

Another killer tsunami looms

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SCIENTISTS predict a repeat of the deadly 2004 Boxing Day tsunami that killed more than 280,000 lives.

Their warnings gained added weight with a fresh earthquake that killed seven and injured 100 more when it struck Sumatra on Monday.

Research involving scientists from the California Institute of Technology University of Southern California and Indonesia indicates that within the next few decades another big tsunami could flood densely populated sections of Sumatra, south of those areas that suffered from the tsunami of December 2004.

By examining historic growth patterns in coral heads near the shore, geologists have mapped a detailed history of seismic activity in the area going back hundreds of years.

Added to this is detailed ground displacement information gathered by GPS stations rushed there after the 2004 quake and in place for the 2005 aftershock.

The aftershock itself, magnitude 8.6, was the seventh largest quake recorded and claimed a further 2000 Indonesian lives.

"We were fortunate to have installed the geodetic instruments right above the part that broke," said Prof Kerry Sieh, who leads the Sumatran project at Caltech's Tectonics Observatory. "This is the closest we've come to such a large earthquake with continuously recording GPS instruments."

The research has shown that south of the 1600km tectonic plate segment that broke on Boxing Day 2004, and the 400km segment that went in March 2005, lies another locked segment of about 600km. This has been accumulating stress since it last broke with a magnitude 9.0 earthquake in 1833.

Corals and coastlines on this southern segment record decades of continual, pronounced subsidence, similar to behaviour of the northern region before its abrupt uplift during the 2005 quake.

"This southern part is very likely about ready to go again," Prof Sieh said.

"It could devastate the coastal communities of southwestern Sumatra, including the cities of Padang and Bengkulu, with a combined population of well over a million people.

"It could happen tomorrow, or it could happen 30 years from now."

Prof Sieh and colleagues published the results of detailed modelling of past and plausible future tsunamis in the area in *Proceedings of the American National Academy of Sciences*.

They also presented findings to communities in Sumatra, which have begun emergency tsunami preparations.