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Organization: University of Waikato

Category: Natural Hazards

Paper ID: 57-ONH-A1867

Title: (NH1) Coastal Hazard Subsequent to a Major Coastal Seismic Event

Abstract:

Coastal hazards typically arising from severe seismic events, apart from the seismic shock itself, includes generation of tsunamis. But longer term coastal hazards can be initiated subsequent to the seismic event if the earthquake event has caused significant uplift or down-throw. These include impacts on the sediment supply system of the coast. For the case of the Napier earthquake of 1931 in Hawke Bay, New Zealand, which hit the city of Napier with magnitude 7.9 and incurred considerable loss of life, the seismic event upset the previous sedimentary-morphodynamic balance and set in train events that have led to subsequent coastal erosion hazard along the coast. In particular the 2-3 m uplift drastically reduced the size and the prism of the Ahuriri estuarine lagoon which is enclosed from a gravel littoral system. As a result of the seismic uplift, river supply of coastal gravel littoral system has been reduced, to the extent that the mixed-sand-gravel barriers have become transgressive (moving inland by storm wave overwash), and in some parts require major re-nourishment programs to protect the sea-front properties. Development of Napier Port since the 1960s, blocking the northward littoral drift, has exacerbated the downward erosion situation.

Presentation Mode: Oral

Keywords:

Status: Pending.

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