

# Warning Information

In the event of a potential tsunami threat in the Caribbean, the Pacific Tsunami Warning Center may issue the following messages to designated agencies.

**Tsunami Information Bulletin/Statement** advises of major earthquakes and gives general information about tsunami threats. In most cases, it indicates there is no threat of a destructive tsunami, and is used to prevent unnecessary evacuations as the earthquake may have been felt in coastal areas.

A **Tsunami Advisory** is issued due to the threat of a potential tsunami which may produce strong currents or waves dangerous to those in or near the water. The threat may continue for several hours after the arrival of the initial wave, but significant widespread inundation (flooding) is not expected for areas under an advisory.

A **Tsunami Watch** is the second highest level of alert. Watches are issued based on seismic (earthquake) information without confirmation that a destructive tsunami is underway. It is issued as a means of providing an advance alert to areas that could be impacted by destructive tsunami waves.

A **Tsunami Warning** is the highest level of alert. It is issued where there is imminent threat of a tsunami from a large underwater earthquake or following confirmation that a potentially destructive tsunami is underway.

CONTRIBUTING SOURCE:  
UNESCO IOC International Tsunami Information Center

**CDEMA**

The Caribbean Disaster  
Emergency Management Agency



UWI

Seismic Research Centre



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TSUNAMI AND OTHER COASTAL HAZARDS  
WARNING SYSTEM PROJECT (2010)

A GUIDE FOR THE PUBLIC

## Understanding Tsunamis in the Caribbean



### What is a tsunami?

A tsunami (tsoo-NAH-mee) is a series of ocean waves caused by a major disturbance of the ocean floor, such as a large underwater earthquake, landslide or volcanic eruption. Very rarely, large meteorite impacts in the ocean may also trigger tsunamis. All known sources capable of causing tsunamis are found within the Caribbean and there are also distant sources across the Atlantic.

### What can I expect during a tsunami?

- ✓ Tsunamis are often seen as a massive wall of water approaching land.
- ✓ There is usually more than one wave and the first is often not the largest.
- ✓ Tsunami waves are powerful and often contain dangerous debris such as trees, cars and boats.
- ✓ Tsunami waves may inundate (flood) areas much further inland than storm surges.



Tsunamis are powerful waves and often contain dangerous debris. American Samoa, September 2009. Photo: Gordon Yamasaki

### Can tsunamis occur in the Caribbean?

Tsunamis have impacted the Caribbean in the past and are, therefore, expected to occur in the future. In the past 500 years there have been at least ten destructive, confirmed earthquake-generated tsunamis in the Caribbean Basin with four causing fatalities. An estimated number of more than 3000 people are thought to have been killed by these events.

Since the Caribbean islands lie in an area of relatively high earthquake activity, the most likely tsunamis to affect the region are those which can be triggered by shallow earthquakes (less than 50km in depth, greater than magnitude 6.5). Based on historical evidence, the Caribbean is expected to experience approximately one destructive tsunami per century generated by earthquakes occurring within the region.

Currently, there is no comprehensive tsunami warning system in the Caribbean, however, an interim agreement exists with the Pacific Tsunami Warning Center. Scientists and disaster management agencies are in the process of developing a warning system but it may be several years before this is operational.



Tsunami travel time chart for 1755 Lisbon tsunami which affected islands in the Caribbean (Barbados and Martinique). Source: [tsun sscc.ru/TTT\\_rep.htm](http://tsun.sscc.ru/TTT_rep.htm)

# Sensing a tsunami

Tsunamis are often accompanied by natural signs that can be sensed by an alert person. Recognizing any of these tsunami warning signs at the beach could save your life!

## ➡ Feel

Do you **FEEL** the ground shaking severely? Severe earthquakes may cause tsunamis. **RUN** to high ground if you feel the severe shaking.

## ➡ See

Do you **SEE** an abnormal withdrawal of water? As a tsunami approaches land, the ocean may pull back a long way from the shore, exposing the ocean floor, reefs and fish. **RUN** to high ground if the sea withdraws.

## ➡ Hear

Do you **HEAR** an unusual roar? A roaring sound from the ocean is sometimes heard before a tsunami arrives. **RUN** to high ground if you hear the roar.

## ➡ Run

- ▶ **RUN** to high ground if you experience any one of these signs.
- ▶ Do not wait for all of the signs to occur before leaving the area.
- ▶ Authorities may not have enough time to issue an official Tsunami Warning so do not wait for official evacuation orders.

# Before a tsunami

- ▶ Determine if your home is in a vulnerable area by discussing with your local disaster management office.
- ▶ Be aware of concrete, reinforced multi-storey buildings nearby that can be used for evacuation to upper floors if necessary.
- ▶ If you live in a low-lying area – for instance near to the beach – identify the quickest way to get to high ground. A safe area would be at least 30m (~100feet) above sea level and 3km (~ 2miles) inland. Teach and practice your evacuation plan with all family members.
- ▶ Ensure that all family members can recognize natural tsunami signs as timely, official Tsunami Warnings may not be possible.
- ▶ Discuss tsunamis with your family and friends. Everyone needs to know what to do in case all members are not together.
- ▶ Emergency supplies and equipment such as canned foods, medication, flashlights, battery-powered radios, clean water and First Aid kits should be readily available and working properly.



# During a tsunami

- ▶ Do not wait for an official warning before evacuating; authorities may not have enough time to issue a Tsunami Warning.
- ▶ If you are at the beach and recognize signs of a tsunami - such as a severe ground shaking, the sea pulling back significantly from the shoreline or an unusual roar from the ocean leave the area and move immediately to higher ground.
- ▶ Sometimes tsunamis may occur without the initial pulling back of the sea. In this case, a massive wall of water may be seen approaching land. If you can see the wave you are already too close to outrun it.
- ▶ If you are unable to move to higher ground, go to an upper floor (at least the 3rd storey) or roof of a concrete and reinforced building. As a last resort, climb a strong tree if trapped on low ground.
- ▶ If swept up by a tsunami, look for something to use as a raft.
- ▶ A tsunami is not a single wave, but a series of waves that can come ashore for hours.
- ▶ The first wave may not be the largest. Stay out of danger areas until an "all-clear" is issued by a recognized authority e.g. your local disaster management office.
- ▶ If a Tsunami Warning is issued NEVER go down to the beach to watch the waves come in.
- ▶ Do not try to surf the tsunami.

# After a tsunami

- ▶ If possible, stay tuned to a radio or television to get the latest emergency information.
- ▶ Help injured or trapped people and call for help if necessary.
- ▶ Keep out of stagnant water.
- ▶ Open windows and doors to help dry buildings.
- ▶ Stay out of damaged buildings. Return home only when authorities say it is safe.
- ▶ Remove mud while it is still moist to give walls and floors an opportunity to dry.
- ▶ Check food supply and test drinking water. Fresh food that has come in contact with flood water may be contaminated and should be discarded.
- ▶ Check for damage to sewer and water lines.



## Be Tsunami Smart, know the signs

**"If you recognize ANY signs of a tsunami, move immediately to higher ground"**