



# CARIBE WAVE/LANTEX 2013

## Seminario en Linea

### 24 de enero de 2013

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# MARCO DE REFERENCIA INSTITUCIONAL PARA EL EJERCICIO

- El Grupo Intergubernamental de Coordinación del Sistema de Alerta contra los Tsunamis y otras Amenazas Costeras en el Caribe y Regiones Adyacentes (**ICG/CARIBE EWS**)
- La Agencia de Manejo de Emergencias y Desastres del Caribe (**CDEMA**)
- El Centro de Coordinación para la Prevención de los Desastres Naturales en América Central (**CEPRENAC**)
- El US NWS National Tsunami Hazard Mitigation Program (**NTHMP**) y Programa de Alerta de Tsunamis del Caribe (**CTWP**)

# CARIBE WAVE 2011

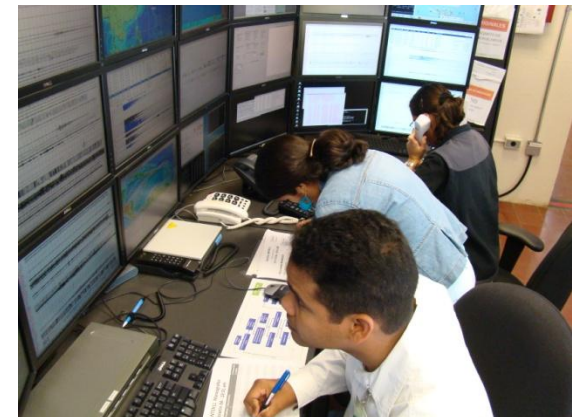
- 34 países y territorios\* participaron en el primer ejercicio regional de tsunamis, CARIBE WAVE 2011 que tuvo lugar el 23 de Marzo de 2011. Esto representó un tasa de participación de casi 90% de las jurisdicciones que han nominado Puntos Focales de Alerta y Contactos Nacionales y un 75% de todos los países y territorios de la región CARIBE EWS.

\* Aruba, Antigua and Barbuda, Bahamas, Barbados, Belize, Bolivarian Republic of Venezuela, Colombia, Dominica, Dominican Republic, France (Martinique, Guadeloupe, St Martin), Grenada, Guatemala, Haiti, Honduras, Jamaica, Mexico, Netherlands (Curacao, Sint Maarten and Sint Eustatius), Nicaragua, Panama, Peru, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, United Kingdom (Anguilla, British Virgin Islands, Bermuda, Cayman Islands, Turks and Caicos), Estados Unidos (Puerto Rico y US Virgin Islands).

# Lecciones de CARIBE WAVE 2011

- Confusión con los términos de alerta utilizados (traducción y diferencia entre los productos de PTWC and WCATWC)
- Deseo de tener mayores detalles sobre el impacto
- Deseo de tener los tiempos estimados de arribo para todos los puntos de pronóstico del CARIBE EWS, ir respectivo del impacto.
- Webinars fueron útiles.
- También fueron muy útiles los emails que fueron enviados a los que se suscribieron durante el transcurso del ejercicio.
- Se necesita identificar alternativas a nivel local para la recepción y diseminación de los mensajes.
- Mejorar el cuestionario de evaluación.

- Un 100% de los países, a pesar de los problemas de comunicación, indicaron que el ejercicio fue muy **útil para validar y enfatizar la necesidad de planes de tsunamis**. Hay una necesidad absoluta para **reforzar los planes de preparación y desalojo** e involucrar al sector privado. El hecho que la **población y la prensa** tenían tanto interés en el ejercicio fue también importante.

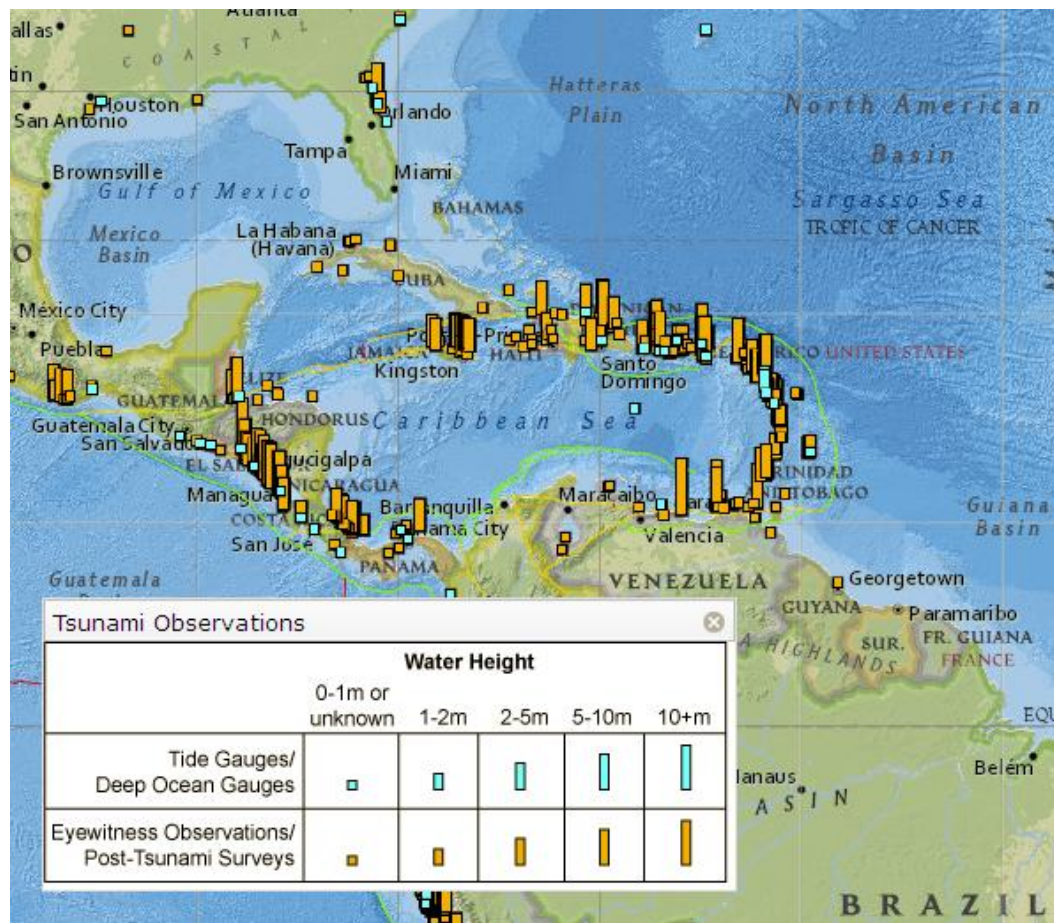


# Otras Justificaciones para Ejercicio 2013

- Con cada ejercicio aumenta la participación (experiencia de Puerto Rico e IIVV)
- La cantidad e impacto de eventos recientes: Haití, Chile and Japón;
- Vulnerabilidad de tsunamis en nuestra región
- Oportunidades para cooperación con otras organizaciones
- Importancia de poner a prueba y evaluar el sistema.



Los datos de tsunamis históricos indican que en los últimos 500 años se han observado en el Caribe más de 75 tsunamis, y aunque ocurren con menos frecuencia que en otras cuencas oceánicas, tienen el potencial de matar unas 500,000 en pocas horas si no se responde adecuadamente..



<http://ngdc.gov>

CARIBE WAVE/LANTEX 2013



# Objetivos

- **Ejercitar y evaluar las operaciones del sistema de alerta de tsunamis, el CARIBE EWS, en particular**
  - Validar la **emisión** de los productos de tsunami del PTWC y WCATWC
  - Validar la **recepción y diseminación** de los productos de tsunami en los puntos focales de alerta del CARIBE EWS (TWFP).
- **Comenzar con un proceso de exposición a los productos experimentales del PTWC .**
  - Revisar y evaluar los productos experimentales del PTWC que estarán disponible como parte del ejercicio
  - Proveer comentarios sobre la puesta en escena, formato y contenido de los productos experimentales

# Objetivos (cont)

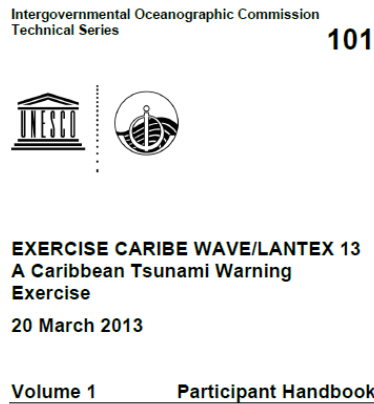
- **Validar el alistamiento para responder a un tsunami local/regional**
  - Validar el alistamiento operacional del Punto Focal de Alerta y/o la Oficina Nacional/Estatal de Manejo de Emergencias.
  - Mejorar el alistamiento operacional. Antes del ejercicio asegurar que las herramientas y planes adecuados hayan sido desarrollados, incluyendo materiales educativos.
  - Validar que la diseminación de alertas, información y sugerencias de los Puntos Focales de Alerta a agencias relevantes sea oportuna y precisa
  - Validar el proceso organizacional de toma de decisiones (planes de respuesta de emergencia) sobre alertas públicas y desalojos.
  - Validar que los métodos usados para notificar e instruir el público sean oportunos y precisos.

# Metas

- Participación del 85% de los estados miembros del ICG CARIBE EWS (75% participaron en 2011)
- Cumplimiento con el cronograma
- 75 % de los Estados Miembros involucrar la comunidad (61% tuvieron actividades con la comunidad en el 2011)
- 100% reciban el mensaje Dummy por los medios oficiales de comunicación (90% lo recibieron en el 2011)
- 100% de los países contesten el cuestionario de evaluación (94% en 2011)

# MANUAL DEL EJERCICIO

- El Manual del Ejercicio CARIBE WAVE/LANTEX 13 (109 páginas) está disponible en línea en inglés en:
  - <http://www.srh.noaa.gov/srh/ctwp> (Página web del Programa de Alerta de Tsunamis del Caribe)



## Caribbean Tsunami Warning Program

**CARIBE WAVE/LANTEX 2013**  
March 20, 2013

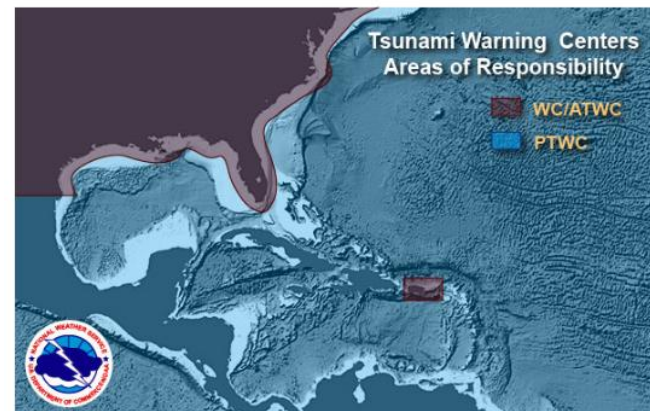
A Caribbean, Western Atlantic and Gulf of Mexico Tsunami Warning Exercise

Webinars for CARIBE WAVE/LANTEX 2013

- [24 de enero en español](#)
- [25 January in English](#)
- [14 de febrero en español](#) Nueva fecha
- [15 February in English](#) New date
- [Register by March 18, 2013](#) to receive Tsunami Messages during CARIBE WAVE/LANTEX 2013
- Exercise CARIBE WAVE/ LANTEX13 [Participant Handbook](#)
- How to Plan, Conduct and Evaluate Tsunami Exercises ([English](#) | [Español](#))
- LANTEX 2013 [Presentation](#) (English)
- Submit [CARIBE WAVE/LANTEX 2013 Post-Exercise evaluation](#) by April 1, 2013

Additional Websites for CARIBE WAVE/LANTEX 2013:

- [Puerto Rico Seismic Network](#)
- [National Tsunami Hazard Mitigation Program](#)
- [UNESCO IOC](#)



Click map for status of any watch or warning for the Caribbean region.



- Notification Subscription Services
- Pacific Center (RSS/Emails)
- West Coast/Alaska Center (RSS/Email)
- Carib. Sea Level Stations Inventory of Stations (Google map)
- IOC Sea Level Monitoring Facility
- Status of Sea Level Data Availability
- Seismic Stations
- IRIS CARIBE EWS Virtual Seismic Network
- Sistema de Monitoreo de Estaciones RSPR
- Status of Seismic Data Availability
- Communications Systems
- EMWIN
- NOAA Weather Radios
- GTS
- NOAA Tsunami Program
- CTWP Presentations
- Tsunami Database
- CARIBE EWS
- IOC Tsunami Programme Home
- Organizational Structure & Governance
- Communication Plan
- Communication Test
- Preparedness
- Education
- Tsunami Messages
- COMET Warning Systems
- JetStream
- NOAA Education
- CTWP Activities
- Calendar
- CTWP Office
- Staff
- CTWP News
- CTWP Homepage

# Trasfondo Técnico y Científico

Evaluation of Tsunami Sources with the Potential to Impact the U.S. Atlantic and Gulf Coasts

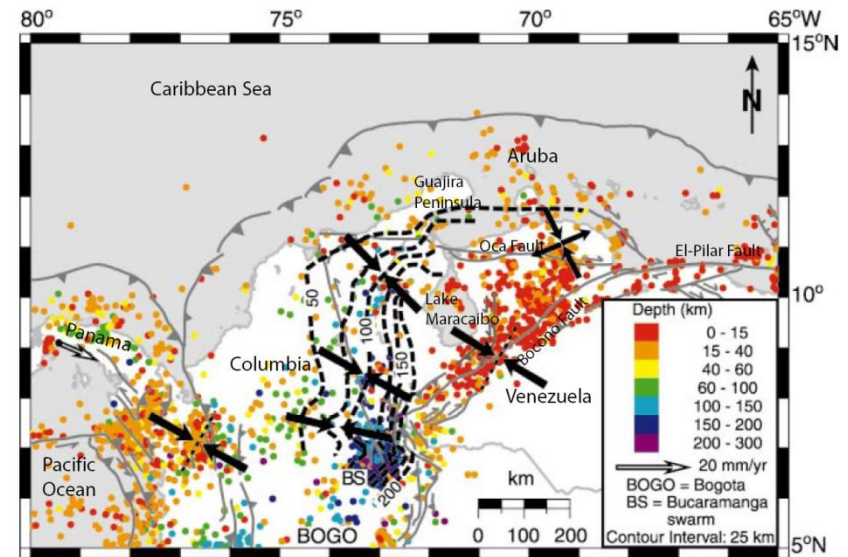
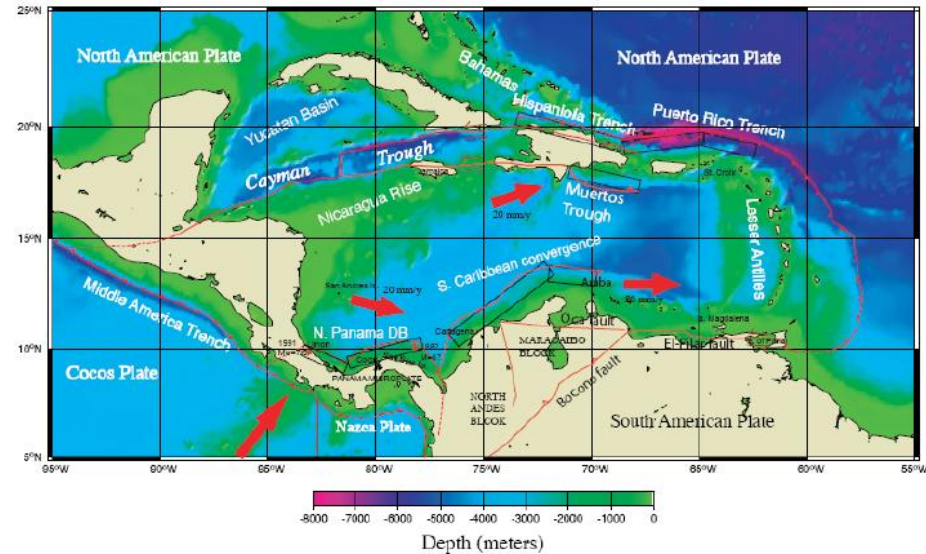
An Updated Report to the US Nuclear Regulatory Commission

By Atlantic and Gulf of Mexico Tsunami Hazard Assessment Group

PI: Dr. Uri Ten Brink, USGS

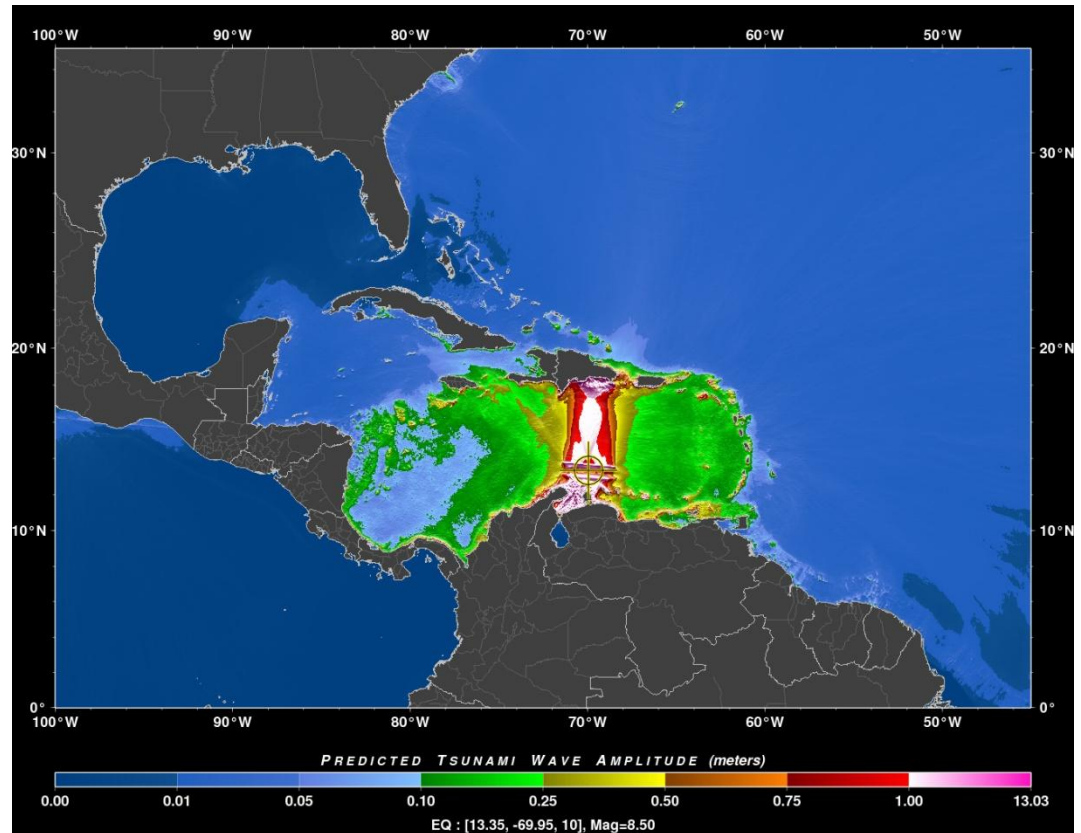
Year: 2007

Source: Northern South America Convergent Zone



# CARIBE WAVE/LANTEX 13

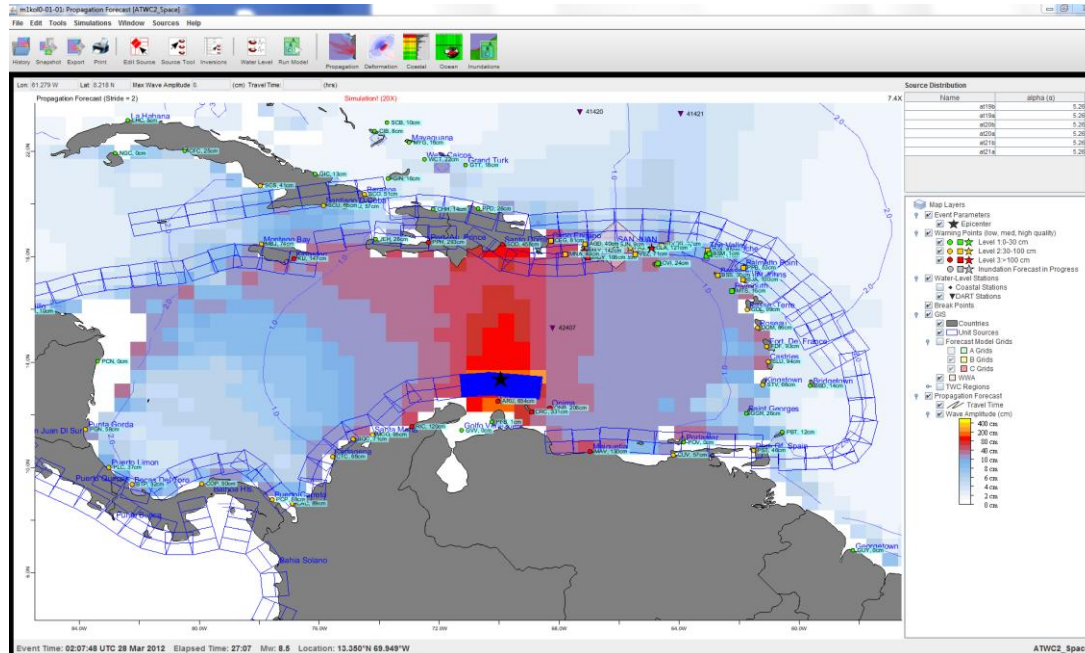
- 20 de Marzo de 2013
- 13h00 UTC
- M 8.5 al norte de Aruba
- Mensajes de comienzo serán diseminados por el PTWC y WCATWC. Otros centros de alerta también estarán emitiendo sus productos



PTWC RIFT Model Output

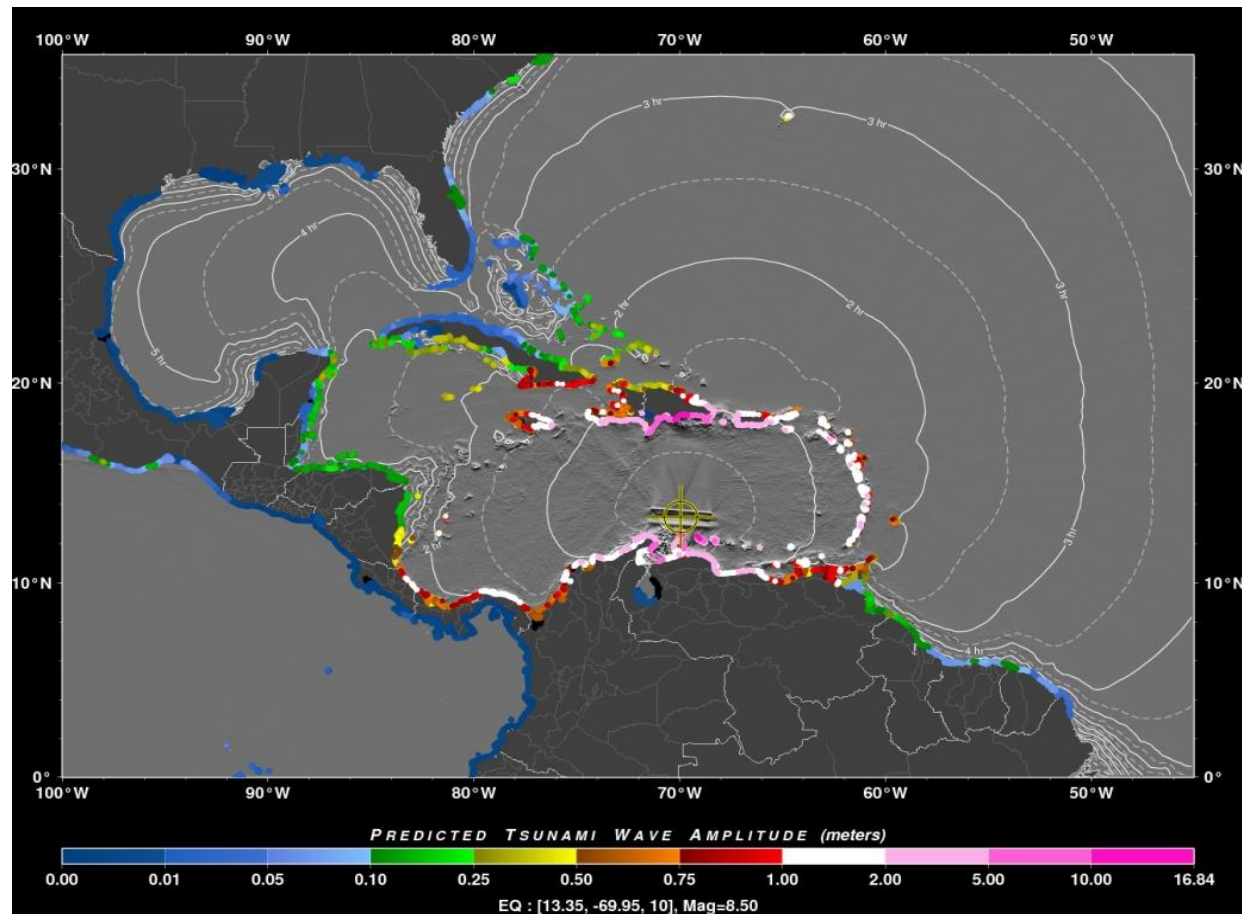
# CARIBE WAVE LANTEX 2013

- Terremoto M 8.5 con epicentro en 13.35N, 69.95W con un area de ruptura = 300 x 100 km, profundidad 10 km. Desplazamiento de 5.26 meters.



Gráfica con modelo de pronóstico, el área de ruptura está en azul (Kara Sterling, US NWS WCATWC).

# Gráfica RIFT (Rapid Inundation Forecasting of Tsunamis) con los tiempos de viaje y alturas de olas pronosticadas (Charles McCreery, US NWS PTWC).



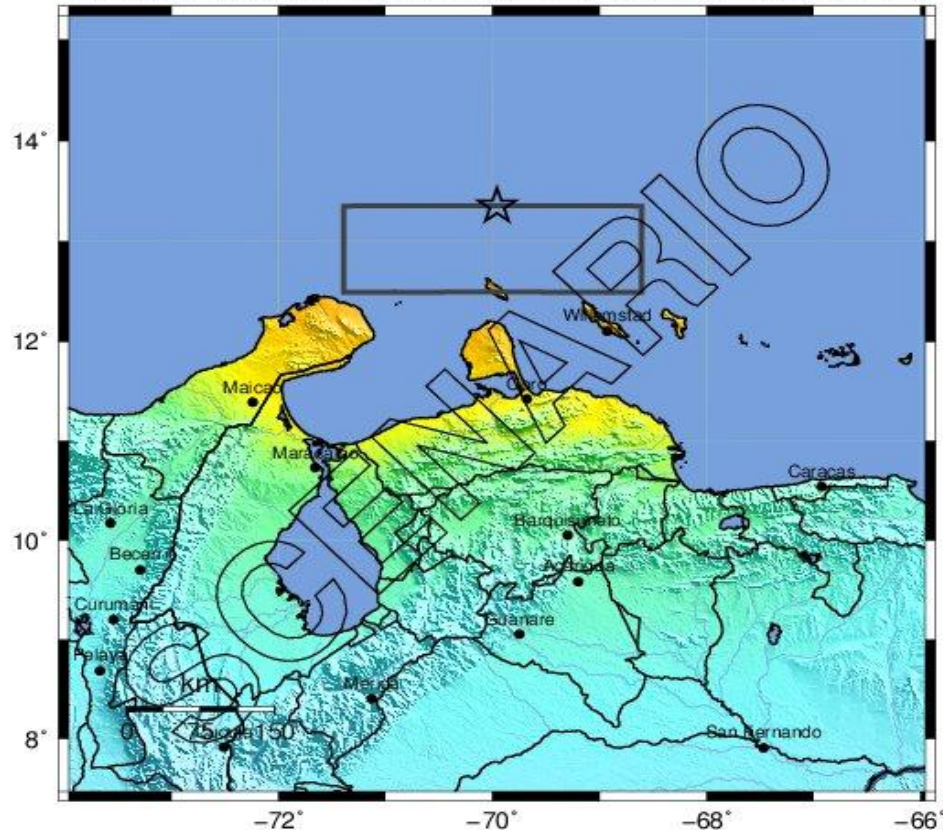




# USGS Scenario Shake Map

-- Earthquake Planning Scenario --  
ShakeMap for Caribewave Scenario

Scenario Date: JAN 1 2013 12:00:00 AM GMT M 8.5 N13.35 W69.96 Depth: 10.0km



PLANNING SCENARIO ONLY -- Map Version 5 Processed Thu Jul 5, 2012 02:50:02 PM MDT

| PERCEIVED SHAKING      | Not felt | Weak   | Light | Moderate   | Strong | Very strong | Severe     | Violent | Extreme    |
|------------------------|----------|--------|-------|------------|--------|-------------|------------|---------|------------|
| POTENTIAL DAMAGE       | none     | none   | none  | Very light | Light  | Moderate    | Mod./Heavy | Heavy   | Very Heavy |
| PEAK ACC.(%g)          | <0.1     | 0.5    | 2.4   | 6.7        | 13     | 24          | 44         | 83      | >156       |
| PEAK VEL.(cm/s)        | <0.07    | 0.4    | 1.9   | 5.8        | 11     | 22          | 43         | 83      | >160       |
| INSTRUMENTAL INTENSITY | I        | II-III | IV    | V          | VI     | VII         | VIII       | IX      | X+         |

Scale based upon Wald, et al., 1999

**M 8.5, CaribeWave\_se**

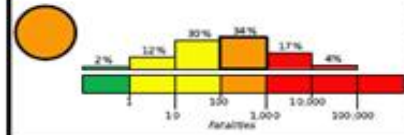
Origin Time: Tue 2013-01-01 12:00:00 UTC (07:20:09 local)

Location: 13.35°N 69.96°W Depth: 10 km

**FOR TSUNAMI INFORMATION, SEE: [tsunami.gov](http://tsunami.gov)**

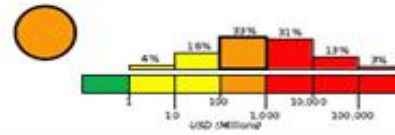
Created: 29 minutes, 0 seconds after earthquake

**Estimated Fatalities**



Orange alert for shaking-related fatalities and economic losses. Significant casualties and damage are likely and the disaster is potentially widespread. Past orange alerts have required a regional or national level response.

**Estimated Economic Losses**



Estimated economic losses are 10-70% GDP of Aruba.

**Estimated Population Exposed to Earthquake Shaking:**

| ESTIMATED POPULATION EXPOSURE (k = x1000) | -                     | 1,128k* | 12,251k* | 11,056k  | 817k     | 635k        | 16k            | 0              | 0        |          |
|---|-----------------------|---------|----------|----------|----------|-------------|----------------|----------------|----------|----------|
| ESTIMATED MODIFIED MERCALLI INTENSITY     | I                     | II-III  | IV       | V        | VI       | VII         | VIII           | IX             | X+       |          |
| PERCEIVED SHAKING                         | Not felt              | Weak    | Light    | Moderate | Strong   | Very Strong | Severe         | Violent        | Extreme  |          |
| POTENTIAL DAMAGE                          | Resistant Structures  | none    | none     | none     | V. Light | Light       | Moderate       | Moderate/heavy | Heavy    | V. Heavy |
|   | Vulnerable Structures | none    | none     | none     | Light    | Moderate    | Moderate/heavy | Heavy          | V. Heavy | V. Heavy |

\*Estimated exposure only includes population within the map area

**Population Exposure**



**Structures:**

Overall, the population in this region resides in structures that are resistant to earthquake shaking, though some vulnerable structures exist. The predominant vulnerable building types are unreinforced brick masonry and adobe construction.

**Historical Earthquakes (with MMI levels):**

| Date (UTC) | Dist. (km) | Mag. | Max. Shaking (MMI#) | Deaths |
|------------|------------|------|---------------------|--------|
| 1989-04-30 | 317        | 5.9  | VIII(190)           | 0      |
| 1976-02-15 | 379        | 5.7  | VIII(1k)            | 0      |
| 1975-04-05 | 366        | 6.3  | VIII(50k)           | 3      |

**Selected City Exposure**

from GeoNames.org

| MMI City        | Population |
|-----------------|------------|
| VIII Babijn     | 41k        |
| VIII Willemstad | 125k       |
| VII Oranjestad  | 30k        |
| VII Angochi     | 29k        |
| VII Barber      | 2k         |
| VII Dorp Soto   | 2k         |
| V Maracaibo     | 2,225k     |
| V Valencia      | 1,395k     |
| V Barquisimeto  | 809k       |
| V Maracay       | 1,754k     |
| IV Caracas      | 3,000k     |

bold cities appear on map (k = x1000)

PAGER content is automatically generated, and only considers losses due to structural damage. Limitations of input data, shaking estimates, and loss models may add uncertainty.

Impacto del Terremoto se limita al norte de Sur América (Curacao, Aruba, Bonaire, Venezuela y Colombia)

# Productos para el Mensaje Dummy y los Canales de Diseminacion de los Centros de Alerta

| <u>Center</u> | <u>WMO ID</u> | <u>AWIPS ID</u> | <u>NWWS</u> | <u>AFTN</u> | <u>GTS</u> | <u>EMWIN</u> | <u>Fax</u> | <u>Email</u> |
|---------------|---------------|-----------------|-------------|-------------|------------|--------------|------------|--------------|
| WCATWC        | WEXX30 PAAQ   | TSUATE          | Yes         | Yes         | Yes        | Yes          | Yes        | Yes          |
| PTWC          | WECA41 PHEB   | TSUCAX          | Yes         | Yes         | Yes        | Yes          | Yes        | Yes          |

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

***En el caso de WCATWC el mensaje Dummy se emitira con el codigo WMO ID WEXX30 PAAQ (en vez de WEXX20 PAAQ) y AWIPS ID TSUATE (en vez de TSUAT1).***

# Cronograma de Mensajería

| Date<br>(UTC) | Time<br>(UTC) | WCATWC<br>Message |                               |       |       | PTWC<br>Message |       |       |       |  |
|---------------|---------------|-------------------|-------------------------------|-------|-------|-----------------|-------|-------|-------|--|
|               |               | #                 | Type                          | Dummy | Email | #               | Type  | Dummy | Email |  |
| 03/20/2013    | 1300          |                   | ----- Earthquake Occurs ----- |       |       |                 |       |       |       |  |
| 03/20/2013    | 1302          | 01                | Warn                          | Yes   | Yes   | 01              | Watch | Yes   | Yes   |  |
|               | 1330          |                   |                               |       |       | 02              | Watch | No    | Yes   |  |
| 03/20/2013    | 1337          | 02                | Warn                          | No    | Yes   |                 |       |       |       |  |
| 03/20/2013    | 1402          | 03                | Warn                          | No    | Yes   |                 |       |       |       |  |
|               | 1420          |                   |                               |       |       | 03              | Watch | No    | Yes   |  |
| 03/20/2013    | 1432          | 04                | Warn                          | No    | Yes   |                 |       |       |       |  |
| 03/20/2013    | 1502          | 05                | Warn                          | No    | Yes   |                 |       |       |       |  |
|               | 1515          |                   |                               |       |       | 04              | Watch | No    | Yes   |  |
| 03/20/2013    | 1604          | 06                | Warn                          | No    | Yes   |                 |       |       |       |  |
|               | 1610          |                   |                               |       |       | 05              | Watch | No    | Yes   |  |
| 03/20/2013    | 1704          | 07                | Warn                          | No    | Yes   |                 |       |       |       |  |
|               | 1710          |                   |                               |       |       | 06              | Watch | No    | Yes   |  |
| 03/20/2013    | 1803          | 08                | Warn                          | No    | Yes   |                 |       |       |       |  |
|               | 1810          |                   |                               |       |       | 07              | Watch | No    | Yes   |  |
| 03/20/2013    | 1902          | 09                | Can                           | No    | Yes   |                 |       |       |       |  |
|               | 1910          |                   |                               |       |       | 08              | Can   | No    | Yes   |  |

# Mensajes Simulados serán Provistos por el PTWC y WC/ATWC:

➤ Warning

– Watch

– Advisory

➤ Cancellation

- West Coast/Alaska Tsunami Warning Center

➤ Caribbean-Wide Tsunami Watch

➤ Cancellation

- Pacific Tsunami Warning Center

**Solo el Dummy se enviará por todos los canales de comunicación para recibir los otros mensajes por email hay que suscribirse hasta el 18 de marzo:**

**<http://redsismica.uprm.edu/lantex/>**

**Link también en <http://www.srh.noaa.gov/srh/ctwp/>**

# Mensajes de Tsunamis para el Caribe

**West Coast & Tsunami Warning Center**  
<http://www.nwac.noaa.gov>  
**Puerto Rico Seismic Network**  
<http://tudisimio.usps.edu> Telephone: 787-632-8632  
**TSUNAMI MESSAGES**



- Danger!
- Run for high ground!
- Follow emergency instructions.

**WARNING**

**ADVISORY**

- Possible strong and dangerous local currents.
- Get out of the water and off the beach.
- Stay tuned for local emergency guidance.



- Potential danger.
- Stayed tuned for more information.

**WATCH**





- Relax.
- No danger.
- A distant ocean basin may be in danger.

**INFORMATION STATEMENT**

WEST COAST & ALASKA TSUNAMI WARNING CENTER

**Pacific Tsunami Warning Center**  
<http://www.weather.gov/ptwc/index.php>  
**Caribbean Tsunami Warning Program**  
<http://www.srh.noaa.gov/srh/ctwp>  
**TSUNAMI MESSAGES FOR THE CARIBBEAN EXCEPT FOR PUERTO RICO AND THE US VIRGIN ISLANDS**





- Danger for all coasts within the Caribbean Region!
- Run for High Ground!
- Follow the instructions of the emergency management officials.

**CARIBBEAN SEA-WIDE TSUNAMI WATCH**




- Danger for coasts within a thousand kilometers from Earthquake!
- Run for High Ground!
- Follow the instructions of the emergency management officials.

**REGIONAL TSUNAMI WATCH**



- Danger for coasts within a hundred kilometers from Earthquake!
- Run for High Ground!
- Follow the instructions of the emergency management officials.

**LOCAL TSUNAMI WATCH**



- Relax.
- No Danger.
- A more distant place may be in danger.

**INFORMATION STATEMENT**

## Appendix D. TWC Dummy Messages

### WCATWC

WEXX30 PAAQ 201302  
TSUATE

TEST...TSUNAMI EXERCISE MESSAGE NUMBER 1...TEST  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
902 AM AST WED MAR 20 2013

...CARIBE WAVE 13/LANTEX 13 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 CARIBE WAVE 13/LANTEX 13 CARIBBEAN  
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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### PTWC

WECR41 PHEB 201302  
TSUCAX

TEST...TSUNAMI EXERCISE MESSAGE NUMBER 1...TEST  
NWS PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS  
ISSUED AT 1302Z 20 MAR 2013

...CARIBE WAVE 13/LANTEX 13 TSUNAMI EXERCISE MESSAGE. REFER TO PTWC MESSAGE 1 IN  
THE EXERCISE HANDBOOK. THIS IS AN EXERCISE ONLY...

THIS MESSAGE IS BEING USED TO START THE CARIBE WAVE 13/LANTEX 13 CARIBBEAN  
TSUNAMI EXERCISE. THIS WILL BE THE ONLY EXERCISE MESSAGE BROADCAST FROM THE  
PACIFIC TSUNAMI WARNING CENTER EXCLUDING SPECIAL EMAIL MESSAGES DISCUSSED IN THE  
HANDBOOK. THE HANDBOOK IS AVAILALE AT THE WEB SITE WCATWC.ARH.NOAA.GOV. THE  
EXERCISE PURPOSE IS TO PROVIDE EMERGENCY MANAGEMENT A REALISTIC SCENARIO TO TEST  
TSUNAMI RESPONSE PLANS.

THIS IS ONLY AN EXERCISE.

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## Appendix E. WCATWC Exercise Messages

The following messages, created for the CARIBE WAVE 13/LANTEX 13 tsunami exercise, are representative of the official standard products issued by the WCATWC during a large magnitude 8.5 earthquake and tsunami originating 57 miles north of Oranjestad, Aruba in the Caribbean Sea at 13.35°N, 69.95°W. During a real event, the TWCs would also issue graphical and html-based products to their web sites and via RSS. Forecasts are only provided for points where the WCATWC has high resolution digital elevation models. Observations are only provided for locations where there is a tide gauge to which the WCATWC has real time access.

### WCATWC Message #1

WEXX30 PAAQ 201302  
TSUATE

BULLETIN  
PUBLIC TSUNAMI MESSAGE NUMBER 1  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
902 AM AST WED MAR 20 2013

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

#### WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

- \* COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.

#### PRELIMINARY EARTHQUAKE PARAMETERS

\* MAGNITUDE 8.5  
\* ORIGIN TIME 0800 EDT MAR 20 2013  
0900 AST MAR 20 2013  
0900 CDT MAR 20 2013  
1300 UTC MAR 20 2013  
\* COORDINATES 13.4 NORTH 70.0 WEST  
\* DEPTH 6 MILES / 10 KM  
\* LOCATION CARIBBEAN SEA

#### IMPACTS FOR TSUNAMI WARNING AREAS

- \* A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION OF LAND IS EXPECTED.
- \* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

#### RECOMMENDED ACTIONS

- \* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.
- \* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.
- \* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.
- \* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS

INDICATE IT IS SAFE TO DO SO.

#### FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

| SITE          | FORECAST<br>START OF<br>OF TSUNAMI | FORECAST<br>TSUNAMI<br>DURATION | FORECAST<br>MAX TSUNAMI<br>HEIGHT | OBSERVED<br>MAX TSUNAMI<br>HEIGHT |
|---------------|------------------------------------|---------------------------------|-----------------------------------|-----------------------------------|
| * PUERTO RICO |                                    |                                 |                                   |                                   |
| PENUELAS      | 0958 AST 03/20                     |                                 |                                   |                                   |
| YABUCCA       | 1002 AST 03/20                     |                                 |                                   |                                   |
| MAYAGUEZ      | 1011 AST 03/20                     |                                 |                                   |                                   |
| SAN JUAN      | 1021 AST 03/20                     |                                 |                                   |                                   |
| ESPERANZA     | 1029 AST 03/20                     |                                 |                                   |                                   |

\* VIRGIN ISLANDS  
LAMESHUR BAY 1011 AST 03/20  
CHARLOTTE HX 1015 AST 03/20

FORECAST MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE PREDICTED TIDE

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.

OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

#### NEXT UPDATE AND ADDITIONAL INFORMATION

- \* THIS MESSAGE WILL BE UPDATED IN 30 MINUTES.
- \* REFER TO THE INTERNET SITE [WCATWC.ARH.NOAA.GOV](http://WCATWC.ARH.NOAA.GOV) FOR MORE INFORMATION.
- \* CARIBBEAN COASTAL RESIDENTS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT [PTWC.WEATHER.GOV](http://PTWC.WEATHER.GOV).

##

### WCATWC Message #2

WEXX30 PAAQ 201337  
TSUATE

BULLETIN  
PUBLIC TSUNAMI MESSAGE NUMBER 2  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
937 AM AST WED MAR 20 2013

NEW OBSERVATIONS AND FORECASTS ARE LISTED BELOW.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

#### WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

- \* COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.

#### IMPACTS FOR TSUNAMI WARNING AREAS

P<sub>2</sub>TWC Message #1

WECA41 FEB 201302  
TSUCAK

TSUNAMI MESSAGE NUMBER 1  
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI  
1302 UTC WED MAR 20 2013

THIS MESSAGE APPLIES TO COUNTRIES WITHIN AND BORDERING THE  
CARIBBEAN SEA EXCEPT FOR PUERTO RICO AND THE VIRGIN ISLANDS.

... A CARIBBEAN-WIDE TSUNAMI WATCH IS IN EFFECT.

A TSUNAMI WATCH IS IN EFFECT FOR

ARUBA / BONAIRES / CURACAO / DOMINICAN REP / VENEZUELA /  
COLOMBIA / SAINT KITTS / MONTERRAT / HAITI / GUADELOUPE /  
DOMINICA / SAINT LUCIA / ST VINCENT / SAINT MARTEN / CUBA /  
MARTINIQUE / ANGUILLA / GRENADA / PANAMA / TURKS N CAICOS /  
BAHAMAS / BARBADOS / JAMAICA / CAYMAN BRAC / ANTIGUA / BARBUDA /  
SAINT MARTIN / GRAND CAYMAN / TRINIDAD TOBAGO / COSTA RICA /  
BERMUDA / MEXICO / NICARAGUA / HONDURAS / BELIZE / GUATEMALA /  
FRENCH GUIANA / GUYANA / SURINAME / BRAZIL

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY  
NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE  
DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND  
ANY ACTIONS TO BE TAKEN IN RESPONSE.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME 08:33:05 20 MAR 2013  
COORDINATES 8.3 NORTH 89.9 WEST  
LOCATION CARIBBEAN SEA  
MAGNITUDE 8.5

EVALUATION

EARTHQUAKES OF THIS SIZE HAVE THE POTENTIAL TO GENERATE A  
WIDESPREAD DESTRUCTIVE TSUNAMI THAT CAN AFFECT COASTLINES ACROSS  
THE ENTIRE CARIBBEAN REGION.

HOWEVER - IT IS NOT KNOWN THAT A TSUNAMI WAS GENERATED. THIS  
WATCH IS BASED ONLY ON THE EARTHQUAKE EVALUATION. AUTHORITIES IN  
THE REGION SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THE  
POSSIBILITY OF A WIDESPREAD DESTRUCTIVE TSUNAMI.

ESTIMATED INITIAL TSUNAMI WAVE ARRIVAL TIMES AT FORECAST POINTS  
WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL  
ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE  
LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN  
SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION  | FORECAST POINT | COORDINATES | ARRIVAL TIME |
|-----------|----------------|-------------|--------------|
| BONAIRE   | ONIMA          | 12.3N 68.3W | 1310Z 20 MAR |
| ARUBA     | ORANJESTAD     | 12.5N 70.0W | 1314Z 20 MAR |
| CURACAO   | WILLEMSTAD     | 12.1N 68.9W | 1326Z 20 MAR |
| COLOMBIA  | SANTA MARTA    | 11.2N 74.2W | 1327Z 20 MAR |
|           | RIOHACHA       | 11.6N 72.9W | 1348Z 20 MAR |
|           | BARRANQUILLA   | 11.1N 74.9W | 1350Z 20 MAR |
|           | CARTAGENA      | 10.4N 75.6W | 1352Z 20 MAR |
|           | PUNTA CARIBANA | 8.6N 76.9W  | 1426Z 20 MAR |
| VENEZUELA | MAIQUETIA      | 10.6N 67.0W | 1329Z 20 MAR |

|                 |                 |             |              |
|-----------------|-----------------|-------------|--------------|
|                 | CUMANA          | 10.5N 64.2W | 1423Z 20 MAR |
|                 | PUNTO FIJO      | 11.7N 70.2W | 1522Z 20 MAR |
|                 | GOLFO VENEZUELA | 11.4N 71.2W | 1635Z 20 MAR |
|                 | FORLAMAR        | 10.9N 63.8W | 1736Z 20 MAR |
| DOMINICAN REP   | SANTO DOMINGO   | 18.5N 69.9W | 1350Z 20 MAR |
|                 | CABO ENGANO     | 18.6N 68.3W | 1356Z 20 MAR |
|                 | PUERTO PLATA    | 19.8N 70.7W | 1433Z 20 MAR |
| MONTERRAT       | PLYMOUTH        | 16.7N 62.2W | 1404Z 20 MAR |
| SAINT LUCIA     | CASTRIES        | 14.0N 61.0W | 1404Z 20 MAR |
| GUADELOUPE      | BASSE-TERRE     | 16.0N 61.7W | 1405Z 20 MAR |
| HAITI           | JEREMIE         | 16.6N 74.1W | 1409Z 20 MAR |
|                 | CAP-HAITEN      | 19.8N 72.2W | 1441Z 20 MAR |
|                 | PORT-AU-PRINCE  | 18.5N 72.4W | 1507Z 20 MAR |
| GRENADA         | SAINT GEORGES   | 12.0N 61.8W | 1410Z 20 MAR |
| DOMINICA        | ROSEAU          | 15.3N 61.4W | 1410Z 20 MAR |
| SAINT KITTS     | BASSETERRE      | 17.3N 62.7W | 1413Z 20 MAR |
| CUBA            | SANTIAGO_D_CUBA | 19.9N 75.8W | 1413Z 20 MAR |
|                 | BARCOA          | 20.4N 74.5W | 1429Z 20 MAR |
|                 | GIBARA          | 21.1N 76.1W | 1457Z 20 MAR |
|                 | CIENFUEGOS      | 22.0N 80.5W | 1504Z 20 MAR |
|                 | LA HABANA       | 23.2N 82.4W | 1614Z 20 MAR |
|                 | SANTA CRZ D SUR | 20.7N 78.0W | 1781Z 20 MAR |
|                 | NUEVA GERONA    | 21.9N 82.8W | 1834Z 20 MAR |
| SAINT MARTEN    | SIMPSON_BAAT    | 18.0N 69.1N | 1413Z 20 MAR |
| MARTINIQUE      | FORT-DE-FRANCE  | 14.5N 61.2W | 1414Z 20 MAR |
| ST VINCENT      | KINGSTOWN       | 13.1N 60.2W | 1416Z 20 MAR |
| JAMAICA         | KINGSTON        | 17.5N 76.9W | 1419Z 20 MAR |
|                 | MONTEGO BAY     | 18.5N 77.9W | 1423Z 20 MAR |
| ANGUILLA        | THE VALLEY      | 18.3N 63.1W | 1419Z 20 MAR |
| PANAMA          | PUERTO CARRETO  | 8.8N 77.6W  | 1424Z 20 MAR |
|                 | ALIGANDI        | 9.2N 78.0W  | 1426Z 20 MAR |
|                 | PUERTO OBALDIA  | 8.7N 77.4W  | 1427Z 20 MAR |
|                 | COLON           | 9.4N 79.9W  | 1435Z 20 MAR |
|                 | BOCAS DEL TORO  | 9.4N 82.2W  | 1501Z 20 MAR |
| ANTIGUA         | SAINT JOHNS     | 17.1N 61.9W | 1431Z 20 MAR |
| BARBADOS        | BRIDGETOWN      | 13.1N 59.6W | 1431Z 20 MAR |
| BARBUDA         | PALMETTO POINT  | 17.6N 61.9W | 1432Z 20 MAR |
| BAHAMAS         | GREAT INAGUA    | 20.9N 73.7W | 1434Z 20 MAR |
|                 | MAYAGUANA       | 22.2N 73.0W | 1447Z 20 MAR |
|                 | LONG IS         | 23.2N 73.1W | 1505Z 20 MAR |
|                 | CROOKED IS      | 23.7N 74.1W | 1509Z 20 MAR |
|                 | SAN SALVADOR    | 24.1N 74.5W | 1513Z 20 MAR |
|                 | ELEUTHERA IS    | 25.2N 76.1W | 1524Z 20 MAR |
|                 | EXUMA           | 23.6N 75.9W | 1525Z 20 MAR |
|                 | CAT IS          | 24.4N 75.5W | 1525Z 20 MAR |
|                 | NASSAU          | 25.1N 77.4W | 1537Z 20 MAR |
|                 | ANDROS IS       | 25.0N 77.9W | 1540Z 20 MAR |
|                 | FREEPORT        | 26.5N 78.8W | 1558Z 20 MAR |
|                 | ABACO IS        | 26.6N 77.1W | 1612Z 20 MAR |
|                 | BIMINI          | 25.8N 79.3W | 1618Z 20 MAR |
| TURKS N CAICOS  | GRAND TURK      | 21.5N 71.1W | 1439Z 20 MAR |
|                 | WEST CAICOS     | 21.7N 72.3W | 1443Z 20 MAR |
| CAYMAN BRAC     | CAYMAN ISLANDS  | 19.2N 79.8W | 1440Z 20 MAR |
| TRINIDAD TOBAGO | PIRATES_BAY     | 11.3N 60.6W | 1445Z 20 MAR |
|                 | PORT-OF-SPAIN   | 10.6N 61.5W | 1620Z 20 MAR |
| COSTA RICA      | PUERTO LIMON    | 10.0N 83.0W | 1453Z 20 MAR |
| GRAND CAYMAN    | CAYMAN ISLANDS  | 19.3N 81.3W | 1457Z 20 MAR |
| SAINT MARTIN    | BAIE BLANCHE    | 18.3N 62.0W | 1459Z 20 MAR |
| NICARAGUA       | PUNTA GORDA     | 11.4N 83.8W | 1541Z 20 MAR |
|                 | PUERTO CABEZAS  | 14.0N 83.4W | 1937Z 20 MAR |
| BERMUDA         | RUTHS_BAY       | 32.4N 64.6W | 1551Z 20 MAR |

# Cont. PTWC

|               |                |       |       |       |    |     |
|---------------|----------------|-------|-------|-------|----|-----|
| MEXICO        | COZUMEL        | 20.5N | 87.0W | 1555Z | 20 | MAR |
|               | VERACRUZ       | 19.2N | 96.1W | 1839Z | 20 | MAR |
|               | MADERO         | 22.3N | 97.8W | 1845Z | 20 | MAR |
|               | TEXAS_BORDER   | 26.0N | 97.1W | 1856Z | 20 | MAR |
|               | CAMPECHE       | 19.9N | 90.5W | 2221Z | 20 | MAR |
| HONDURAS      | PUERTO_CORTES  | 15.9N | 88.0W | 1555Z | 20 | MAR |
|               | TRUJILLO       | 15.9N | 86.0W | 1626Z | 20 | MAR |
| BELIZE        | BELIZE_CITY    | 17.5N | 88.2W | 1635Z | 20 | MAR |
| GUATEMALA     | PUERTO_BARRIOS | 15.7N | 88.6W | 1819Z | 20 | MAR |
| FRENCH GUIANA | CAYENNE        | 4.9N  | 52.3W | 1848Z | 20 | MAR |
| SURINAME      | PARAMARIBO     | 5.9N  | 55.2W | 1850Z | 20 | MAR |
| GUYANA        | GEORGETOWN     | 6.8N  | 58.2W | 1851Z | 20 | MAR |
| BRAZIL        | FORTALEZA      | 3.7S  | 38.5W | 1934Z | 20 | MAR |
|               | SAO_LUIS       | 2.5S  | 44.3W | 2121Z | 20 | MAR |
|               | ILHA_DE_MARACA | 2.2N  | 50.5W | 2200Z | 20 | MAR |

ADDITIONAL BULLETINS WILL BE ISSUED BY THE PACIFIC TSUNAMI  
WARNING CENTER FOR THIS EVENT AS MORE INFORMATION  
BECOMES AVAILABLE.



WCATWC Message #9

WEXX30 PAAQ 201902  
TSUATE

BULLETIN  
PUBLIC TSUNAMI MESSAGE NUMBER 9  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
302 PM AST WED MAR 20 2013

...THE TSUNAMI WARNING IS CANCELLED...

CANCELLATIONS

\* COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.

IMPACTS - UPDATED

- \* TSUNAMI ACTIVITY HAS SUBSIDED ALONG THE COASTS OF PUERTO RICO, VIRGIN ISLANDS... AND U.S. AND CANADIAN COASTS IN THE ATLANTIC.
- \* ONGOING ACTIVITY MAY PERSIST IN SOME AREAS CAUSING STRONG CURRENTS DANGEROUS TO SWIMMERS AND BOATS.
- \* THE DETERMINATION TO RE-OCCUPY HAZARD ZONES MUST BE MADE BY LOCAL OFFICIALS.

RECOMMENDED ACTIONS - UPDATED

- \* DO NOT RE-OCCUPY HAZARD ZONES UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY

| SITE                     | TIME<br>OF MEASUREMENT | OBSERVED MAX<br>TSUNAMI HEIGHT |
|--------------------------|------------------------|--------------------------------|
| PENUELAS PUERTO RICO     | 1035 AST 03/20         | 03.8FT                         |
| YABUCCA PUERTO RICO      | 1045 AST 03/20         | 02.8FT                         |
| MAYAGUEZ PUERTO RICO     | 1115 AST 03/20         | 02.1FT                         |
| SAN JUAN PUERTO RICO     | 1105 AST 03/20         | 01.1FT                         |
| ESPERANZA VIEQUES IS. PR | 1105 AST 03/20         | 01.8FT                         |
| LAMESHUR BAY USVI        | 1057 AST 03/20         | 01.8FT                         |
| CHARLOTTE HN USVI        | 1015 AST 03/20         | 03.1FT                         |
| WILLEMSTAD CURACAO       | 0929 AST 03/20         | 05.8FT                         |
| SANTO DOMINGO DR         | 0953 AST 03/20         | 11.2FT                         |
| PUNTA CANA DR            | 1003 AST 03/20         | 01.8FT                         |
| ROSEAU DOMINICA          | 1018 AST 03/20         | 00.8FT                         |
| BARAHONA DR              | 1027 AST 03/20         | 07.7FT                         |
| CAP HAITIEN HT           | 1146 AST 03/20         | 00.4FT                         |
| DESIRADE GUADELOUPE      | 1208 AST 03/20         | 00.6FT                         |

OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

NEXT UPDATE AND ADDITIONAL INFORMATION

- \* THIS WILL BE THE LAST WEST COAST/ALASKA TSUNAMI WARNING CENTER BULLETIN ISSUED FOR THIS EVENT.
- \* REFER TO THE INTERNET SITE [WCATWC.ARH.NOAA.GOV](http://WCATWC.ARH.NOAA.GOV) FOR MORE

INFORMATION

- \* CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION AT [PTWC.WEATHER.GOV](http://PTWC.WEATHER.GOV).

PTWC Message #8

WECA41 FHEB 201910  
TSUCAK

TSUNAMI MESSAGE NUMBER 8  
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI  
1910 UTC WED MAR 20 2013

THIS MESSAGE APPLIES TO COUNTRIES WITHIN AND BORDERING THE  
CARIBBEAN SEA EXCEPT FOR SURINAM, GUYANA, THE VIRGIN ISLANDS,

... THE TSUNAMI WATCH IS CANCELLED.

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY  
NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE  
DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND  
ANY ACTIONS TO BE TAKEN IN RESPONSE.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME 1305Z 20 MAR 2013  
COORDINATES 11.3 NORTH 69.9 WEST  
LOCATION CARIBBEAN SEA  
MAGNITUDE 8.8

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

| Gauge Location           | LAT   | LOX   | TIME  | AMPL            | PER   |
|--------------------------|-------|-------|-------|-----------------|-------|
| DART 42407               | 18.3N | 68.2W | 1324Z | 0.42M / 1.4FT   | 20MIN |
| MONA ISLAND PR           | 18.1N | 67.8W | 1352Z | 3.77M / 12.2FT  | 18MIN |
| PENUELAS PR              | 18.0N | 66.8W | 1352Z | 1.11M / 3.6FT   | 16MIN |
| WILLEMSTAD CURACAO       | 18.0N | 69.7W | 1352Z | 3.44M / 11.2FT  | 20MIN |
| PUNTA CANA DO            | 18.0N | 69.4W | 1402Z | 4.50M / 14.8FT  | 20MIN |
| BARAHONA DO              | 18.0N | 69.2W | 1407Z | 6.15M / 20.0FT  | 18MIN |
| LIMETREE VI              | 18.0N | 69.2W | 1412Z | 1.41M / 4.6FT   | 16MIN |
| YABUCCA PR               | 18.0N | 68.8W | 1412Z | 0.86M / 2.8FT   | 22MIN |
| MAYAGUEZ PR              | 18.0N | 67.2W | 1412Z | 0.65M / 2.1FT   | 12MIN |
| ST CROIX VI              | 17.7N | 64.2W | 1417Z | 0.84M / 2.7FT   | 18MIN |
| MAGUEYES ISLAND PR       | 18.0N | 67.7W | 1412Z | 2.56M / 8.3FT   | 24MIN |
| ESPERANZA VIEQUES PR     | 18.1N | 65.5W | 1420Z | 0.06M / 1.9FT   | 16MIN |
| AGUADILLA PR             | 18.5N | 67.2W | 1420Z | 1.92M / 6.3FT   | 19MIN |
| ARECIBO PR               | 18.3N | 66.7W | 1422Z | 1.43M / 4.7FT   | 22MIN |
| PORT SAN ANDRES DO       | 18.4N | 68.6W | 1427Z | 13.54M / 44.0FT | 14MIN |
| ROSEAU DM                | 15.3N | 61.4W | 1432Z | 1.10M / 3.6FT   | 18MIN |
| SAN JUAN PR              | 18.0N | 68.2W | 1432Z | 0.34M / 1.1FT   | 14MIN |
| FRICKLEY BAY GD          | 18.0N | 68.2W | 1442Z | 1.29M / 4.2FT   | 20MIN |
| BARBUDA AG               | 17.9N | 61.8W | 1450Z | 0.21M / 0.7FT   | 22MIN |
| PUERTO PLATA DO          | 19.8N | 70.7W | 1450Z | 0.49M / 1.6FT   | 22MIN |
| LAMESHURRAYS, JOHNSVILLE | 18.3N | 64.7W | 1450Z | 0.58M / 1.9FT   | 17MIN |
| CHARLOTTE-AMALIE VI      | 18.3N | 64.5W | 1452Z | 0.95M / 3.1FT   | 24MIN |
| DESRADE GUYANA           | 16.3N | 61.1W | 1457Z | 0.18M / 0.6FT   | 24MIN |
| CULEBRA IS PR            | 18.0N | 65.3W | 1452Z | 1.38M / 4.5FT   | 20MIN |
| CAP HAITIEN HT           | 18.0N | 68.2W | 1512Z | 0.14M / 0.5FT   | 23MIN |
| FAJARDO PR               | 18.3N | 65.6W | 1512Z | 1.21M / 3.9FT   | 22MIN |
| LIMON CR                 | 10.0N | 83.0W | 1530Z | 0.74M / 2.4FT   | 26MIN |

LAT - LATITUDE (N-NORTH, S-SOUTH)

LOX - LONGITUDE (E-EAST, W-WEST)

TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)

AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ... NOT ... CLEAR ... THROUGH ... WAVE ... HEIGHT ...  
VALUES ARE GIVEN IN BOTH METERS (M) AND FEET (FT).

PER - PERIOD OF TIME IN MINUTES (MIN) FROM ONE WAVE TO THE NEXT.

NOTE - DART MEASUREMENTS ARE FROM THE DEEP OCEAN AND THEY

ARE GENERALLY MUCH SMALLER THAN WOULD BE COASTAL  
MEASUREMENTS AT SIMILAR LOCATIONS.

EVALUATION

A SIGNIFICANT TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.  
SEA LEVEL READINGS NOW INDICATE THAT THE THREAT IS DIMINISHING  
IN MOST AREAS. THEREFORE THE TSUNAMI WATCH ISSUED BY THIS CENTER  
IS NOW CANCELLED.

FOR ANY AFFECTED AREAS - WHEN NO MAJOR WAVES HAVE OCCURRED FOR AT  
LEAST TWO HOURS AFTER THE ESTIMATED ARRIVAL TIME OR DAMAGING WAVES  
HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES  
CAN ASSUME THE THREAT IS PASSES. DANGER TO BOATS AND COASTAL  
STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS.  
AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE  
ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL  
AUTHITIES.

THIS WILL BE THE FINAL PRODUCT ISSUED BY THE PACIFIC TSUNAMI  
WARNING CENTER FOR THIS EVENT UNLESS ADDITIONAL INFORMATION  
BECOMES AVAILABLE.

# Participación de los Estados Miembros

- Cada Estado Miembro debe establecer su propio grupo de trabajo nacional para decidir la envergadura de la participación y pruebas de comunicación.



# MEDIOS DE COMUNICACIÓN

- Las comunidades pueden **invitar a sus órganos informativos** locales a participar en el Ejercicio a fin de sensibilizar a la población local al peligro de tsunami.
- Apendice H del Manual incluye un ejemplo de un comunicado de prensa
- La NOAA y UNESCO difundirán un **comunicado de prensa** varios días antes del Ejercicio a fin de describirlo y explicar su finalidad.
- **Guías para los medios** de tsunamis han sido preparados por la Red Sísmica de Puerto Rico (<http://www.prsn.uprm.edu/mediakit/>), y el Seismic Research Unit (<http://www.uwiseismic.com>).
- Si se van a emitir mensajes publicos el dia del ejercicio es muy importante **orientar a la población antes para evitar falsas alarmas.**

# Formulario de Evaluación

A ser completado por Individuos/Agencias y Uno por Estado Miembro CARIBE EWS hasta el 1 de Abril 2013

| Exercise CARIBE WAVE/LANTEX 13 Evaluation Form |  |                          |  |
|--|--|--------------------------|--|
| Contact Details                                |  |                          |  |
| Agency:  |  | Country/State/Territory: |  |
| Contact Name:                                  |  | Contact Position:        |  |
| Contact Phone:                                 |  | Contact Mobile:          |  |
| Contact E-Mail:                                |  |                          |  |

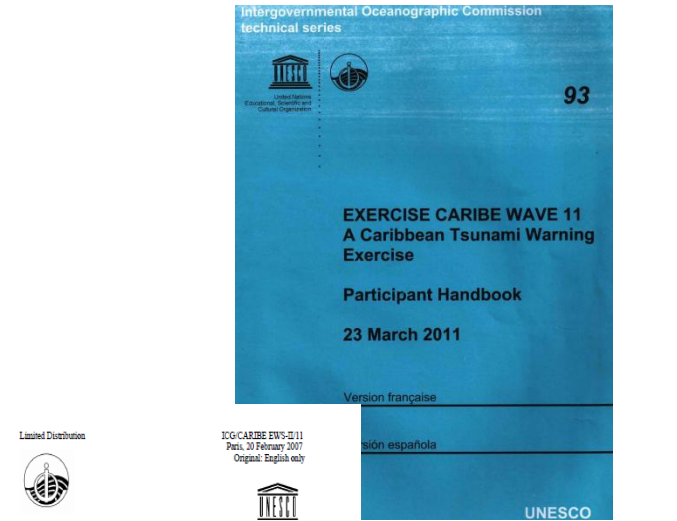
|           |  | Yes                      | No                         | Comment                    | Not applicable             |                             |
|-----------|--|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| <b>0A</b> | Are you filling out this evaluation as the Tsunami National Contact or Designated Agency? <b>If No, only answer Section 5.</b> | <input type="checkbox"/> | Y <input type="checkbox"/> | N <input type="checkbox"/> | C <input type="checkbox"/> | NA <input type="checkbox"/> |

|           |  | Yes                      | No                         | Comment                    | Not applicable             |                             |
|-----------|--|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| <b>0B</b> | Did your country participate in CARIBE WAVE/LANTEX 13? If not, only answer sections 2 and 3 A and B. | <input type="checkbox"/> | Y <input type="checkbox"/> | N <input type="checkbox"/> | C <input type="checkbox"/> | NA <input type="checkbox"/> |



# Recursos

- Borrador Manual IOC “How to plan, conduct and evaluate tsunami exercises” (Inglés y Español).
- Manual CARIBE WAVE 2011
- Informe CARIBE WAVE 2011 Report
- Plan de Comunicaciones de PTWC para el Caribe



Limited Distribution



IOC-CARIBE EWS-II-11  
Paris, 20 February 2007  
Original: English only



Communication Plan for the Interim Tsunami Advisory  
Information Service to the Caribbean Sea and Adjacent  
Regions  
23 July 2006 Version  
NOAA Richard H. Hagemeyer  
Pacific Tsunami Warning Center

1. Introduction
2. Product Issuance Criteria
3. Product Content
4. Product Dissemination
5. Communication Tests
6. Procedures for Acting on Products
7. Focal Points

Appendix I. Broadband seismic stations in the Caribbean and surrounding region; providing real time continuous waveform data to PTWC.

Appendix II. Sea level stations in the Caribbean providing near real time data to PTWC.

Appendix III. Sample Products



Intergovernmental Oceanographic Commission  
Manuals and Guides 58

HOW TO PLAN, CONDUCT  
AND EVALUATE TSUNAMI  
EXERCISES

DRAFT

UNESCO

# Otros Detalles

- Materiales adicionales serán colocados en las páginas de CTWP y RSPR.
- Enviar enlaces de paginas nacionales a [christa.vonh@noaa.gov](mailto:christa.vonh@noaa.gov) para incluir en la pagina del CTWP
- Esta presentación se subirá a la pagina de CTWP

The screenshot displays the Lantex website interface. At the top, the Lantex logo is on the left, and the site's name 'Red Sismica de Puerto Rico' and 'Servicio Lantex 12' are on the right, along with a 'Select Language' dropdown and a 'Powered by Google Translate' notice. A navigation menu includes 'Home', 'Mapas', 'Documentos', 'Manuales', and 'Enlaces'. The main content area features a large banner image of a school building with a video player overlay. Below the banner, there are several informational sections: 'Temas de Importancia' with a list of topics, 'Terremotos / Earthquakes' with a video thumbnail, 'Tsunamis' with a video thumbnail, and 'Niveles de Mensajería de Tsunami' with a graphic. A central section titled '¿Quiénes pueden participar?' lists five categories of participants: 1. Tsunami Warning Focus Points, 2. Agencies Gubernamentales y Federales, 3. Comunidades locales (en especial los Municipios TsunamiReady), 4. Empresas Privadas, and 5. Escuelas Públicas y Privadas. Below this, '¿Cómo participar?' lists three steps: 1. Realizando uno de los 5 tipos de ejercicios, 2. Realizando al menos una de las pruebas de comunicaciones, and 3. Completar las Evaluaciones de Riesgo. The bottom of the page features three columns with images and text: '¿Por qué deben participar los Municipios TsunamiReady?', '¿Por qué deben participar las zonas A2/M2-A3, A2/M2-A3 y OMBW?', and '¿Por qué deben participar las Escuelas?'. The footer contains a row of logos for various organizations and a copyright notice for Red Sismica de Puerto Rico.

# Webinars

- ✓ 24 de enero en español
- 25 January in English
- 12 de febrero en español
- 13 February in English

# Equipo CARIBE WAVE LANTEX 2013

- Presidenta CARIBE EWS, Christa von Hillebrandt-Andrade
- Presidentes Grupos de Trabajo 1, 2, 3 and 4, Emilio Talavera, Narcisse Zahibo, Elizabeth Klute, Kerry Hinds
- Gerente Caribbean Tsunami Warning Program (Líder), Christa von Hillebrandt-Andrade
- Director/Representante Caribbean Tsunami Information Center
- Directora ITIC-Laura Kong
- Director Pacific Tsunami Warning Center-Charles McCreery
- Director West Coast/Alaska Tsunami Warning Center-Paul Whitmore
- Director CDEMA o designado
- Director CEPREDENAC o designado – Wilfred Strauch (designado para ejercicio)
- Secretario Técnico ICG CARIBE EWS – Bernardo Aliaga

# Preguntas, Comentarios

¡Muchas Gracias!

# Cronograma del Ejercicio

| Action   | Due Date                 |
|--|--------------------------|
| 1st Draft Circulated among Task Team                           | July 1, 2012             |
| 2 <sup>nd</sup> Draft Circulated among ICG CARIBE EWS TNC/TWFP | September 1, 2012        |
| Final Exercise Manual Available on Line                        | November 1, 2012         |
| Circular Letter Issued by IOC                                  | November 15, 2012        |
| 1st Webinar  | Mid- Late January, 2013  |
| 2 <sup>nd</sup> Webinar  | Mid – Late February 2013 |
| Exercise   | March 20, 2013           |
| Exercise Questionnaire Due                                     | April 1, 2013            |
| Report   | ICG CARIBE EWS VIII      |