

# Natural Hazards Centre

setting the foundation for a safer future

bringing together the expertise of NIWA and the Institute of Geological & Nuclear Sciences on the full range of natural hazards

- providing information for policy managers, planners, emergency managers
- helping people improve their resilience and better manage the risks
- floods & droughts, extreme weather, coastal erosion, landslides, earthquakes, volcanoes, tsunamis

[www.naturalhazards.net.nz](http://www.naturalhazards.net.nz)

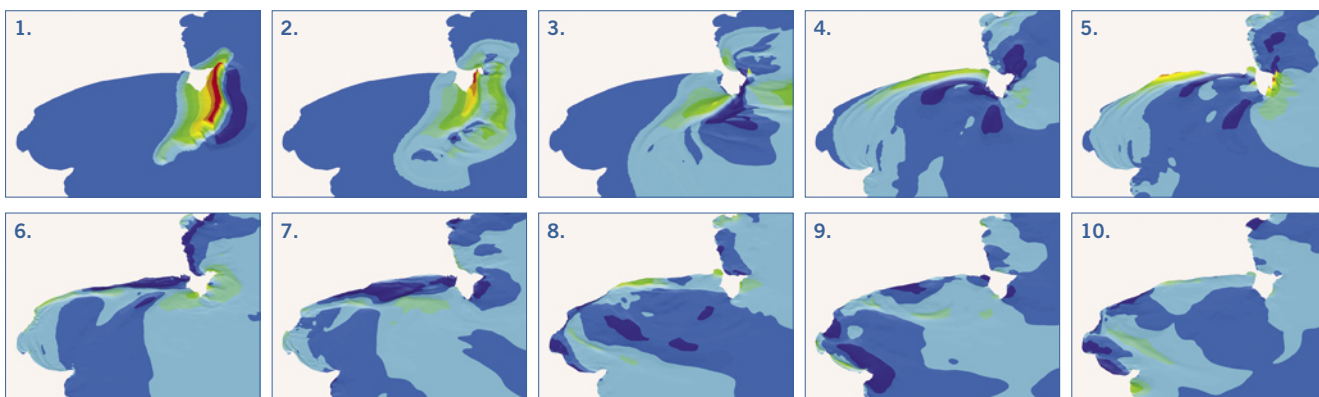
## Tsunami: knowledge is safety

Before the Indian Ocean tsunami on Boxing Day 2004, the National Hazards Centre was already working to raise the profile of tsunamis, concerned that many New Zealanders had little appreciation of the dangers or knew how to respond.

New Zealand's first interactive tsunami learning centre opened in November 2004 at the National Aquarium in Napier. We developed the interactive kiosk, complete with animations, including how a tsunami could affect the region.

We show what could happen if the highly active Lachlan Fault off Hawke's Bay were to rupture. The west-moving part of the initial wave arrives at Wairoa about 38 minutes after the quake, with a maximum wave height over 3.5 metres above normal sea level. Reflected waves then spread down the coast to Napier, and Gisborne is also affected. The return time between major quakes on the Lachlan Fault is estimated at between 600 and 2300 years.

The tsunami learning centre was coordinated by the Hawke's Bay Regional Council, with expertise from NIWA and the Institute of Geological & Nuclear Sciences, and support from the Earthquake Commission and the Ministry of Civil Defence and Emergency Management.



Frames taken from a NIWA video modelling the effects of a tsunami resulting from an earthquake on the Lachlan Fault off Hawke's Bay.

## Help to stop falling pylons

NIWA scientists from the National Hazards Centre have created a way for Transpower to identify the power pylons most at risk from flooding and slipping.

We developed a risk assessment tool which combines information about land cover (grass or trees), hill slope, proximity to rivers, and the size of the rivers. So, for example, a pylon on a steep grassy slope is more at risk from slipping than one on a flat, tree-covered hilltop. Similarly, a pylon that lies on the flood plain of a major river is more at risk than one well away from any watercourses.

Our risk assessment tool uses GIS layers so the different aspects can be mapped, and the risk to each pylon in the country assessed. Pylons were categorised as to how extreme each of these parameters were, and then ranked in order of risk. The system was evaluated by comparing its results for pylons already known to be at risk. Transpower is now using the risk-assessment tool to prioritise its pylon inspections.

