2014 earthquake study looked at tsunami risks

July 30 2015

A study published in 2014 found Queensland was relatively safe from the threat of a devastating tsunami, but southern states on the east coast might not be so lucky.

Researcher Associate Professor Huilin Xing from The University of Queensland School of Earth Sciences said that the greatest tsunami threat to Australia's eastern coast was in the southeastern region and originated from an earthquake trench south of New Zealand.

In August last year Dr Xing said cities directly on the eastern region of Queensland were less vulnerable to these threats.

"The Queensland coast is protected from mega-tsunami waves due to a pushed-up and rough-ocean sea floor, reefs and outer islands, all of which help to slow down and reduce the impact of a tsunami wave, " Dr Xing said.

"On the other hand, seismic threat from southeastern Australia could produce waves more than 1.5 metres high along the coasts of Tasmania, Victoria and New South Wales, and more than 2.6 metres high in areas close to Sydney, Maria Island and Gabo Island."

Dr Xing said the good news for southeastern coast residents was that it would probably take more than two hours for any tsunami to reach Australian shores, giving people enough time to evacuate if well-prepared.

"Having reliable warning systems and well-planned evacuations will help avoid unnecessary delays," he said.

The study, published in *Pure and Applied Geophysics*, used supercomputer simulations to determine tsunami waves and their sensitivities to earthquakes and sea-floor conditions along the eastern Australian coast.

"In terms of numbers of earthquakes, the Australia-Pacific plate boundary is one of the most active in the world," he said.

"Understanding and predicting earthquake and tsunami events in this region is crucial for making reliable predictions and warnings."

The study was a collaborative effort with Dr R. W. Ding from the Shandong University of Science and Technology (China) and Professor D. A. Yuen from the University of Minnesota at Twin Cities (USA).

More information: *Pure and Applied Geophysics*, link.springer.com/article/10.1007%2Fs00024-014-0904-x

Provided by University of Queensland