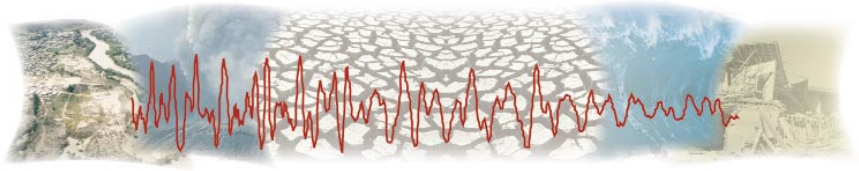
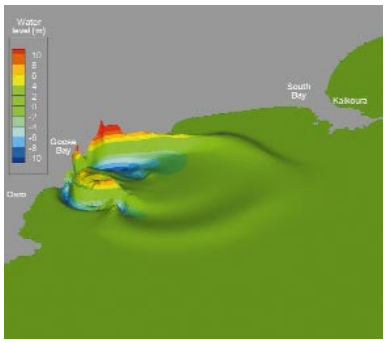
Natural Hazards Centre

setting the foundation for a safer future

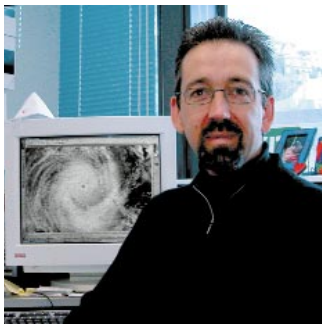


Tsunami are underrated hazards in New Zealand. We have experienced damaging tsunami from both remote and local sources, but a generation has passed since the last major tsunami, caused by an earthquake in Chile in May 1960, hit our shores. How prepared are we? NIWA recently assessed the potential effect of tsunami on the Kaikoura coast for Environment Canterbury. Our results showed that one of the major threats comes from a tsunami generated by a submarine landslide in Kaikoura Canyon. A wave from this source would hit Goose Bay in a matter of minutes, reaching about 10 metres high, and would strike South Bay about 7 minutes later at a height of about 4 metres. These results show the need to make the public 'tsunami aware' to the same degree as coastal residents in Peru, Chile, and Japan.



The model shows the landslide-generated tsunami arriving at Goose Bay.

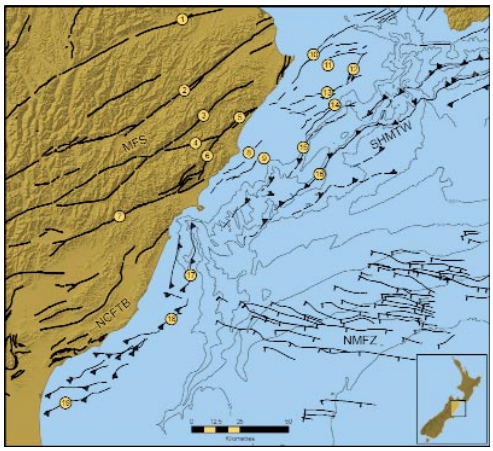
NIWA and the Institute of Geological & Nuclear Sciences (GNS) established the Natural Hazards Centre to strengthen the links between scientists, policy makers, planners, and emergency managers by providing a focal point for science-based information on natural hazards. The Centre's key role is to communicate research results, seek feedback to help formulate future research, and provide services to ensure that hazards research is responsive to the needs of end users. It provides integrated research-based information and tools to organisations and communities to help improve their resilience to natural hazards and better manage the risk through informed choice.



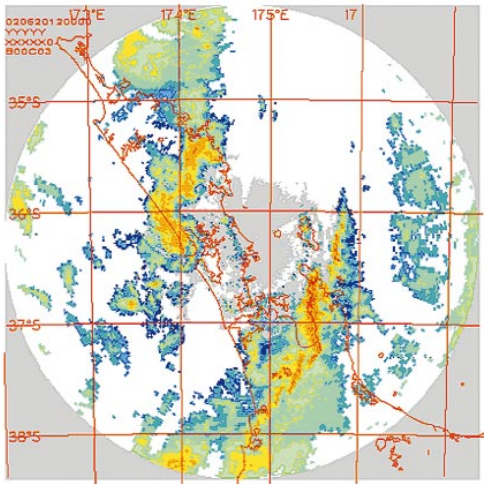
Warren Gray

NIWA and GNS have significant public good hazard research programmes and individual links with a range of end users. Our complementary research activities cover the spectrum of New Zealand hazards – storms, floods, droughts, landslides, earthquakes, volcanoes, storm surges, waves, coastal erosion, and tsunami. The research is supported by national monitoring networks, including the climate network, hydrological network, sea-level network, the EQC-funded GeoNet network of seismic and volcanic recorders, and the GPS deformation network, part-funded by LINZ. By working together through the Centre, we can make better progress towards increasing the resilience of New Zealand communities.

www.naturalhazards.net.nz



Understanding earthquake hazards ◂
One of the tools we've developed should make estimating the likelihood of future earthquakes and shaking in New Zealand easier. The national seismic hazard model is based on combining the 160-year historical record of earthquakes with prehistoric earthquake information from over 300 active faults in New Zealand. With GNS and NIWA joining forces to link the onshore and offshore marine faulting, it will be possible to produce a much better model of the seismic hazard for New Zealand.



Predicting extreme weather ▸
The 'weather bomb' that caused extensive flooding and damage in the Coromandel in 2002 and the loss of one life was a rapidly deepening storm which affected many northern areas. NIWA is currently studying the processes that lead to the formation of extreme weather systems like this. We use sophisticated computer simulations of the weather to model the uptake of heat and moisture from the ocean surface and compare this with theoretical data. We then analyse radar data to determine the scale, intensity, and predictability of the rain bands formed.

Every issue of the quarterly NHC newsletter, Natural Hazards Update, *includes maps of the significant natural hazards recorded over the previous 3 months: floods & droughts, weather extremes, coastal hazards, landslides, and earthquakes & volcanic activity.*