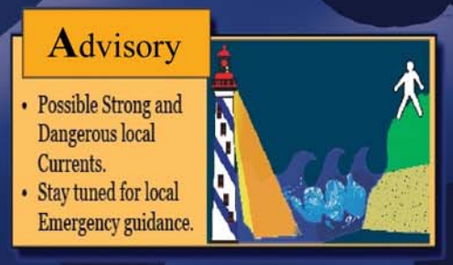
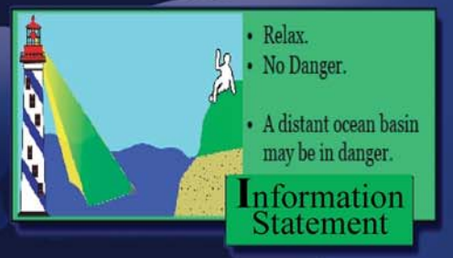
## Tsunami Warning Center
4 Levels of Messaging






## U. S. Tsunami Product Definitions:

**Warning:** A potential tsunami with significant widespread inundation is imminent or expected. Widespread, dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after the arrival of the initial wave.

**Advisory:** A potential tsunami which may produce strong currents or waves exists. Significant widespread inundation is not expected.

**Watch:** A potentially dangerous distant seismic event has occurred which may later impact the watch area with a tsunami. Be ready to take action if a warning is issued.

**Information Statements:** An earthquake has occurred or a tsunami warning, watch, or advisory has been issued for another section of the ocean. In most cases, information statements are issued to indicate there is no threat of a destructive tsunami in your area.

## Be Prepared BEFORE a Tsunami Strikes:

- ✔ Know the tsunami history and flooding elevation of the area where you live, work, or visit.
- ✔ Learn a location of the nearest tsunami shelter and/or safe area.
- ✔ Learn the safe route to shelter.
- ✔ Have a family emergency plan.
- ✔ Have a portable disaster supply kit with three days supply of food and water. Keep the kit in a location you can access quickly.
- ✔ In addition, consider maintaining a two-week supply of food and water in your home.

For more information about tsunamis:

**www.tsunami.gov**

NATIONAL WEATHER SERVICE

## What is a Tsunami?

Tsunamis are ocean waves generated by a sudden change of the ocean water level, most often caused by earthquakes, but also by landslides, volcanic eruptions, and comet or meteorite impacts in the ocean.

## Why are Tsunamis Dangerous?

As the tsunami crosses the deep ocean, it may be only a few feet or less in height. As the tsunami approaches the shore, the wave height increases and associated currents intensify, becoming a threat to life and property. There is usually little time to forecast the severity of a tsunami after one is generated. Large areas of coastline can be inundated by a tsunami.

## A Tsunami:

- ✔ is like a fast rising flood or an advancing wall of water and strikes with devastating force.
- ✔ moves faster than you can run.
- ✔ is a *series* of waves that may continue for hours. The first wave may not be the last or the most dangerous.

## Warning Signs of a Tsunami:

- ✔ A strong earthquake, felt in a coastal area, that causes difficulty standing.
- ✔ A sudden unexpected rise or fall of the ocean tide or height.
- ✔ A loud, roaring sound (like an airplane or train) coming from the ocean.

## What do I do if I See These Warning Signs?

- ✔ Keep calm.
- ✔ Immediately move to higher ground or into a tall, sturdy building and stay there.
- ✔ Do not drive – keep roads open for emergency vehicles.
- ✔ Stay away from the beach until officials issue an "all clear."

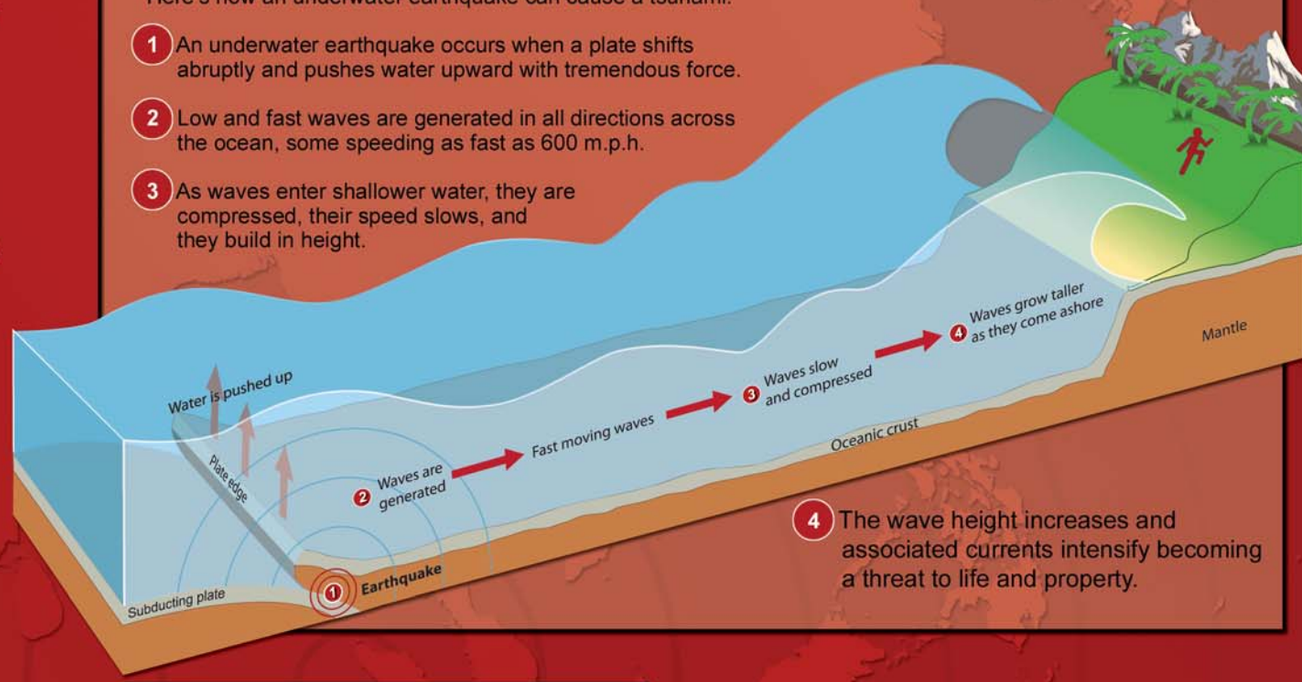
## Who is at Risk for a Tsunami?

- ✔ Any resident, visitor, business or facility on *any* beach or coastline

## How a Tsunami Works

The most common causes of tsunamis are underwater landslides and earthquakes. Here's how an underwater earthquake can cause a tsunami:

1. An underwater earthquake occurs when a plate shifts abruptly and pushes water upward with tremendous force.
2. Low and fast waves are generated in all directions across the ocean, some speeding as fast as 600 m.p.h.
3. As waves enter shallower water, they are compressed, their speed slows, and they build in height.
4. The wave height increases and associated currents intensify becoming a threat to life and property.




## Did you know...?

- ✔ In deep water, tsunami waves may reach speeds of 600 miles per hour.
- ✔ Currents associated with tsunamis may reach up to 35 miles per hour.
- ✔ Tsunamis may be generated from distant locations and may not be preceded by a local earthquake.

## Facts About Tsunamis

- ✔ Not every earthquake will generate a tsunami.
- ✔ A small tsunami at one beach may be a giant tsunami a few miles away.
- ✔ A tsunami can strike anywhere and at anytime along the U.S. coastline.
- ✔ The only warning you may have is an earthquake.
- ✔ Tsunamis can reach the coast within minutes of an earthquake.

www.tsunami.gov