



UNESCO/IOC – NOAA ITIC Training Program in Hawaii (ITP-TEWS Chile)  
TSUNAMI EARLY WARNING SYSTEMS  
AND THE PACIFIC TSUNAMI WARNING CENTER (PTWC) ENHANCED PRODUCTS  
TSUNAMI EVACUATION PLANNING AND UNESCO IOC TSUNAMI READY PROGRAMME  
19-30 August 2024, Valparaiso, Chile

# ITP-TEWS Chile 2024

## Course Overview

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# END-TO-END TSUNAMI WARNING

## Tsunami Warning chain for M9.5 Chile

Pacific Tsunami Warning & Mitigation System

# Tsunami Warning!



The image shows a white rectangular area with a black border. At the top, it says 'Pacific Tsunami Warning & Mitigation System'. Below that is the large text 'Tsunami Warning!'. At the bottom, there are four logos: UNESCO, ITCO (International Tsunami Commission), NOAA (National Oceanic and Atmospheric Administration), and the Chilean Government logo.



Pacific Tsunami Warning & Mitigation System

### Tsunami Warning!

When a major undersea earthquake occurs near the coast, a destructive tsunami can result from it. In order to save lives and reduce property damage, it is essential to issue tsunami warnings as early as possible. The Pacific Tsunami Warning and Mitigation System (PTWC) has been established to provide tsunami warnings to the Pacific region.


In 2011, the PTWC celebrated its 20th anniversary. The system was established in 1995 in response to the 1994 M9.2 earthquake off South Central Chile that generated a tsunami which killed 2,200 people in Hawaii, Japan, and the Philippines. The PTWC has been built up over the decades through cooperation and the commitment of the participating countries in the Pacific Rim.

To ensure awareness of the danger of tsunamis, and to educate the public on how the PTWC works, the system staff is approaching Hawaii, the U.S., Indonesia, Chile, Japan, and other tsunami-prone areas to help them understand the system and the value of the PTWC.

This video illustrates the tsunami warning chain for an M9.5 earthquake off Southern Chile. The Pacific Tsunami Warning Center (PTWC) staff quickly analyze seismic data and issue tsunami warnings to Pacific and Indian Ocean Tsunami Warning Centers around the Pacific. Within one to two hours, video messages are prepared and disseminated to coastal communities along the Pacific coast of Chile and Peru, and other nations the PTWC serves that have been and will be affected.

[www.tsunami.gov](http://www.tsunami.gov)

Produced by International Tsunami Information Center (ITC) in collaboration with the U.S. NOAA Tsunami Program. Services provided by the International Tsunami Warning and Mitigation System (ITWMS) and the Pacific Tsunami Warning and Mitigation System (PTWC). ITC is a joint effort of the U.S. and Japan. ITC is a member of the International Oceanographic Commission (IOC). ITC is a member of the International Tsunami Commission (ITC).



English:  
Spanish:  
French:

<https://vimeo.com/124650777>, <https://www.youtube.com/watch?v=XlXhRs7bst4>  
<https://vimeo.com/125109150>, <https://www.youtube.com/watch?v=aXx4pnVvz8I>  
<https://vimeo.com/125109148>, [https://www.youtube.com/watch?v=m4O\\_nnVslBQ](https://www.youtube.com/watch?v=m4O_nnVslBQ)

# Goals and Objectives

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- Strengthen Tsunami Warning and Emergency Response plans and procedures (SOPs for end-to-end warning chain: detection-to-evacuation)
- Increase capacity of operational staff to efficiently and effectively respond
- Improve understanding and use of PTWC Enhanced Products
- Strengthen community evacuation planning and preparedness, especially for local tsunamis, through UNESCO IOC Tsunami Ready Recognition programme.

# Goals and Objectives

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- ITP-TEWS Chile will use Chile as a working example of an end-to-end tsunami warning and mitigation system demonstrating stakeholder coordination and partnership for operational warnings and in preparedness activities.
- Training activities will include warning and response decision-making, use of decision-support tools, evacuation, awareness, and exercises

# Agenda

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- **Day 1 – 3 (Mon-Tues): TEWS Overview and Background**
  - IOC Global System - ICGs for Pacific and Caribbean, TOWS WG
  - Earthquake and Tsunami Science, Lessons Learned
  - Chile TEWS
- **Day 4 – 5 (Wed – Fri): TWC/ TER operations, SOPs, PTWC products, Decision Support Tools, SL instrumentation**  
Thurs: CSN, SENAPRED, Tues-Fri: SNAM (TWC drill)
- **Day 5 (Sat, Field Trip): Tsunami Deposits and Marine Preparedness**
- **Day 6 (Sunday): Free Day**
- **Day 7- 8 (Mon - Wed)**
  - Mitigation, Preparedness, Awareness
  - UNESCO IOC Tsunami Ready Recognition Programme
- **Day 9 - 10 (Thurs - Fri): Exercise Chile Wave (ECW-24) Tsunami Exer**

# Course Materials

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- ❑ **TWC/TER SOPs: IOC MG 76 (2017) (En)**  
Plans and Procedures for Tsunami Warning and Emergency Management
- ❑ **Evacuation Planning: IOC MG 82 (2019)**  
Preparing for Community Tsunami Evacuations: from inundation to evacuation maps, response plans and exercises
- ❑ **Exercises**
  - **IOC Wave Exercises: IOC MG 58 (2017) (En, Sp)**  
How to Plan, Conduct and Evaluate UNESCO/IOC Tsunami Wave Exercises
  - **Multi-Annual Community Tsunami Exercise Programme Guidelines for CARIBE-EWS: IOC MG 86 (2021) (En, Sp, Fr)**
- ❑ **Tsunami Ready: IOC MG 74 (2022) (En, Sp, Fr)**  
Standard Guidelines for the Tsunami Ready Recognition Programme
- ❑ **Awareness materials (general, global / regional hazards)**



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# Thank You

# Muchas Gracias

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