



# TSUNAMI NEWS

Tsunami Unit Quarterly Newsletter  
September 2008 | Issue No. 2

## In this issue...

- Introduction 1
- Latest developments 1-2
- Other News 2-3
- Training in the Indian Ocean 3
- Upcoming events 3

## Introduction



### Getting into gear

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Head of Tsunami Unit,  
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With the boreal summer season being over, we are fast approaching the time of year for the Intergovernmental Coordination Groups' (ICGs) sessions. But despite these "seasonal" activities most of the work done in establishing tsunami early warning systems is continuous: raising awareness and preparedness and assisting countries in developing and fine-tuning their own Standard Operating Procedures (SOPs). In short: more and more training and assessments for requesting Member States. The Tsunami Unit, with the support of many donor countries and organizations and the help of many dedicated staff and co-workers manages training workshops, assessment missions, and technical visits. Slowly, through the last two years, a solid foundation has been laid in terms of documentation and training, course and outreach material. Now the more important ones are being made available in appropriate languages, and in a culturally adapted form and format. Some of these activities are reported on in this issue of the Tsunami Unit Newsletter. Suggestions and contributions on how to enlarge and improve this corner of the Unit's Workshop are greatly appreciated.

## The Intergovernmental Oceanographic Commission of UNESCO

<http://www.ioc-unesco.org/>  
<http://ioc-tsunami.org/>

### Working towards global protection

- PTWS: Tsunami Early Warning System in the Pacific
- IOTWS: Indian Ocean Tsunami Warning and Mitigation System
- CARIBE-EWS: Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions
- NEAMTWS: Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas

## Latest developments

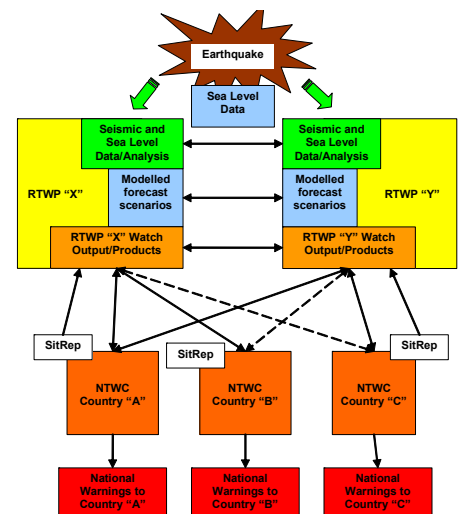
### IOTWS

#### India and Australia commence RTWP transition process

Following the adoption of the Regional Tsunami Watch Provider (RTWP) implementation plan at ICG/IOTWS-V in Malaysia in April 2008, India and Australia have announced their commencement of the transition process to becoming RTWPs. India became the first to start in June, followed by Australia in August that year.

The first stage of the transition is to share Service Level 1 earthquake bulletin information with other potential RTWPs and the Interim Advisory Service providers JMA and PTWC. A standing IOTWS RTWP Coordination Group (RCG) will review this information and measure performance against benchmarks. When the RCG considers that performance at Service Level 1 is satisfactory, a potential RTWP can move to providing Service Level 2 information and data products. When at least 2 RTWPs are operating at Service Level 2, the transition will be considered complete and the RTWPs will formally assume the responsibilities currently carried out by the Interim Advisory Service. It is anticipated that the transition will be complete by the beginning of 2010.

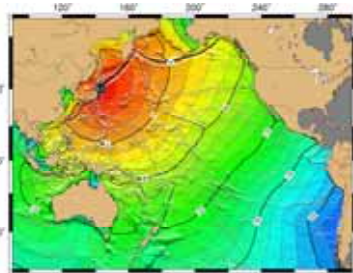
More information on the RTWP Implementation Plan [here](#).



### PTWS

#### Pacific-wide Tsunami Exercise "Pacific Wave 08" in October 2008

Member States recognize that the PTWS requires regular testing and review and noted that simulating scenarios and learning lessons from such exercises is an effective way to improve preparedness. They consequently recommended that a second Pacific wide tsunami exercise be carried out in 2008.



The name of the exercise will be "Pacific Wave 08." The exercise will take place from 28-30 October 2008. The exercise will simulate Pacific countries being placed into a Tsunami Warning situation, and require Member State decision-making, and steps taken prior to public notification. These steps may be played during the exercise dates or the following days. The exercise is not required to be conducted through to community level. Rather, the aim is to exercise the operational lines of communication within the PTWS without disrupting or alarming individual citizens. Member countries will, however, be encouraged to exercise, evaluate and report back on communication and decision making within a warning situation down to the level just prior to public notification.

In order to ensure the commitment of participating countries is fully coordinated, IOC/UNESCO will be seeking official nominations from Member States of National Contacts for the Pacific Wave 08 exercise with whom it will communicate about planning for the conduct of the exercise.

## CARIBE-EWS

The **Workshop on “Good Practices on Tsunami and Coastal Hazards Community Preparedness and Readiness in Central America and the Caribbean”** was held in Panama City, 11-13 August 2008.

The workshop addressed a series of fundamental questions on how to build and keep alive at the community level Coastal Early Warning Systems in Central America and the Caribbean. The meeting convoked community preparedness leaders and planners from across the region to share their experiences in developing community-based programs for dealing with coastal hazards, including tsunamis. After three interesting days of presentations, experience sharing and working group sessions, the main results of the meeting include recommendations for capacity building at the regional and national level, pointers for the development of standard operational procedures and concrete steps to move forward based on current initiatives and ongoing efforts (including educational aspects at community level as well as public-private liaisons and communications, as the main pillars for “Tsunami ready” communities). These recommendations support the development of a Caribbean tsunami and other coastal hazards early warning system (CARIBE/EWS).

The **IOC-GLOSS-PRSN Caribbean Training Course for Operators of Sea Level Stations**, took place between 23-27 June 2008 in Mayagüez, Puerto Rico. The purpose of the course was to provide the sea level station operators in the region lectures and hands-on training on the science and operations of sea level stations for tsunami and other coastal hazards warning purposes. It also considered the proposed IOCARIBE-GOOS partnership that promotes development and sustainability of the Caribbean Sea level array and its integration into the CARIBE/EWS.

More info and report available [here](#)



## NEAMTWS

The establishment of an ad hoc **Task Team** on the architecture of Regional Tsunami Warning Centres (RTWC) was one of the major outcomes of the last ICG/NEAMTWS held in Lisbon, in November 2007. This Task Team met for the first time in January 2008 and, based on the discussions and results, the secretariat circulated a survey among Member States to inquire on national plans and future commitments to the regional system. The responses to this survey will now be analyzed in the second Task Team meeting which will take place at the National Oceanographic Centre, in Southampton, UK, from 29-30 September 2008.

NEAMTWS officers, WG chairs as well as the potential RTWCs of the two major sub-regions (NE Atlantic and Mediterranean) will be represented and discuss a regional architecture, logistics and technical arrangements and the identification of potential national donors to support the operation in the long run. The conclusions and recommendations stemming from this meeting will be presented for approval during the ICG/NEAMTWS-V meeting to be held in Athens, Greece, 3-5 November 2008.

## Other news

The official presentation of the **kid's book “¡Alerta! ¡Tsunami! ¡Maremoto!”** was attended by the First Lady of Puerto Rico. The book was originally written in English by IOC and has been adapted and translated by the Puerto Rico seismic network.

The book can be downloaded [here](#).



The **Puerto Rico Seismic Network** of the Department of Geology of the University of Puerto Rico at Mayagüez successfully installed and is operating a network of 6 tsunami ready tide gauges and meteorological stations.



[Read more...](#)

*In remembrance of the Great Flood of Vela Luka which happened on 21 June 1978, the **International Symposium on Meteotsunamis** took place in Vela Luka, exactly thirty years later, after the devastating event.*

[Read more...](#)



The conference “**The Armed Forces support in possible disasters: tsunamis**” was held in Washington DC, between 27-29 August 2008. Members of the Interamerican Defence Board, the UN University and the Tsunami Unit, met with high ranking officers from Central-American and Caribbean countries.

The role of the Army in the Early Warning, Preparedness and Readiness in the event of Tsunamis was discussed. [Read more...](#)

The 2<sup>nd</sup> [North Pacific Tsunami Awareness Conference](#) in Honolulu, Hawaii, 18-20 August 2008, brought together over 90 experts and participants from numerous Pacific islands. Succinct presentations on NOAA's responsibility to provide warnings highlighted the achievements and ambitions to cooperate in this difficult field of end-to-end warning systems, and in particular emergency management. Examples from recent events and of timely preparation and planning provided ample opportunities for the participants to share information, experiences and concerns. As part of the US programme **TsunamiReady** the contributions showed a high level of government involvement and commitment down to the extremely important “beach level”.

## Training Activities in the Indian Ocean

UNESCO IOC Field Workshop on Geologic Assessment of Makran Tsunami Hazards was held in Oman from 18-27 May 2008. The aim of the workshop was to conduct palaeotsunami studies in northern Oman and train the participants in palaeotsunami research techniques.

The 16 workshop participants came from 11 countries including Australia, India, Indonesia, Iran, Oman, Pakistan, Thailand and Yemen, and experts from Chile, Canada and the USA. Five days were spent in the field on the north coast of Oman. Mid-day temperatures around 45 °C limited field work to the hours before 11 a.m. Participants had to arise at 3 a.m. to reach field sites at dawn.



Two days of workshop presentations and discussions as well as a public seminar were held at Sultan Qaboos University. During the workshop, all participants made presentations on the paleotsunami research in their country or region. The seminar was attended by members of the Oman Tsunami Early Warning Taskforce, including Mr Al-Harthy, the Director of the Oman Meteorology Department and Tsunami Warning Focal Point for Oman. More than 25 students and staff of the university also attended. [Read more...](#)



A programme of training workshops on the development of **Standard Operating Procedures (SOP)** for tsunami warning has commenced with a regional workshop held in Bangkok, 12-16 May. The programme, funded by the UNESCAP administered Multi Donor Trust Fund, aims to strengthen regional tsunami warning and emergency response capacity by providing guidance, templates, and best practice examples to member states in the Indian Ocean and Southeast Asia regions. The Bangkok workshop was attended by 46 participants and trainers from 19 countries. After 2 days of plenary sessions, the participants formed breakout groups for more detailed training on specialised warning centre and disaster management topics before coming back together on the last day for a tabletop exercise.

The next stage of the project is to conduct multi-mission technical assistance sub-projects in Myanmar, Pakistan, Philippines and Vietnam, working directly with each country to help them develop sound tsunami warning and emergency response SOPs. The first of these country workshops was held at PHIVOLCS in Quezon City, Philippines, 4-8 August, and was attended by 37 participants from a number of agencies and media organisations.

## Upcoming events

- *Advanced Hydrographic surveying training courses on single beam and multibeam operation, bathymetric data acquisition, processing and management.* Bremerhaven, GERMANY 16-30 September 2008. Organised by UNESCO/IOC within the framework of the COAST MAP IO project.
- [NEAMTWS Task Team Meeting on RTWC.](#) Southampton, UK, 29 September-1 October 2008.
- [ICG/PTWS Steering Committee.](#) Guayaquil, ECUADOR. 8-10 October.
- [Regional Symposium on Tsunamis.](#) Puerto La Cruz, VENEZUELA, 20-21 October 2008.
- *DEM Development and Tsunami Inundation Maps Training Workshop.* Hyderabad, INDIA, 27 October-7 November 2008.
- [Fifth session of the ICG/NEAMTWS.](#) Athens, GREECE, 3-5 November 2008.
- *International Conference on Tsunami Warning (ICTW).* Bali, INDONESIA. 11-14 November 2008. Held on the occasion of the Inauguration of the Indonesian Tsunami Early Warning System.
- [ICG/Caribe-EWS Working Groups and Officers Meeting.](#) Pointe-à-Pitre, FRANCE, 8-10 December 2008.
- *First International Caribbean Waves: Risk Evaluation of Natural Hazards in the Caribbean.* Pointe-à-Pitre, FRANCE, 9-10 December 2008.

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## Global web-based sea level station monitoring facility launched

IOC has in collaboration with the Flanders Marine Institute (VLIZ) developed a web-based global sea level station monitoring facility for viewing sea level data received in real time from different network operators through a number of different communications channels.

The particular aims of this service are: (i) to provide information about the operational status of global and regional networks of real time sea level stations; and (ii) to provide a display service for quick inspection of the raw data stream from individual stations.

The web-site developed from an earlier collaboration between VLIZ and the ODINAFRICA project of IODE and was initially focused on operational monitoring of sea level measuring stations in Africa. The service has since been expanded to a global station monitoring service for real time sea level measuring stations in (i) the Global Sea Level Observing System (GLOSS) Core Network; and (ii) the networks under the regional tsunami warning systems in the Indian Ocean, North East Atlantic & Mediterranean, Pacific and the Caribbean.



<http://www.vliz.be/gauges>

The web service provides the following capabilities:

- *Global sea level network map, showing color-coded operational status (working/not working)*
- *Station listing, showing metadata (4-letter code, GLOSS ID number, Location, Collection method, Last Data Transmission date/time, Delay, and Transmit Interval)*
- *Displaying and download of raw data.*

The web-service does not provide low frequency and high frequency data of research quality. Such data are available from the [GLOSS designated data centers](#) at the Permanent Service for Mean Sea Level (PSMSL), the British Oceanographic Data Center (BODC) and the University of Hawaii Sea Level Center (UHSLC).