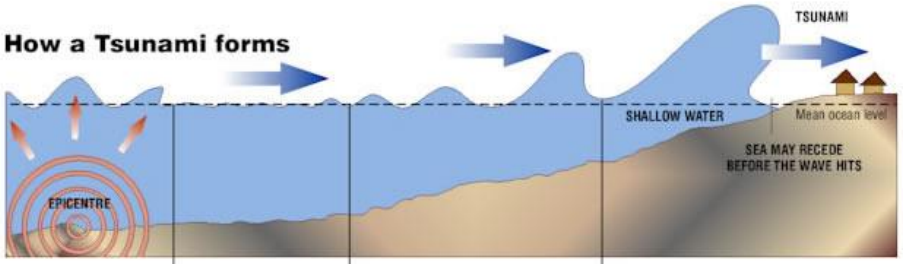
# TSUNAMİ

## How a Tsunami forms



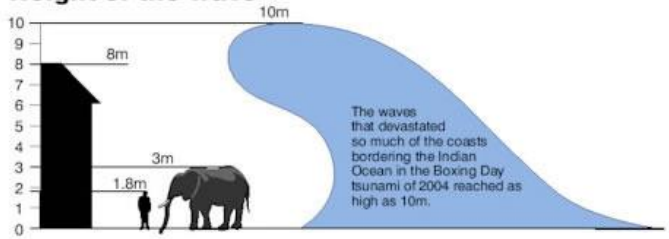

During a quake the sea floor either rises or subsides along a fault line and a mass of water is displaced

Waves rush away at high speeds. In deep oceans tsunamis can be as little as 60cm high but can travel more then 700km/h.

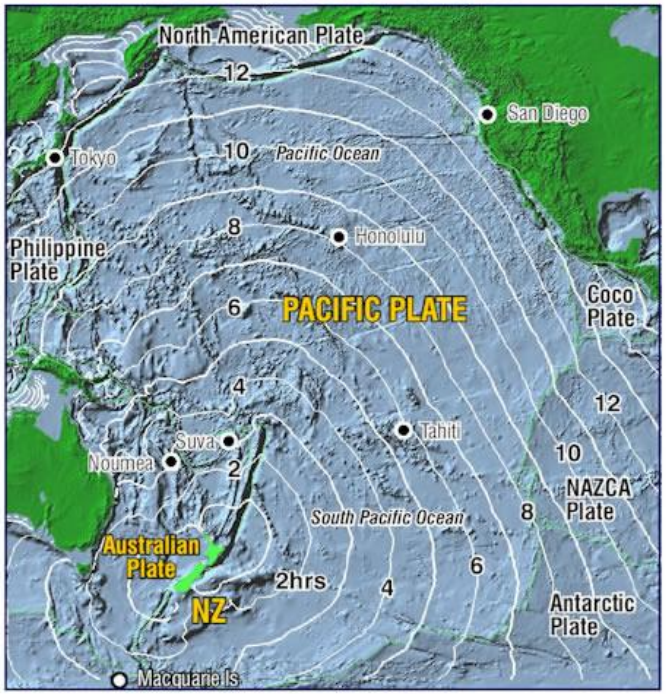
The waves grow higher and slow down as they reach the shallower water near coastal areas

The tsunami hits the coast devastating all in its path. People die not only from drowning, but also from being crushed by buildings and debris.

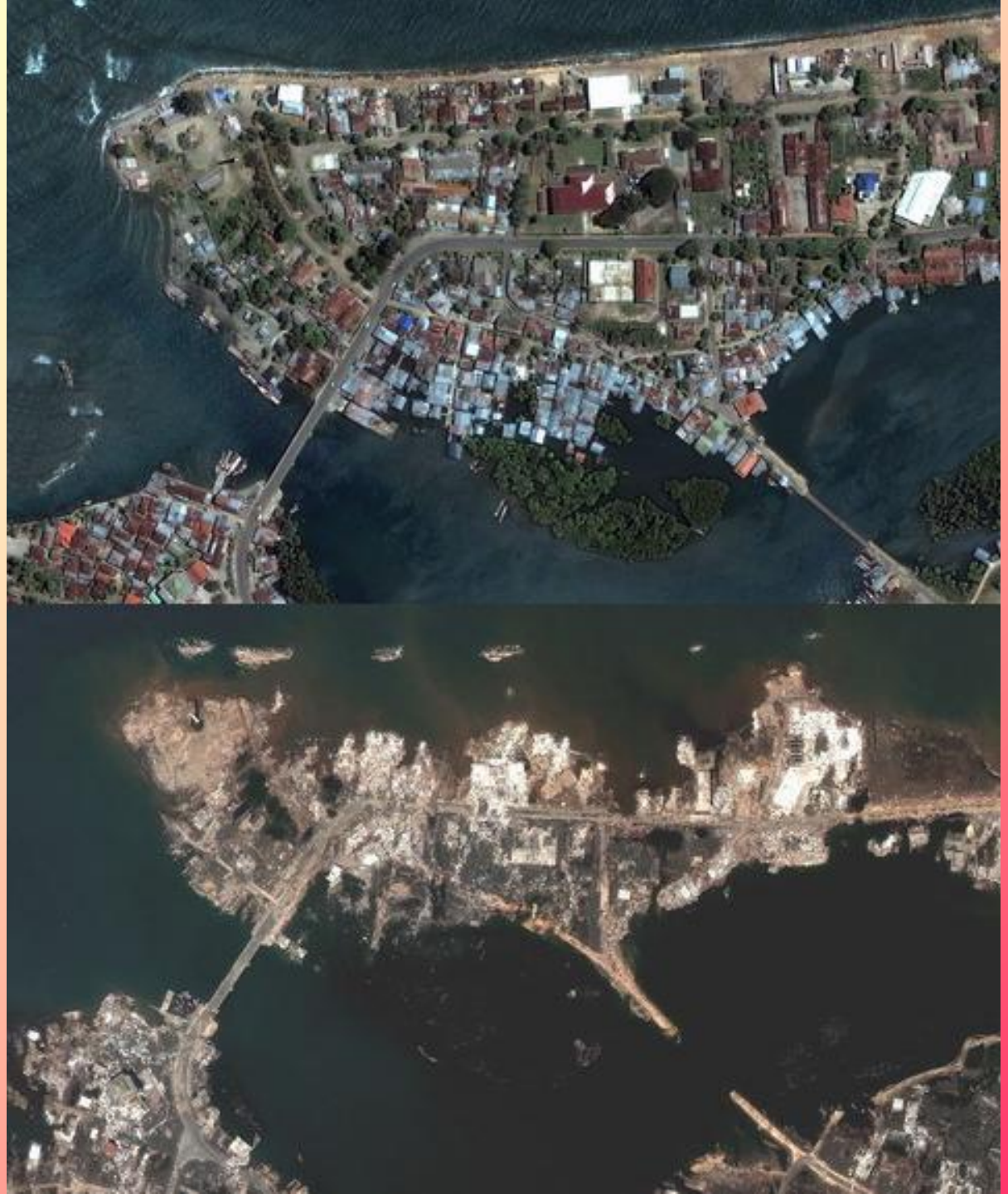
## Height of the wave

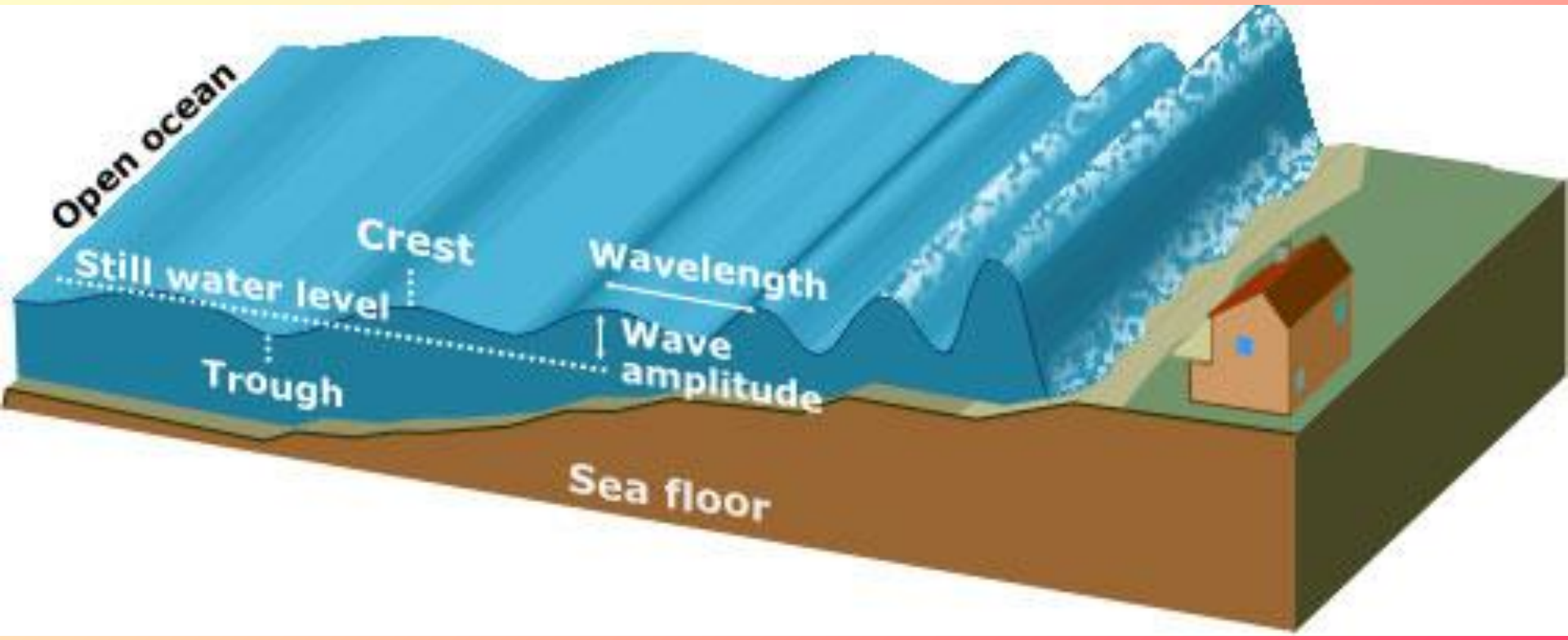


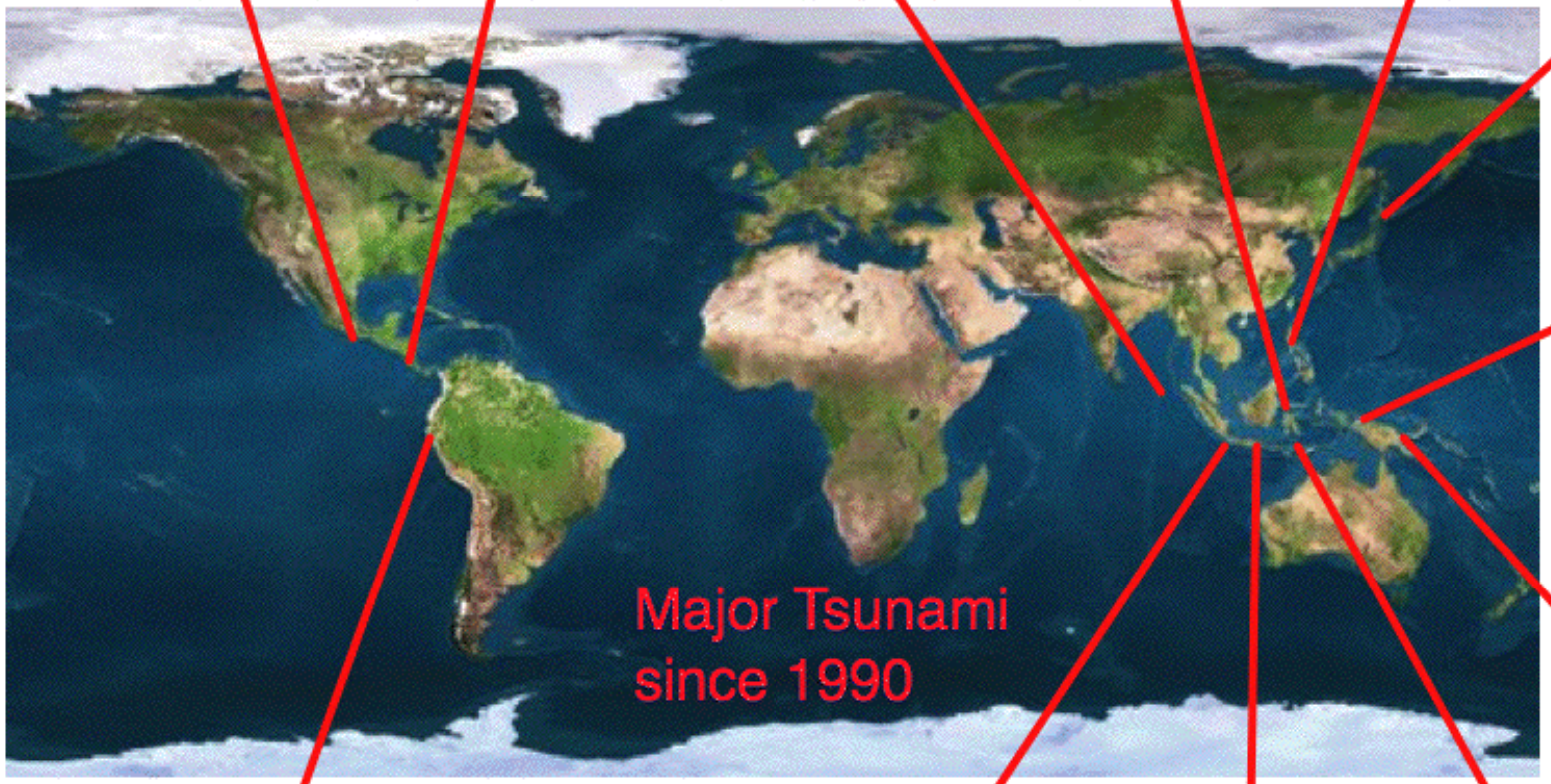

## Pacific tsunami travel times




**The quake occurred at one of the many seams in the ever-shifting crust of the earth where one plate slips beneath another in an incessant, but spasmodic process. In this case, the quake was set off by an abrupt slippage along 700 miles of the seam where the plate beneath the Indian ocean slides under the Indonesian archipelago.**




Open ocean
Crest
Still water level
Wavelength
Wave amplitude
Trough
Sea floor




Mexico
1995
11m
1 killed

Nicaragua
1992
10m
170 killed

India Ocean
2004
10m+
280,000 killed

Indonesia
1996
3.4m
9 killed

Mindoro
1994
7m
49 killed

Japan
1993
31m
239 killed

Irian Jaya
1996
8m
161 killed

New Guinea
1998
15m
2200 killed

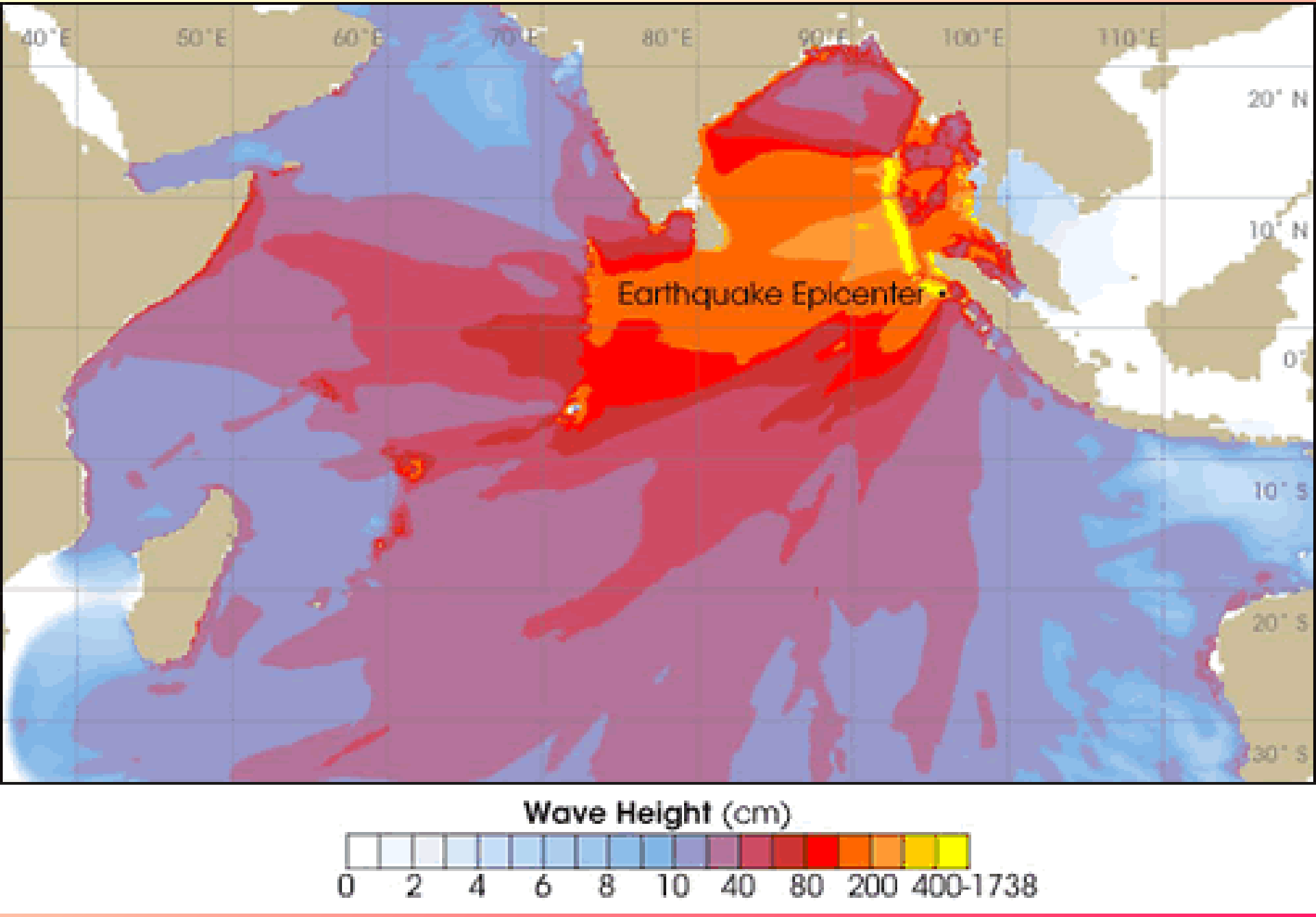
Peru
1996
5m
12 killed

Based on
Bryant 2001
& Gonzalez 1999

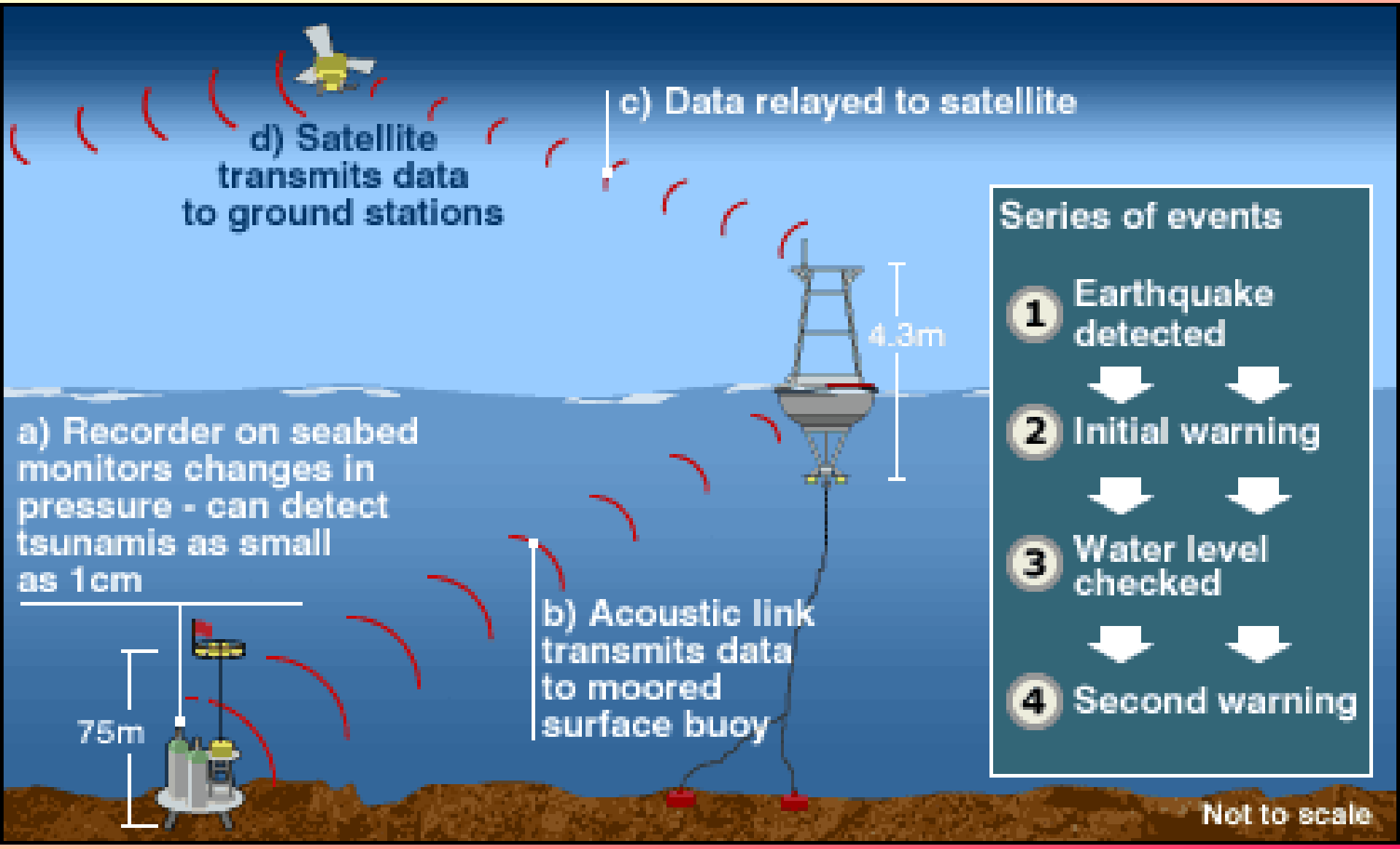
Indonesia
2006
2m+
650 killed

Indonesia
1994
14m
238 killed

Indonesia
1992
26m
1000 killed


40°E
50°E
60°E
70°E
80°E
90°E
100°E
110°E
20° N
10° N
0°
10° S
20° S
30° S
Earthquake Epicenter
Wave Height (cm)
0 2 4 6 8 10 40 80 200 400-1738


"Suddenly I heard a shout."


d) Satellite transmits data to ground stations
c) Data relayed to satellite
4.3m
a) Recorder on seabed monitors changes in pressure - can detect tsunamis as small as 1cm
75m
b) Acoustic link transmits data to moored surface buoy
Series of events
1 Earthquake detected
2 Initial warning
3 Water level checked
4 Second warning
Not to scale