



Overview of regional evacuation mapping and planning

Who is doing what and how around the country?



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GROUP



Ministry of Civil Defence
& Emergency Management
Te Rākau Whakararumarua



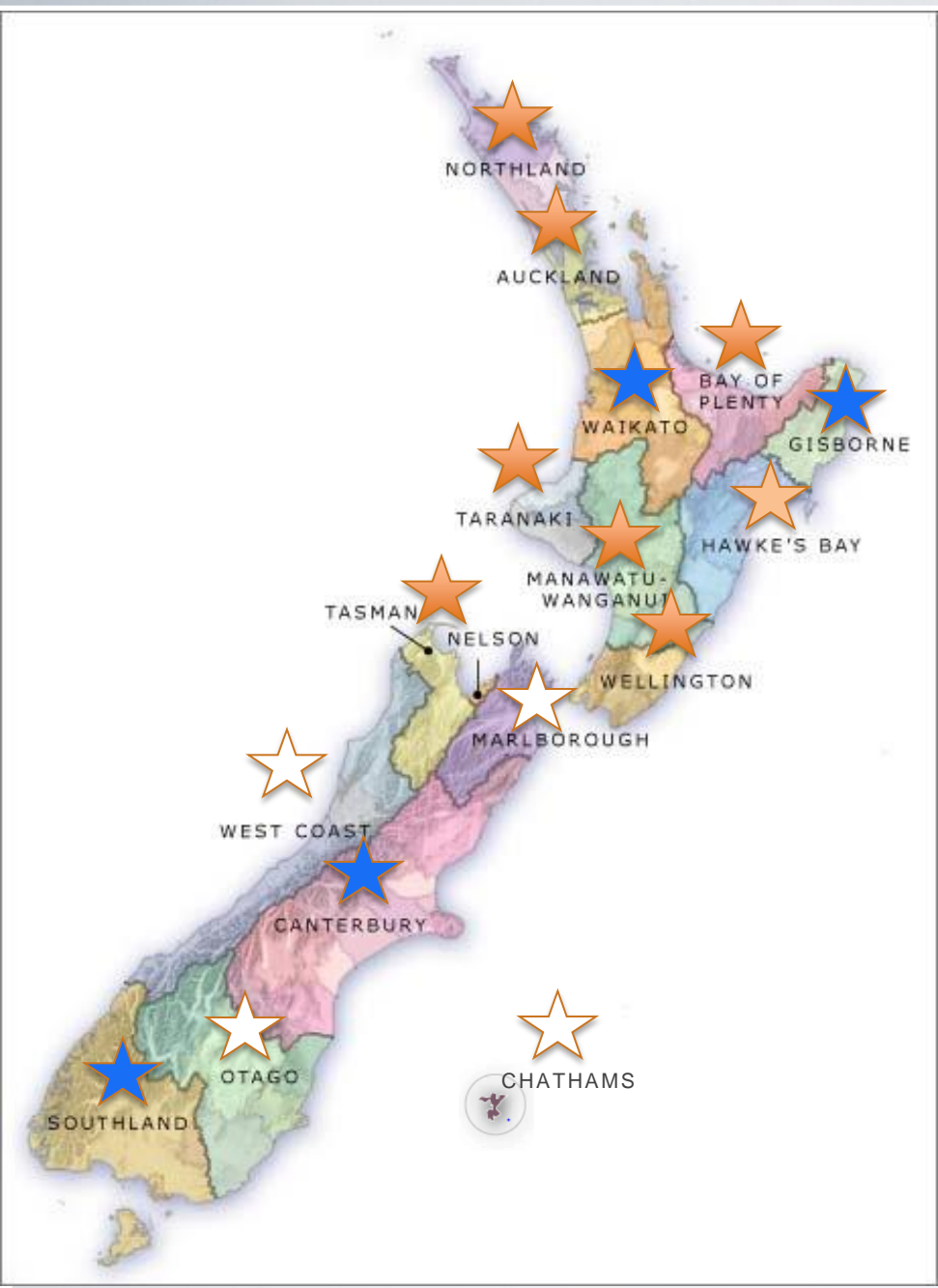
HAWKE'S BAY
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Hazard Modelling

- Hazard modelling doesn't necessarily include inundation
- In some cases regions have employed both GNS, NIWA and other experts to do different modelling at different times.
- Some modelling is now considered out of date
- Many Groups have used Level 2 for evacuation mapping and zones (validated by GNS Report 2013/02)





Evacuation Zones in NZ

-  7 Groups with 3 zones
-  1 Group with 3 (2) zones
-  4 Groups with 1 zone
-  4 Groups yet to develop zones

- **MCDEM (DGL 08/08)**
recommend at least 2 and a maximum of 3

Hazard Models - 4 developmental levels

Level 1

A simple 'bathtub' model – inundation based on maximum wave height projected inland from coast to cut-off elevation

Level 2

A measure of a GIS rule-based wave height attenuation inland from the coast.

Level 3

A computer-derived simulation model that theoretically allows for complexities such varied surfaces, water turning corners, etc

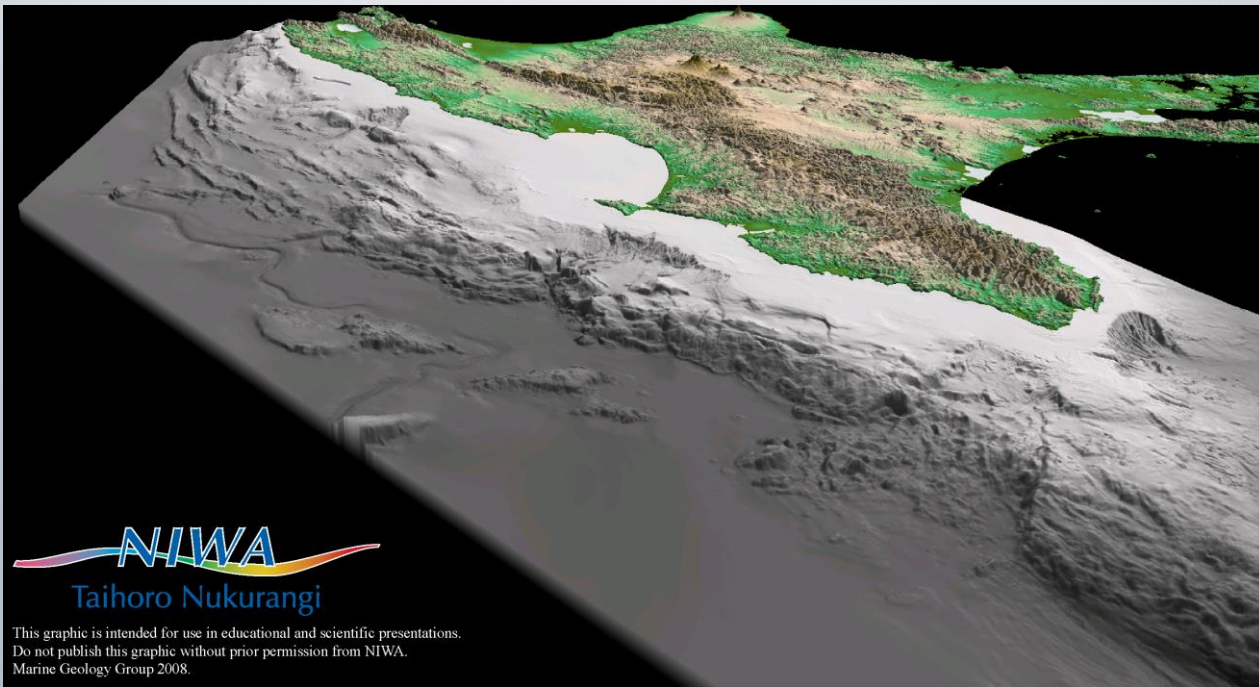
Level 4

A multiple source, and range of magnitude, computer-derived simulation model



Evacuation Mapping based on

Region	Zones	Based on
Northland	3	Level 2 2005
Auckland	3	Level 2 2013
Waikato	1	20m elevation line for Coromandel, refined by Ecoast
Bay of Plenty	3	Level 2 2005 Draft Level 3 2013 by Mike 21
Gisborne	1	Level 3 by GNS based on Tonga-Kermadec & South American sources
Hawke's Bay	3	Level 2 2013 Level 3 by Mike 21 2005 high population areas
Taranaki	3	Level 3 2005 by Mike 21
Manawatu/Wanaganui	3	Level 2 2005
Wellington	3	Level 2 2005
Nelson Tasman	3	Level 2 2013
Marlborough	-	-
West Coast	-	Level 2 2013 (just delivered in draft form)
Canterbury	1	Based on 1868 Arica event at high tide (worst case). Planning Level 2
Otago	-	Coastal inundation areas (elevated sea level & tsunami hazard) based South America and Puysegur Trench sources
Southland	1	L2 & L3 based on GNS scenarios 2011
Chathams	-	-



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Marine Geology Group 2008.



Working Together for a Resilient Hawke's Bay

