



United Nations  
Educational, Scientific and  
Cultural Organization



Intergovernmental  
Oceanographic  
Commission



National Oceanic  
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International  
Tsunami Information  
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Caribbean Tsunami  
Warning Program



CTIC  
Caribbean Tsunami  
Information Centre  
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NATIONAL WEATHER SERVICE  
Pacific Tsunami  
Warning Center



COASTAL ZONE  
MANAGEMENT UNIT  
BARBADOS



Ministry of Foreign Affairs

Regional Training Workshop on Pacific Tsunami Warning  
Center Enhanced Tsunami Products for ICG/CARIBE EWS  
31 October – 02 November, 2017  
Cartagena, Colombia

## 4.3 Demonstration: Decision Support Tool of Monitoring, Detection, Assessment – Earthquakes: Real-time Earthquake Display (CISN), USGS Website (CMT, ShakeMap, PAGER)

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# Tsunami Warning Decision Support Tools (ongoing):

## Earthquakes:

- Heads-up SMS TW Alert (NOAA/USAID RANET, PTWC) – since 2005 N/A
- Tsunami Bull Board (ITIC) – since 1995, curr 443 science/tsu/govt
- Real time Earthquake Display / California Integrated Seismic Network Display (USGS, NTHMP) – since 2005, curr >250
- USGS Website
- Local and Regional Networks

# CTWP Work Room





# Tsunami Bulletin Board

**Email List-serve, Currently, ~443**

**Membership: Scientists, Tsunami prof, govt,  
NO MEDIA - NO PUBLIC**

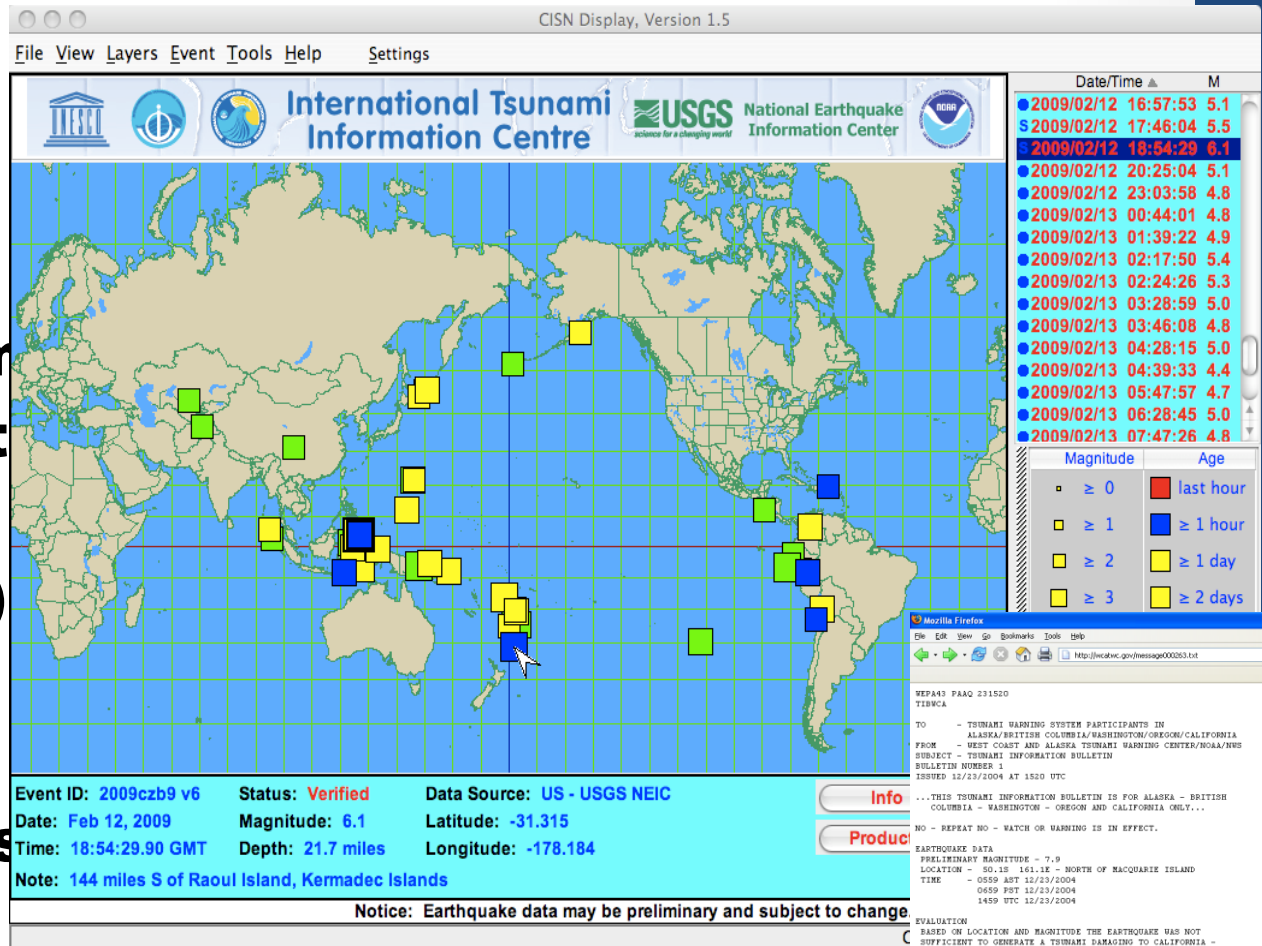
## **Features**

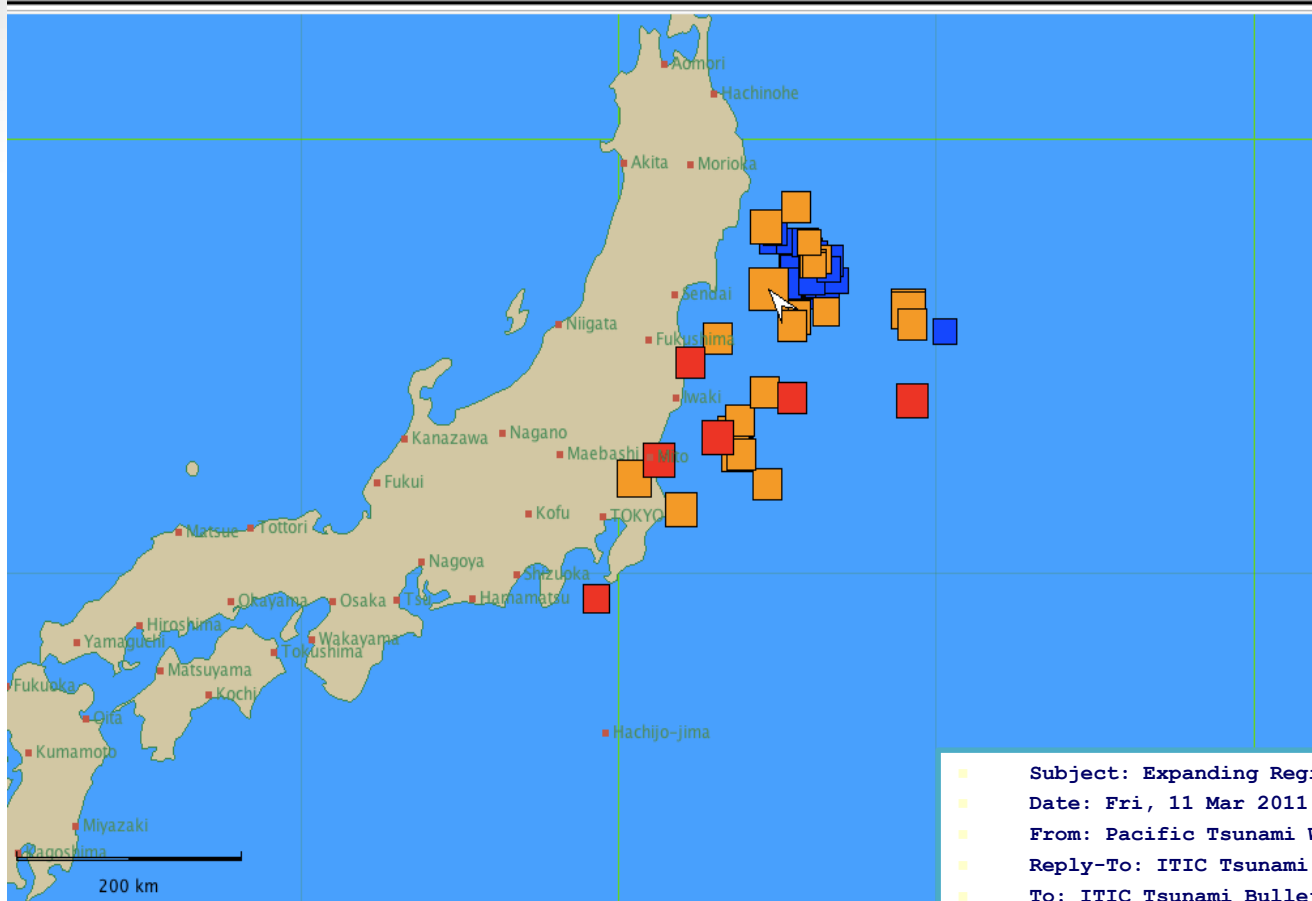
- 1. Immediate delivery**
- 2. No censureship**
- 3. Forum for sharing science and early results -  
NOT peer-reviewed**
- 4. PTWC, US NTWC tsunami messages**

*Contact: [itic.tsunami@noaa.gov](mailto:itic.tsunami@noaa.gov)*

# Real-Time Earthquake Display and Alert System (CISN)

- Internet
- Passive (automatic receive)
- Multi-platform
- EQ broadcast
- Alert system (SMS, email)
- GIS layers
- Tsunami Warning msgs





Date/Time	M
2011/03/11 05:46:23	7.9
2011/03/11 05:46:23	8.9
2011/03/11 06:06:11	6.4
2011/03/11 06:07:21	6.4
2011/03/11 06:15:45	6.8
2011/03/11 06:25:50	7.1
2011/03/11 06:25:51	7.1
2011/03/11 06:48:47	6.3
2011/03/11 06:57:14	6.3
2011/03/11 07:10:59	5.8
2011/03/11 07:13:47	5.9
2011/03/11 07:14:59	6.3
2011/03/11 07:25:33	6.1
2011/03/11 07:28:12	6.1
2011/03/11 07:38:26	5.9
2011/03/11 07:42:55	5.8
2011/03/11 07:54:44	5.7
2011/03/11 07:56:15	5.6
2011/03/11 08:01:58	5.9
2011/03/11 08:10:47	5.4
2011/03/11 08:12:04	6.2
2011/03/11 08:15:40	6.2

Magnitude	Age
≥ 0	last hour
≥ 1	≥ 1 hour
≥ 2	≥ 1 day
≥ 3	≥ 2 days

Event ID: c0001xgp vA    Status: Unverified    Data Source: US - USGS NEIC  
 Date: Mar 11, 2011    Magnitude: 8.9    Latitude: 38.322  
 Time: 05:46:23.70 GMT    Depth: 24.4 km    Longitude: 142.369  
 Note: 130 km E of Sendai, Honshu, Japan

Notice: Earthquake data may be preliminary

Subject: Expanding Regional Warning - Initial  
 Date: Fri, 11 Mar 2011 05:56:02 +0000 (GMT)  
 From: Pacific Tsunami Warning Center <ptwc@ptwc.noaa.gov>  
 Reply-To: ITIC Tsunami Bulletin Board <tsunami\_bb@infolist.nws.noaa.gov>  
 To: ITIC Tsunami Bulletin Board <tsunami\_bb@infolist.nws.noaa.gov>

ITIC Tsunami Bulletin Board  
 TSUNAMI BULLETIN NUMBER 001  
 PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS  
 ISSUED AT 0555Z 11 MAR 2011

THIS BULLETIN APPLIES TO AREAS WITHIN AND BORDERING THE PACIFIC OCEAN AND ADJACENT SEAS... EXCEPT ALASKA... BRITISH COLUMBIA... WASHINGTON... OREGON AND CALIFORNIA.

... A TSUNAMI WARNING AND WATCH ARE IN EFFECT ...

A TSUNAMI WARNING IS IN EFFECT FOR

JAPAN / RUSSIA / MARCUS IS. / N. MARIANAS

# CISN: 11 March 2011

# Other Sources of Earthquake Information

- USGS – National Earthquake Information Center
  - <https://earthquake.usgs.gov/contactus/golden/neic.php>

## About the NEIC



The National Earthquake Information Center (NEIC), was established in Rockville, Maryland, in 1966 as part of the National Ocean Survey of the Department of Commerce. The Coast and Geodetic Survey, a forerunner of the National Ocean Survey, had coordinated the collection of seismological data in the United States for many years. The NEIC was transferred to Boulder, Colorado, in 1972 and made part of the U.S. Geological Survey in 1973. The NEIC was moved again in 1974 to its present location in Golden, Colorado.

The National Earthquake Information Center (NEIC), a part of the Department of the Interior, U.S. Geological Survey, is located in Golden, Colorado, 10 miles west of Denver. The NEIC has three main missions. First, the NEIC determines, as rapidly and as accurately as possible, the location and size of all significant earthquakes that occur worldwide. The NEIC disseminates this information immediately to concerned national and international agencies, scientists, critical facilities, and the general public. Second, the NEIC collects and provides to scientists and to the public an extensive seismic database that serves as a solid

foundation for scientific research, principally through the operation of modern digital national and global seismograph networks and through cooperative international agreements. The NEIC is *the* national data center and archive for earthquake information. Third, the NEIC pursues an active research program to improve its ability to locate earthquakes and to understand the earthquake mechanism. These efforts are all aimed at mitigating the risks of earthquakes to mankind; and they are made possible by the fine international cooperation that has long characterized the science of seismology.

# USGS – National Earthquake Information Center

<https://earthquake.usgs.gov/contactus/golden/neic.php>





# Other Sources of Earthquake Information

- Local/Regional Seismic Network
  - Colombia Geological Survey
  - OVSICORI (UNA)/RSN (UCR) – Costa Rica
  - CENAIIS – Cuba
  - Centro Nacional de Sismología, UASD- Dominican Republic
  - INSIVUMEH – Guatemala
  - INETER – Nicaragua
  - Earthquake Unit – UWI, Jamaica
  - Servicio Sismológico – Mexico
  - Seismic Research Center – UWI Trinidad and Tobago – Lesser Antilles
  - Instituto de Geociencias, UPA - Panama
  - FUNVISIS – Venezuela
  - Puerto Rico Seismic Network – NE Caribbean



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# Thank You

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