



## **INTERGOVERNMENTAL COORDINATION GROUP FOR THE TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS (ICG/CARIBE EWS)<sup>1</sup>**

### **ORGANIZATIONAL STRUCTURE AND GOVERNANCE**

#### **ICG/CARIBE EWS Organizational Structure and Governance**

The Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS) is a subsidiary body of the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific, and Cultural Organization (UNESCO). It was established in 2005, and is currently comprised of 32 Member States and 16 Territories in the Caribbean and Adjacent Regions and 3 Observer Member States (Annex 1), as well as Observer Organizations (Annex 2). Almost all of the Member States have officially designated Tsunami National Contacts (TNC) and/or Tsunami Warning Focal Points (TWFP). The ICG/CARIBE EWS coordinates international tsunami warning and mitigation activities, including the issuance of timely and understandable tsunami bulletins in the Caribbean. Comprehensive tsunami mitigation programmes require complementary and sustained activities in tsunami hazard risk assessment, tsunami warning and emergency response, and preparedness. Stakeholder involvement and coordination is essential, and community-based, people-centered mitigation activities will help to build tsunami resiliency.

More information on the CARIBE EWS is available from <http://www.ioc-tsunami.org>.

The following describes the various components of the ICG and how they work together to enable an effective international warning system.

#### **Intergovernmental Coordination Group (ICG)**

The ICG is an IOC subsidiary body that reports to the IOC Assembly or Executive Council. The ICG/CARIBE EWS was established by IOC Resolution XXIII-13 in 2005 as a regional international body, and has met every year since 2006.

Official delegates to the ICG represent member states' interests in the ICG. The ICG activities are member state driven according to the needs of the region taking the advice of experts contributing to Working Groups and other tertiary bodies. As a regional subsidiary body, the

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<sup>1</sup> Updated November 10, 2015

ICG Terms of Reference specify that it is comprised of Member States in that region. Other countries outside the region, and organizations are considered Observers to the ICG.

In addition to the CARIBE EWS, the PTWS was established by IOC in 1965 as a regional international body, and has met every two years since 1968 and in 2005 ICG's were also established for the Indian Ocean (ICG/IOTWS), and North East Atlantic and Mediterranean and Connected Seas (ICG/NEAMTWS), and have met frequently starting in 2005. The development of these systems is based on a basin-focused strategy and approach that considers the characteristics of the region and the communities at risk. It acknowledges a region's unique oceanographic, geophysical, technical, educational, cultural, and political interests.

### **ICG/CARIBE EWS Officers**

CARIBE EWS leadership is guided by member state's elected Officers (Chairperson, 3 Vice-Chairpersons) along with the elected Officers (Chair and Vice Chairs) of the Working Groups.

### **ICG Working Groups**

CARIBE EWS work is enabled through Working Groups (WG). Intra-sessional (or sessional) WGs work during an ICG and report back to the ICG in which they were established. Inter-sessional WGs work between ICGs and report at the next ICG. Inter-sessional WGs may decide to meet, or may carry their work out through e-mail, teleconferences, in-person meetings, or other means. Terms of Reference for WGs are stated through Recommendations endorsed by the ICG. The Recommendation may also state the WG members. A WG Chair may be designated by the ICG, or elected by WG members. The Chair provides leadership for the WG and is responsible for written reports summarizing its work. Working Group members are nominated by Member States according to their individual abilities to contribute to the tasks of the WG. The nomination should be accompanied by a CV of the candidate. A WG should dissolve after its tasks have been completed. The CARIBE EWS has the following four working groups:

#### **WG1: Monitoring and Detection Systems**

- Advise member states on the monitoring and detection capabilities needed for operating national tsunami warning centers.
- Define the threshold criteria for the monitoring and warning systems.
- Assure the compliance with the agreed standards for the detection systems.
- Ensure the effectiveness of the warning system by promoting the open exchange of seismic, sea level and other observational data in real time.
- Promote the sharing of experience and expertise and capacity building essential to the effective monitoring and issuance of warnings.
- Support the establishment of a fully interoperable regional tsunami warning system.

**WG2: Hazard Assessment**

- Review and evaluate the required methods and data sets, including bathymetry and coastal topography for determining the coastal hazards.
- Advise the member states on the requirements for operating the appropriate models.
- Develop capacity building for the appropriate modelling.

**WG3: Tsunami Related Services**

- Explore and document capabilities for dissemination of existing guidance and alerts in the countries of the region.
- Identify the difficulties and challenges existing in the region for effective end-to-end communication and dissemination of tsunami early warnings and products.
- Establish strategies for the development and implementation of methods and technologies to strengthen the media and dissemination of tsunami early warnings and products by Member States.
- Routinely test (and periodically evaluate) the mechanisms of communication and dissemination of warnings by Member States, in order to identify weaknesses and make recommendations to help strengthen these delivery systems.
- Create communication protocols and standardized information identifying guidelines for communication and dissemination of tsunami early warning and products in all countries, for approval by the ICG.

**WG4: Preparedness, Readiness and Resilience**

- Identify the public awareness and education strategies and tools that the Member States can integrate into their risk reduction and emergency management programs.
- Support the development of guidelines for preparedness, response and recovery plans for communities and local governments and organisations which should include sharing of training and evacuation best practices.
- To closely cooperate with the Caribbean Tsunami Information Centre (CTIC) in carrying out its mandate and in the implementation of its program.

**Task Teams (TT)**

Task teams are small ad hoc subsidiary bodies formed by the ICG CARIBE EWS to carry out specific tasks. Upon completion of the assigned tasks, the task team is disbanded. The Member States concerned normally appoint the corresponding governmental experts. The ICG CARIBE EWS also nominates a Chairperson and a Vice-Chairperson. The members, chairs and vice chairs normally serve for one intersessional period, unless there is a decision for renewal. In the Intersessional Period 2014-2015 there are four task teams: Performance Based Tsunami Recognition Program, CARIBE WAVE 16, PTWC Enhanced Products and Warning and Tsunami Services Model.

## **National Tsunami Warning Centre (NTWC)**

A centre officially designated by a government to monitor and issue tsunami warnings and other related statements within their country according to established National Standard Operating Procedures.

## **Tsunami National Contact (TNC)**

The person designated by an ICG Member State government to represent his/her country in the coordination of international tsunami warning and mitigation activities. The person is part of the main stakeholders of the national tsunami warning and mitigation system program.

## **Tsunami Warning Focal Point (TWFP)**

A 24 x 7 point of contact (office, operational unit or position, not a person) officially designated by the NTWC or the government to receive and disseminate tsunami information from an ICG Tsunami Service Provider according to established National Standard Operating Procedures. The TWFP may or not be the NTWC.

## **Tsunami Service Provider (TSP)**

A Tsunami Service Provider (TSP) is a Centre that monitors seismic and sea level activity and issues timely tsunami threat information within an ICG framework to National Tsunami Warning Centres/Tsunami Warning Focal Points and other TSPs operating within an ocean basin. The NTWCs/TWFPs may use these products to develop and issue tsunami warning for their countries. TSPs may also issue Public messages for an ocean basin and act as National Tsunami Warning Centres providing tsunami warnings for their own countries. Several ICG Tsunami Service Providers have been established.

Bi-lateral, multi-lateral and subregional arrangements may also exist to provide products for a sub set of Member States within an ICG. The criteria may or may not be established by the ICG.

In the case of the CARIBE EWS, the TSP is the US Pacific Tsunami Warning Center.

## **Observer Organizations**

Observer organizations can be a UN or non UN regional and international organizations contributing significantly to the ICG CARIBE EWS. These organizations include technical and scientific bodies, as well as emergency and disaster management organizations. Annex 2 has a list of these organizations.

## **Tsunami Unit (TSU) - IOC Secretariat**

The IOC Tsunami Unit (TSU) presently coordinates the four tsunami warning and mitigation systems and works to identify the commonalities in terms of specifications, guidelines, standards, procedures and processes including developing synergies with existing technical

groups dealing with related matters. The TSU as part of the IOC Secretariat is based in Paris, France, and composed of the Unit Head, the Secretariats of the ICGs, the ITIC, and technical and professional staff. The TSU provides guidance for the final integration of ICG's basin-driven work that occurs at the IOC Governing Bodies level.

### **Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG)**

Through Resolution XXIV-14 the IOC Assembly at its 24th Session decided on the establishment of a Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG). It is tasked primarily to advise the IOC Governing Bodies on co-ordinated development and implementation activities on warning and mitigation systems for tsunamis and other hazards related to sea level of common priority to all Intergovernmental Coordination Groups for regional Tsunami Warning and Mitigation Systems (ICG/TWSs). The Chair of the CARIBE EWS represents the ICG in the WG. The Working Group also has three task teams: Tsunami Watch Operations, Disaster Management and Preparedness and Hazard Assessment Related to Highest Potential Tsunami Source Areas. The Task Team members are nominated by the respective ICG chairs and the chair is appointed by the IOC chairs.

### **ICG/CARIBE EWS Secretariat**

The IOC Executive Secretary provides, upon request by the IOC governing bodies, secretarial support for the ICG. The CARIBE EWS Technical Secretary (CTS) coordinates and facilitates the activities of the ICG, interacting directly with Member States and regional organizations. The CTS oversees in coordination with the CARIBE EWS Officers the arrangement, conduct, and reporting of the ICG's sessions and other meetings. The CTS facilitates the ICG's Action Plan working with Member State Tsunami National Contacts for overall international activities, with Tsunami Warning Focal Points for issues directly related to tsunami bulletins, and with the PTWC. The CARIBE EWS Technical Secretary is part of the IOC's Tsunami Unit

### **Caribbean Tsunami Information Center (CTIC)**

The Caribbean Tsunami Information Centre (CTIC) is a partnership initiative between the Government of Barbados and the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organisation (UNESCO/IOC). This partnership was formalised with the signing of a Memorandum of Understanding (MOU) between the Government of Barbados and UNESCO/IOC on March 01, 2013 and the ensuing Implementing Partners Agreements (IPAs) between UNESCO/IOC and the Department of Emergency Management, Barbados since May 03, 2013. The operations of the CTIC are also supported by the United Nations Development Programme (UNDP) sub-regional office for Barbados and the OECS based on signed IPAs with UNESCO/IOC. The assumption of duty by the Interim Director of the CTIC on September 02, 2013 facilitated the formal establishment of the CTIC at the Department of Emergency Management (DEM), Barbados

under the auspices of the Ministry of Home Affairs. Its work is focused on four strategic areas:

- Tsunami knowledge, awareness and education in the Caribbean and adjacent regions is improved.
- A technical training programme for improving tsunami preparedness is established.
- Strategic partnerships and resources to advance the functions of CTIC are enhanced.
- An effective programme for monitoring the ICG/CARIBE EWS system is established.

The CTIC will benefit from partnership with regional organizations ([Caribbean Tsunami Warning Program](#), [SRC](#), [CIMH](#), [CCCCC](#), [CRID](#), [UN-ISDR](#)) as well as draw on the support of regional disaster management organizations ([CDEMA](#), [CEPREDENAC](#)). The [International Tsunami Information Center](#) (ITIC) has also providing support and guidance in the development and operations of the CTIC. The activities of the CTIC have been executed to date largely through funding received from the ERC Project, UNESCO/IOC and USAID/OFDA. It also pursues partnerships with regional technical agencies, as well as financial support from donor agencies and contributions from ICG/CARIBE EWS Member States.

### **Caribbean Tsunami Warning Program (CTWP)**

The Caribbean Tsunami Warning Program (CTWP) was established by the US NWS in Mayagüez, Puerto Rico in 2010 in support of the Tsunami and Other Coastal Warning System for the Caribbean and Adjacent Regions. The office supports an increased capability of the tsunami observational system and the continued enhancement of tsunami outreach and education capacity, including the implementation of the TsunamiReady® and Tsunami Ready Programs. The CTWP works closely with the seismic, sea level and GPS operators and the designated National Tsunami Warning Focal Points and Tsunami National Contacts as well as providing technical and training services in compliment to the activities of CTIC.

### **Pacific Tsunami Warning Center (PTWC)**

The [Pacific Tsunami Warning Center](#) (PTWC) serves as the Tsunami Service Provider for the CARIBE EWS. The US National Tsunami Warning Center coordinates closely with the PTWC and currently provides warning services to Puerto Rico and the US and British Virgin Islands. The centers issue tsunami alerts to designated national authorities who then take action to protect their populations.

### **IOC decisions on CARIBE EWS**

CARIBE EWS Resolutions and Recommendations are developed by Member States in coordination with the Secretariat. These are reported to the next IOC Governing Body for endorsement and official adoption

## **Cooperation with other organizations**

The CARIBE EWS, through CTIC, PTWC, CTWP and the ICG/CARIBE EWS Secretariat, cooperates with international agencies in order to support, sustain, and coordinate its operational tsunami warning and mitigation system. The CARIBE EWS's goal is to save lives, property and livelihood, and as such, seeks to work in partnership with all appropriate agencies. The IOC's United Nations partners include, for example, the IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE), the International Strategy for Disaster Reduction (ISDR), the United Nations Development Programme (UNDP), the World Meteorological Organization (WMO) and the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO). Specialized and regional organizations include the Incorporated Research Institutions for Seismology (IRIS), International Union of Geodesy and Geophysics Tsunami Commission (IUGG-TC), the Caribbean Disaster and Emergency Management Agency (CDEMA), and Centro de Coordinación de la Prevención de Desastres Naturales en América Central (CEPREDENAC).

## **CARIBE EWS Communications Plan**

The Guide is intended for use by National Tsunami Warning Focal Points as customers receiving the advisories from the (interim) tsunami warning centers. It includes a summary of the operational procedures, instrument networks used, criteria for the reporting and issuing of tsunami alerts, recipients of the information, and the methods for message transmission, as well as a number of Annexes that provide explanatory and background information on technical evaluation methods and other guidance in order to assist customers in understanding the products that are issued. The [Communications Plan](#) was approved in 2007 and is reviewed and updated, if necessary, at least annually.

## ANNEX 1

### UNESCO CARIBE EWS Member States

1. Antigua and Barbuda\*
2. Bahamas
3. Barbados
4. Belize
5. Brazil\*\*
6. Colombia
7. Costa Rica
8. Cuba
9. Dominica
10. Dominican Republic
11. France (Guadeloupe, Guyane, Martinique, Saint Martin, St. Barthelemy)
12. Grenada
13. Guatemala
14. Guyana
15. Haiti
16. Honduras
17. Jamaica
18. Mexico
19. Netherlands (Aruba\*\*\*, Bonaire, Curacao\*\*\*, Saba, Sint Maarten\*\*\*, Sint Eustaius).
20. Nicaragua
21. Panama
22. Saint Kitts and Nevis
23. Saint Lucia
24. Saint Vincent and the Grenadines
25. Suriname
26. Trinidad and Tobago
27. United Kingdom of Great Britain & Northern Ireland (Anguilla\*\*\*, Bermuda, British Virgin Islands\*\*\*, Cayman Islands\*\*\*, Montserrat\*\*\*, Turks and Caicos)
28. United States (Puerto Rico and US Virgin Islands)
29. Venezuela (Bolivarian Republic of)

\*not an IOC Member State

\*\*Designation of Tsunami National Contact and Tsunami Warning Focal Point pending

\*\*\*UNESCO Associate Member States participating at IOC CARIBE EWS

### Observer Member States of UNESCO CARIBE EWS

1. Canada
2. Peru

## ANNEX 2

### Observer Organizations

1. Caribbean Disaster and Emergency Management Agency (CDEMA)
2. Caribbean Institute of Meteorology and Hydrology (CIMH)
3. Coordination Centre for the Prevention of Natural Disasters in Central America (CEPRENAC)
4. Puerto Rico Seismic Network, University of Puerto Rico, Mayagüez (PRSN)
5. Seismic Research Center, University of the West Indies, Trinidad and Tobago (SRC)
6. United Nations Development Program, Barbados and the OECS (UNDP)
7. World Meteorological Organization (WMO)

## ANNEX 3: TWC, TWFP AND TNC NOMINATION FORMS

NATIONAL TSUNAMI WARNING CENTRE (NTWC)  
and  
24x7 TSUNAMI WARNING FOCAL POINT (TWFP)

### **NOMINATION FORM**

Name of Country: \_\_\_\_\_

Place in Country\*: \_\_\_\_\_

*\* Only if this Contact Point informed hereafter is not for the entire country's coast.*

*Note that more than one Tsunami Warning Focal Point may be designated using a new form for each nomination. In case a Member State run other NTWC and TWFP in areas covered by other regional tsunami warning systems, e.g. islands or overseas jurisdictions geographically separated from main center(s), information on those contact points should be provided using the Nomination Form of the regional Tsunami Warning System they pertain.*

*Do you agree to share your TWFP information with other TWFP and NTWC contacts?*

Yes \_\_\_\_\_ No \_\_\_\_\_

**Definitions** (IOC/EC-XLVII/Dec.3.2.1 (IV), 2014):

National Tsunami Warning Centre (NTWC): A centre officially designated by the government to monitor and issue tsunami warnings and other related statements within their country according to established National Standard Operating Procedures

Tsunami Warning Focal Point (TWFP): A 24 x 7 point of contact (office, operational unit or position, not a person) officially designated by the NTWC or the government to receive and disseminate tsunami information from an ICG Tsunami Service Provider according to established National Standard Operating Procedures. The TWFP may or not be the NTWC.

### 1. National Tsunami Warning Centre (NTWC)

NTWC Agency Name: \_\_\_\_\_

NTWC Agency Contact or Officer in Charge (person):

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

Position: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

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

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

### 2. Tsunami Warning Focal Point (TWFP) for receiving Tsunami Bulletins

TWFP Agency name: \_\_\_\_\_

*(if different from NTWC agency)*

TWFP Agency Contact or Officer in Charge *(if different from NTWC Agency)*:

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

Position: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

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

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

### TWFP 24x7 point of contact (office, operational unit or position, not a person):

Name of office, operational unit or position: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Cellular phone number: \_\_\_\_\_

Fax: \_\_\_\_\_

### 3. Designated Communication Method Information (operational on 7/24 basis).

Please specify GTS (WMO-Global Telecommunication System), AFTN (Aeronautical Fixed Telecommunications Network), Fax, or E-mail in a priority order. Note that all dissemination methods designated below will be made simultaneously by the issuing centers, but bulletins may reach their destinations at different times depending on the communication method.

Please note the following:

- In general, the GTS and AFTN dedicated, private communication methods guarantee timely receipt of bulletins within several minutes, whereas Facsimile and E-mail may incur delays of tens of minutes during peak usage times.
- Fax and E-mail alone are not the timeliest and should not be used as the primary means.
- For GTS, include the international 4-letter GTS Location Indicators used in the abbreviated headings. Location Indicators can be found at [http://www.wmo.int/pages/prog/www/ois/Operational\\_Information/VolumeC1/CCCC\\_en.pdf](http://www.wmo.int/pages/prog/www/ois/Operational_Information/VolumeC1/CCCC_en.pdf)
- For AFTN, the 8-letter Address Indicators are found in ICAO (International Civil Aviation Organization) Documents 7910 and 8585, and consist of a 4-letter location indicator and 4-letter type-of-operations indicator.

For each dissemination method, please specify the mode (GTS, email, SMS or Fax) and the addresses/contact numbers to use (GTS Location Indicator, email address(es), cellular phone number(s), Fax number):

**Primary Method:**

Mode (GTS, email, SMS, Fax): \_\_\_\_\_

Address/contact numbers: \_\_\_\_\_

**Alternate 1:**

Mode (GTS, email, SMS, Fax): \_\_\_\_\_

Address/contact numbers: \_\_\_\_\_

**Alternate 2:**

Mode (GTS, email, SMS, Fax): \_\_\_\_\_

Address/contact numbers: \_\_\_\_\_

**Alternate 3:**

Mode (GTS, email, SMS, Fax): \_\_\_\_\_

Address/contact numbers: \_\_\_\_\_

Please also specify telephone number for voice communication, in a priority order. In general, due to language barriers, the regional centre does not use voice communication as the primary means of dissemination, but as a backup or for confirmation of message receipt through the above means, when urgently needed.

Primary: \_\_\_\_\_

Alternate 1: \_\_\_\_\_

Alternate 2: \_\_\_\_\_

Alternate 3: \_\_\_\_\_

**4. Comments:**

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Submitted by: \_\_\_\_\_

Signature: \_\_\_\_\_

Position: \_\_\_\_\_

Government Department/Agency: \_\_\_\_\_

Date: \_\_\_\_\_

**UNESCO IOC**  
**TSUNAMI NATIONAL CONTACT (TNC) FORM**

Note that more than one contact point may be designated using a new Form for each

Name of Country \_\_\_\_\_

**Tsunami National Contact**

The person designated by an ICG Member State government to represent his/her country in the coordination of international tsunami warning and mitigation activities.

Agency name \_\_\_\_\_

Contact Person in Agency or Officer in Charge:

Name \_\_\_\_\_

Position \_\_\_\_\_

Telephone Number \_\_\_\_\_

Fax \_\_\_\_\_

Cellular Telephone Number \_\_\_\_\_

E-mail Address: \_\_\_\_\_

Postal Address \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**Comments:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date: \_\_\_\_\_ Submitted by: \_\_\_\_\_

**For the CARIBE EWS send copies of correspondence to:**

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