

PRESENTED BY:



IOC

U. S. NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION (NOAA)
UNESCO/INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (IOC)
INTERNATIONAL TSUNAMI INFORMATION CENTER (ITIC)
LABORATOIRE DE GEOPHYSIQUE, FRANCE (LDG)

THE GREAT WAVES

and 2200 lives in the 1998 Aitape, Papua New Guinea tsunamis. Property damage was nearly one billion United States (U.S.) dollars. Although 80% of the tsunamis occur in the Pacific, they can also threaten coastlines of countries in other regions, including the Indian Ocean, Mediterranean Sea, Caribbean region, and even the Atlantic Ocean.

At the Richard H. Hagemeyer Pacific Tsunami Warning Center (PTWC), the operational center of the Tsunami

The purpose of this brochure is to increase awareness and knowledge of tsunamis. Please share what you learn; knowing the right information may save your life and the lives of those you love.

The phenomenon we call "tsunami" (soo-NAH-mee) is a series of traveling ocean waves of extremely long length generated primarily by earthquakes occurring below or near the ocean floor. Underwater volcanic eruptions and landslides can also generate tsunamis. In the deep ocean, the tsunami waves propagate across the deep ocean with a speed exceeding 800 kilometers per hour ([km], ~500 miles per hour), and a wave height of only a few tens of centimeters (1 foot [ft]) or less. Tsunami waves are distinguished from ordinary ocean waves by their great length between wave crests, often exceeding a 100 km (60 miles [mi]) or more in the deep ocean, and by the time between these crests, ranging from 10 minutes to an hour.

As they reach the shallow waters of the coast, the waves slow down and the water can pile up into a wall of destruction tens of meters (30 ft) or more in height. The effect can be amplified where a bay, harbor or lagoon funnels the wave as it moves inland. Large tsunamis have been known to rise over 30 meters (100 ft). Even a tsunami 3-6 meters (m) high can be very destructive and cause many deaths and injuries.

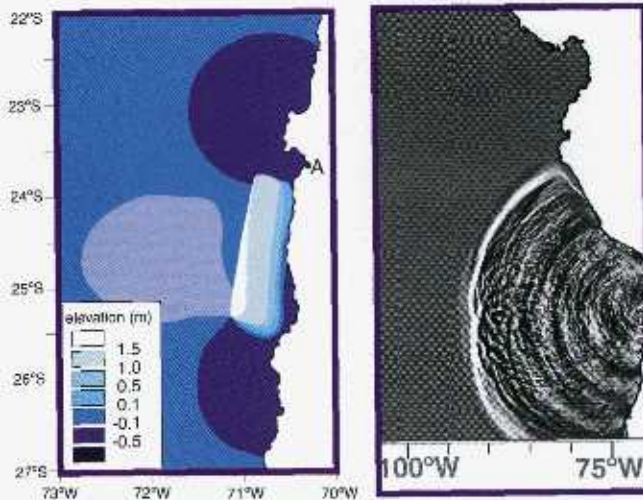
Tsunamis are a threat to life and property for all coastal residents living near the ocean. During the 1990s, over 4,000 people were killed by 10 tsunamis, including more than 1000 lives lost in the 1992 Flores region, Indonesia,



Hilo Harbor, Hawaii, April 1, 1946, Aleutian Islands earthquake. Photo taken from the vessel Brigham Victory of tsunami breaking over Pier 1. The gentleman on the left did not survive. (NOAA)

Warning System in the Pacific (TWSP), scientists monitor seismological and water level stations throughout the Pacific Basin, evaluate potentially tsunamigenic earthquakes, monitor tsunami waves, and disseminate tsunami warning information. Located near Honolulu, Hawaii, PTWC provides tsunami warning information to national authorities in the Pacific Basin. National or Regional Warning Centers are also operating in Japan, French Polynesia, Chile, and Russia, in addition to the United States.

The International Tsunami Information Center, hosted by the U.S. and located in Honolulu, Hawaii, at NOAA/National Weather Service Pacific Region Headquarters, monitors and evaluates the performance and effectiveness of the TWSP on an everyday basis.



Left: Computer model of the initial water surface changes at the time the July 30, 1995, Chilean tsunami was generated. A is Antofagasta, Chile. Right: Computer model of the same tsunami, three hours after it was generated.

