



Australian Government
Attorney-General's Department
Emergency Management Australia

EMA Schools Education

TSUNAMI INFORMATION



Tsunami Activity Sheet No. 2

Where have Tsunamis occurred in the past

2. Where have tsunamis occurred in the past?

Tsunamis do not occur everywhere and on every coastline – there is a pattern to their distribution. The majority of tsunamis – over 90 per cent – occur in the Pacific Ocean. The reason for this can be seen when looking at a map that shows tectonic plates and the location of active volcanoes.

The **Pacific Ring of Fire** is a region well known for earthquake and volcanic activity.

<http://geography.about.com/cs/earthquakes/a/ringoffire.htm>

1. What is a tectonic plate?
2. Define the following terms: seismic; subduction; dormant volcano; active volcano.
3. What percentage of the world's active and dormant volcanoes is located on the Pacific "Ring of fire"?
4. The plate boundaries also experience a lot of earthquake activity. Go to the **enchanted learning** site and look at the diagram of the Earth's crust. What occurs at the plate boundaries that might give rise to earthquakes?

<http://www.enchantedlearning.com/subjects/astronomy/planets/earth/Continents.shtml>

This site is an excellent site <http://www.guardian.co.uk/flash/0,5860,1121610.html> showing the how earthquakes occur and how they can cause tsunami.

Also read the information and look at the animations at the **geoworld** site.

http://geo-world.org/ks3/year8/plate_tectonics.html

At the **tsunami risks project**, <http://www.nerc-bas.ac.uk/tsunami-risks/> there is a clickable map showing distribution of tsunamis and more information on a few. Click on **past events** to get access to the map. You can also go to a risk atlas and print graphs for various locations

- a) Study this map, which shows the distribution of recorded tsunami events. Look once again at the map showing the Pacific "Ring of fire". Describe the association between the location and distribution of earthquake and volcanic activity and the location and distribution of recorded tsunamis.
- b) An **interactive map** of the world allows you to find out more detail about some tsunami events.

<http://www.geophys.washington.edu/tsunami/general/historic/historic.html>

Where have tsunamis occurred in Australia?

All low-lying coastal areas can be affected by tsunami. A tsunami is recorded on average in Australia every two years but they are usually too small to be noticed by people.

The threat of tsunami in Australia is low for most of our coastline. There is a medium threat along the northern half of the coastline in Western Australia. There are low risks on the eastern coast.

The last tsunami to be noticed in Australia was in 1994 along the northwest coast, following an earthquake in East Java. The biggest ever was recorded at Cape Leveque, Western Australia in 1977. No one was injured by these waves.

<http://www.ga.gov.au/urban/factsheets/tsunami4.jsp>

1. Which parts of the Australian coastline are at risk of tsunamis and why?
2. Look again at the map showing the Pacific "Ring of fire". Are other parts of the Australian coastline potentially at risk from tsunamis occurring in the Pacific Ocean? Explain.