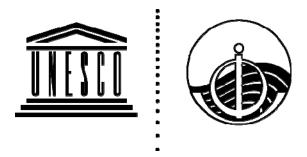


# **EXERCISE INDIAN OCEAN WAVE 2011 An Indian Ocean-wide Tsunami Warning and Communication Exercise**

**UNESCO 2011** 



# **EXERCISE INDIAN OCEAN WAVE 2011 An Indian Ocean-wide Tsunami Warning and Communication Exercise**

Prepared by the IOWave11 Task Team For the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System

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#### 1. BACKGROUND

The devastating impact of the 26 December 2004 Indonesia earthquake and Indian Ocean tsunami tragically demonstrated what can happen without an effective tsunami warning system. Tsunamis may not occur often, but when they do they can affect coasts, sometimes across an entire ocean. The tsunami caused damage and casualties across the entire Indian Ocean basin — even as far away as South Africa. Following this event, UNESCO's Intergovernmental Oceanographic Commission (IOC) was requested to establish an International Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS), to promote the exchange of seismic and sea level data for rapid tsunami detection and analysis, to provide warnings for such events, and to coordinate mitigation efforts among its Member States. An efficient and effective end to end warning system is needed that is ready to react 24 hours a day to any potential tsunami threat, alert those at risk along coasts, and motivate them take immediate and appropriate steps to save their lives.

The 8<sup>th</sup> Session of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS-VIII) was held at the Bureau of Meteorology, Melbourne, Australia, 3–6 May 2011. The session was attended by 59 delegates and observers from 12 Member States in the Indian Ocean region, 3 Observer States and 9 UN agencies, NGOs and other organizations. The ICG decided to hold an Indian Ocean Wave Exercise (IOWave11) on 12<sup>th</sup> October 2011 and established a Task Team to organise it, with membership comprising Australia, India, Indonesia, Malaysia and Oman. The timetable for the transition to the Regional Tsunami Advisory Service Provider (RTSP) service for the IOTWS was adopted, with the service scheduled to commence operations on 12 October 2011, following the IOWave11 exercise, with the Interim Advisory Service (IAS) provided by the Japan Meteorological Agency (JMA) and the Pacific Tsunami Warning Center (PTWC) continuing in operate a parallel (or "shadow") service until the next session of the ICG.

Indian Ocean-wide tsunami exercises are effective tools for evaluating the readiness of the IOTWS and for identifying changes that can improve its effectiveness. There have been few major Indian Ocean tsunamis in the last few years and the IOTWS must be prepared.

# 1.1 IOWave09

Exercise IOWave09 took place on October 14, 2009. A total of 18 Member States: Australia, Bangladesh, India, Indonesia, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Myanmar, Oman, Pakistan, Seychelles, Singapore, Sri Lanka, Tanzania and Timor Leste participated in the exercise. Some countries including Kenya, Indonesia and Sri Lanka executed it down to the community level.

The post-evaluation showed that most of the participating countries/agencies expressed a positive view on IOWave09 Exercise planning, conduct, format and style.

#### 1.2 Exercise Dates

Exercise IOWAVE11 will take place on 12th October 2011.

Who should be involved?: National Tsunami Warning Centres; National Disaster

Management Organizations; Local communities, to the

extent decided by each Member State.

Scenario: North Sumatra earthquake of 26<sup>th</sup> December 2004

Start time: 0100hrs UTC

Timescale: Real-time

# 1.3 Further Information

Further information will be posted to the website <a href="www.ioc-tsunami.org/iowave11">www.ioc-tsunami.org/iowave11</a> as it becomes available.

#### 2. CONCEPT OF EXERCISE IOWave11

# 2.1 Purpose

The purpose of the exercise IOWave11 is to evaluate and improve the effectiveness of the IOTWS, its operational Regional Tsunami Advisory Service Providers (RTSPs) and the Regional Integrated Multi-Hazard Early Warning System (RIMES), the Interim Advisory Service provided by the Japan Meteorological Agency (JMA) and the Pacific Tsunami Warning Center (PTWC), the National Tsunami Warning Centres (NTWCs), and National Disaster Management Organizations (NDMO), in responding to a potentially destructive tsunami. The exercise will provide an opportunity for Indian Ocean countries to test their operational lines of communications, review their tsunami warning and emergency response Standard Operating Procedures, and to promote emergency preparedness. Regular exercises are important for maintaining staff readiness for the real event. This is especially true for tsunamis, which are infrequent but require rapid response when they occur. The pre-exercise planning and post-exercise evaluation process is as important as the actual exercise, because it brings together all stakeholders to closely coordinate their actions. Every Indian Ocean country is encouraged to participate.

# 2.2 Objectives

The following are the over-arching objectives for IOWave11:

- 1. Validate the dissemination process of issuing Tsunami Bulletins to Indian Ocean countries.
  - a. RTSP and RIMES bulletins to other RTSPs and NTWCs
  - b. IAS providers (PTWC and JMA) bulletins to NTWCs and RTSPs
- 2. Validate the Standard Operating Procedures of countries receiving and confirming Tsunami Bulletins through their designated Tsunami Watch Focal Points (TWFPs).
- 3. Validate Standard Operating Procedures for disseminating warning messages to relevant agencies within a country.
- 4. Validate the national level organisational decision-making process for public warnings and evacuations.
- 5. Identify the methods that would be used to notify and instruct the public.
- 6. Assess the elapsed time for public notification and instruction.

Within the above framework, each country should develop its own specific objectives for the exercise.

# 2.3 Types of Exercise

Exercises stimulate the development, training, testing and evaluation of Disaster Plans and Standard Operating Procedures (SOP). Exercise participants may use their own past multihazard drills (e.g. flood, typhoon, earthquake, etc.) as a framework to conduct Exercise IOWave11.

Exercise IOWave11 should be conducted to a level of readiness that involves communication and decision making at Government level, without disrupting or alarming the general public. Individual countries may at their discretion elect to extend the exercise down to the level of public notification and community evacuation.

Exercises can be conducted at various scales of magnitude and sophistication. The following list provides an overview of the different types of exercises that can be conducted:

- 1. An Orientation Exercise lays the groundwork for a comprehensive exercise programme. It is a planned event, developed to 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.
- 2. A Drill is a planned activity that tests, develops, and/or maintains skills in a single or limited emergency response procedure. Drills generally involve operational response of single departments or agencies, organizations, or facilities, but may be a subset of full-scale exercises. Drills can involve internal notifications and/or field activities. Limited evacuation may or may not be conducted, such as within a school, pilot hotel, or village.
- 3. A Tabletop Exercise is a planned activity in which local officials, key staff, and organizations with disaster management responsibilities are presented with simulated emergency situations. It is usually informal, in a conference room environment, and is designed to elicit constructive discussion from the participants to assess plans, policies, and procedures. Individuals are encouraged to discuss decisions based on their organization's Standard Operating Procedures (SOPs) 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. See Appendix IV for a more detailed description of Tabletop Exercises.
- 4. A Functional Exercise is a planned activity designed to test and evaluate individual functions, multiple activities within a function, or interdependent groups of functions among various agencies. It is based on a simulation of a realistic emergency situation. The Functional Exercise gives the decision-makers a fully simulated experience of being in a major disaster event. It should take place at the appropriate coordination locations (eg. Warning centres and emergency operations centres) and activate all the appropriate members designated by the plan. Organisations should test their SOPs using real time simulation tsunami bulletins. Public evacuations may or may not be included. A Functional Exercise should have specific goals, objectives, and a scenario narrative.
- 5. A Full-scale Exercise is the culmination of a progressive exercise programme that has grown with the capacity of the community to conduct exercises. A Full-Scale exercise is a planned activity in a "challenging" environment that encompasses a majority of the tsunami warning and emergency management functions, and involves multiple layers of government (national, provincial, local). This type of exercise involves the actual mobilization and deployment of the appropriate personnel and resources needed to demonstrate operational capabilities. DMOs (Disaster Management Office) and other local command centres are required to be activated. It tests all aspects of emergency response, and should demonstrate inter-agency cooperation. A Full-scale exercise is the largest, costliest and most complex exercise type. It may or may not include public evacuations.

For Exercise IOWave11, individual Member States should decide what type of exercise they are going to undertake on 12<sup>th</sup> October. It recommended that a tabletop exercise should be conducted as a minimum. Many Member States will choose to conduct a functional exercise and some may decide to undertake a full-scale exercise. Each of these requires an increasing level of planning and preparation, particularly if any form of community evacuation is planned, and Member States are advised to conduct the exercise only to the level for which they are fully prepared.

#### 3. SPECIFICS OF CONDUCTING EXERCISE IOWAVE11

#### 3.1 Overview

There will be a single exercise scenario played out in real time. The scenario will replicate the major earthquake off the northwest coast of Sumatra on 26<sup>th</sup> December 2004 that generated a destructive tele-tsunami affecting countries from Australia to South Africa over the course of about 12 hours.

The RTSPs, RIMES and IAS providers will issue bulletins for this exercise to all IOTWS NTWCs. The timeline for issuance of bulletins on 12<sup>th</sup> October is given in Table 1. WMO GTS product identifiers for the bulletins are given in Table 2.

Participant countries may follow the exercise timeline precisely or elect to exercise on their own timeline in order to achieve their particular objectives. For example, a particular country's exercise controller may choose to inject the bulletins into the exercise at times of their own choosing, or alternatively put them in envelopes with the time they must be opened written on each, with each key participant agency having their own set of envelopes.

**Coverage**: All Member States are encouraged to participate. Estimated tsunami arrival times and wave heights to all IOTWS countries are included in the bulletins.

**Messages:** The RTSPs and RIMES will issue an initial notification message to start the exercise. Thereafter, NTWCs will receive notification messages from the RTSPs and RIMES according to the timeline shown below (Table 1) and will be directed to the RTSP and RIMES websites for to view the detailed bulletins. Examples of the notification messages for each RTSP and RIMES are given in Appendix 1.

RTSP and RIMES bulletins are also provided as Annex 1 to this manual for reference purposes and to facilitate the conduct of tabletop exercises on timelines other than real time. However, countries are encouraged to conduct the exercise in real time and to make use of the RTSP websites to access bulletins.

"Dummy" test messages will be sent by the IAS providers at the start of the exercise. Subsequent dummy test messages from the IAS will direct the participants to Appendices 2 and 3 of this manual where the bulletins are displayed in full. (NB. The IAS bulletins are provided in full because they will not be available on websites)

# 3.2 Exercise Specifics

**The Scenario:** The simulated tsunami will be generated by a magnitude 9.2 earthquake off the northwest coast of Sumatra at 3.30°N, 95.96°E that occurs on October 12, 2011 at 0100 UTC. An earthquake of this size would be likely to generate a tsunami with widespread destructive effects. Bulletins will be issued in real time for approximately 12 hours until the tsunami is simulated to have crossed the entire Indian Ocean.

# **Master Schedule and Timings**

# **Table 1: Scenario Timeline**

Tsunami from magnitude 9.2 earthquake with epicentre at  $3.30^{\circ}N$ ,  $95.96^{\circ}E$  occurring on October 12, 2011 at 0100 UTC.

Time (UTC)	Provider	Bulletin #	Detail
0100			Earthquake occurs
0105	RTSP India	1	Type-I
0105	RTSP Indonesia	1	Type-I
0105	RIMES	1	Type-I
0105	RTSP Australia	1	Type-I
0110	RTSP India	2	Type-II
0110	RTSP Indonesia	2	Type-II
0112	RIMES	2	Type-II
0112	RTSP Australia	2	Type-II
0115	PTWC	1	See Appendix II for full bulletin
0120	JMA	1	See Appendix III for full bulletin
0141	RTSP India	3	Type-III
0143	RIMES	3	Type-III
0145	RTSP Australia	3	Type-1
0145	RTSP Indonesia	3	Type-III
0145	PTWC	2	See Appendix II for full bulletin
0150	RTSP Australia	4	Type-III
0150	JMA	2	See Appendix III for full bulletin
0200	RTSP India	4	Type-III
0243	RIMES	4	Type-III
0245	RTSP Indonesia	4	Type-III
0245	PTWC	3	See Appendix II for full bulletin
0300	RTSP India	5	Type-III
0300	RTSP Australia	5	Type-III

0300	JMA	3	Final
0343	RIMES	5	Type-III
0345	RTSP Indonesia	5	Type-III
0345	PTWC	4	See Appendix II for full bulletin
0400	RTSP India	6	Type-III
0400	RTSP Australia	6	Type-III
0443	RIMES	6	Type-III
0445	RTSP Indonesia	6	Type-III
0445	PTWC	5	See Appendix II for full bulletin
0500	RTSP India	7	Type-III
0500	RTSP Australia	7	Type-III
0543	RIMES	7	Type-III
0545	RTSP Indonesia	7	Type-III
0545	PTWC	6	See Appendix II for full bulletin
0600	RTSP India	8	Type-III
0600	RTSP Australia	8	Type-III
0643	RIMES	8	Type-III
0645	RTSP Indonesia	8	Type-III
0645	PTWC	7	See Appendix II for full bulletin
0700	RTSP India	9	Type-III
0700	RTSP Australia	9	Type-III
0743	RIMES	9	Type-III
0745	RTSP Indonesia	9	Type-III
0745	PTWC	8	See Appendix II for full bulletin
0800	RTSP India	10	Type-III
0800	RTSP Australia	10	Type-III
0845	PTWC	9	See Appendix II for full bulletin
0900	RTSP India	11	Type-III
0900	RTSP Australia	11	Type-III

0943	RIMES	10	Type-III
0945	RTSP Indonesia	10	Type-III
0945	PTWC	10	See Appendix II for full bulletin
1000	RTSP India	12	Type-III
1000	RTSP Australia	12	Type-III
1043	RIMES	11	Type-III
1045	PTWC	11	See Appendix II for full bulletin
1100	RTSP India	13	Type-III
1100	RTSP Australia	13	Type-III
1100	PTWC	12	Final
1145	RTSP Indonesia	11	Type-III
1200	RTSP India	14	Type-III
1200	RTSP Australia	14	Type-IV: Final
1200	RIMES	12	Type-IV: Final
1300	RTSP India	15	Type-IV: Final
1300	RTSP Indonesia	12	Type-IV: Final

**Table 2: Product Types** 

Product types issued for Dummy bulletins

Centre	WMO GTS Identifier	Fax	Email	SMS
ITEWC	WEIO20 DEMS	Yes	Yes	Yes
InaTEWS	WEIO22 WIIX	Yes	Yes	Yes
JATWC	WEIO24 AMMC	Yes	Yes	Yes
JMA	WEIO40 RJTD	Yes	Yes	No
PTWC	WEIO21 PHEB	Yes	Yes	No
RIMES	WEIO29 VRMM	Yes	Yes	Yes

# 3.3 Test Procedure:

A Communications Test Log form for each NTWC to complete is included in the evaluation form for National Tsunami Warning Centres (Part 1). There is one page for each RTSP's messages and one for the RIMES messages. Following the reception of each notification message from an RTSP or RIMES, NTWCs should do the following:

- (a) Log the time of reception of the RTSP or RIMES notification message, and how it was received (GTS, email, fax, SMS).
- (b) Use a web browser to access the password-protected website for the RTSP or RIMES given in the notification message, and log the success or otherwise of this access.
- (c) Following the reception of notification messages, also report the NTWC warning status (as if the NTWC was actually issuing warnings for their country for this event) via the web-based "NTWC Warning Status" form. A link to this form is given on each RTSP website and the RIMES website. Please log the success or otherwise of the reporting process via the form.

Steps (a), (b) and (c) should be performed for **each RTSP** when its notification message arrives.

#### 3.4 Website Passwords:

The user names and passwords for accessing each of the RTSP password-protected websites are provided in the manual copies to NTWCs and are not intended to be viewed by the general public.

#### 3.5 Actions in case of a real event

All documentation and correspondence relating to this exercise is to be clearly identified as **Indian Ocean Wave 11 Exercise** and **For Exercise Purposes Only**. In the case of a real event occurring during the exercise, IAS and NTWCs/RTSPs will issue their normal message products for the event. Such messages will be given full priority and a decision will be made by each centre whether to continue or cease their participation in the exercise.

# 3.6 Resourcing

Although participating countries will have advance notice of the exercise and may elect to stand up a special dedicated shift to allow normal core business to continue uninterrupted, it is suggested that realistic resource levels be deployed in order to reflect some of the issues that are likely to be faced in a real event.

#### 3.7 Media Arrangements

The UNESCO External Relations and Information department (ERI) will issue an international Media Advisory in late September or early October to alert the press of the 12 October "Indian Ocean Wave 2011 Exercise." About one week before the exercise, UNESCO will issue a second press release with more details on the exercise. Appendix IV contains a sample press release that can be customized by Member States.

ICG/IOTWS Member States should consider issuing one or two exercise press releases to their respective country's media in conjunction with UNESCO releases. Member States press releases will give adequate alert to their country's population and give their local media time to conduct interviews and documentaries with participating exercise organizations in advance of the exercise.

A second Member State press release, one week before the exercise, would provide a more detailed description of exercise activities to take place within that country.

# 4. POST EVALUATION

# 4.1 Evaluation and Debriefing

Participating countries are requested to provide feedback on the exercise by 31st October

2011. This feedback will greatly assist in the evaluation of the IOWave11 Exercise and assist in the development of subsequent exercises.

The goal of exercise evaluation is to validate strengths and to identify opportunities for improvement within the participating organisations. This is to be accomplished by collating supporting data; analysing the data to compare effectiveness against requirements; and determining what changes need to be made by participating organizations as well as the IOTWS as a collective to support effective tsunami warning and decision making.

Evaluation of this exercise will focus on the adequacy of plans, policies, procedures, assessment capabilities, communication, resources and inter-agency/inter-jurisdictional relationships that support effective tsunami warning and decision-making at all levels of government. Participants that choose to include additional objectives, for example by exercising public warning and/or response plans, can expand the evaluation accordingly. The evaluation of such additional objectives will be for the use of the particular participant only and is not required for the integrated IOTWS report.

The evaluation aims to inform and facilitate individual participant country evaluations as well as the integrated IOWave11 Report. Official Exercise Evaluation Forms addressing the respective focus areas and objectives are included in Appendix V. All participant countries are requested to complete the official Exercise Evaluation Forms and return only those forms back to the ICG/IOTWS Secretariat at <a href="mailto:iotws@unesco.org">iotws@unesco.org</a> by 31st October 2011.

A formal exercise debrief inclusive of all participants in the respective countries will facilitate a collective and official evaluation. The method applied to collect the data required for consideration in the debrief is to be decided upon by the individual participant countries. It is recommended that independent and objective exercise evaluators/observers be appointed at all exercise points to support the collection of such data. Evaluators/observers are to be guided by the exercise objectives and the information required in the Exercise Evaluation Forms.

In completing evaluation forms, participating organizations must have the ability to note areas for improvement and actions that they plan to take without concern that the information carries political or operational risks. Thus, all official Exercise Evaluation Forms are designated as "For Official Use Only" and will be restricted for use by the exercise Task Team for the sole purpose of compilation of the integrated IOWave11 Report. Some participant countries may however decide to share their individual evaluation outcomes with the public. While the IOWave11 Report will be submitted to the IOC, the decision to share the information contained in it with the public will be made by the ICG/IOTWS.

#### APPENDIX I. SAMPLE NOTIFICATION MESSAGES

# **RTSP India**

WEIO20 DEMS 120105

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

TEST TSUNAMI BULLETIN NOTIFICATION MESSAGE NUMBER 1 REGIONAL TSUNAMI ADVISORY SERVICE PROVIDER RTSP INDIA (ITEWC)

issued at: 0105 UTC Wednesday 12 October 2011

TO: INDIAN OCEAN NATIONAL TSUNAMI WARNING CENTRES (NTWCs)

FROM: RTSP INDIA

#### **NOTIFICATION:**

\*\*\* THIS IS INDIAN OCEAN TSUNAMI DRILL IOWAVE11 \*\*\*

\*\*\* THIS IS NOT A REAL TSUNAMI EVENT \*\*\*

RTSP INDIA HAS JUST ISSUED TEST TSUNAMI BULLETIN NUMBER 1 FOR THE INDIAN OCEAN, BASED ON THE FOLLOWING TEST EARTHQUAKE EVENT:

MAGNITUDE: 8.2 M

DEPTH: 10 km DATE: 12 Oct 2011 ORIGIN TIME: 01 00 UTC

LATITUDE: 3.3 N

LONGITUDE: 95.96 E

LOCATION: NORTHERN SUMATRA, INDONESIA

TO VIEW THE BULLETIN GO TO THE RTSP INDIA WEBSITE AT:

http://www.incois.gov.in/Incois/tsunami/COMM\_login.jsp

NOTE: THIS IS A RESTRICTED-ACCESS WEBSITE CONTAINING TECHNICAL DATA FOR NATIONAL TSUNAMI WARNING CENTRES ONLY. IT IS NOT FOR GENERAL PUBLIC ACCESS.

GENERAL PUBLIC INFORMATION FOR THIS EVENT IS AVAILABLE FROM:

INDIAN TSUNAMI EARLY WARNING CENTRE (ITEWC)
INDIAN NATIONAL CENTRE FOR OCEAN INFORMATION SERVICES (INCOIS)
ADDRESS:"OCEAN VALLEY", PRAGATHI NAGAR (BO), NIZAMPET (SO),

HYDERABAD - 500 090, INDIA.

PHONE: 91-40-23895011 FAX: 91-40-23895012

EMAIL: TSUNAMI@INCOIS.GOV.IN

WEB: WWW.INCOIS.GOV.IN

END OF TEST NOTIFICATION MESSAGE

.....

# **RTSP Indonesia**

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

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TEST TSUNAMI BULLETIN NOTIFICATION MESSAGE NUMBER 1
REGIONAL TSUNAMI SERVICE PROVIDER - RTSP INDONESIA [Inatews-BMKG]

ISSUED AT 0105UTC 12 OCTOBER 2011

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TO: INDIAN OCEAN NATIONAL TSUNAMI WARNING CENTRES [NTWCs]

FROM: RTSP INDONESIA

\*\*\* THIS IS INDIAN OCEAN TSUNAMI DRILL IOWAVE11\*\*\*

\*\*\* THIS IS NOT A REAL TSUNAMI EVENT \*\*\*

#### NOTIFICATION:

RTSP INDONESIA HAS JUST ISSUED A TEST TSUNAMI BULLETIN FOR THE INDIAN OCEAN, BASED ON THE FOLLOWING TEST EARTHQUAKE EVENT:

MAGNITUDE : 8.8 DEPTH : 10km

ORIGIN TIME: 0100 UTC 12 OCTOBER 2011

LATITUDE : 3.30N LONGITUDE : 95.96E

LOCATION : NORTHERN SUMATRA, INDONESIA

TO VIEW THE BULLETIN GO TO THE RTSP INDONESIA WEBSITE AT: http://rtsp.bmkg.go.id

NOTE: THIS IS A RESTRICTED-ACCESS WEBSITE CONTAINING TECHNICAL DATA FOR NATIONAL TSUNAMI WARNING CENTRES ONLY. IT IS NOT FOR GENERAL PUBLIC ACCESS.

GENERAL ENERAL PUBLIC INFORMATION FOR THIS EVENT IS AVAILABLE FROM: Indonesia Tsunami Early Warning System (InaTEWS)

METEOROLOGICAL CLIMATOLOGICAL AND GEOPHYSICAL AGENCY (BMKG)

Address: Jl. Angkasa I no.2 Kemayoran, Jakarta, Indonesia, 10720

Tel.: +62 (21) 65867045 Fax: +62 (21) 6546316 P.O. Box 3540 Jakarta Email:inartsp@bmkq.qo.id

Website : http://inatews.bmkg.go.id

END OF NOTIFICATION MESSAGE

\_\_\_\_\_

# **RTSP Australia**

WEI024 AMMC 120110

TEST TSUNAMI BULLETIN NOTIFICATION MESSAGE NUMBER 1

REGIONAL TSUNAMI SERVICE PROVIDER - RTSP AUSTRALIA [JATWC]

ISSUED AT 01100UTC 12 OCTOBER 2011

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

TO: INDIAN OCEAN NATIONAL TSUNAMI WARNING CENTRES [NTWCs]

FROM: RTSP AUSTRALIA

\*\*\* IOWAVE11 EXERCISE FOR THE INDIAN OCEAN TSUNAMI WARNING SYSTEM \*\*\*
\*\*\* THIS IS NOT A REAL TSUNAMI EVENT \*\*\*

#### NOTIFICATION:

RTSP AUSTRALIA HAS JUST ISSUED A TEST TSUNAMI BULLETIN FOR THE INDIAN OCEAN, BASED ON THE FOLLOWING TEST EARTHQUAKE EVENT:

MAGNITUDE: 9.2 DEPTH: 10km

ORIGIN TIME: 0100 UTC 12 OCTOBER 2011

LATITUDE: 3.30N LONGITUDE: 95.96E

LOCATION: NORTHERN SUMATRA, INDONESIA

TO VIEW THE BULLETIN GO TO THE RTSP AUSTRALIA WEBSITE AT:

http://reg.bom.gov.au/tsunami/rtsp

NOTE: THIS IS A RESTRICTED-ACCESS WEBSITE CONTAINING TECHNICAL DATA FOR NATIONAL TSUNAMI WARNING CENTRES ONLY. IT IS NOT FOR GENERAL PUBLIC ACCESS.

GENERAL PUBLIC INFORMATION FOR THIS EVENT IS AVAILABLE FROM:

JOINT AUSTRALIAN TSUNAMI WARNING CENTRE [JATWC]
BUREAU OF METEOROLOGY

MELBOURNE, AUSTRALIA

http://www.bom.gov.au/tsunami

END OF TEST NOTIFICATION MESSAGE

\_\_\_\_\_

# **RIMES**

\_\_\_\_\_

TSUNAMI BULLETIN NOTIFICATION MESSAGE NUMBER 1

RIMES

ISSUED AT: 0105 UTC Wednesday, October 12, 2011

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TO: ALL INDIAN OCEAN NATIONAL TSUNAMI WARNING CENTRES (NTWCs)

FROM: RIMES

RIMES HAS JUST ISSUED TSUNAMI BULLETIN NUMBER 1 FOR THE INDIAN OCEAN, BASED ON THE FOLLOWING EARTHOUAKE EVENT:

MAGNITUDE: 9.2 Mw(MWP)
DEPTH: 10 Km

DATE: 12 OCT 2011
ORIGIN TIME 0100 UTC

LATITUDE: 3.3N LONGITUDE: 95.96E

LOCATION: Northern Sumatra Indonesia

TO VIEW THE BULLETIN GO TO RIMES WEBSITE AT:

http://www.rimes.int/earthquake/tsunami-bulletin

NOTE: THIS IS A RESTRICTED-ACCESS WEBSITE CONTAINING TECHNICAL DATA FOR NATIONAL TSUNAMI WARNING CENTRES ONLY.

IT IS NOT FOR GENERAL PUBLIC ACCESS.

GENERAL PUBLIC INFORMATION FOR THIS EVENT IS AVAILABLE FROM: REGIONAL INTEGRATED MULTIHAZARD EARLY WARNING SYSTEM (RIMES)

OUTREACH BUILDING, AIT CAMPUS, PATHUMTHANI, THAILAND

PHONE: 662-516-5905 TO 07 FAX: 662-516-5908 TO 09 EMAIL: TSUNAMI@RIMES.INT

WEB: WWW.RIMES.INT

END OF NOTIFICATION MESSAGE

# **PTWC**

TEST...TSUNAMI EXERCISE MESSAGE NUMBER 001...TEST NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI 0115 UTC 12 OCT 2011

...EXERCISE INDIAN OCEAN WAVE 11...

TO - PARTICIPANTS OF THE INDIAN OCEAN WAVE 11 TSUNAMI EXERCISE. ALL OTHERS PLEASE IGNORE.

SUBJECT - EXERCISE INDIAN OCEAN WAVE 11
REFER TO PTWC BULLETIN 1 IN EXERCISE MANUAL

THIS MESSAGE IS ONE OF A SERIES OF MESSAGES THAT ARE BEING ISSUED AS PART OF THE INDIAN OCEAN WAVE 11 TSUNAMI EXERCISE. THE EXERCISE IS TO TEST COMMUNICATIONS AND ACTIONS THAT WOULD BE NEEDED IN THE EVENT OF AN ACTUAL TSUNAMI.

PARTICIPANTS IN THE EXERCISE SHOULD REFER TO THE INDIAN OCEAN WAVE 11 EXERCISE MANUAL FOR THE CORRESPONDING PTWC BULLETIN 1.

THIS IS ONLY AN EXERCISE.

# **JMA**

TSUNAMI EXERCISE MESSAGE NUMBER 001 ISSUED BY JMA ISSUED AT 0120Z 12 OCT 2011

TO: PARTICIPANTS OF INDIAN OCEAN WAVE 11 TSUNAMI EXERCISE. ALL OTHERS PLEASE I GNORE.

SUBJECT: EXERCISE INDIAN OCEAN WAVE 11
REFER TO JMA BULLETIN 1 IN EXERCISE MANUAL

THIS MESSAGE IS ONE OF A SERIES OF MESSAGES THAT ARE BEING ISSUED AS PART OF THE INDIAN OCEAN WAVE 11 TSUNAMI EXERCISE. THE EXERCISE IS TO TEST COMMUNICATIONS AND ACTIONS THAT WOULD BE NEEDED IN THE EVENT OF AN ACTUAL TSUNAMI.

PARTICIPANTS IN THE EXERCISE SHOULD REFER TO THE INDIAN OCEAN WAVE 11 EXERCISE MANUAL FOR THE CORRESPONDING JMA BULLETIN 1.

THIS IS ONLY AN EXERCISE. =

#### **APPENDIX II. EXERCISE BULLETINS - PTWC**

TEST...TSUNAMI BULLETIN NUMBER 001 ...TEST PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS ISSUED AT 0115Z 12 OCT 2011

THIS BULLETIN IS FOR ALL AREAS OF THE INDIAN OCEAN.

... AN INDIAN-OCEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

INDONESIA / INDIA / AUSTRALIA / THAILAND / MYANMAR / SRI LANKA / MALDIVES / UNITED KINGDOM / MALAYSIA / MAURITIUS / REUNION / SEYCHELLES / OMAN / PAKISTAN / SOMALIA / MADAGASCAR / IRAN / UAE / YEMEN / COMORES / MOZAMBIQUE / KENYA / TANZANIA / BANGLADESH / CROZET ISLANDS / KERGUELEN ISLANDS / SOUTH AFRICA / SINGAPORE

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 - 0100Z 12 OCT 2011

COORDI NATES - 3.3 NORTH 95.9 EAST

LOCATION - NORTHERN SUMATRA INDONESIA

MAGNITUDE - 8.2

#### **EVALUATION**

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

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.

LOCATI ON	FORECAST POINT	COORDI NATES	ARRIVAL TIME
I NDONESI A	SI MEULUE BANDA_ACEH SI BERUT PADANG BENGKULU CI LACAP BANDAR_LAMPUNG BALI	2. 5N 96. 0E 5. 5N 95. 1E 1. 5S 98. 7E 0. 9S 100. 1E 3. 9S 102. 0E 7. 8S 108. 9E 5. 7S 105. 3E 8. 7S 115. 3E	0138Z 12 0CT 0152Z 12 0CT 0215Z 12 0CT 0256Z 12 0CT 0308Z 12 0CT 0422Z 12 0CT 0431Z 12 0CT 0506Z 12 0CT
I NDI A	BELAWAN KUPANG BALI GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM	10.7N 92.3E 11.9N 92.7E	0546Z 12 0CT 0605Z 12 0CT 0506Z 12 0CT 0217Z 12 0CT 0305Z 12 0CT 0315Z 12 0CT 0335Z 12 0CT 0430Z 12 0CT 0456Z 12 0CT 0504Z 12 0CT

AUSTRALI A	MANGALORE BOMBAY GULF_OF_KUTCH COCOS_I SLAND NORTH_WEST_CAPE CAPE_INSPIRATIO PERTH AUGUSTA GERALDTOWN CAPE_LEVEQUE ESPERANCE KINGSTON_SOUTH_ HEARD_I SLAND EUCLA_MOTEL HOBART DARWIN PHUKET KO_PHRA_THONG KO_TARUTAO CHEDUBA_I SLAND	16. 1S 122. 6E 34. 0S 121. 8E	0639Z 12 0CT 0906Z 12 0CT 0937Z 12 0CT 0330Z 12 0CT 0543Z 12 0CT 0645Z 12 0CT 0657Z 12 0CT 0716Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0849Z 12 0CT 1023Z 12 0CT 1052Z 12 0CT 1100Z 12 0CT 1133Z 12 0CT
THAI LAND	DARWIN PHUKET KO PHRA THONG	12. 1S 130. 7E 8. 0N 98. 2E 9. 1N 98. 2E	1153Z 12 0CT 0332Z 12 0CT 0422Z 12 0CT
MYANMAR	KO_TARUTAO CHEDUBA_I SLAND CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE	6. 6N 99. 6E 18. 9N 93. 4E 18. 9N 93. 4E 15. 9N 94. 3E 20. 0N 92. 9E	0442Z 12 0CT 0510Z 12 0CT
SRI LANKA	CHEDUBA_I SLAND CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI YANGON TRI NCOMALEE DONDRA_HEAD COLOMBO JAFFNA GAN MALE MI NI COV DI EGO_GARCI A GEORGETOWN PORT_DI CKSON PORT_LOUI S ST_DENI S VI CTORI A	12. 8N 98. 4E 16. 5N 96. 4E 8. 7N 81. 3E 5. 9N 80. 6E 6. 9N 79. 8E	0421Z 12 0CT
MALDI VES	JAFFNA GAN MALE	9. 9N 80. 0E 0. 6S 73. 2E 4. 2N 73. 6E	0532Z 12 0CT 0446Z 12 0CT 0451Z 12 0CT
UNITED KINGDOM MALAYSIA	DI EGO_GARCI A GEORGETOWN	8. 3N 73. 0E 7. 3S 72. 4E 5. 4N 100. 1E	0514Z 12 0CT 0504Z 12 0CT 0522Z 12 0CT
MAURITIUS REUNION SEYCHELLES OMAN	PORT_LOUIS ST_DENIS VICTORIA SALALAH MUSCAT	2. 5N 101. 7E 20. 0S 57. 3E 20. 8S 55. 2E 4. 5S 55. 6E 16. 9N 54. 1E 23. 9N 58. 6E	1002Z 12 0CT 0800Z 12 0CT 0814Z 12 0CT 0828Z 12 0CT 0838Z 12 0CT 0844Z 12 0CT
PAKI STAN	DUQM GWADAR	19. 7N 57. 8E 25. 1N 62. 4E 24. 7N 66. 9E	0853Z 12 0CT 0846Z 12 0CT 0938Z 12 0CT
SOMALI A	KARACHI CAPE_GUARO HI LALAYA	11. 9N 51. 4E 6. 4N 49. 1E	0848Z 12 0CT 0849Z 12 0CT
MADAGASCAR	MOGADI SHU KAAMBOONI ANTSI RANANA TOAMASI NA MANAKARA MAHAJANGA	2. 0N 45. 5E 1. 5S 41. 9E 12. 1S 49. 5E 17. 8S 49. 6E 22. 2S 48. 2E 15. 4S 46. 2E	0904Z 12 0CT 0932Z 12 0CT 0850Z 12 0CT 0902Z 12 0CT 0917Z 12 0CT 0954Z 12 0CT
I RAN UAE YEMEN	CAP_STE_MARIE TOLIARA GAVATER FUJAIRAH AL_MUKALLA ADEN	25. 8S 45. 2E 23. 4S 43. 6E 25. 0N 61. 3E 25. 1N 56. 4E 14. 5N 49. 2E 13. 0N 45. 2E	1016Z 12 0CT 1041Z 12 0CT 0852Z 12 0CT 0930Z 12 0CT 0937Z 12 0CT 1023Z 12 0CT
COMORES MOZAMBI QUE	MORONI CABO_DELGADO ANGOCHE QUELI MANE MAPUTO	13. 0N 43. 2E 11. 6S 43. 3E 10. 7S 40. 7E 15. 5S 40. 6E 18. 0S 37. 1E 25. 9S 32. 8E	0951Z 12 0CT 1008Z 12 0CT 1040Z 12 0CT 1207Z 12 0CT 1255Z 12 0CT
KENYA TANZANI A	BEIRA MOMBASA LINDI	19. 9S 35. 1E 4. 0S 39. 7E 9. 8S 39. 9E	1317Z 12 0CT 1009Z 12 0CT 1009Z 12 0CT
BANGLADESH CROZET ISLANDS KERGUELEN ISLAN	DAR_ES_SALAAM CHITTAGONG CROZET_ISLANDS PORT_AUX_FRANCA	6. 7S 39. 4E 22. 7N 91. 2E 46. 4S 51. 8E 49. 0S 69. 1E	1012Z 12 0CT 1025Z 12 0CT 1030Z 12 0CT 1111Z 12 0CT

SOUTH AFRICA	PRINCE EDWARD I	46. 6S 37. 6E	1205Z 12 OCT
	DURBAN	29. 8S 31. 2E	1209Z 12 OCT
	PORT_ELI ZABETH	33. 9S 25. 8E	1311Z 12 OCT
	CAPE_TOWN	34. 1S 18. 0E	1410Z 12 OCT
SI NGAPORE	SINGAPORE	1. 2N 103. 8E	15507 12 OCT

TEST...TSUNAMI BULLETIN NUMBER 002. PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS ISSUED AT 0145Z 12 OCT 2011

THIS BULLETIN IS FOR ALL AREAS OF THE INDIAN OCEAN.

... AN INDIAN-OCEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

INDONESIA / INDIA / AUSTRALIA / THAILAND / MYANMAR / SRI LANKA / MALDIVES / UNITED KINGDOM / MALAYSIA / MAURITIUS / REUNION /
SEYCHELLES / OMAN / PAKISTAN / SOMALIA / MADAGASCAR / IRAN /
UAE / YEMEN / COMORES / MOZAMBIQUE / KENYA / TANZANIA /
BANGLADESH / CROZET ISLANDS / KERGUELEN ISLANDS / SOUTH AFRICA / SI NGAPORE

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AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME -0100Z 12 0CT 2011

COORDINATES -3.3 NORTH 95. 9 EAST

LOCATI ON NORTHERN SUMATRA INDONESIA

9.2 MAGNI TUDE

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
SABANG ID	5.8N	095. 3E	0125Z	4. OM / 13. 1FT	17MIN

- LATITUDE (N-NORTH, S-SOUTH)
- LONGITUDE (E-EAST, W-WEST) LON

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

AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH 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.

#### **EVALUATION**

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY ALREADY HAVE BEEN DESTRUCTIVE ALONG SOME COASTS.

BASED ON THESE DATA THE THREAT CONTINUES FOR ALL COASTAL AREAS OF THE INDIAN OCEAN. FOR THOSE 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 PASSED. 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 AUTHORITIES.

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.

LOCATI ON	FORECAST POINT	COORDI NATES	ARRIVAL TIME
I NDONESI A	SI MEULUE	2. 5N 96. 0E	0138Z 12 0CT
	BANDA_ACEH	5. 5N 95. 1E	0152Z 12 0CT
	SI BERUT	1. 5S 98. 7E	0215Z 12 0CT

	PADANG BENGKULU CI LACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY GULF_OF_KUTCH	0. 9S 100. 1E	0256Z 12 0CT
	BENGKULU	3. 9S 102. 0E	0308Z 12 0CT
	CILACAP BANDAR LAMPUNG	7. 85 108. 9E 5. 7S 105. 3E	0422Z 12 0CT 0431Z 12 0CT
	BALI	8. 7S 115. 3E	0506Z 12 0CT
	BELAWAN KUPANG	3.8N 98.8E 10.0S 123.4F	0546Z 12 0CT 0605Z 12 0CT
	BALI	8. 7S 115. 3E	0506Z 12 0CT
I NDI A	GREAT_NI COBAR	7.1N 93.6E	0217Z 12 0CT 0305Z 12 0CT
	PORT_BLAIR	11. 9N 92. 7E	03157 12 OCT
	NORTH_ANDAMAN	13. 3N 92. 6E	0335Z 12 0CT 0430Z 12 0CT
	KAKI NADA	17. 2N 82. 7E	04567 12 OCT
	TRI VANDRUM	8. 3N 76. 9E	0504Z 12 0CT 0639Z 12 0CT
	NORTH_ANDAMAN CHENNAI KAKINADA TRIVANDRUM MANGALORE BOMBAY GULF OF KUTCH	18. 8N 72. 6E	09067 12 OCT
AUSTRALI A	GULF_OF_KUTCH	22. 7N 68. 9E 12. 1S 96. 7E	0937Z 12 0CT 0330Z 12 0CT
AUSTRALIA	COCOS_I SLAND NORTH_WEST_CAPE CAPE_I NSPI RATI O PERTH AUGUSTA GERALDTOWN	21. 5S 113. 9E	0543Z 12 OCT
	CAPE_I NSPI RATI 0	25. 9S 113. 0E 32. 0S 115. 3E	0645Z 12 0CT 0657Z 12 0CT
	AUGUSTA	34. 3S 114. 7E	0716Z 12 OCT
	GERALDTOWN	28. 6S 114. 3E	0732Z 12 0CT 0732Z 12 0CT
	ESPERANCE	34. 0S 121. 8E	0732Z 12 0CT 0849Z 12 0CT
	CAPE_LEVEQUE ESPERANCE KI NGSTON_SOUTH_ HEARD_I SLAND EUCLA_MOTEL HOBART	37. 0S 139. 4E	1023Z 12 0CT
	EUCLA MOTEL	31. 8S 128. 9E	1052Z 12 0CT 1100Z 12 0CT
	HOBART	43. 3S 147. 6E	1133Z 12 OCT
THAI LAND	PHUKET	12. 1S 130. 7E 8. ON 98. 2E	11332 12 001
	DARWI N PHUKET KO_PHRA_THONG KO_TARUTAO CHEDUBA_I SLAND CHEDUBA_I SLAND	8. ON 98. 2E 9. 1N 98. 2E	0422Z 12 OCT
MYANMAR	CHEDUBA ISLAND	6.6N 99.6E 18.9N 93.4E	0452Z 12 0CT 0432Z 12 0CT
	CHEDUBA_I SLAND	18. 9N 93. 4E	0432Z 12 OCT
	CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI YANGON TRI NCOMALEE DONDRA_HEAD COLOMBO JAFFNA	15. 9N 94. 3E 20. 0N 92. 9E	0442Z 12 0CT 0510Z 12 0CT
	MERGUI	12. 8N 98. 4E	0549Z 12 OCT
SRI LANKA	TRI NCOMALEE	16. 5N 96. 4E 8. 7N 81. 3E	0943Z 12 0CT 0347Z 12 0CT
	DONDRA_HEAD	8. 7N 81. 3E 5. 9N 80. 6E	0354Z 12 OCT
	JAFFNA		0421Z 12 0CT 0532Z 12 0CT
MALDI VES	GAN	0. 6S 73. 2E	0446Z 12 0CT
	MALE MINICOV	4. 2N 73. 6E 8. 3N 73. 0E	0451Z 12 0CT 0514Z 12 0CT
UNITED KINGDOM MALAYSIA	DI EGO_GARCI A GEORGETOWN	7. 3S 72. 4E 5. 4N 100. 1E	0504Z 12 0CT 0522Z 12 0CT
WALATSIA	PORT DICKSON	5. 4N 100. 1E 2. 5N 101. 7E	1002Z 12 0CT
MAURITIUS REUNION	PORT_LOUIS ST_DENIS	20. 0S 57. 3E 20. 8S 55. 2E	0800Z 12 0CT 0814Z 12 0CT
SEYCHELLES	VI CTORI A	4. 5S 55. 6E	0828Z 12 OCT
OMAN	SALALAH MUSCAT	16. 9N 54. 1E 23. 9N 58. 6E	0838Z 12 0CT
	DUQM	23. 9N 58. 6E 19. 7N 57. 8E	0844Z 12 0CT 0853Z 12 0CT
PAKI STAN	GWADAR	25. 1N 62. 4E 24. 7N 66. 9E	0846Z 12 0CT
SOMALI A	KARACHI CAPE_GUARO	24. 7N 66. 9E 11. 9N 51. 4E	0938Z 12 0CT 0848Z 12 0CT
	HI LALAYA	6. 4N 49. 1E	0849Z 12 0CT
	MOGADI SHU KAAMBOONI	2. ON 45. 5E 1. 5S 41. 9E	0904Z 12 0CT 0932Z 12 0CT
MADAGASCAR	ANTSI RANANA	12. 1S 49. 5E	0850Z 12 0CT
	TOAMASINA MANAKARA	22. 2S 48. 2E	0902Z 12 0CT 0917Z 12 0CT
	MAHAJANGA	15. 4S 46. 2E	0954Z 12 0CT
	CAP_STE_MARIE TOLIARA	25. 8S 45. 2E 23. 4S 43. 6E	1016Z 12 0CT 1041Z 12 0CT
I RAN	GAVATER	25. ON 61. 3E	0852Z 12 OCT

UAE YEMEN	FUJAI RAH AL_MUKALLA	25. 1N 14. 5N	56. 4E 49. 2E	0930Z 12 0CT 0937Z 12 0CT
COMORES MOZAMBI QUE	ADEN MORONI CABO_DELGADO	13. 0N 11. 6S 10. 7S	45. 2E 43. 3E 40. 7E	1023Z 12 0CT 0951Z 12 0CT 1008Z 12 0CT
	ANGOCHE QUELI MANE MAPUTO	15. 5S 18. 0S 25. 9S	40. 6E 37. 1E 32. 8F	1040Z 12 0CT 1207Z 12 0CT 1255Z 12 0CT
	BEIRA	19. 9S	35. 1E	1317Z 12 OCT
KENYA	MOMBASA	4. 0S	39. 7E	1009Z 12 OCT
TANZANI A	LI NDI	9. 8S	39. 9E	1009Z 12 0CT
	DAR_ES_SALAAM	6. 7S	39. 4E	1012Z 12 OCT
BANGLADESH	CHI TTAGONG	22. 7N	91. 2E	1025Z 12 OCT
CROZET ISLANDS	CROZET_I SLANDS	46. 4S	51. 8E	1030Z 12 0CT
KERGUELEN ISLAN	PORT AŪX FRANCA	49. OS	69. 1E	1111Z 12 OCT
SOUTH AFRICA	PRI NCE_EDWARD_I	46. 6S	37. 6E	1205Z 12 0CT
	DURBAN	29. 8S	31. 2E	1209Z 12 0CT
	PORT_ELI ZABETH	33. 9S	25. 8E	1311Z 12 OCT
	CAPE_TOWN	34. 1S	18. OE	1410Z 12 OCT
SI NGAPORE	SINGAPORE	1. 2N	103. 8E	1550Z 12 0CT

TEST...TSUNAMI BULLETIN NUMBER 003. PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS ISSUED AT 0245Z 12 0CT 2011

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A TSUNAMI WATCH IS IN EFFECT FOR

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SEYCHELLES / OMAN / PAKISTAN / SOMALIA / MADAGASCAR / IRAN /
UAE / YEMEN / COMORES / MOZAMBIQUE / KENYA / TANZANIA /
BANGLADESH / CROZET ISLANDS / KERGUELEN ISLANDS / SOUTH AFRICA / SI NGAPORE

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ORIGIN TIME -0100Z 12 0CT 2011

COORDINATES -3.3 NORTH 95.9 EAST

LOCATI ON NORTHERN SUMATRA INDONESIA

9.2 MAGNI TUDE

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
SABANG ID TELUKDALAM, ID		095. 3E 097. 8E		5.3M / 17.4FT 7.5M / 24.6FT	

LAT - LATI TUDE (N-NORTH, S-SOUTH) LON - LONGI TUDE (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... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT)

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

# **EVALUATION**

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY ALREADY HAVE BEEN DESTRUCTIVE ALONG SOME COASTS.

BASED ON THESE DATA THE THREAT CONTINUES FOR ALL COASTAL AREAS OF THE INDIAN OCEAN. FOR THOSE 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 PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE AS LOCAL CONDITIONS CAN CAUSE A WIDE TO RAPID CURRENTS. VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

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.

LOCATI ON	FORECAST POINT	COORDI NATES	ARRIVAL TIME
I NDONESI A	SIMEULUE	2. 5N 96. 0E	0138Z 12 0CT
	BANDA ACEH	5. 5N 95. 1E	0152Z 12 0CT

I NDI A	SIBERUT PADANG BENGKULU CI LACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI GREAT_NI COBAR LITTLE_ANDAMAN PORT_BLAIR NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY GULF_OF_KUTCH COCOS_I SLAND NORTH_WEST_CAPE CAPE_I NSPI RATI O PERTH AUGUSTA GERALDTOWN CAPE_LEVEQUE ESPERANCE KI NGSTON_SOUTH_HEARD_I SLAND EUCLA_MOTEL HOBART DARWI N PHUKET KO_PHRA_THONG KO_TARUTAO CHEDUBA_I SLAND CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI YANGON	1. 5S 98. 7E 0. 9S 100. 1E 3. 9S 102. 0E 7. 8S 108. 9E 5. 7S 105. 3E 8. 7S 115. 3E 3. 8N 98. 8E 10. 0S 123. 4E 8. 7S 115. 3E 7. 1N 93. 6E 10. 7N 92. 3E 11. 9N 92. 7E 13. 3N 92. 6E 13. 4N 80. 4E 17. 2N 82. 7E 8. 3N 76. 9E 13. 3N 74. 4E 18. 8N 72. 6E	0215Z 12 0CT 0256Z 12 0CT 0308Z 12 0CT 0422Z 12 0CT 0431Z 12 0CT 0506Z 12 0CT 0546Z 12 0CT 0506Z 12 0CT 0506Z 12 0CT 0217Z 12 0CT 0305Z 12 0CT 0315Z 12 0CT 0335Z 12 0CT 0335Z 12 0CT 0430Z 12 0CT 0456Z 12 0CT 0456Z 12 0CT 0504Z 12 0CT 0639Z 12 0CT 0639Z 12 0CT
AUSTRALI A	GULF_OF_KUTCH COCOS_I SLAND NORTH_WEST_CAPE CAPE_I NSPI RATI O PERTH AUGUSTA GERALDTOWN CAPE_LEVEQUE ESPERANCE KI NGSTON_SOUTH_ HEARD_I SLAND EUCLA_MOTEL HOBART DARWI N	22. 7N 68. 9E 12. 1S 96. 7E 21. 5S 113. 9E 25. 9S 113. 0E 32. 0S 115. 3E 34. 3S 114. 7E 28. 6S 114. 3E 16. 1S 122. 6E 34. 0S 121. 8E 37. 0S 139. 4E 54. 0S 73. 5E 31. 8S 128. 9E 43. 3S 147. 6E 12. 1S 130. 7E	0937Z 12 0CT 0330Z 12 0CT 0543Z 12 0CT 0645Z 12 0CT 0657Z 12 0CT 0716Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0849Z 12 0CT 1023Z 12 0CT 1052Z 12 0CT 1100Z 12 0CT 1133Z 12 0CT 1133Z 12 0CT
THAI LAND	PHUKET KO_PHRA_THONG	8. ON 98. 2E 9. 1N 98. 2E	0332Z 12 0CT 0422Z 12 0CT
MYANMAR	CHEDUBA_I SLAND CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI	6. 6N 99. 6E 18. 9N 93. 4E 18. 9N 93. 4E 15. 9N 94. 3E 20. 0N 92. 9E 12. 8N 98. 4E	0452Z 12 0CT 0432Z 12 0CT 0432Z 12 0CT 0442Z 12 0CT 0510Z 12 0CT 0549Z 12 0CT
SRI LANKA	DONDRA_HEAD COLOMBO	8. /N 81. 3E 5. 9N 80. 6E 6. 9N 79. 8E	0943Z 12 0CT 0347Z 12 0CT 0354Z 12 0CT 0421Z 12 0CT
MALDI VES	JAFFNA GAN MALE	9. 9N 80. 0E 0. 6S 73. 2E 4. 2N 73. 6E	0532Z 12 0CT 0446Z 12 0CT 0451Z 12 0CT
UNITED KINGDOM MALAYSIA	MINICOV DIEGO_GARCIA GEORGETOWN PORT DICKSON	8. 3N 73. 0E 7. 3S 72. 4E 5. 4N 100. 1E 2. 5N 101. 7E	0514Z 12 0CT 0504Z 12 0CT 0522Z 12 0CT 1002Z 12 0CT
MAURI TI US	PORT_LOUI S	20. 0S 57. 3E	0800Z 12 0CT
REUNI ON	ST_DENIS	20. 8S 55. 2E	0814Z 12 0CT
SEYCHELLES OMAN	VICTORIA SALALAH MUSCAT DUQM	4. 5S 55. 6E 16. 9N 54. 1E 23. 9N 58. 6E 19. 7N 57. 8E	0828Z 12 0CT 0838Z 12 0CT 0844Z 12 0CT 0853Z 12 0CT
PAKI STAN	GWADAR	25. 1N 62. 4E	0846Z 12 OCT
SOMALI A	KARACHI CAPE_GUARO HI LALAYA MOGADI SHU	24. 7N 66. 9E 11. 9N 51. 4E 6. 4N 49. 1E 2. ON 45. 5E	0938Z 12 0CT 0848Z 12 0CT 0849Z 12 0CT 0904Z 12 0CT
MADAGASCAR	KAAMBOONI ANTSI RANANA TOAMASI NA MANAKARA MAHAJANGA CAP_STE_MARI E TOLI ARA	1. 5S 41. 9E 12. 1S 49. 5E 17. 8S 49. 6E 22. 2S 48. 2E 15. 4S 46. 2E 25. 8S 45. 2E 23. 4S 43. 6E	0932Z 12 0CT 0850Z 12 0CT 0902Z 12 0CT 0917Z 12 0CT 0954Z 12 0CT 1016Z 12 0CT 1041Z 12 0CT

I RAN	GAVATER	25. ON	61. 3E	0852Z 12 0CT
UAE	FUJAI RAH	25. 1N	56. 4E	0930Z 12 0CT
YEMEN	AL_MUKALLA	14. 5N	49. 2E	0937Z 12 0CT
COMORES MOZAMBI QUE	ADEN MORONI CABO_DELGADO ANGOCHE	13. 0N 11. 6S 10. 7S 15. 5S	45. 2E 43. 3E 40. 7E 40. 6F	1023Z 12 0CT 0951Z 12 0CT 1008Z 12 0CT 1040Z 12 0CT
	QUELI MANE	18. 0S	37. 1E	1207Z 12 0CT
	MAPUTO	25. 9S	32. 8E	1255Z 12 0CT
	BEI RA	19. 9S	35. 1F	1317Z 12 0CT
KENYA	MOMBASA	4. 0S	39. 7E	1009Z 12 0CT
TANZANI A	LINDI	9. 8S	39. 9E	1009Z 12 0CT
BANGLADESH CROZET I SLANDS	DAR_ES_SALAAM CHITTAGONG CROZET_ISLANDS	6. 7S 22. 7N 46. 4S	39. 4E 91. 2E 51. 8E	1012Z 12 0CT 1025Z 12 0CT 1030Z 12 0CT
KERGUELEN ISLAN SOUTH AFRICA	PORT_AUX_FRANCA PRI NCE_EDWARD_I DURBAN PORT_ELI ZABETH	49. 0S 46. 6S 29. 8S 33. 9S	69. 1E 37. 6E 31. 2E 25. 8E	1111Z 12 0CT 1205Z 12 0CT 1209Z 12 0CT 1311Z 12 0CT
SI NGAPORE	CAPE_TOWN	34. 1S	18. 0E	1410Z 12 0CT
	SINGAPORE	1. 2N	103. 8E	1550Z 12 0CT

TEST...TSUNAMI BULLETIN NUMBER 004. PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS ISSUED AT 0345Z 12 0CT 2011

THIS BULLETIN IS FOR ALL AREAS OF THE INDIAN OCEAN.

... AN INDIAN-OCEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

INDONESIA / INDIA / AUSTRALIA / THAILAND / MYANMAR / SRI LANKA / MALDIVES / UNITED KINGDOM / MALAYSIA / MAURITIUS / REUNION /
SEYCHELLES / OMAN / PAKISTAN / SOMALIA / MADAGASCAR / IRAN /
UAE / YEMEN / COMORES / MOZAMBIQUE / KENYA / TANZANIA /
BANGLADESH / CROZET ISLANDS / KERGUELEN ISLANDS / SOUTH AFRICA / SI NGAPORE

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. 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 -0100Z 12 0CT 2011

COORDINATES -3.3 NORTH 95.9 EAST

LOCATI ON NORTHERN SUMATRA INDONESIA

9.2 MAGNI TUDE

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
SABANG ID TELUKDALAM, ID PADANG, ID	0. 6N	095. 3E 097. 8E 100. 4E	0207Z	5. 3M / 17. 4FT 7. 5M / 24. 6FT 1. 5M / 4. 9FT	19MI N

LAT - LATITUDE (N-NORTH, S-SOUTH)
LON - LONGITUDE (E-EAST, W-WEST)
TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
AMPL - TSUAMI AMPLITUDE MEASUREMENT (ED RELATIVE TO NORMAL SEA LEVEL. IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT. VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).

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

#### **EVALUATION**

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY ALREADY HAVE BEEN DESTRUCTIVE ALONG SOME COASTS.

BASED ON THESE DATA THE THREAT CONTINUES FOR ALL COASTAL AREAS OF THE INDIAN OCEAN. FOR THOSE 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 PASSED. 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 AUTHORITIES.

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.

LOCATI ON	FORECAST POINT	COORDI NATES	ARRIVAL TIME
I NDONESI A	SIMEULUE	2.5N 96.0E	0138Z 12 OCT

I NDI A	BANDA_ACEH SI BERUT PADANG BENGKULU CI LACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY GULF_OF_KUTCH COCOS_I SLAND NORTH_WEST_CAPE CAPE_I NSPI RATI O PERTH AUGUSTA GERALDTOWN CAPE_LEVEQUE ESPERANCE KI NGSTON_SOUTH_HEARD_I SLAND EUCLA_MOTEL HOBART DARWI N PHUKET KO_PHRA_THONG KO_TARUTAO CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI YANGON TRI NCOMALEE	5. 5N 95. 1E 1. 5S 98. 7E 0. 9S 100. 1E 3. 9S 102. 0E 7. 8S 108. 9E 5. 7S 105. 3E 8. 7S 115. 3E 3. 8N 98. 8E 10. 0S 123. 4E 8. 7S 115. 3E 7. 1N 93. 6E 10. 7N 92. 3E 11. 9N 92. 7E 13. 3N 92. 6E 13. 4N 80. 4E 17. 2N 82. 7E 8. 3N 76. 9E 13. 3N 74. 4E 18. 8N 72. 6E 22. 7N 68 9E	0152Z 12 0CT 0215Z 12 0CT 0256Z 12 0CT 0308Z 12 0CT 0422Z 12 0CT 0431Z 12 0CT 0506Z 12 0CT 0546Z 12 0CT 0506Z 12 0CT 0506Z 12 0CT 0506Z 12 0CT 0217Z 12 0CT 0315Z 12 0CT 0335Z 12 0CT 0335Z 12 0CT 0335Z 12 0CT 0335Z 12 0CT 0430Z 12 0CT 0456Z 12 0CT 0456Z 12 0CT 0456Z 12 0CT 0639Z 12 0CT 0639Z 12 0CT 0906Z 12 0CT 0906Z 12 0CT
AUSTRALI A	COCOS_I SLAND NORTH_WEST_CAPE CAPE_I NSPI RATI O PERTH AUGUSTA GERALDTOWN CAPE_LEVEQUE ESPERANCE KI NGSTON_SOUTH_ HEARD_I SLAND EUCLA_MOTEL HOBART DARWI N	12. 1S 96. 7E 21. 5S 113. 9E 25. 9S 113. 0E 32. 0S 115. 3E 34. 3S 114. 7E 28. 6S 114. 3E 16. 1S 122. 6E 34. 0S 121. 8E 37. 0S 139. 4E 54. 0S 73. 5E 31. 8S 128. 9E 43. 3S 147. 6E	0330Z 12 0CT 0543Z 12 0CT 0543Z 12 0CT 0645Z 12 0CT 0716Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 1023Z 12 0CT 1023Z 12 0CT 1052Z 12 0CT 1100Z 12 0CT 1133Z 12 0CT 1153Z 12 0CT
THAI LAND	PHUKET	8. ON 98. 2E	0332Z 12 0CT
	KO_PHRA_THONG	9. 1N 98. 2E	0422Z 12 0CT
MYANMAR	CHEDUBA_I SLAND CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI	18. 9N 93. 4E 18. 9N 93. 4E 15. 9N 94. 3E 20. 0N 92. 9E 12. 8N 98. 4E 16. 5N 96. 4E	0452Z 12 0CT 0432Z 12 0CT 0432Z 12 0CT 0442Z 12 0CT 0510Z 12 0CT 0549Z 12 0CT 0943Z 12 0CT
SRI LANKA	DONDRA_HEAD	5. 9N 80. 6E	0354Z 12 0C1
	COLOMBO	6. 9N 79. 8E	0421Z 12 0CT
MALDI VES	JAFFNA	9. 9N 80. 0E	0532Z 12 0CT
	GAN	0. 6S 73. 2E	0446Z 12 0CT
	MALE	4. 2N 73. 6E	0451Z 12 0CT
	MINICOV	8. 3N 73. 0E	0514Z 12 0CT
UNITED KINGDOM MALAYSIA	DI EGO_GARCI A GEORGETOWN PORT_DI CKSON	7. 3S 72. 4E 5. 4N 100. 1E 2. 5N 101. 7E	0504Z 12 0CT 0522Z 12 0CT 1002Z 12 0CT
MAURI TI US REUNI ON SEYCHELLES OMAN	PORT_LOUIS ST_DENIS VICTORIA SALALAH MUSCAT	20. 0S 57. 3E 20. 8S 55. 2E 4. 5S 55. 6E 16. 9N 54. 1E 23. 9N 58. 6E	0800Z 12 0CT 0814Z 12 0CT 0828Z 12 0CT 0838Z 12 0CT 0844Z 12 0CT
PAKI STAN	DUQM	19. 7N 57. 8E	0853Z 12 0CT
	GWADAR	25. 1N 62. 4E	0846Z 12 0CT
SOMALI A	KARACHI	24. 7N 66. 9E	0938Z 12 0CT
	CAPE_GUARO	11. 9N 51. 4E	0848Z 12 0CT
	HI LALAYA	6. 4N 49. 1E	0849Z 12 0CT
	MOGADI SHU	2. 0N 45. 5E	0904Z 12 0CT
MADAGASCAR	KAAMBOONI	1. 5S 41. 9E	0932Z 12 0CT
	ANTSI RANANA	12. 1S 49. 5E	0850Z 12 0CT
	TOAMASI NA	17. 8S 49. 6E	0902Z 12 0CT
	MANAKARA	22. 2S 48. 2E	0917Z 12 0CT
	MAHAJANGA	15. 4S 46. 2E	0954Z 12 0CT
	CAP_STE_MARI E	25. 8S 45. 2E	1016Z 12 0CT

I RAN UAE YEMEN	TOLI ARA GAVATER FUJAI RAH AL_MUKALLA ADEN	23. 4S 25. 0N 25. 1N 14. 5N 13. 0N	43. 6E 61. 3E 56. 4E 49. 2E 45. 2E	1041Z 12 0CT 0852Z 12 0CT 0930Z 12 0CT 0937Z 12 0CT 1023Z 12 0CT
COMORES	MORONI	11. 6S	43. 2E	0951Z 12 0CT
MOZAMBI QUE	CABO_DELGADO	10. 7S	40. 7E	1008Z 12 OCT
	ANGOCHE	15. 5S	40. 6E	1040Z 12 0CT
	QUELI MANE	18. OS	37. 1E	1207Z 12 OCT
	MAPUTO	25. 9S	32. 8E	1255Z 12 OCT
	BEI RA	19. 9S	35. 1E	1317Z 12 OCT
KENYA	MOMBASA	4. OS	39. 7E	1009Z 12 0CT
TANZANI A	LINDI	9. 8S	39. 9E	1009Z 12 0CT
	DAR_ES_SALAAM	6. 7S	39. 4E	1012Z 12 OCT
BANGLADESH	CHITTAGONG	22. 7N	91. 2E	1025Z 12 OCT
CROZET ISLANDS	CROZET_I SLANDS	46. 4S	51. 8E	1030Z 12 0CT
KERGUELEN ISLAN	PORT_AUX_FRANCA	49. OS	69. 1E	1111Z 12 OCT
SOUTH AFRICA	PRINCE_EDWARD_I	46. 6S	37. 6E	1205Z 12 OCT
	DURBAN	29. 8S	31. 2E	1209Z 12 0CT
	PORT_ELI ZABETH	33. 9S	25. 8E	1311Z 12 OCT
CLNCADODE	CAPE_TOWN	34. 1S	18. 0E	1410Z 12 0CT
SI NGAPORE	SI NGAPORE	1. 2N	103. 8E	1550Z 12 0CT

TEST...TSUNAMI BULLETIN NUMBER 005. PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS ISSUED AT 0445Z 12 OCT 2011

THIS BULLETIN IS FOR ALL AREAS OF THE INDIAN OCEAN.

... AN INDIAN-OCEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

INDONESIA / INDIA / AUSTRALIA / THAILAND / MYANMAR / SRI LANKA / MALDIVES / UNITED KINGDOM / MALAYSIA / MAURITIUS / REUNION /
SEYCHELLES / OMAN / PAKISTAN / SOMALIA / MADAGASCAR / IRAN /
UAE / YEMEN / COMORES / MOZAMBIQUE / KENYA / TANZANIA /
BANGLADESH / CROZET ISLANDS / KERGUELEN ISLANDS / SOUTH AFRICA / SI NGAPORE

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AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME -0100Z 12 0CT 2011

COORDINATES -3.3 NORTH 95.9 EAST

LOCATI ON NORTHERN SUMATRA INDONESIA

9.2 **MAGNI TUDE** 

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
SABANG ID TELUKDALAM, ID PADANG, ID COCOS IS, AU CHRISTMAS IS, AU SIBOLGA, ID TRINCONMALEE, LK	0. 6N 1. 0S 12. 1S 10. 4S 1. 7N 8. 6N	095. 3E 097. 8E 100. 4E 096. 9E 105. 7E 98. 8E 81. 2E	0207Z 0316Z 0332Z 0339Z 0349Z 0350Z	5. 3M / 17. 4FT 7. 5M / 24. 6FT 1. 5M / 4. 9FT 0. 3M / 1. 1FT 0. 6M / 2. 0FT 4. 0M / 13. 1FT 3. 8M / 12. 5FT	17MI N 19MI N 17MI N 15MI N 20MI N 18MI N 18MI N
COLOMBO, LK	6. 9N	79. 9E	0423Z	2.2M / 7.2FT	21MIN

- LATITUDE (N-NORTH, S-SOUTH) - LONGITUDE (E-EAST, W-WEST) LAT

LON

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

AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS (M) AND FEET (FT).

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

#### **EVALUATION**

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY ALREADY HAVE BEEN DESTRUCTIVE ALONG SOME COASTS.

BASED ON THESE DATA THE THREAT CONTINUES FOR ALL COASTAL AREAS OF THE INDIAN OCEAN. FOR THOSE 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 PASSED. 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 AUTHORITIES.

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.

LOCATI ON	FORECAST POINT	COORDI NATES	ARRIVAL TIME
I NDONESI A	SIMEULUE BANDA_ACEH SI BERUT PADANG BENGKULU CI LACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI	2. 5N 96. 0E 5. 5N 95. 1E 1. 5S 98. 7E 0. 9S 100. 1E 3. 9S 102. 0E 7. 8S 108. 9E 5. 7S 105. 3E 8. 7S 115. 3E 3. 8N 98. 8E 10. 0S 123. 4E 8 7S 115. 3E	0138Z 12 0CT 0152Z 12 0CT 0215Z 12 0CT 0256Z 12 0CT 0308Z 12 0CT 0422Z 12 0CT 0431Z 12 0CT 0506Z 12 0CT 0546Z 12 0CT 0605Z 12 0CT
I NDI A	GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY GULE OF KUTCH	7. 1N 93. 6E 10. 7N 92. 3E 11. 9N 92. 7E 13. 3N 92. 6E 13. 4N 80. 4E 17. 2N 82. 7E 8. 3N 76. 9E 13. 3N 74. 4E 18. 8N 72. 6E	0217Z 12 0CT 0305Z 12 0CT 0315Z 12 0CT 0335Z 12 0CT 0430Z 12 0CT 0456Z 12 0CT 0504Z 12 0CT 0639Z 12 0CT 0906Z 12 0CT
AUSTRALI A	FORECAST POINT  SIMEULUE BANDA_ACEH SIBERUT PADANG BENGKULU CILACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI GREAT_NICOBAR LITTLE_ANDAMAN PORT_BLAIR NORTH_ANDAMAN CHENNAI KAKINADA TRIVANDRUM MANGALORE BOMBAY GULF_OF_KUTCH COCOS_ISLAND NORTH_WEST_CAPE CAPE_INSPIRATIO PERTH AUGUSTA GERALDTOWN CAPE_LEVEQUE ESPERANCE KINGSTON_SOUTH_HEARD_ISLAND EUCLA_MOTEL HOBART DARWIN PHUKET KO_PHRA_THONG KO_TARUTAO CHEDUBA_ISLAND PYINKAYAING SITTWE MERGUI YANGON TRINCOMALEE DONDRA HEAD	12. 1S 96. 7E 21. 5S 113. 9E 25. 9S 113. 0E 32. 0S 115. 3E 34. 3S 114. 7E 28. 6S 114. 3E 16. 1S 122. 6E 34. 0S 121. 8E 37. 0S 139. 4E 54. 0S 73. 5E 31. 8S 128. 9E 43. 3S 147. 6E	0330Z 12 0CT 0543Z 12 0CT 0645Z 12 0CT 0657Z 12 0CT 0716Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0849Z 12 0CT 1023Z 12 0CT 1052Z 12 0CT 1100Z 12 0CT 1133Z 12 0CT
THAI LAND	DARWI N PHUKET KO_PHRA_THONG	12. 1S 130. 7E 8. ON 98. 2E 9. 1N 98. 2E	1153Z 12 0CT 0332Z 12 0CT 0422Z 12 0CT
MYANMAR	KO_TARUTAO CHEDUBA_I SLAND CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI	6. 6N 99. 6E 18. 9N 93. 4E 18. 9N 93. 4E 15. 9N 94. 3E 20. 0N 92. 9E 12. 8N 98. 4E	0452Z 12 0CT 0432Z 12 0CT 0432Z 12 0CT 0442Z 12 0CT 0510Z 12 0CT 0549Z 12 0CT
SRI LANKA	COLOMBO	6. 9N 79. 8E	0421Z 12 0CT
MALDI VES	JAFFNA GAN MALE	9. 9N 80. 0E 0. 6S 73. 2E 4. 2N 73. 6E	0532Z 12 0CT 0446Z 12 0CT 0451Z 12 0CT
UNITED KINGDOM MALAYSIA	MI NI COV DI EGO_GARCI A GEORGETOWN PORT_DI CKSON	8. 3N 73. 0E 7. 3S 72. 4E 5. 4N 100. 1E 2. 5N 101. 7E	0514Z 12 0CT 0504Z 12 0CT 0522Z 12 0CT 1002Z 12 0CT
MAURITIUS REUNION SEYCHELLES OMAN	PORT_LOUIS ST_DENIS VICTORIA SALALAH MUSCAT	20. 0S 57. 3E 20. 8S 55. 2E 4. 5S 55. 6E 16. 9N 54. 1E 23. 9N 58. 6E	0800Z 12 0CT 0814Z 12 0CT 0828Z 12 0CT 0838Z 12 0CT 0844Z 12 0CT
PAKI STAN	DUQM GWADAR KARACHI	19. 7N 57. 8E 25. 1N 62. 4E 24. 7N 66. 9E	0846Z 12 0CT 0938Z 12 0CT
SOMALI A	CAPE_GUARO HILALAYA MOGADISHU KAAMBOONI	11. 9N 51. 4E 6. 4N 49. 1E 2. 0N 45. 5E 1. 5S 41. 9E	0848Z 12 0CT 0849Z 12 0CT 0904Z 12 0CT 0932Z 12 0CT

MADAGASCAR	ANTSI RANANA TOAMASI NA MANAKARA MAHAJANGA CAP_STE_MARI E	12. 1S 17. 8S 22. 2S 15. 4S 25. 8S	49. 5E 49. 6E 48. 2E 46. 2E 45. 2E	0850Z 12 0CT 0902Z 12 0CT 0917Z 12 0CT 0954Z 12 0CT 1016Z 12 0CT
	TOLI ARA	23. 4S	43. 6E	1041Z 12 0CT
I RAN	GAVATER	25. ON	61. 3E	0852Z 12 0CT
UAE	FUJAI RAH	25. 1N	56. 4E	0930Z 12 0CT
YEMEN	AL_MUKALLA	14. 5N	49. 2E	0937Z 12 0CT
	ADEN	13. ON	45. 2E	1023Z 12 OCT
COMORES	MORONI	11. 6S	43. 3E	0951Z 12 OCT
MOZAMBI QUE	CABO_DELGADO	10. 7S	40. 7E	1008Z 12 OCT
	ANGOCHE	15. 5S	40. 6E	1040Z 12 OCT
	QUELI MANE	18. OS	37. 1E	1207Z 12 OCT
	MAPUTO	25. 9S	32. 8E	1255Z 12 OCT
	BEIRA	19. 9S	35. 1E	1317Z 12 OCT
KENYA	MOMBASA	4. 0S	39. 7E	1009Z 12 OCT
TANZANI A	LINDI	9. 8S	39. 9E	1009Z 12 0CT
	DAR_ES_SALAAM	6. 7S	39. 4E	1012Z 12 OCT
BANGLADESH	CHI TTAGONG	22. 7N	91. 2E	1025Z 12 0CT
CROZET ISLANDS	CROZET_I SLANDS	46. 4S	51. 8E	1030Z 12 0CT
KERGUELEN ISLAN	PORT_AUX_FRANCA	49. OS	69. 1E	1111Z 12 0CT
SOUTH AFRICA	PRINCE_EDWARD_I	46. 6S	37. 6E	1205Z 12 0CT
	DURBAN DODT FLIZABETH	29. 8S	31. 2E	1209Z 12 0CT 1311Z 12 0CT
	PORT_ELI ZABETH	33. 9S	25. 8E	1311Z 12 0CT 1410Z 12 0CT
SI NGAPORE	CAPE_TOWN SINGAPORE	34. 1S 1. 2N	18. 0E 103. 8E	1550Z 12 0CT
STINGAPURE	STINGAPURE	I.∠IV	IUS. OE	10002 12 001

TEST...TSUNAMI BULLETIN NUMBER 006. PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS ISSUED AT 0545Z 12 OCT 2011

THIS BULLETIN IS FOR ALL AREAS OF THE INDIAN OCEAN.

... AN INDIAN-OCEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

INDONESIA / INDIA / AUSTRALIA / THAILAND / MYANMAR / SRI LANKA / MALDIVES / UNITED KINGDOM / MALAYSIA / MAURITIUS / REUNION /
SEYCHELLES / OMAN / PAKISTAN / SOMALIA / MADAGASCAR / IRAN /
UAE / YEMEN / COMORES / MOZAMBIQUE / KENYA / TANZANIA /
BANGLADESH / CROZET ISLANDS / KERGUELEN ISLANDS / SOUTH AFRICA / SI NGAPORE

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AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME -0100Z 12 0CT 2011

COORDINATES -3.3 NORTH 95.9 EAST

LOCATI ON NORTHERN SUMATRA INDONESIA

9.2 **MAGNI TUDE** 

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
SABANG ID TELUKDALAM, ID PADANG, ID COCOS IS, AU CHRISTMAS IS, AU SIBOLGA, ID TRINCONMALEE, LK COLOMBO, LK KO TAPHAO NOI, TH GAN, MV	5. 8N	095. 3E	0140Z	5. 3M / 17. 4FT	17MI N
	0. 6N	097. 8E	0207Z	7. 5M / 24. 6FT	19MI N
	1. 0S	100. 4E	0316Z	1. 5M / 4. 9FT	17MI N
	12. 1S	096. 9E	0332Z	0. 3M / 1. 1FT	15MI N
	10. 4S	105. 7E	0339Z	0. 6M / 2. 0FT	20MI N
	1. 7N	98. 8E	0349Z	4. 0M / 13. 1FT	18MI N
	8. 6N	81. 2E	0350Z	3. 8M / 12. 5FT	18MI N
	6. 9N	79. 9E	0423Z	2. 2M / 7. 2FT	21MI N
	7. 8N	098. 4E	0441Z	4. 4M / 14. 4FT	18MI N
	0. 7S	73. 2E	0451Z	2. 9M / 9. 5FT	18MI N
MALE, MV	4. 2N	73. 5E	0444Z	3.3M / 10.8FT	16MI N
SITTWE, MM	20. 2N	92. 9E	0500Z	1.2M / 3.9FT	12MI N
HANIMAADHOO, MV	6. 8N	73. 2E	0455Z	2.9M / 9.5FT	18MI N
DIEGO GARCIA, UK	7. 3S	72. 4E	0457Z	1.7M / 5.6FT	18MI N

- LATITUDE (N-NORTH, S-SOUTH)
- LONGITUDE (E-EAST, W-WEST) LAT

LON

TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME) AMPL - TSUNAMI AMPLITUDE MEASURÈD RELATIVE TO NORMAL SEA LÉVEL.

IT IS ... NOT... CREST-TO-TROUGH WAVE HEIGHT. VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT)

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

# **EVALUATION**

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY ALREADY HAVE BEEN DESTRUCTIVE ALONG SOME COASTS.

BASED ON THESE DATA THE THREAT CONTINUES FOR ALL COASTAL AREAS OF THE INDIAN OCEAN. FOR THOSE 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 PASSED. 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 AUTHORITIES.

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.

LOCATI ON	FORECAST POINT	COORDI NATES	ARRIVAL TIME
I NDONESI A	SIMEULUE BANDA_ACEH SIBERUT PADANG BENGKULU CILACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI	2. 5N 96. 0E 5. 5N 95. 1E 1. 5S 98. 7E 0. 9S 100. 1E 3. 9S 102. 0E 7. 8S 108. 9E 5. 7S 105. 3E 8. 7S 115. 3E 3. 8N 98. 8E 10. 0S 123. 4E 8 7S 115. 3F	0138Z 12 0CT 0152Z 12 0CT 0215Z 12 0CT 0256Z 12 0CT 0308Z 12 0CT 0422Z 12 0CT 0431Z 12 0CT 0506Z 12 0CT 0546Z 12 0CT 0605Z 12 0CT
I NDI A	GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY	7. 1N 93. 6E 10. 7N 92. 3E 11. 9N 92. 7E 13. 3N 92. 6E 13. 4N 80. 4E 17. 2N 82. 7E 8. 3N 76. 9E 13. 3N 74. 4E 18. 8N 72. 6E	0217Z 12 0CT 0305Z 12 0CT 0315Z 12 0CT 0335Z 12 0CT 0430Z 12 0CT 0456Z 12 0CT 0504Z 12 0CT 0639Z 12 0CT 0906Z 12 0CT
AUSTRALI A	FORECAST POINT  SI MEULUE BANDA_ACEH SI BERUT PADANG BENGKULU CI LACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY GULF_OF_KUTCH COCOS_I SLAND NORTH_WEST_CAPE CAPE_I NSPI RATI O PERTH AUGUSTA GERALDTOWN CAPE_LEVEQUE ESPERANCE KI NGSTON_SOUTH_HEARD_I SLAND EUCLA_MOTEL HOBART DARWI N PHUKET KO_PHRA_THONG KO_TARUTAO CHEDUBA_I SLAND CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI YANGON TRI NCOMALEE DONDRA_HEAD	12. 1S 96. 7E 12. 1S 96. 7E 21. 5S 113. 9E 25. 9S 113. 0E 32. 0S 115. 3E 34. 3S 114. 7E 28. 6S 114. 3E 16. 1S 122. 6E 34. 0S 121. 8E 37. 0S 139. 4E 54. 0S 73. 5E 31. 8S 128. 9E 43. 3S 147. 6E	0330Z 12 0CT 0543Z 12 0CT 0645Z 12 0CT 0657Z 12 0CT 0716Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0849Z 12 0CT 1023Z 12 0CT 1052Z 12 0CT 1100Z 12 0CT
THAI LAND	DARWI N PHUKET KO_PHRA_THONG KO_TARUTAO	12. 1S 130. 7E 8. ON 98. 2E 9. 1N 98. 2E 6. 6N 99. 6E	1153Z 12 0CI 0332Z 12 0CT 0422Z 12 0CT
MYANMAR	CHEDUBA_I SLAND CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI	18. 9N 93. 4E 18. 9N 93. 4E 15. 9N 94. 3E 20. 0N 92. 9E 12. 8N 98. 4E	0432Z 12 0CT 0432Z 12 0CT 0442Z 12 0CT 0510Z 12 0CT 0549Z 12 0CT
SRI LANKA	YANGON TRI NCOMALEE DONDRA_HEAD COLOMBO JAFFNA	16. 5N 96. 4E 8. 7N 81. 3E 5. 9N 80. 6E 6. 9N 79. 8E 9. 9N 80. 0E	0943Z 12 0CT 0347Z 12 0CT 0354Z 12 0CT 0421Z 12 0CT 0532Z 12 0CT
MALDI VES	GAN MALE MI NI COV	0. 6S 73. 2E 4. 2N 73. 6E 8. 3N 73. 0E	0446Z 12 0CT 0451Z 12 0CT 0514Z 12 0CT
UNITED KINGDOM MALAYSIA	DI EGO_GARCI A GEORGETOWN PORT_DI CKSON	7. 3S 72. 4E 5. 4N 100. 1E 2. 5N 101. 7E	0504Z 12 0CT 0504Z 12 0CT 0522Z 12 0CT 1002Z 12 0CT
MAURITIUS REUNION SEYCHELLES OMAN	PORT_LOUIS ST_DENIS VICTORIA SALALAH MUSCAT	20. 0S 57. 3E 20. 8S 55. 2E 4. 5S 55. 6E 16. 9N 54. 1E 23. 9N 58. 6E	0800Z 12 0CT 0814Z 12 0CT 0828Z 12 0CT 0838Z 12 0CT 0844Z 12 0CT

PAKI STAN	DUQM GWADAR	19. 7N 25. 1N	57. 8E 62. 4E	0853Z 12 0CT 0846Z 12 0CT
	KARACHI	24. 7N	66. 9E	0938Z 12 0CT
SOMALI A	CAPE_GUARO	11. 9N	51. 4E	0848Z 12 OCT
	HI LALAYA	6. 4N	49. 1E	0849Z 12 OCT
	MOGADI SHU	2. ON	45. 5E	0904Z 12 0CT
	KAAMBOONI	1. 5S	41. 9E	0932Z 12 0CT
MADAGASCAR	ANTSI RANANA	12. 1S	49. 5E	0850Z 12 0CT
	TOAMASINA	17. 8S	49. 6E	0902Z 12 0CT
	MANAKARA	22. 2S	48. 2E	0917Z 12 0CT
	MAHAJANGA	15. 4S	46. 2E	0954Z 12 0CT
	CAP_STE_MARIE	25. 8S	45. 2E	1016Z 12 0CT
I RAN	TOLI ARA	23. 4S 25. ON	43. 6E 61. 3E	1041Z 12 0CT 0852Z 12 0CT
UAE	GAVATER FUJAI RAH	25. UN 25. 1N	56. 4E	0930Z 12 0CT
YEMEN	AL MUKALLA	14. 5N	49. 2E	0930Z 12 0CT
ILIVILIN	ADEN	13. ON	45. 2E	1023Z 12 0CT
COMORES	MORONI	11. 6S	43. 3E	0951Z 12 0CT
MOZAMBI QUE	CABO_DELGADO	10. 7S	40. 7E	1008Z 12 0CT
	ANGOCHE	15. 5S	40. 6E	1040Z 12 0CT
	QUELI MANE	18. 0S	37. 1E	1207Z 12 0CT
	MAPUTO	25. 9S	32. 8E	1255Z 12 OCT
	BEI RA	19. 9S	35. 1E	1317Z 12 OCT
KENYA	MOMBASA	4. 0S	39. 7E	1009Z 12 0CT
TANZANI A	LINDI	9. 8S	39. 9E	1009Z 12 0CT
	DAR_ES_SALAAM	6. 7S	39. 4E	1012Z 12 0CT
BANGLADESH	CHITTAGONG	22. 7N	91. 2E	1025Z 12 OCT
CROZET ISLANDS	CROZET_I SLANDS	46. 4S	51. 8E	1030Z 12 0CT
KERGUELEN ISLAN	PORT_AUX_FRANCA	49. OS	69. 1E	1111Z 12 OCT
SOUTH AFRICA	PRI NCE_EDWARD_I	46. 6S	37. 6E	1205Z 12 0CT
	DURBAN	29. 8S	31. 2E	1209Z 12 0CT
	PORT_ELI ZABETH CAPE_TOWN	33. 9S 34. 1S	25. 8E 18. 0E	1311Z 12 OCT 1410Z 12 OCT
SINGAPORE	SI NGAPORE		103. 8E	1550Z 12 0CT
JI NOAF UKL	JI NOAF UNL	I. ∠IV	103. OE	13302 12 001

TEST...TSUNAMI BULLETIN NUMBER 007. PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS ISSUED AT 0645Z 12 OCT 2011

THIS BULLETIN IS FOR ALL AREAS OF THE INDIAN OCEAN.

... AN INDIAN-OCEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

INDONESIA / INDIA / AUSTRALIA / THAILAND / MYANMAR / SRI LANKA / MALDIVES / UNITED KINGDOM / MALAYSIA / MAURITIUS / REUNION /
SEYCHELLES / OMAN / PAKISTAN / SOMALIA / MADAGASCAR / IRAN /
UAE / YEMEN / COMORES / MOZAMBIQUE / KENYA / TANZANIA /
BANGLADESH / CROZET ISLANDS / KERGUELEN ISLANDS / SOUTH AFRICA / SI NGAPORE

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. 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

0100Z 12 0CT 2011 ORIGIN TIME -

COORDINATES -3.3 NORTH 95. 9 EAST

LOCATI ON NORTHERN SUMATRA INDONESIA

9.2 **MAGNI TUDE** 

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
SABANG ID	5. 8N	095. 3E	0140Z	5. 3M / 17. 4FT	17MI N
TELUKDALAM, ID	0. 6N	097.8E	0207Z	7.5M / 24.6FT	19MI N
PADANG, ID	1. 0S	100. 4E	0316Z	1.5M / 4.9FT	17MIN
COCOS IS, AU	12. 1S	096. 9E	0332Z	O. 3M / 1.1FT	15MIN
CHRISTMAS IS, AU	10. 4S	105. 7E	0339Z	O.6M / 2.0FT	20MIN
SIBOLGA, ID	1. 7N	98. 8E	0349Z	4.OM / 13.1FT	18MI N
TRINCONMALEE, LK	8. 6N	81. 2E	0350Z	3.8M / 12.5FT	18MI N
COLOMBO, LK	6. 9N	79. 9E	0423Z	2.2M / 7.2FT	21MIN
KO TAPHAO NOI, TH	7. 8N	098. 4E	0441Z	4.4M / 14.4FT	18MI N
GAN, MV	0. 7S	73. 2E	0451Z	2.9M / 9.5FT	18MI N
MALE, MV	4. 2N	73. 5E	0444Z	3.3M / 10.8FT	16MIN
SITTWE, MM	20. 2N	92. 9E	0500Z	1.2M / 3.9FT	12MIN
HANI MAADHOO, MV	6. 8N	73. 2E	0455Z	2.9M / 9.5FT	18MI N
	7. 3S	72. 4E	0457Z	1.7M / 5.6FT	18MI N
LANGKAWI, MY	6. 9N	99. 8E	0535Z	2.3M / 7.5FT	16MIN

- LATITUDE (N-NORTH, S-SOUTH) - LONGITUDE (E-EAST, W-WEST)

LON

TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME) AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LÉVEL.

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VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT)

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TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

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LOCATI ON	FORECAST POINT	COORDI NATES	ARRIVAL TIME
I NDONESI A	SIMEULUE BANDA_ACEH SIBERUT PADANG BENGKULU CILACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI	2. 5N 96. 0E 5. 5N 95. 1E 1. 5S 98. 7E 0. 9S 100. 1E 3. 9S 102. 0E 7. 8S 108. 9E 5. 7S 105. 3E 8. 7S 115. 3E 3. 8N 98. 8E 10. 0S 123. 4E 8. 7S 115. 3F	0138Z 12 0CT 0152Z 12 0CT 0215Z 12 0CT 0256Z 12 0CT 0308Z 12 0CT 0422Z 12 0CT 0431Z 12 0CT 0506Z 12 0CT 0546Z 12 0CT 0605Z 12 0CT
I NDI A	GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY	7. 1N 93. 6E 10. 7N 92. 3E 11. 9N 92. 7E 13. 3N 92. 6E 13. 4N 80. 4E 17. 2N 82. 7E 8. 3N 76. 9E 13. 3N 74. 4E 18. 8N 72. 6E	0217Z 12 0CT 0305Z 12 0CT 0315Z 12 0CT 0335Z 12 0CT 0430Z 12 0CT 0456Z 12 0CT 0504Z 12 0CT 0639Z 12 0CT 0906Z 12 0CT
AUSTRALI A	FORECAST POINT  SI MEULUE BANDA_ACEH SI BERUT PADANG BENGKULU CI LACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY GULF_OF_KUTCH COCOS_I SLAND NORTH_WEST_CAPE CAPE_I NSPI RATI O PERTH AUGUSTA GERALDTOWN CAPE_LEVEQUE ESPERANCE KI NGSTON_SOUTH_HEARD_I SLAND EUCLA_MOTEL HOBART DARWI N PHUKET KO_PHRA_THONG KO_TARUTAO CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI YANGON TRI NCOMALEE DONDRA HEAD	12. 1S 96. 7E 21. 5S 113. 9E 25. 9S 113. 0E 32. 0S 115. 3E 34. 3S 114. 7E 28. 6S 114. 3E 16. 1S 122. 6E 34. 0S 121. 8E 37. 0S 139. 4E 54. 0S 73. 5E 31. 8S 128. 9E 43. 3S 147. 6E	0330Z 12 0CT 0543Z 12 0CT 0543Z 12 0CT 0645Z 12 0CT 0716Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0849Z 12 0CT 1023Z 12 0CT 1052Z 12 0CT 1100Z 12 0CT 1133Z 12 0CT
THAI LAND	DARWI N PHUKET KO_PHRA_THONG	12. 1S 130. 7E 8. ON 98. 2E 9. 1N 98. 2E	1153Z 12 0CT 0332Z 12 0CT 0422Z 12 0CT
MYANMAR	KO_TARUTAO CHEDUBA_I SLAND CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI	6. 6N 99. 6E 18. 9N 93. 4E 18. 9N 93. 4E 15. 9N 94. 3E 20. 0N 92. 9E 12. 8N 98. 4E	0452Z 12 0CT 0432Z 12 0CT 0432Z 12 0CT 0442Z 12 0CT 0510Z 12 0CT 0549Z 12 0CT
SRI LANKA	YANGON TRI NCOMALEE DONDRA_HEAD COLOMBO JAFFNA	16. 5N 96. 4E 8. 7N 81. 3E 5. 9N 80. 6E 6. 9N 79. 8E 9. 9N 80. 0E	0943Z 12 0CT 0347Z 12 0CT 0354Z 12 0CT 0421Z 12 0CT 0532Z 12 0CT
MALDI VES	GAN MALE	0. 6S 73. 2E 4. 2N 73. 6E	0446Z 12 0CT 0451Z 12 0CT
UNITED KINGDOM MALAYSIA	MI NI COV DI EGO_GARCI A GEORGETOWN PORT_DI CKSON	8. 3N 73. 0E 7. 3S 72. 4E 5. 4N 100. 1E 2. 5N 101. 7E	0514Z 12 0CT 0504Z 12 0CT 0522Z 12 0CT 1002Z 12 0CT
MAURI TI US REUNI ON SEYCHELLES OMAN	PORT_LOUIS ST_DENIS VICTORIA SALALAH	20. 0S 57. 3E 20. 8S 55. 2E 4. 5S 55. 6E 16. 9N 54. 1E	0800Z 12 0CT 0814Z 12 0CT 0828Z 12 0CT 0838Z 12 0CT

PAKI STAN	MUSCAT DUQM GWADAR	19.7N 5	8. 6E 7. 8E 2. 4E	0844Z 12 0CT 0853Z 12 0CT 0846Z 12 0CT
TARTSTAN	KARACHI		6. 9E	0938Z 12 0CT
SOMALI A	CAPE GUARO		1. 4E	0848Z 12 0CT
	HI LAŪAYA	6.4N 4	9. 1E	0849Z 12 OCT
	MOGADI SHU		5. 5E	0904Z 12 OCT
MADAGAGGAD	KAAMBOONI		1. 9E	0932Z 12 0CT
MADAGASCAR	ANTSI RANANA		9. 5E	0850Z 12 0CT 0902Z 12 0CT
	TOAMASINA MANAKARA		9. 6E 8. 2E	0902Z 12 0CT 0917Z 12 0CT
	MAHAJANGA		6. 2E	09172 12 0CT 0954Z 12 0CT
	CAP_STE_MARIE		5. 2E	1016Z 12 0CT
	TOLI ARA		3. 6E	1041Z 12 OCT
I RAN	GAVATER		1. 3E	0852Z 12 OCT
UAE	FUJAI RAH		6. 4E	0930Z 12 0CT
YEMEN	AL_MUKALLA		9. 2E	0937Z 12 0CT
COMORES	ADEN MORONI		5. 2E 3. 3E	1023Z 12 0CT 0951Z 12 0CT
MOZAMBI QUE	CABO DELGADO		3. 3E 0. 7E	1008Z 12 0CT
WOZAWDI QOL	ANGOCHE		0. 7E 0. 6E	1040Z 12 0CT
	QUELI MANE		7. 1E	1207Z 12 0CT
	MAPUTO	25. 9S 3	2. 8E	1255Z 12 OCT
	BEIRA		5. 1E	1317Z 12 OCT
KENYA	MOMBASA		9. 7E	1009Z 12 0CT
TANZANI A	LINDI		9. 9E	1009Z 12 0CT
BANGLADESH	DAR_ES_SALAAM CHITTAGONG		9. 4E 1. 2E	1012Z 12 0CT 1025Z 12 0CT
CROZET I SLANDS	CROZET_I SLANDS		1. 2E 1. 8E	1030Z 12 0CT
KERGUELEN ISLAN	PORT_AUX_FRANCA		9. 1E	1111Z 12 OCT
SOUTH AFRICA	PRI NCE_EDWARD_I		7. 6E	1205Z 12 OCT
	DURBAN		1. 2E	1209Z 12 OCT
	PORT_ELI ZABETH		5. 8E	1311Z 12 OCT
CLNCADODE	CAPE_TOWN		8. 0E	1410Z 12 0CT
SI NGAPORE	SINGAPORE	1. 2N 10	3. 8E	1550Z 12 0CT

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

THE JAPAN METEOROLOGICAL AGENCY MAY ISSUE ADDITIONAL INFORMATION FOR THIS EVENT. IN THE CASE OF CONFLICTING INFORMATION...THE MORE CONSERVATIVE INFORMATION SHOULD BE USED FOR SAFETY.

TEST...TSUNAMI BULLETIN NUMBER 008. PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS ISSUED AT 0745Z 12 OCT 2011

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... AN INDIAN-OCEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

INDONESIA / INDIA / AUSTRALIA / THAILAND / MYANMAR / SRI LANKA / MALDIVES / UNITED KINGDOM / MALAYSIA / MAURITIUS / REUNION /
SEYCHELLES / OMAN / PAKISTAN / SOMALIA / MADAGASCAR / IRAN /
UAE / YEMEN / COMORES / MOZAMBIQUE / KENYA / TANZANIA /
BANGLADESH / CROZET ISLANDS / KERGUELEN ISLANDS / SOUTH AFRICA / SI NGAPORE

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AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

0100Z 12 0CT 2011 ORIGIN TIME -

COORDINATES -3.3 NORTH 95. 9 EAST

LOCATI ON NORTHERN SUMATRA INDONESIA

9.2 **MAGNI TUDE** 

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
SABANG ID TELUKDALAM, ID PADANG, ID COCOS IS, AU CHRISTMAS IS, AU SIBOLGA, ID	5. 8N 0. 6N 1. 0S 12. 1S 10. 4S 1. 7N 8. 6N 6. 9N 7. 8N 0. 7S 4. 2N	095. 3E 097. 8E 100. 4E 096. 9E 105. 7E 98. 8E 81. 2E 79. 9E	0140Z 0207Z 0316Z 0332Z 0339Z 0349Z 0350Z 0423Z 0441Z 0451Z 0444Z 0500Z	5. 3M / 17. 4FT 7. 5M / 24. 6FT 1. 5M / 4. 9FT 0. 3M / 1. 1FT 0. 6M / 2. 0FT 4. 0M / 13. 1FT 3. 8M / 12. 5FT 2. 2M / 7. 2FT 4. 4M / 14. 4FT 2. 9M / 9. 5FT 3. 3M / 10. 8FT	PER  17MI N 19MI N 15MI N 20MI N 18MI N 21MI N 21MI N 18MI N 18MI N 16MI N 16MI N 18MI N
DIEGO GARCIA, UK LANGKAWI, MY RODRIGUES, MU	7. 3S 6. 9N 19. 7S	72. 4E 99. 8E 63. 4E	0 . O . <del>_</del>	1.7M / 5.6FT 2.3M / 7.5FT 1.6M / 5.2FT	18MI N 16MI N 16MI N

- LATITUDE (N-NORTH, S-SOUTH)
- LONGITUDE (E-EAST, W-WEST) LAT

LON

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

AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.

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#### **EVALUATION**

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY ALREADY HAVE BEEN DESTRUCTIVE ALONG SOME COASTS.

BASED ON THESE DATA THE THREAT CONTINUES FOR ALL COASTAL AREAS OF THE INDIAN OCEAN. FOR THOSE 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 PASSED. 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 AUTHORITIES.

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.

LOCATI ON	FORECAST POINT	COORDI NATES	ARRIVAL TIME
I NDONESI A	SI MEULUE BANDA_ACEH SI BERUT PADANG BENGKULU CI LACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI BALI	2. 5N 96. 0E 5. 5N 95. 1E 1. 5S 98. 7E 0. 9S 100. 1E 3. 9S 102. 0E 7. 8S 108. 9E 5. 7S 105. 3E 8. 7S 115. 3E 3. 8N 98. 8E 10. 0S 123. 4E 8. 7S 115. 3E	0138Z 12 0CT 0152Z 12 0CT 0215Z 12 0CT 0256Z 12 0CT 0308Z 12 0CT 0422Z 12 0CT 0431Z 12 0CT 0506Z 12 0CT 0546Z 12 0CT 0605Z 12 0CT 0506Z 12 0CT
I NDI A	GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY	7. 1N 93. 6E 10. 7N 92. 3E 11. 9N 92. 7E 13. 3N 92. 6E 13. 4N 80. 4E 17. 2N 82. 7E 8. 3N 76. 9E 13. 3N 74. 4E 18. 8N 72. 6E 22. 7N 68 9E	0217Z 12 0CT 0305Z 12 0CT 0315Z 12 0CT 0335Z 12 0CT 0430Z 12 0CT 0456Z 12 0CT 0504Z 12 0CT 0639Z 12 0CT 0906Z 12 0CT
AUSTRALI A	FORECAST POINT  SI MEULUE BANDA_ACEH SI BERUT PADANG BENGKULU CI LACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY GULF_OF_KUTCH COCOS_I SLAND NORTH_WEST_CAPE CAPE_INSPIRATIO PERTH AUGUSTA GERALDTOWN CAPE_LEVEQUE ESPERANCE KI NGSTON_SOUTH_HEARD_I SLAND EUCLA_MOTEL HOBART DARWI N PHUKET KO_PHRA_THONG KO_TARUTAO CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI YANGON TRI NCOMALEE DONDRA HEAD	12. 1S 96. 7E 12. 1S 96. 7E 21. 5S 113. 9E 25. 9S 113. 0E 32. 0S 115. 3E 34. 3S 114. 7E 28. 6S 114. 3E 16. 1S 122. 6E 34. 0S 121. 8E 37. 0S 139. 4E 54. 0S 73. 5E 31. 8S 128. 9E 43. 3S 147. 6E	0330Z 12 0CT 0543Z 12 0CT 0645Z 12 0CT 0657Z 12 0CT 0716Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0849Z 12 0CT 1023Z 12 0CT 1052Z 12 0CT 1103Z 12 0CT 1133Z 12 0CT
THAI LAND	PHUKET KO_PHRA_THONG KO_TARIITAO	8. ON 98. 2E 9. 1N 98. 2E 6. 6N 99. 6F	0332Z 12 0CT 0422Z 12 0CT 0452Z 12 0CT
MYANMAR	CHEDUBA_I SLAND CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI YANGON	18. 9N 93. 4E 18. 9N 93. 4E 15. 9N 94. 3E 20. 0N 92. 9E 12. 8N 98. 4E 16. 5N 96. 4E	0432Z 12 0CT 0432Z 12 0CT 0432Z 12 0CT 0442Z 12 0CT 0510Z 12 0CT 0549Z 12 0CT 0943Z 12 0CT
SRI LANKA	COLOMBO	6. 9N 79. 8E	0421Z 12 0CT
MALDI VES	JAFFNA GAN MALE MI NI COV	9. 9N 80. 0E 0. 6S 73. 2E 4. 2N 73. 6E 8. 3N 73. 0E	0532Z 12 0CT 0446Z 12 0CT 0451Z 12 0CT 0514Z 12 0CT
UNITED KINGDOM MALAYSIA	DI EGO_GARCI A GEORGETOWN PORT_DI CKSON	7. 3S 72. 4E 5. 4N 100. 1E 2. 5N 101. 7E	0504Z 12 0CT 0504Z 12 0CT 0522Z 12 0CT 1002Z 12 0CT
MAURI TI US REUNI ON SEYCHELLES	PORT_LOUI S ST_DENI S VI CTORI A	20. 0S 57. 3E 20. 8S 55. 2E 4. 5S 55. 6E	0800Z 12 0CT 0814Z 12 0CT 0828Z 12 0CT

OMAN	SALALAH MUSCAT	16. 9N 23. 9N	54. 1E 58. 6E	0838Z 12 0CT 0844Z 12 0CT
	DUQM	19. 7N	57. 8E	0853Z 12 OCT
PAKI STAN	GWADAR	25. 1N	62. 4E	0846Z 12 0CT 0938Z 12 0CT
SOMALI A	KARACHI CAPE_GUARO	24. 7N 11. 9N	66. 9E 51. 4E	0938Z 12 0CT 0848Z 12 0CT
JOM/ILI/I	HI LALAYA	6. 4N	49. 1E	0849Z 12 0CT
	MOGADI SHU	2. ON	45. 5E	0904Z 12 OCT
	KAAMBOONI	1.55	41. 9E	0932Z 12 0CT
MADAGASCAR	ANTSI RANANA TOAMASI NA	12. 1S 17. 8S	49. 5E	0850Z 12 0CT 0902Z 12 0CT
	MANAKARA	17. 83 22. 2S	49. 6E 48. 2E	0902Z 12 0CT 0917Z 12 0CT
	MAHAJANGA	15. 4S	46. 2E	0954Z 12 0CT
	CAP_STE_MARIE	25. 8S	45. 2E	1016Z 12 0CT
. =	TOLI ARA	23. 4S	43. 6E	1041Z 12 OCT
IRAN	GAVATER	25. ON	61. 3E	0852Z 12 0CT
UAE YEMEN	FUJAI RAH AL_MUKALLA	25. 1N 14. 5N	56. 4E 49. 2E	0930Z 12 0CT 0937Z 12 0CT
ILIVILIV	ADEN	13. ON	45. 2E	1023Z 12 0CT
COMORES	MORONI	11. 6S	43. 3E	0951Z 12 OCT
MOZAMBI QUE	CABO_DELGADO	10. 7S	40. 7E	1008Z 12 OCT
	ANGOCHE	15. 5S	40. 6E	1040Z 12 0CT
	QUELI MANE MAPUTO	18. 0S 25. 9S	37. 1E 32. 8E	
	BEIRA	19. 9S	35. 1E	
KENYA	MOMBASA	4. 0S	39. 7E	1009Z 12 0CT
TANZANI A	LINDI	9. 8S	39. 9E	1009Z 12 OCT
DANOL ADECU	DAR_ES_SALAAM	6. 7S	39. 4E	1012Z 12 0CT
BANGLADESH CROZET ISLANDS	CHITTAGONG CROZET ISLANDS	22. 7N 46. 4S	91. 2E 51. 8E	1025Z 12 0CT 1030Z 12 0CT
KERGUELEN ISLAN	PORT_AUX_FRANCA	40. 43 49. 0S	69. 1E	1111Z 12 0CT
SOUTH AFRICA	PRI NCE_EDWARD_I	46. 6S	37. 6E	1205Z 12 OCT
	DURBAN	29. 8S	31. 2E	1209Z 12 OCT
	PORT_ELI ZABETH	33. 9S	25. 8E	1311Z 12 0CT
CLNCADODE	CAPE_TOWN	34. 1S	18. 0E	1410Z 12 0CT
SI NGAPORE	SI NGAPORE	1. 2N	103. 8E	1550Z 12 0CT

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

THE JAPAN METEOROLOGICAL AGENCY MAY ISSUE ADDITIONAL INFORMATION FOR THIS EVENT. IN THE CASE OF CONFLICTING INFORMATION...THE MORE CONSERVATIVE INFORMATION SHOULD BE USED FOR SAFETY.

TEST...TSUNAMI BULLETIN NUMBER 009. PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS ISSUED AT 0845Z 12 OCT 2011

THIS BULLETIN IS FOR ALL AREAS OF THE INDIAN OCEAN.

... AN INDIAN-OCEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

INDONESIA / INDIA / AUSTRALIA / THAILAND / MYANMAR / SRI LANKA / MALDIVES / UNITED KINGDOM / MALAYSIA / MAURITIUS / REUNION /
SEYCHELLES / OMAN / PAKISTAN / SOMALIA / MADAGASCAR / IRAN /
UAE / YEMEN / COMORES / MOZAMBIQUE / KENYA / TANZANIA /
BANGLADESH / CROZET ISLANDS / KERGUELEN ISLANDS / SOUTH AFRICA / SI NGAPORE

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. 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 -0100Z 12 0CT 2011

COORDINATES -3.3 NORTH 95.9 EAST

LOCATI ON NORTHERN SUMATRA INDONESIA

9.2 **MAGNI TUDE** 

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT		TIME		PER
SABANG ID TELUKDALAM, ID PADANG, ID COCOS IS, AU	5. 8N 0. 6N 1. 0S	095. 3E 097. 8E	0140Z 0207Z 0316Z	5.3M / 17.4FT 7.5M / 24.6FT 1.5M / 4.9FT	17MI N 19MI N 17MI N 15MI N
CHRISTMAS IS, AU SIBOLGA, ID	10. 4S 1. 7N	105. 7E 98. 8E	0339Z 0349Z	O.6M / 2.0FT 4.0M / 13.1FT	20MI N 18MI N
KO TAPHAO NOI, TH	6. 9N 7. 8N	79. 9E 098. 4E	0423Z 0441Z	2.2M / 7.2FT 4.4M / 14.4FT	18MI N 21MI N 18MI N
GAN, MV MALE, MV SITTWE, MM	4. 2N		0444Z		18MIN 16MIN 12MIN
HANIMAADHOO, MV DIEGO GARCIA, UK	6. 8N 7. 3S		0457Z	1.7M / 5.6FT	18MI N 18MI N 16MI N
LANGKAWI, MY RODRIGUES, MU PORT LOUIS, MU	19. 7S	63. 4E	0705Z	1.6M / 5.2FT	16MI N 15MI N

LAT - LATITUDE (N-NORTH, S-SOUTH)
LON - LONGITUDE (E-EAST, W-WEST)
TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
AMPL - TSUAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS ... NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).

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

PER

#### **EVALUATION**

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LOCATI ON	FORECAST POINT	COORDI NATES	ARRIVAL TIME
I NDONESI A	SIMEULUE BANDA_ACEH SIBERUT PADANG BENGKULU CILACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI	2. 5N 96. 0E 5. 5N 95. 1E 1. 5S 98. 7E 0. 9S 100. 1E 3. 9S 102. 0E 7. 8S 108. 9E 5. 7S 105. 3E 8. 7S 115. 3E 3. 8N 98. 8E 10. 0S 123. 4E 8. 7S 115. 3E	0138Z 12 0CT 0152Z 12 0CT 0215Z 12 0CT 0256Z 12 0CT 0308Z 12 0CT 0422Z 12 0CT 0431Z 12 0CT 0506Z 12 0CT 0546Z 12 0CT 0605Z 12 0CT
I NDI A	GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY	7. 1N 93. 6E 10. 7N 92. 3E 11. 9N 92. 7E 13. 3N 92. 6E 13. 4N 80. 4E 17. 2N 82. 7E 8. 3N 76. 9E 13. 3N 74. 4E 18. 8N 72. 6E	0217Z 12 0CT 0305Z 12 0CT 0315Z 12 0CT 0335Z 12 0CT 0430Z 12 0CT 0456Z 12 0CT 0504Z 12 0CT 0639Z 12 0CT 0906Z 12 0CT
AUSTRALI A	FORECAST POINT  SIMEULUE BANDA_ACEH SIBERUT PADANG BENGKULU CILACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI GREAT_NICOBAR LITTLE_ANDAMAN PORT_BLAIR NORTH_ANDAMAN CHENNAI KAKINADA TRIVANDRUM MANGALORE BOMBAY GULF_OF_KUTCH COCOS_ISLAND NORTH_WEST_CAPE CAPE_INSPIRATIO PERTH AUGUSTA GERALDTOWN CAPE_LEVEQUE ESPERANCE KINGSTON_SOUTH_HEARD_ISLAND EUCLA_MOTEL HOBART DARWIN PHUKET KO_PHRA_THONG KO_TARUTAO CHEDUBA_ISLAND PYINKAYAING SITTWE MERGUI YANGON TRINCOMALEE DONDRA_HEAD	22. 7N 68. 9E 12. 1S 96. 7E 21. 5S 113. 9E 25. 9S 113. 0E 32. 0S 115. 3E 34. 3S 114. 7E 28. 6S 114. 3E 16. 1S 122. 6E 34. 0S 121. 8E 37. 0S 139. 4E 54. 0S 73. 5E 31. 8S 128. 9E 43. 3S 147. 6E	0937Z 12 0CT 0330Z 12 0CT 0543Z 12 0CT 0645Z 12 0CT 0657Z 12 0CT 0716Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0849Z 12 0CT 1023Z 12 0CT 1052Z 12 0CT 1100Z 12 0CT
THAI LAND	PHUKET  KO_PHRA_THONG  KO_TARUTAO  CHEDUBA I SLAND	12. 15 130. 7E 8. ON 98. 2E 9. 1N 98. 2E 6. 6N 99. 6E 18. 9N 93. 4E	0332Z 12 0CT 0422Z 12 0CT 0422Z 12 0CT 0452Z 12 0CT 0432Z 12 0CT
	CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI YANGON	18. 9N 93. 4E 15. 9N 94. 3E 20. 0N 92. 9E 12. 8N 98. 4E 16. 5N 96. 4E	0432Z 12 0CT 0442Z 12 0CT 0510Z 12 0CT 0549Z 12 0CT 0943Z 12 0CT
SRI LANKA	TRI NCOMALEE DONDRA_HEAD COLOMBO JAFFNA	8. 7N 81. 3E 5. 9N 80. 6E 6. 9N 79. 8E 9. 9N 80. 0E	0347Z 12 0CT 0354Z 12 0CT 0421Z 12 0CT 0532Z 12 0CT
MALDI VES	GAN MALE MI NI COV	0. 6S 73. 2E 4. 2N 73. 6E 8. 3N 73. 0E	0446Z 12 0CT 0451Z 12 0CT 0514Z 12 0CT
UNITED KINGDOM MALAYSIA	DI EGO_GARCI A GEORGETOWN PORT_DI CKSON	7. 3S 72. 4E 5. 4N 100. 1E 2. 5N 101. 7E	0504Z 12 0CT 0522Z 12 0CT 1002Z 12 0CT
MAURI TI US REUNI ON	PORT_LOUIS ST_DENIS	20. 0S 57. 3E 20. 8S 55. 2E	0800Z 12 0CT 0814Z 12 0CT

SEYCHELLES OMAN	VI CTORI A SALALAH MUSCAT	4. 5S 16. 9N 23. 9N 19. 7N	55. 6E 54. 1E 58. 6E 57. 8E	0828Z 12 0CT 0838Z 12 0CT 0844Z 12 0CT 0853Z 12 0CT
PAKI STAN	DUQM GWADAR KARACHI	25. 1N 24. 7N	62. 4E 66. 9E	0846Z 12 0CT 0846Z 12 0CT 0938Z 12 0CT
SOMALI A	CAPE_GUARO HI LALAYA MOGADI SHU KAAMBOONI	11. 9N 6. 4N 2. 0N 1. 5S	51. 4E 49. 1E 45. 5E 41. 9E	0848Z 12 0CT 0849Z 12 0CT 0904Z 12 0CT 0904Z 12 0CT
MADAGASCAR	ANTSI RANANA TOAMASI NA MANAKARA MAHAJANGA CAP_STE_MARI E TOLI ARA	12. 1S 17. 8S 22. 2S 15. 4S 25. 8S 23. 4S	49. 5E 49. 6E 48. 2E 46. 2E 45. 2E 43. 6E	0850Z 12 0CT 0902Z 12 0CT 0917Z 12 0CT 0954Z 12 0CT
I RAN	GAVATER	25. ON	61. 3E	0852Z 12 OCT
UAE	FUJAI RAH	25. 1N	56. 4E	0930Z 12 0CT
YEMEN	AL_MUKALLA	14.5N	49. 2E	0937Z 12 OCT
	ADEN	13. UN	45. 2E	1023Z 12 OCT
COMORES	MORONI	11. 6S	43. 3E	0951Z 12 OCT
MOZAMBI QUE	CABO_DELGADO ANGOCHE	10. 7S	40. 7E	1008Z 12 0CT
	7 11 10 0 0 1 1 2		40. 6E	1040Z 12 OCT
	QUELI MANE	18. OS	37. 1E	1207Z 12 OCT
	MAPUTO	25. 9S	32. 8E	1255Z 12 OCT
	BEI RA	19. 9S	35. 1E	1317Z 12 OCT
KENYA	MOMBASA	4. 0S	39. 7E	1009Z 12 0CT
TANZANI A	LINDI	9. 8S	39. 9E	1009Z 12 0CT
	DAR_ES_SALAAM	6. 7S	39. 4E	1012Z 12 OCT
BANGLADESH	CHI TTAGONG	22. 7N	91. 2E	1025Z 12 0CT
CROZET ISLANDS	CROZET_I SLANDS	46. 4S	51. 8E	1030Z 12 0CT
KERGUELEN ISLAN	PORT_AUX_FRANCA	49. OS	69. 1E	1111Z 12 OCT
SOUTH AFRICA	PRI NCE_EDWARD_I	46. 6S	37. 6E	1205Z 12 0CT
	DURBAN	29. 8S	31. 2E	1209Z 12 0CT
	PORT_ELI ZABETH	33. 9S	25. 8E	1311Z 12 0CT
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TEST...TSUNAMI BULLETIN NUMBER 011 ...T
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS ISSUED AT 1045Z 12 OCT 2011

THIS BULLETIN IS FOR ALL AREAS OF THE INDIAN OCEAN.

... AN INDIAN-OCEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

INDONESIA / INDIA / AUSTRALIA / THAILAND / MYANMAR / SRI LANKA / MALDIVES / UNITED KINGDOM / MALAYSIA / MAURITIUS / REUNION /
SEYCHELLES / OMAN / PAKISTAN / SOMALIA / MADAGASCAR / IRAN /
UAE / YEMEN / COMORES / MOZAMBIQUE / KENYA / TANZANIA /
BANGLADESH / CROZET ISLANDS / KERGUELEN ISLANDS / SOUTH AFRICA / SI NGAPORE

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AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

0100Z 12 0CT 2011 ORIGIN TIME -

3.3 NORTH COORDINATES -95. 9 EAST

LOCATI ON NORTHERN SUMATRA INDONESIA

9. 2 **MAGNI TUDE** 

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
SABANG ID TELUKDALAM, ID PADANG, ID COCOS IS, AU CHRISTMAS IS, AU SIBOLGA, ID TRINCONMALEE, LK COLOMBO, LK KO TAPHAO NOI, TH GAN, MV MALE, MV SITTWE, MM HANIMAADHOO, MV DIEGO GARCIA, UK	5. 8N 0. 6N 1. 0S 12. 1S 10. 4S 1. 7N 8. 6N 6. 9N 7. 8N 0. 7S 4. 2N 20. 2N 6. 8N 7. 3S	095. 3E 097. 8E 100. 4E 096. 9E 105. 7E 98. 8E 81. 2E 79. 9E 098. 4E 73. 2E 73. 5E 92. 9E 73. 2E 72. 4E	0140Z 0207Z 0316Z 0332Z 0339Z 0349Z 0350Z 0423Z 0441Z 0451Z 0444Z 0500Z 0455Z 0457Z	5. 3M / 17. 4FT 7. 5M / 24. 6FT 1. 5M / 4. 9FT 0. 3M / 1. 1FT 0. 6M / 2. 0FT 4. 0M / 13. 1FT 3. 8M / 12. 5FT 2. 2M / 7. 2FT 4. 4M / 14. 4FT 2. 9M / 9. 5FT 3. 3M / 10. 8FT 1. 2M / 3. 9FT 2. 9M / 9. 5FT 1. 7M / 5. 6FT	17MI N 19MI N 17MI N 15MI N 20MI N 18MI N 21MI N 18MI N 18MI N 16MI N 12MI N 18MI N 18MI N
LANGKAWI, MY RODRIGUES, MU PORT LOUIS, MU	6. 9N 19. 7S	99. 8E 63. 4E	0535Z 0705Z	2.3M / 7.5FT 1.6M / 5.2FT	16MI N 16MI N
SALALAH, OM MASIRAH, OM CHABAHAR, IR	16. 9N 20. 7N 25. 3N	58. 9E 60. 6F	0900Z		19MI N 19MI N 17MI N 18MI N
HILLARYS, AU LAMU, KE MOMBASA, KE ZANZIBAR, TZ LAMU, KE MOMBASA, KE	2. 3S 4. 1S 6. 2S 2. 3S	40. 9E 39. 6E 39. 2E 40. 9E	1022Z 1026Z 1033Z 1022Z	1.5M / 4.9FT 2.3M / 7.5FT 2.2M / 7.2FT 1.5M / 4.9FT	17MI N 15MI N 16MI N 17MI N
MOMBASA, KE	4. 1S	39. 6E	1026Z	2.3M / 7.5FT	15MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
LON - LONGITUDE (E-EAST, W-WEST)
TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
AMPL - TSUNANI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS ... NOT... CREST-TO-TROUGH WAVE HEIGHT.

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	FORECAST POINT	COORDI NATES	ARRIVAL TIME
I NDONESI A	SIMEULUE BANDA_ACEH SIBERUT PADANG BENGKULU CILACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI	2. 5N 96. 0E 5. 5N 95. 1E 1. 5S 98. 7E 0. 9S 100. 1E 3. 9S 102. 0E 7. 8S 108. 9E 5. 7S 105. 3E 8. 7S 115. 3E 3. 8N 98. 8E 10. 0S 123. 4E 8. 7S 115. 3E	0138Z 12 0CT 0152Z 12 0CT 0215Z 12 0CT 0256Z 12 0CT 0308Z 12 0CT 0422Z 12 0CT 0431Z 12 0CT 0506Z 12 0CT 0546Z 12 0CT 0605Z 12 0CT 0506Z 12 0CT
I NDI A	GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY GUI F OF KUTCH	7. 1N 93. 6E 10. 7N 92. 3E 11. 9N 92. 7E 13. 3N 92. 6E 13. 4N 80. 4E 17. 2N 82. 7E 8. 3N 76. 9E 13. 3N 74. 4E 18. 8N 72. 6E 22. 7N 68. 9F	0217Z 12 0CT 0305Z 12 0CT 0315Z 12 0CT 0335Z 12 0CT 0430Z 12 0CT 0456Z 12 0CT 0504Z 12 0CT 0639Z 12 0CT 0906Z 12 0CT 0937Z 12 0CT
AUSTRALI A	FORECAST POINT  SI MEULUE BANDA_ACEH SI BERUT PADANG BENGKULU CI LACAP BANDAR_LAMPUNG BALI BELAWAN KUPANG BALI GREAT_NI COBAR LI TTLE_ANDAMAN PORT_BLAI R NORTH_ANDAMAN CHENNAI KAKI NADA TRI VANDRUM MANGALORE BOMBAY GULF_OF_KUTCH COCOS_I SLAND NORTH_WEST_CAPE CAPE_I NSPI RATI O PERTH AUGUSTA GERALDTOWN CAPE_LEVEQUE ESPERANCE KI NGSTON_SOUTH_HEARD_I SLAND EUCLA_MOTEL HOBART DARWI N PHUKET KO_PHRA_THONG KO_TARUTAO CHEDUBA_I SLAND PYI NKAYAI NG	12. 1S 96. 7E 21. 5S 113. 9E 25. 9S 113. 0E 32. 0S 115. 3E 34. 3S 114. 7E 28. 6S 114. 3E 16. 1S 122. 6E 34. 0S 121. 8E 37. 0S 139. 4E 54. 0S 73. 5E 31. 8S 128. 9E 43. 3S 147. 6E	0330Z 12 0CT 0543Z 12 0CT 0645Z 12 0CT 0657Z 12 0CT 0716Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0732Z 12 0CT 0849Z 12 0CT 1023Z 12 0CT 1052Z 12 0CT 1100Z 12 0CT 1133Z 12 0CT 1153Z 12 0CT
THAI LAND	PHUKET  KO_PHRA_THONG	8. ON 98. 2E 9. 1N 98. 2E	0332Z 12 0CT 0422Z 12 0CT 0452Z 12 0CT
MYANMAR	CHEDUBA_I SLAND CHEDUBA_I SLAND PYI NKAYAI NG SI TTWE MERGUI YANGON TRI NCOMALEE DONDRA_HEAD COLOMBO	18. 9N 93. 4E 18. 9N 93. 4E 15. 9N 94. 3E 20. 0N 92. 9E 12. 8N 98. 4E 16. 5N 96. 4E	0432Z 12 0CT 0432Z 12 0CT 0432Z 12 0CT 0442Z 12 0CT 0510Z 12 0CT 0549Z 12 0CT 0943Z 12 0CT
SRI LANKA	TRI NCOMALEE DONDRA_HEAD COLOMBO	8. 7N 81. 3E 5. 9N 80. 6E 6. 9N 79. 8E	0347Z 12 0CT 0354Z 12 0CT 0421Z 12 0CT

MALDI VES  UNI TED KINGDOM MALAYSI A	JAFFNA GAN MALE MI NI COV DI EGO_GARCI A GEORGETOWN PORT_DI CKSON		0532Z 12 0CT 0446Z 12 0CT 0451Z 12 0CT 0514Z 12 0CT 0504Z 12 0CT 0522Z 12 0CT 1002Z 12 0CT
MAURITIUS REUNION SEYCHELLES OMAN	PORT_DI CKSON PORT_LOUI S ST_DENI S VI CTORI A SALALAH MUSCAT DUQM GWADAR KARACHI CAPE_GUARO HI LALAYA MOGADI SHU KAAMBOONI ANTSI RANANA TOAMASI NA MANAKARA	20. 0S 57. 3E 20. 8S 55. 2E 4. 5S 55. 6E 16. 9N 54. 1E 23. 9N 58. 6E 19. 7N 57. 8E	0800Z 12 0CT 0814Z 12 0CT 0828Z 12 0CT 0838Z 12 0CT 0844Z 12 0CT 0853Z 12 0CT
PAKI STAN	GWADAR KADACHI	25. 1N 62. 4E 24. 7N 66. 9E	0846Z 12 0CT 0938Z 12 0CT
SOMALI A	CAPE_GUARO HI LALAYA MOGADI SHU KAAMBOONI	11. 9N 51. 4E 6. 4N 49. 1E 2. 0N 45. 5E 1. 5S 41. 9E	0848Z 12 0CT 0849Z 12 0CT 0904Z 12 0CT 0932Z 12 0CT
MADAGASCAR	MAHAJANGA CAP_STE_MARIE	15. 4S 46. 2E 25. 8S 45. 2E	0850Z 12 0CT 0902Z 12 0CT 0917Z 12 0CT 0954Z 12 0CT 1016Z 12 0CT
I RAN	TOLI ARA GAVATER	25. ON 61. 3E	1041Z 12 0CT 0852Z 12 0CT
UAE YEMEN	FUJAI RAH AL_MUKALLA ADEN	25. 1N 56. 4E 14. 5N 49. 2E 13. 0N 45. 2E	0930Z 12 0CT 0937Z 12 0CT 1023Z 12 0CT
COMORES MOZAMBI QUE	MORONI CABO_DELGADO ANGOCHE OUELI MANE MAPUTO BEI RA	11. 6S 43. 3E 10. 7S 40. 7E 15. 5S 40. 6E 18. 0S 37. 1E 25. 9S 32. 8E 19. 9S 35. 1E	0951Z 12 0CT 1008Z 12 0CT 1040Z 12 0CT 1207Z 12 0CT 1255Z 12 0CT 1317Z 12 0CT
KENYA TANZANI A	MOMBASA LINDI DAR ES SALAAM	4. OS 39. 7E	1009Z 12 0CT 1009Z 12 0CT 1012Z 12 0CT
BANGLADESH CROZET ISLANDS KERGUELEN ISLAN SOUTH AFRICA	PORT_AŪX_FRANCA PRI NCE_EDWARD_I DURBAN PORT_ELI ZABETH	46. 4S 51. 8E 49. 0S 69. 1E 46. 6S 37. 6E 29. 8S 31. 2E 33. 9S 25. 8E	1025Z 12 0CT 1030Z 12 0CT 1111Z 12 0CT 1205Z 12 0CT 1209Z 12 0CT 1311Z 12 0CT
SI NGAPORE	CAPE_TOWN SI NGAPORE	34.1S 18.0E 1.2N 103.8E	1410Z 12 0CT 1550Z 12 0CT

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

THE JAPAN METEOROLOGICAL AGENCY MAY ISSUE ADDITIONAL INFORMATION FOR THIS EVENT. IN THE CASE OF CONFLICTING INFORMATION...THE MORE CONSERVATIVE INFORMATION SHOULD BE USED FOR SAFETY.

TEST...TSUNAMI BULLETIN NUMBER 012 ...T
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS ISSUED AT 1100Z 12 OCT 2011

THIS BULLETIN IS FOR ALL AREAS OF THE INDIAN OCEAN.

... THE TSUNAMI WATCH IS CANCELLED ...

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. 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

0100Z 12 0CT 2011 ORIGIN TIME -

COORDINATES -

3.3 NORTH 95.9 EAST NORTHERN SUMATRA INDONESIA LOCATI ON

**MAGNI TUDE** 9.2

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
SABANG ID TELUKDALAM, ID PADANG, ID COCOS IS, AU CHRISTMAS IS, AU SIBOLGA, ID TRINCONMALEE	5. 8N 0. 6N 1. 0S 12. 1S 10. 4S 1. 7N 8 6N	095. 3E 097. 8E 100. 4E 096. 9E 105. 7E 98. 8E 81. 2F	0140Z 0207Z 0316Z 0332Z 0339Z 0349Z 0350Z	5. 3M / 17. 4FT 7. 5M / 24. 6FT 1. 5M / 4. 9FT 0. 3M / 1. 1FT 0. 6M / 2. 0FT 4. 0M / 13. 1FT 3. 8M / 12. 5FT 2. 2M / 7. 2FT 4. 4M / 14. 4FT	17MI N 19MI N 17MI N 15MI N 20MI N 18MI N 18MI N 21MI N 18MI N
COLOMBO, LK KO TAPHAO NOI, TH GAN, MV MALE, MV SITTWE, MM HANI MAADHOO, MV DIEGO GARCIA JIK	6 81	/3 7F	()455/	3.3M / 10.8FT 1.2M / 3.9FT 2.9M / 9.5FT	16MI N 12MI N 18MI N
DIEGO GARCIA, UK LANGKAWI, MY RODRIGUES, MU PORT LOUIS, MU SALALAH, OM	6. 9N 19. 7S 20. 2S 16. 9N	99. 8E 63. 4E 57. 5E 54. 0E	0535Z 0705Z 0806Z 0835Z	2.3M / 7.5FT 1.6M / 5.2FT 1.0M / 3.3FT 0.5M / 1.6FT	16MI N 16MI N 15MI N 19MI N
MASIRAH, OM CHABAHAR, IR HILLARYS, AU LAMU, KE MOMBASA KF	2E 2N	58. 9E 60. 6E 115. 7E 40. 9E 39. 6E	0913Z 0730Z 1022Z	0.9M / 3.0FT 0.5M / 1.6FT 1.5M / 4.9FT	17MI N 18MI N
HILLARYS, AU LAMU, KE MOMBASA, KE ZANZIBAR, TZ LAMU, KE MOMBASA, KE	6. 2S 2. 3S 4. 1S	39. 2E 40. 9E 39. 6E	1033Z 1022Z	2.2M / 7.2FT 1.5M / 4.9FT	16MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
LON - LONGITUDE (E-EAST, W-WEST)
TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
AMPL - TSUAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).

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

#### **EVALUATION**

A SIGNIFICANT TSUNAMI WAS GENERATED BY THIS EARTHQUAKE. HOWEVER...SEA LEVEL READINGS NOW INDICATE THAT THE THREAT HAS DIMINISHED OR IS OVER FOR 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 PASSED. 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 AUTHORITIES.

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

#### APPENDIX III. EXERCISE BULLETINS - JMA

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TSUNAMI BULLETIN NUMBER 001
 ISSUED BY THE JAPAN METEOROLOGICAL AGENCY (JMA)
 ISSUED AT 0120 12 OCT 2011 (UTC)
... AN INDIAN-OCEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...
1. EARTHQUAKE INFORMATION
 ORIGIN TIME: 0100 12 OCT 2011 (UTC)
 COORDINATES: 3.3 NORTH 95.9 EAST
 LOCATI ON
                OFF WEST COAST OF NORTHERN SUMATRA, INDONESIA
 MAGNI TUDE
                8. 2
2. EVALUATI ON
 THERE IS A POSSIBILITY OF A DESTRUCTIVE OCEAN-WIDE
 TSUNAMI IN THE INDIAN OCEAN.
3. ESTIMATED TSUNAMI TRAVEL TIME
 ONE HOUR OR LESS
  I NDI A:
    ALL COASTS OF ANDAMAN AND NICOBAR ISLANDS
  I NDONESI A:
    INDIAN OCEAN COAST OF SUMATRA
    MALACCA COAST OF SUMATRA
 ONE HOUR TO THREE HOURS
  I NDI A:
    BENGAL BAY COAST
  SRI LANKA:
    ALL COASTS
  THAI LAND:
    MALACCA COAST
  I NDONESI A:
    INDIAN OCEAN COAST OF JAWA
  AUSTRALI A:
    COCOS ISLANDS
 THREE HOURS TO SIX HOURS
  I NDI A:
    ARABIAN SEA COAST
  MALDI VES:
    ALL COASTS
  BANGLADESH:
    BENGAL BAY COAST
  MYANMAR:
    BENGAL BAY COAST
    ANDAMAN SEA COAST
  MALAYSI A:
    MALACCA COAST
  I NDONESI A:
    SOUTH COASTS OF LESSER SUNDA ISLANDS
    ARAFURA SEA COAST FROM LETI ISLANDS TO IRIAN JAYA
  EAST TIMOR:
  TIMOR SEA COAST
AUSTRALIA:
    NORTHWEST COAST AND WEST COAST
  UNITED KINGDOM:
 CHAGOS ARCHI PELAGO
SIX HOURS TO NINE HOURS
  COMOROS:
    ALL COASTS
  FRANCE:
    MAYOTTE ISLAND
    REUNION ISLAND
    CROZET I SLANDS
    AMSTERDAM I SLAND AND ST-PAUL
  MADAGASCAR:
    ALL COASTS
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SEYCHELLES:

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ALL COASTS
 MAURI TI US:
   ALL COASTS
 MOZAMBI QUE:
   ALL COASTS
 TANZANI A:
   ALL COASTS
 KENYA:
ALL COASTS
 SOMALI:
   INDIAN OCEAN COAST
   GULF COAST
 YEMEN:
   GULF COAST
 OMAN:
   ARABIAN SEA COAST
   GULF COAST
 UAE:
   GULF COAST
 I RAN:
   GULF COAST
 PAKI STAN:
   ARABIAN SEA COAST
 AUSTRALI A:
   COASTS FROM THE GULF OF CARPENTARIA TO THE ARAFURA SEA
NINE HOURS TO TWELVE HOURS SOUTH AFRICA:
   INDIAN OCEAN COAST
 FRANCE:
   KERGUELEN
 DJI BOUTI:
   GULF COAST
TWELVE HOURS OR MORE
 SI NGAPORE:
   MALACCA COAST
```

- \*TSUNAMI TRAVEL TIME IS ESTIMATED ONLY FROM EARTHQUAKE DATA AND INDICATES THE TIME LAPSE BETWEEN ORIGIN TIME AND TSUNAMI ARRIVAL TIME.
- \*THIS WILL BE THE FINAL INFORMATION UNLESS THERE ARE CHANGES ABOUT THE POTENTIAL OF TSUNAMI GENERATION AND ESTIMATED TSUNAMI TRAVEL TIME BY RE-EVALUATION OF THE EARTHQUAKE OR THERE ARE REPORTS ON TSUNAMI OBSERVATIONS.

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TSUNAMI BULLETIN NUMBER 002
ISSUED BY THE JAPAN METEOROLOGICAL AGENCY (JMA) ISSUED AT 0150 12 OCT 2011 (UTC)
 ... AN INDIAN-OCEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...
1. EARTHQUAKE INFORMATION
ORIGIN TIME: 0100 12 OCT 2011 (UTC) COORDINATES: 3.3 NORTH 95.9 EAST
                OFF WEST COAST OF NORTHERN SUMATRA, INDONESIA
 LOCATION
MAGNI TUDE
              : 9.2
2. EVALUATI ON
 THERE IS A POSSIBILITY OF A DESTRUCTIVE OCEAN-WIDE
 TSUNAMI IN THE INDIAN OCEAN.
3. ESTIMATED TSUNAMI TRAVEL TIME
 ONE HOUR OR LESS
  I NDI A:
    ALL COASTS OF ANDAMAN AND NICOBAR ISLANDS
  THAI LAND:
    MALACCA COAST
  I NDONESI A:
    INDIAN OCEAN COAST OF SUMATRA
    MALACCA COAST OF SUMATRA
 ONE HOUR TO THREE HOURS
  INDIA:
    BENGAL BAY COAST
  MALDI VES:
    ALL COASTS
  SRI LANKA:
    ALL COASTS
  MALAYSI A:
    MALACCA COAST
  I NDONESI A:
    INDIAN OCEAN COAST OF JAWA
  AUSTRALI A:
    COCOS I SLANDS
 THREE HOURS TO SIX HOURS
  FRANCE:
    AMSTERDAM ISLAND AND ST-PAUL
  MAURI TI US:
    ALL COASTS
  I NDI A:
    ARABIAN SEA COAST
  BANGLADESH:
    BENGAL BAY COAST
  MYANMAR:
    BENGAL BAY COAST
    ANDAMAN SEA COAST
  INDONESIA:
    SOUTH COASTS OF LESSER SUNDA ISLANDS
    ARAFURA SEA COAST FROM LETI ISLANDS TO IRIAN JAYA
  EAST TIMOR:
    TIMOR SEA COAST
  AUSTRALI A:
    NORTHWEST COAST AND WEST COAST
  UNITED KINGDOM:
CHAGOS ARCHI PELAGO
SIX HOURS TO NINE HOURS
  COMOROS:
    ALL COASTS
  FRANCE:
    MAYOTTE ISLAND
    REUNION ISLAND
    CROZET I SLANDS
  MADAGASCAR:
    ALL COASTS
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**SEYCHELLES:** 

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ALL COASTS
 MOZAMBI QUE:
   ALL COASTS
 TANZANI A:
   ALL COASTS
 KENYA:
   ALL COASTS
 SOMALI:
   INDIAN OCEAN COAST
   GULF COAST
 YEMEN:
   GULF COAST
 OMAN:
   ARABIAN SEA COAST
   GULF COAST
 UAE:
   GULF COAST
 I RAN:
   GULF COAST
 PAKI STAN:
   ARABIAN SEA COAST
 AUSTRALI A:
COASTS FROM THE GULF OF CARPENTARIA TO THE ARAFURA SEA NINE HOURS TO TWELVE HOURS
 SOUTH AFRICA:
   INDIAN OCEAN COAST
 FRANCE:
   KERGUELEN
 DJI BOUTI:
   GULF COAST
TWELVE HOURS OR MORE
 SI NGAPORE:
   MALACCA COAST
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4. OBSERVATIONS ON MAXIMUM TSUNAMI WAVE

\*TSUNAMI TRAVEL TIME IS ESTIMATED ONLY FROM EARTHQUAKE DATA AND INDICATES THE TIME LAPSE BETWEEN ORIGIN TIME AND TSUNAMI ARRIVAL TIME.

\*THIS WILL BE THE FINAL INFORMATION UNLESS THERE ARE CHANGES ABOUT THE POTENTIAL OF TSUNAMI GENERATION AND ESTIMATED TSUNAMI TRAVEL TIME BY RE-EVALUATION OF THE EARTHQUAKE OR THERE ARE REPORTS ON TSUNAMI OBSERVATIONS.

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TSUNAMI BULLETIN NUMBER 003
ISSUED BY THE JAPAN METEOROLOGICAL AGENCY (JMA) ISSUED AT 0300 12 OCT 2011 (UTC)
 ... AN INDIAN-OCEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...
1. EARTHQUAKE INFORMATION
ORIGIN TIME: 0100 12 OCT 2011 (UTC) COORDINATES: 3.3 NORTH 95.9 EAST
                OFF WEST COAST OF NORTHERN SUMATRA, INDONESIA
 LOCATION
MAGNI TUDE
              : 9.2
2. EVALUATI ON
 THERE IS A POSSIBILITY OF A DESTRUCTIVE OCEAN-WIDE
 TSUNAMI IN THE INDIAN OCEAN.
3. ESTIMATED TSUNAMI TRAVEL TIME
 ONE HOUR OR LESS
  I NDI A:
    ALL COASTS OF ANDAMAN AND NICOBAR ISLANDS
  THAI LAND:
    MALACCA COAST
  I NDONESI A:
    INDIAN OCEAN COAST OF SUMATRA
    MALACCA COAST OF SUMATRA
 ONE HOUR TO THREE HOURS
  INDIA:
    BENGAL BAY COAST
  MALDI VES:
    ALL COASTS
  SRI LANKA:
    ALL COASTS
  MALAYSI A:
    MALACCA COAST
  I NDONESI A:
    INDIAN OCEAN COAST OF JAWA
  AUSTRALI A:
    COCOS I SLANDS
 THREE HOURS TO SIX HOURS
  FRANCE:
    AMSTERDAM ISLAND AND ST-PAUL
  MAURI TI US:
    ALL COASTS
  I NDI A:
    ARABIAN SEA COAST
  BANGLADESH:
    BENGAL BAY COAST
  MYANMAR:
    BENGAL BAY COAST
    ANDAMAN SEA COAST
  INDONESIA:
    SOUTH COASTS OF LESSER SUNDA ISLANDS
    ARAFURA SEA COAST FROM LETI ISLANDS TO IRIAN JAYA
  EAST TIMOR:
    TIMOR SEA COAST
  AUSTRALI A:
    NORTHWEST COAST AND WEST COAST
  UNITED KINGDOM:
CHAGOS ARCHI PELAGO
SIX HOURS TO NINE HOURS
  COMOROS:
    ALL COASTS
  FRANCE:
    MAYOTTE ISLAND
    REUNION ISLAND
    CROZET I SLANDS
  MADAGASCAR:
    ALL COASTS
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**SEYCHELLES:** 

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ALL COASTS
 MOZAMBI QUE:
   ALL COASTS
 TANZANI A:
   ALL COASTS
 KENYA:
   ALL COASTS
 SOMALI:
   INDIAN OCEAN COAST
   GULF COAST
 YEMEN:
   GULF COAST
 OMAN:
   ARABIAN SEA COAST
   GULF COAST
 UAE:
   GULF COAST
 I RAN:
   GULF COAST
 PAKI STAN:
   ARABIAN SEA COAST
 AUSTRALI A:
COASTS FROM THE GULF OF CARPENTARIA TO THE ARAFURA SEA NINE HOURS TO TWELVE HOURS
 SOUTH AFRICA:
   INDIAN OCEAN COAST
 FRANCE:
   KERGUELEN
 DJI BOUTI:
   GULF COAST
TWELVE HOURS OR MORE SINGAPORE:
   MALACCA COAST
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#### 4. OBSERVATIONS ON MAXIMUM TSUNAMI WAVE

LOCATI ON	COORDI NATES	ARRIVAL TIME	AMPL
SITTWE	20. 2N 092. 9E	0248Z 12 OCT	1. OM
MOULMEI N	16.5N 097.6E	0254Z 12 OCT	2.5M
KO MI ANG	08.6N 097.6E	0230Z 12 0CT	4. OM
SABANG	05.8N 095.3E	0125Z 12 OCT	4. OM
SI BOLGA	01. 7N 098. 8E	0255Z 12 OCT	O. 4M
PADANG	01. 0S 100. 4E	0255Z 12 OCT	O. 6M
TRI NCONMALEE	08.6N 081.2E	0254Z 12 OCT	4. OM
AMPL AMPLITUDE IN ME	ETERS OF HALF OF TH	E CREST TO TRO	UGH

<sup>\*</sup>TSUNAMI TRAVEL TIME IS ESTIMATED ONLY FROM EARTHQUAKE DATA AND INDICATES THE TIME LAPSE BETWEEN ORIGIN TIME AND TSUNAMI ARRIVAL TIME.

<sup>\*</sup>THIS WILL BE THE FINAL INFORMATION UNLESS THERE ARE CHANGES ABOUT THE POTENTIAL OF TSUNAMI GENERATION AND ESTIMATED TSUNAMI TRAVEL TIME BY RE-EVALUATION OF THE EARTHQUAKE OR THERE ARE REPORTS ON TSUNAMI OBSERVATIONS.

#### APPENDIX IV. SAMPLE PRESS RELEASE

#### TEMPLATE FOR NEWS RELEASE USE AGENCY LETTERHEAD

Contact: (insert name) FOR IMMEDIATE RELEASE (insert phone number) (insert date) (insert email address)

#### INDIAN OCEAN-WIDE TSUNAMI EXERCISE SET FOR OCTOBER

(insert country name) will join over 20 other countries around the Indian Ocean Rim as a participant in a mock tsunami scenario on 12<sup>th</sup> October 2011. The purpose of this Indian Ocean-wide exercise is to increase preparedness, evaluate response capabilities in each country and improve coordination throughout the region.

"The 2004 Indian Ocean tsunami and subsequent events in the Indian and Pacific Oceans have brought to the attention of the world the urgent need to be more prepared for such events," said (insert name of appropriate official). "This important exercise will test the current procedures of the Indian Ocean Tsunami Warning and Mitigation System and help identify operational strengths and weaknesses in each country."

The exercise, titled Exercise Indian Ocean Wave 2011 (IOWave11), will simulate Indian Ocean countries being put into a Tsunami Warning situation requiring government decision-making. It builds on the first Indian Ocean exercise conducted in 2009 (IOWave09) and on prior national tsunami warning drill carried out in (dates) (delete if not applicable).

Following the IOWave11 exercise, the Indian Ocean Regional Tsunami Service Providers (RTSPs) will commence operations, while the Interim Advisory Service (IAS) provided by the Japan Meteorological Agency (JMA) and the Pacific Tsunami Warning Center (PTWC) since 2005 will continue to operate a parallel service.

The exercise can be divided into two stages. In the first stage, a destructive tsunami crossing the Indian Ocean from an earthquake source near Aceh-Sumatra will be simulated by international notifications from the RTSPs of Australia, India and Indonesia and the Regional Integrated Multi-hazard Early Warning System (RIMES) to designated Tsunami Warning Focal Points in each country. The IAS providers, Japan Meteorological Agency (JMA) and Pacific Tsunami Warning Center (PTWC) will also transmit exercise bulletins.

In the second stage, conducted simultaneously in response to receipt of the international messages and any national tsunami detection, analysis, and forecasting capabilities, government officials will simulate decision-making and alerting procedures down to the last step before public notification. *Notification of emergency management and response authorities for a single coastal community will be used as a measure of the end-to end process for purposes of this exercise. Due care will be taken to ensure the public is not inadvertently alarmed.* (delete if not applicable)

Insert paragraph tailored for specific country. Could identify participating agencies and specific plans. Could describe current early warning programme, past evacuation drills (if any), ongoing mitigation and public education programmes, etc. Could describe tsunami threat, history of tsunami hazards, if any.

Should any actual tsunami threat occur during the time period of the exercise, 12 October 2011, the drill will be terminated.

Following the exercise, a review and evaluation will be conducted by all participating countries and agencies.

"We see this exercise as an essential element in the routine maintenance of the Indian Ocean Tsunami Warning and Mitigation System," said (insert name of appropriate official). "Our goal is to ensure the timely and effective early warning of tsunamis, to educate communities at risk about safety preparedness, and to improve our overall coordination. We will evaluate what works well, where improvements are needed, make necessary changes, and continue to practice."

The exercise is in the Work Plan of the Intergovernmental Coordination Group of the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS). ICG/IOTWS is a body of UNESCO's Intergovernmental Oceanographic Commission.

IOWAVE11 Information:http://www.ioc-unesco.org/iowave11.

#### APPENDIX V. POST EXERCISE EVALUATION

#### **EXERCISE OBJECTIVES**

There are six core objectives of the exercise:

- 1. Validate the Regional Tsunami Service Providers, RIMES and Interim Advisory Services providers' dissemination process of issuing Tsunami Bulletins to Indian Ocean countries.
- 2. Validate the Standard Operating Procedures for countries receiving and confirming Tsunami Bulletins through their designated Tsunami Watch Focal Points (TWFPs).
- 3. Validate Standard Operating Procedures for dissemination of warning messages to relevant Agencies within a country, provinces and local iurisdictions.
- 4. Validate the national level organizational decision making process about public warnings and evacuations.
- 5. Identify the methods that would be employed to notify and instruct the public.
- 6. Assess the elapsed time until public would be notified and instructed.

#### EXERCISE SUCCESS CRITERIA

The exercise will be a success when:

- The core objectives above were exercised, performance evaluated and reported upon.
- The dynamics between the National Tsunami Warning Centres, Tsunami Warning Focal Points and information dissemination points within countries at the onset of a tsunami event are tested and understood.
- Areas where aspects of warnings for a tsunami event can be improved are identified, both for tsunami warning centres and individual countries.
- It supports the establishment or review of planning for response to tsunamis at national and regional/local levels.

#### **EVALUATING PARTICIPANT PERFORMANCE**

Evaluation is based on:

- (a) Reporting on each of the core objectives described above.
- (b) Specific measurable sub-objectives for some of the core objectives.

Participants must fill in all reports and score each sub-objective, fill in detail where requested and make any comments in the spaces provided on the attached forms.

Separate forms are designed and marked for:

- **1) National Tsunami Warning Centres** (only Objectives 1, 2, 3 and 5). Each NTWC is also requested to complete a Communications Test Log during the test, recording:
  - the arrival times of RTSP and RIMES notification messages at their NTWC,
  - how the messages arrived (GTS, email, fax, SMS),
  - whether or not the NTWC was able to access the updated bulletin messages on the RTSP and RIMES websites, and

- whether or not the NTWC was able to report its national warning status via the web-based report form.
- **2) Tsunami Emergency Response agencies** and/or provinces/local jurisdictions within countries. These are the recipients of warnings disseminated from the national decision making/dissemination points (Objectives 3-6).

## Please fill in only those forms that are relevant to your particular circumstances.

The score rating for sub-objectives is as follows:

Rating	Definition
1	Did not meet the objectives (state why not)
2	Met some of the objectives (state what part was not met)
3	Met the objectives
4	Exceeded the objectives (state how)

#### **EVALUATION FORMS**

The following pages contain the exercise evaluation forms to be filled out by the appropriate organisations after IOWave11 and returned by 31st October 2011 to the ICG/IOTWS Secretariat (Email: iotws@unesco.org, Fax: +61 8 9226 0599)

#### **EVALUATION FORMS FOR**

# NATIONAL TSUNAMI WARNING <u>CENTRES</u>

#### **Objectives:**

- **1.** Validate the Regional Tsunami Service Providers, RIMES and Interim Advisory Services providers' dissemination process of issuing Tsunami Bulletins to Indian Ocean countries.
- **2.** Validate the Standard Operating Procedures for countries receiving and confirming Tsunami Bulletins through their designated Tsunami Watch Focal Points (TWFPs).
- **3.** Validate dissemination of the warning message to relevant agencies within a country, provinces and local jurisdictions.

#### Optional:

- **5.** Identify the modes that would be employed to notify and instruct the public (answer only if the NTWC has responsibility for this)
- **6.** Assess the elapsed time until the public would be notified and instructed (answer only if the NTWC has responsibility for this)

Country:	 	
Agency/Authority:	 	

### **Exercise Planning and Conduct**

The exercise planning, conduct, format, and style were satisfactory.

Circle/Highlight score: 1 2 3 4

Remarks/suggestions

#### **OBJECTIVE 1:**

Validate the Regional Tsunami Service Providers, RIMES and Interim Advisory Services providers' dissemination process of issuing Tsunami Bulletins to Indian Ocean countries.

Country:							
Agency/Authority:							
<b>1 (a)</b> Judged against the r Service Provider(s), RIME					•	egional Tsunar	ni
Circle/Highlight score:	1	2	3	4			
<b>1 (b)</b> The <u>method(s)</u> used appropriate.	l by the	e Tsuna	ami Wa	arning Centre(s)	to send bull	etins to us wer	е
Circle/Highlight score:	1	2	3	4			
Remarks/suggestions:							

#### **OBJECTIVE 2:**

Validate the Standard Operating Procedures for countries receiving and confirming Tsunami Bulletins through their designated Tsunami Watch Focal Points (TWFPs)

Country:	
Agency/Authority:	
Receipt of Warning from the Regional Tsunami Service I Advisory Service Provide	•
Country:	
NAME OF NTWC:	

**RTSP INDIA Messages** 

Message	Time Received (UTC)	How Received	RTSP India Website Accessible? (Y/N)	Able to report NTWC Status via web?	Comments
0100 UTC		GTS			
Earthquake		Fax			
occurs		Email			
		SMS			
		GTS	<u> </u>		
0105 UTC Bulletin		Fax			
1		Email			
		SMS			
		GTS			
0110 UTC Bulletin		Fax			
2		Email			
		SMS			
		GTS			
0140 UTC Bulletin		Fax			
3		Email			
		SMS			
		GTS			
0200 UTC Bulletin		Fax			
4		Email			
		SMS			
		GTS			
0300 UTC Bulletin		Fax			
5		Email			
		SMS			
		GTS			
0400 UTC Bulletin		Fax	<u> </u>		
6		Email	<u> </u>		
		SMS			
		GTS	1		
0500 UTC Bulletin		Fax	1		
7		Email	1		
		SMS			
0600 UTC Bulletin		GTS	1		
8		Fax			

	Email		
	SMS		
	GTS		
0700 UTC Bulletin	Fax		
9	Email		
	SMS		
	GTS		
0800 UTC Bulletin	Fax		
10	Email		
	SMS		
	GTS		
0900 UTC Bulletin	Fax		
11	Email		
	SMS		
	GTS		
1000 UTC Bulletin	Fax		
12	Email		
	SMS		
	GTS		
1100 UTC Bulletin	Fax		
13	Email		
	SMS		
	GTS		
1200 UTC Bulletin	Fax		
14	Email		
	SMS		
	GTS		
1300 UTC Bulletin	Fax		
15	Email		
	SMS		

NAME OF NTWC:	
NAME OF NIWC:	

**RTSP INDONESIA Messages** 

Message	Time Received	How	RTSP Indonesia Website	Able to report NTWC	Comments
mocoago	(UTC)	Received	Accessible? (Y/N)	Status via web?	Comments
0100 UTC		GTS	1		
Earthquake		Fax	1		
occurs		Email SMS	<u> </u>		
		GTS			
0105 UTC Bulletin		Fax	1		
1		Email	†		
'		SMS	1		
		GTS			
0110 UTC Bulletin		Fax	1		
2		Email	1		
_		SMS	<u> </u> 		
		GTS			
0145 UTC Bulletin		Fax	1		
3		Email	]		
		SMS			
		GTS	_		
0245 UTC Bulletin		Fax	<u> </u>		
4		Email	1		
		SMS GTS			
0345 UTC Bulletin		Fax	+		
5		Email	1		
		SMS	1		
		GTS			
0445 UTC Bulletin		Fax	†		
6		Email	]		
		SMS			
		GTS	<u> </u>		
0545 UTC Bulletin		Fax	1		
7		Email	1		
		SMS GTS			
004511705 " "		Fax	†		
0645 UTC Bulletin 8		Email	†		
O			†		
		SMS GTS			
0745 LITO Desiled		Fax	1		
0745 UTC Bulletin 9		Email	†		
9		SMS	†		
		GTS	1		
0945 UTC Bulletin		Fax	1		
10		Email	1		
		SMS			
1145 UTC Bulletin		GTS	1		
11		Fax			

#### IOWAVE 11 EXERCISE EVALUATION FORM

	Email		
	SMS		
	GTS		
1300 UTC Bulletin	Fax		
12	Email		
	SMS		

**RTSP AUSTRALIA Messages** 

KIOI AGOTKALI	Time	How	RTSP Australia	Able to report	
Message	Received (UTC)	Received	Website Accessible? (Y/N)	NTWC Status via web?	Comments
0100 UTC		GTS			
Earthquake		Fax	1		
occurs		Email SMS	1		
		GTS			
0405 LITO Dellatin		Fax	1		
0105 UTC Bulletin 1		Email	-		
ı		SMS	+		
0112 UTC Bulletin		GTS Fax	1		
2		Email	1		
_		SMS	1		
		GTS			
0145 UTC Bulletin		Fax	†		
3		Email	1		
		SMS			
		GTS			
0150 UTC Bulletin		Fax			
4		Email	1		
		SMS			
0000 UTO D. II. (*		GTS	1		
0300 UTC Bulletin 5		Fax	1		
		Email SMS	-		
		GTS			
0400 UTC Bulletin		Fax	1		
6		Email	1		
		SMS	1		
0500 UTC Bulletin		GTS			
		Fax			
7		Email			
		SMS			
		GTS			
0600 UTC Bulletin		Fax	1		
8		Email	1		
		SMS			
0700 UTC Bulletin 9		GTS			
		Fax	1		
		Email	]		
		SMS			
0800 UTC Bulletin		GTS			
		Fax	1		
10		Email	1		
		SMS	†		
0900 UTC Bulletin		GTS			
11		Fax	†		
-		гах			

	Email		
	SMS		
1000 UTC Bulletin	GTS		
	Fax		
12	Email		
	SMS		
1100 UTC Bulletin 13	GTS		
	Fax		
	Email		
	SMS		
1200 UTC Bulletin 14	GTS		
	Fax		
	Email		
	SMS		

NAME OF NTWC:	

**RIMES Messages** 

Message	Time Received (UTC)	How Received	RIMES Website Accessible? (Y/N)	Able to report NTWC Status via web?	Comments
0100 UTC		GTS			
Earthquake		Fax			
occurs		Email	_		
		SMS GTS			
0405 LITO Dellatio		Fax			
0105 UTC Bulletin 1		Email			
'		SMS			
		GTS			
0112 UTC Bulletin		Fax	1		
2		Email			
_		SMS			
		GTS			
0143 UTC Bulletin		Fax			
3		Email			
		SMS			
		GTS			
0243 UTC Bulletin		Fax			
4		Email			
		SMS			
0242 LITC Dulletin		GTS Fax	<u> </u>		
0343 UTC Bulletin 5		Email	-		
อ		SMS			
		GTS			
0443 UTC Bulletin		Fax			
6		Email			
		SMS			
		GTS			
0543 UTC Bulletin		Fax			
7		Email			
		SMS			
		GTS			
0643 UTC Bulletin		Fax	+		
8		Email			
		SMS			
0743 UTC Bulletin		GTS			
		Fax	_		
		Email			
		SMS			
0943 UTC Bulletin 10		GTS			
		Fax			
		Email			
		SMS			
1043 UTC Bulletin		GTS			
11		Fax	†		
		Email	†		
		EIIIdii			

#### IOWAVE 11 EXERCISE EVALUATION FORM

	SMS		
1200 UTC Bulletin 12	GTS		
	Fax		
	Email		
	SMS		

NAME OF NTWC:				
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Pacific Tsunami Warning Center (PTWC) Messages

Message	Time Received (UTC)	How Received	Comments
0100 UTC Earthquake		GTS	
occurs		Fax	
		Email	
		GTS	
0115 UTC Bulletin 1		Fax	
		Email	
		GTS	
0145 UTC Bulletin 2		Fax	
		Email	
		GTS	
0245 UTC Bulletin 3		Fax	
		Email	
		GTS	
0345 UTC Bulletin 4		Fax	
		Email	
		GTS	
0445 UTC Bulletin 5		Fax	
		Email	
		GTS	
0545 UTC Bulletin 6		Fax	
		Email	
		GTS	
0645 UTC Bulletin 7		Fax	
		Email	
		GTS	
0745 UTC Bulletin 8		Fax	
		Email	
		GTS	
0845 UTC Bulletin 9		Fax	
		Email	
		GTS	
0945 UTC Bulletin 10		Fax	
		Email	
1045 UTC Bulletin 11		GTS	
			1
		Fax	-
		Email	
		GTS	
1100 UTC Bulletin 12		Fax	
		Email	

# NAME OF NTWC:

\_\_\_\_\_

Japan Meteorological Agency (JMA) Messages

	J J \		
Message	Time Received (UTC)	How Received	Comments
0100 UTC Earthquake		GTS	
occurs		Fax	
occurs		Email	
		GTS	
0120 UTC Bulletin 1		Fax	
		Email	
		GTS	
0150 UTC Bulletin 2		Fax	
		Email	
		GTS	
0300 UTC Bulletin 3		Fax	
		Email	

Validate dissemination of the warning message to relevant agencies within a country, provinces and local jurisdictions.

Country:	
Agency/Authority:	

# **Dissemination of Warning**

# **Dissemination Points**

	Time warning sent (UTC)	Method of delivery	Number of failed deliveries	Reasons for failed deliveries	Alternate action taken
Emergency Services					
Other national government agencies					
Science agencies/universities for assessment					
Local government: provincial/regional level					
Local government: city/district level					

# **Confirmations**

	Method of confirming receipt	Time confirmati on received (UTC)	Number of non confirmati ons	Reasons for non confirmati on	Alternate action taken
Emergency Services					
Other national government agencies					
Science agencies/universities for assessment					
Local government: provincial/regional level					
Local government: city/district level					

Identify the modes that would be employed to notify and instruct the public (answer only if the NTWC has responsibility for this).

Country:		
•		
Agency/Authority:	 	 

As part of our decision-making during this exercise we have determined to use the following means of public notification and instruction in a real event of this kind:

Method	Yes/No	Arrangements Exist (yes/no)
Public radio broadcasts		
TV announcements/teletext		
Public announcement systems		
Cell broadcast		
SMS (cell)		
Public call centre		
Website		
Telephone		
Sirens		
Door to door announcements		
Other (specify)		
Email		

Assess the elapsed time until the public would be notified and instructed (answer only if the NTWC has responsibility for this).

Country:	 	 
Agency/Authority:		

# The following times applied to us:

Activity	Elapsed Time (e.g. 1hr 15mins)
Making a decision on public warning (From time of receipt of warning)	
Formulation/compilation of public notification (From time of decision)	
Activation of public notification systems (From time of notification formulated)	
Total Time	

# **EVALUATION FORMS FOR**

# TSUNAMI EMERGENCY RESPONSE AGENCIES

## **Objectives:**

- **3.** Validate dissemination of the warning message to relevant agencies within a country, provinces and local jurisdictions.
- **4.** Validate the organizational decision making process about public warnings and evacuations.
- **5.** Identify the modes that would be employed to notify and instruct the public.
- 6. Assess the elapsed time until the public would be notified and instructed

Country:	 	 
Agency/Authority:		

# **Exercise Planning and Conduct**

The exercise planning, conduct, format, and style were satisfactory.

Circle/Highlight score: 1 2 3 4

Remarks/suggestions

Validate dissemination of the warning message to relevant agencies within a country, provinces and local jurisdictions.

Country:	
·	
Agency/Authority:	

# **Dissemination of Warning**

# **Dissemination Points**

	Time warning sent (UTC)	Method of delivery	Number of failed deliveries	Reasons for failed deliveries	Alternate action taken
Emergency Services					
Other national government agencies					
Science agencies/universities for assessment					
Local government: provincial/regional level					
Local government: city/district level					

# **Confirmations**

	Method of confirming receipt	Time confirmati on received (UTC)	Number of non confirmati ons	Reasons for non confirmati on	Alternate action taken
Emergency Services					
Other national government agencies					
Science agencies/universities for assessment					
Local government: provincial/regional level					
Local government: city/district level					

# **OBJECTIVE 3 (cont.):**

Validate dissemination of the warning message to relevant agencies within a country, provinces and local jurisdictions.

Country:					
Agency/Authority:					
3 (a): Judged against the decision-making a				it, information issued by our nationation int was timely:	al
Circle/Highlight score:	1	2	3	4	
· ,				r national decision-making and to support decision-making:	
Circle/Highlight score:	1	2	3	4	
Remarks/suggestions					

Count	ry:					
Agend	cy/Authority:					
4 (a):	dissemination poir	nt and i	individu	ual res	ponse agencies	ecision-making and and provinces/local mation requirements.
Circle	e/Highlight score:	1	2	3	4	
Rema	ırks/suggestions					

Country:					
Agency/Authority:					
4 (b):Arrangements to as making on tsunami					vant to decision- before the exercise.
Circle/Highlight score:	1	2	3	4	
Remarks/suggestions					

Remarks/suggestions

# **OBJECTIVE 4:**

Country:					
Agency/Authority:					
<b>4 (c):</b> Our management g response was asse warning. This was <u>t</u>	mbİed	within :	<b>X</b> minu	ıtes (fill in) after	receiving the first
Circle/Highlight score:	1	2	3	4	

Country:					
Agency/Authority:					
4 (d): The <u>quality</u> of the ir dissemination point				·	_
Circle/Highlight score:	1	2	3	4	
Remarks/suggestions					

Count	ry:					-
Agend	cy/Authority:			-		-
4 (e):						response agencies and onal level decision-
Circle	e/Highlight score:	1	2	3	4	
Rema	ırks/suggestions					

Country:					
Agency/Authority:					
<b>4 (f):</b> Sufficient <u>national ir</u> making (Regional T scientific assessme	sunan	ni Serv	ice Pro	ovider information	national level decision n, country-generated
Circle/Highlight score:	1	2	3	4	
Remarks/suggestions					

Remarks/suggestions

# **OBJECTIVE 4:**

Count	ry:					_
Agend	cy/Authority:					_
4 (g):		ocal h				our assessment and ion areas identified,
Circle	/Highlight score:	1	2	3	4	

Country:					_	
Agency/Authority:						
4 (h): We were able to m	nake d	ecision	s abo	ut appropriate wa	arnings and respon	ıse
Circle/Highlight score:	1	2	3	4		
Remarks/suggestions:						

Country:				_
Agency/Authority:				_
4 (i): Decision-making was	s based	d on pre	-existing plans for	an event of this nature
Circle/Highlight score: 1	2	3	4	
Remarks/suggestions:				

Country:				
Agency/Authority:				
4 (j):The exercise contributed related to public warning this nature.		•		
Circle/Highlight score: 1	2	3	4	
Remarks/suggestions:				

Identify	y the modes	that would be	employed	to notify	and instruct the	public.
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Country:	
Agency/Authority:	

As part of our decision-making during this exercise we have determined to use the following means of public notification and instruction in a real event of this kind:

Method	Yes/No	Arrangements Exist (yes/no)
Public radio broadcasts		
TV announcements/teletext		
Public announcement systems		
Cell broadcast		
SMS (cell)		
Public call centre		
Website		
Telephone		
Sirens		
Door to door announcements		
Other (specify)		
Email		

Assess the elapsed time until the public would be notified and instructed

Country:	 	 
Agency/Authority:		 

# The following times applied to us:

Activity	Elapsed Time (e.g. 1hr 15mins)
Making a decision on public warning (From time of receipt of warning)	
Formulation/compilation of public notification (From time of decision)	
Activation of public notification systems (From time of notification formulated)	
Total Time	