CARIBE WAVE 2019
ICG/CARIBE-EWS Tsunami Exercise

Elizabeth A Vanacore
ICG CARIBE EWS CARIBE WAVE 18 Task Team Chair

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Manager, NOAA NWS Caribbean Tsunami Warning Program
AGENDA 6.1

April 2018
2019 Proposal

• In ICG VIII it was decided that exercises be conducted every year

• Proposed date/hour: March 14, 2019, 14:00 UTC

• Three Potential Scenarios
  • Jamaica Port Royal, June 7, 1692 earthquake
  • Panamá, September 7, 1882 earthquake (WG2 Dominican Republic Meeting)
  • Kick’em Jenny Massive Underwater volcanic eruption (if feasible)
Multiple scenarios

• One dummy messages (first)
• Simulated products (Multiple messages)
• Resolving the uncertainty of multiples messages:
  – Each MS selects one scenario
  – Each MS will receive the simulated messages from selected scenario
  – Handbook will contain simulated messages from all scenarios
CW19: Three Possible Scenarios
Jamaica 1692 Scenario 7.5Mw

Suggestion: ramp up to 8.0Mw as above to increase impact
Panamá 1882 $8.47 M_w$

From:
https://maps.ngdc.noaa.gov/viewers/CATSAM/
Kick’em Jenny (KeJ) Eruption

Products will not be the same as a tectonic event!
- First sign of tsunami will be arrival of wave at nearby sea level stations
- Only feasible if protocols for such events are finalized and PTWC is confident on the types of products it would have available in such an event.
KeJ Simulation Work

- Dr. G. Gisler (LANL) used SAGE numerical model to simulate the effects of KeJ (2006)
- Dr. H. Fritz (GT, WG2) currently has an NSF-funded project to run simulations at the OSU WRL
- Dr. J. Horrillo (UT, WG2) is validating numerically the model using TSUNAMI3D
- Dr. J. Macías (UM, WG2) is using TSUNAMI-HySEA (developed in CUDA – GPU) to model also volcanic eruptions
Kick’em Jenny Plan B?

- Event in Eastern Caribbean → Impact the Lesser Antilles
CARIBE WAVE 2019
PTWC only provider
PTWC Enhanced Products
Each Member State is Responsible for Generating Its Domestic Products

Dummy Message as start of exercise will be sent on all PTWC Comm Systems

Simulated Products will ONLY be sent via e-mail to CARIBE EWS TWFPs and NTWCs,
Registration System – TsunamiZone.org

Welcome to the TsunamiZone in the Caribbean!

The Caribbean's 2018 tsunami preparedness activities will primarily occur during the week of March 11 - 17, including the CARIBE WAVE 2018 exercise. Join us by registering your tsunami preparedness activities!

Español | Français

UNESCO CARIBE EWS Member States and Territories

Antigua and Barbuda*  Bahamas  Barbados  Belize  Brazil**
Colombia  Costa Rica  Cuba  Dominica  Dominican Republic
France (Guadeloupe, Guyane, Martinique, Saint Martin, St. Barthelemy)  Grenada
Guatemala  Guyana  Haiti  Honduras  Jamaica
Netherlands (Aruba***, Bonaire, Curaçao***, Saba, Sint Eustatius, Sint Maarten***)
Nicaragua  Panama  Saint Kitts and Nevis  Saint Lucia
Saint Vincent and the Grenadines  Suriname  Trinidad and Tobago
United Kingdom of Great Britain & Northern Ireland (Anguilla***, Bermuda, British Virgin Islands***, Cayman Islands***, Montserrat***, Turks and Caicos)
United States (Puerto Rico and U.S. Virgin Islands)  Venezuela, Bolivarian Republic of

*not an IOC Member State
**Designations of Tsunami National Contacts and Tsunami Warning Focal Points pending
***UNESCO Associate Member States participating at IOC CARIBE EWS

Observer Member States of UNESCO CARIBE EWS

Canada  Peru

Caribbean Events

A list of TsunamiZone events will appear below.

Coming Soon

Add an event to the Caribbean calendar.
Evaluation

- Enhanced Products (Question still needed?)
  - Level of comfort
  - Training needs
- Remove Questions/Reduce time needed for response?
- Tsunami Ready Questions?
<table>
<thead>
<tr>
<th>Action</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>Draft Circulated among ICG CARIBE EWS TNC/TWFP</td>
<td>August 2018</td>
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<tr>
<td>Deadline for Comments</td>
<td>September 2018</td>
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<tr>
<td>Final Exercise handbook Available online</td>
<td>October 2018</td>
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<tr>
<td>Circular Letter Issued by IOC to MS</td>
<td>November 2018</td>
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<tr>
<td>1st Webinar</td>
<td>January 2019</td>
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<tr>
<td>2nd Webinar</td>
<td>February 2019</td>
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<tr>
<td>Exercise</td>
<td>March 14 2019</td>
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<tr>
<td>Exercise Evaluation Questionnaire Due</td>
<td>April 1 2019</td>
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<tr>
<td>Draft Final CARIBE WAVE 2019 Report</td>
<td>ICG CARIBE EWS XIII (April/May, 2019)</td>
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<tr>
<td>Goals</td>
<td>2013 Results</td>
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<td>-----------------------------------------------------------------------</td>
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<tr>
<td>TWFP receive the dummy message</td>
<td>98%</td>
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<tr>
<td>Participation of Member States and territories of ICG CARIBE EWS</td>
<td>94%</td>
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<tr>
<td>Community involvement (beyond TWFP)</td>
<td>75%</td>
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<tr>
<td>Number of participants TsunamiZone – Registered Participants?</td>
<td>44,000</td>
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<td>Member States and territories who participate submit exercise questionnaire</td>
<td>90%</td>
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<td>Compliance with the timeline Not a measurable metric</td>
<td>Close to 100%</td>
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CARIBE WAVE 2019 Task Team

- Chair of Task team TBD
- Chair and Vice Chairs CARIBE EWS
- Chair of Working Group 1
- Chair of Working Group 2
- Chair of Working Group 3
- Chair of Working Group 4
- Director of Caribbean Tsunami Information Center
- Christa von Hillebrandt-Andrade, Manager, Caribbean Tsunami Warning Program
- Charles McCreery and Cindy Preller, Pacific Tsunami Warning Center
- Ronald Jackson, Director of CDEMA or his Designate
- Roy Barboza, Secretario Ejecutivo of CEPREDE McNAC
- Director of EMIZ
- Bernardo Aliaga, Technical Secretary ICG CARIBE EWS
- Representatives from source countries
Decisions for ICG

- Date
- Scenarios
- Registration System
- Time Line
- Metrics
- Task Team, Chair and Members
- Survey Content
Decisions of ICG: Looking ahead

• Caribe Wave 2020:
  – Muertos Trough
  – Nicaraguan Rise: Landslide
  – Motagua/Polochic Fault: Honduras/Guatemala

• Caribe Wave 2021:
  – Landslide Sources to test products and protocols?
Questions, Comments

Thank you