

Tsunamis



TWENTY

Tsunamis

History

Tsunamis have occurred frequently throughout history; however, it wasn't until the catastrophic tsunami in 2004 that this natural phenomenon gained significant exposure amongst the general population. This is due in large part to the prevalence of mainstream media. The following represents some of the greatest tsunamis events in history:

Date	Place	Size	Death Toll
December 26, 2004	Sumatra, Indonesia	As tall as 50 metres moving 5 km inland	230,000
March 11, 2011	North Pacific Coast, Japan	800km per hour with 10 meter high waves 452,000 people were displaced from their homes	18,000
November 1, 1755	Lisbon, Portugal	Waves up to 30 meters high	60,000
August 27, 1883	Krakatau, Indonesia	Waves as high as 37 meters	40,000
October 28, 1707	Nankaido, Japan	Waves as high as 25 meters	30,000

How They Work

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Because these types of natural disasters are so frequent in Japan, the actual word tsunami comes from the Japanese words 'tsu' meaning harbor and 'nami' meaning wave.

What Makes Them So Destructive?

What makes a tsunami so destructive is both its size and speed. Tsunamis can reach speeds of 222 m/s (729 ft/s) and heights of 30 meters (100 feet). Think about the difference between throwing a tennis ball 5 m/s and throwing a bowling ball at 100 m/s, which would create more damage?

Current Applicability

Tsunamis are a major concern for scientists today and this is why the continuous study, monitoring, and measurement of tsunamis activity is so important. Currently, tsunamis are monitored at various warning centers which use open-ocean tsunami buoys and coastal tide gauges to measure activity. Seismic data from earthquakes (how much disturbance they create) is also used and the magnitude and intensity of the earthquake can often give scientists valuable information on the probability of a tsunami occurring and the resulting size and impact it will make. This information is often available in a short window of time before the effects of the tsunami are able to reach the shore. This can help to reduce the death toll from these disasters, as people are able to evacuate and is why it is so critical to have warning centers and proper emergency procedures in place.



Impact

Social:

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Environmental: Not only can tsunamis kill and injure humans they can also have significant and devastating effects on the environment. Directly, tsunamis move a lot of water both away from the ocean and onto the shore, which will damage natural ecosystems and displace certain populations of aquatic and land organisms. Assuming this immediate displacement doesn't kill the species immediately, it will severely impact the health of the organism.

Tsunamis can also indirectly impact an environment. For example, disaster debris can be improperly disposed of, burned in the open air or dumped in protected areas resulting in hazardous materials becoming intermixed with normal garbage. In addition, soil and water can become contaminated through the release of chemicals such as asbestos and fuel.

Being Prepared

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Some of the warning signs that a tsunami may occur include:

- there is a large earthquake that lasts for more than 20 seconds
- a noticeable fall/rise in water levels
- a drastic change in normal water patterns

Reading Comprehension Questions:

1. How many people died in the Sumatra tsunami of 2004?
2. What
3. Describe how a tsunami could be started by an underwater disturbance?
4. Why
5. Why are tsunamis so destructive?
6. If a
7. Describe the direct environmental impact of a tsunami.
8. What
9. Someone

TWF READING SAMPLE

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TWF READING

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