

Are we safe from tsunami?



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Astronomy

TSUNAMI are for real. They can arise from earthquakes, like the one which recently claimed thousands of lives in Papua New Guinea, or from cosmic impact, like the one depicted in the blockbuster Movie *Deep Impact*.

So, if you live close to the coast, do you have tsunami insurance? How likely are we to suffer a gigantic ocean wave, such as the movie whopper that washed away the city of New York and penetrated far inland?

The chances of such a large one are remote but one could strike even as you read these words. Small tsunami, such as the recent one in New Guinea, are much more common.

Over the past two millennia there have been more than 200 recorded instances of devastating tsunami.

Not all would have been from earthquakes. In fact earthquake-induced tsunami occur most often near the boundaries of tectonic plates, in places such as Japan, where one drowned 27,000 people in 1896.

We are well away from a plate boundary so a tsunami hitting the coast of NSW may be more likely to arise from a cosmic impact than an earthquake.

Evidence has been found of several



Water, water everywhere: A tsunami engulfs Sydney, courtesy of some computer enhancement using a scene from the movie *Deep Impact*. — Photo montage from SMH

hitting our coast within the last few millennia.

Geologists Ted Bryant and David Price, from Wollongong University, have studied the many different signatures tsunami leave, such as deposits laid where they shouldn't be, sculptured marks in bedrock and so on.

Using well-established dating techniques they have identified more than a dozen over the past seven millennia, the latest occurring just before European settlement.

Evidence near Shoalhaven indicates that a tsunami penetrated 10km inland for at least one event, and reached a height of 100m on cliffs at Jervis Bay.

Along the northwest coast of Western Australia there is good evidence that a fairly recent tsunami swept more than 30km inland.

So this continent is not immune from tsunami, as one may guess from the number of known meteorite craters in the outback. Had any of these crater-forming meteorites instead landed in the sea just off our coast, the tsunami devastation might have exceeded that resulting from a cratering impact.

I think I had better take a closer look at the fine print on my insurance policy.

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