Disaster Risk Management in New Zealand:

A Coastal Inundation & Sea Level Rise Case Study

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23 May 2017

GNS SCIENCE
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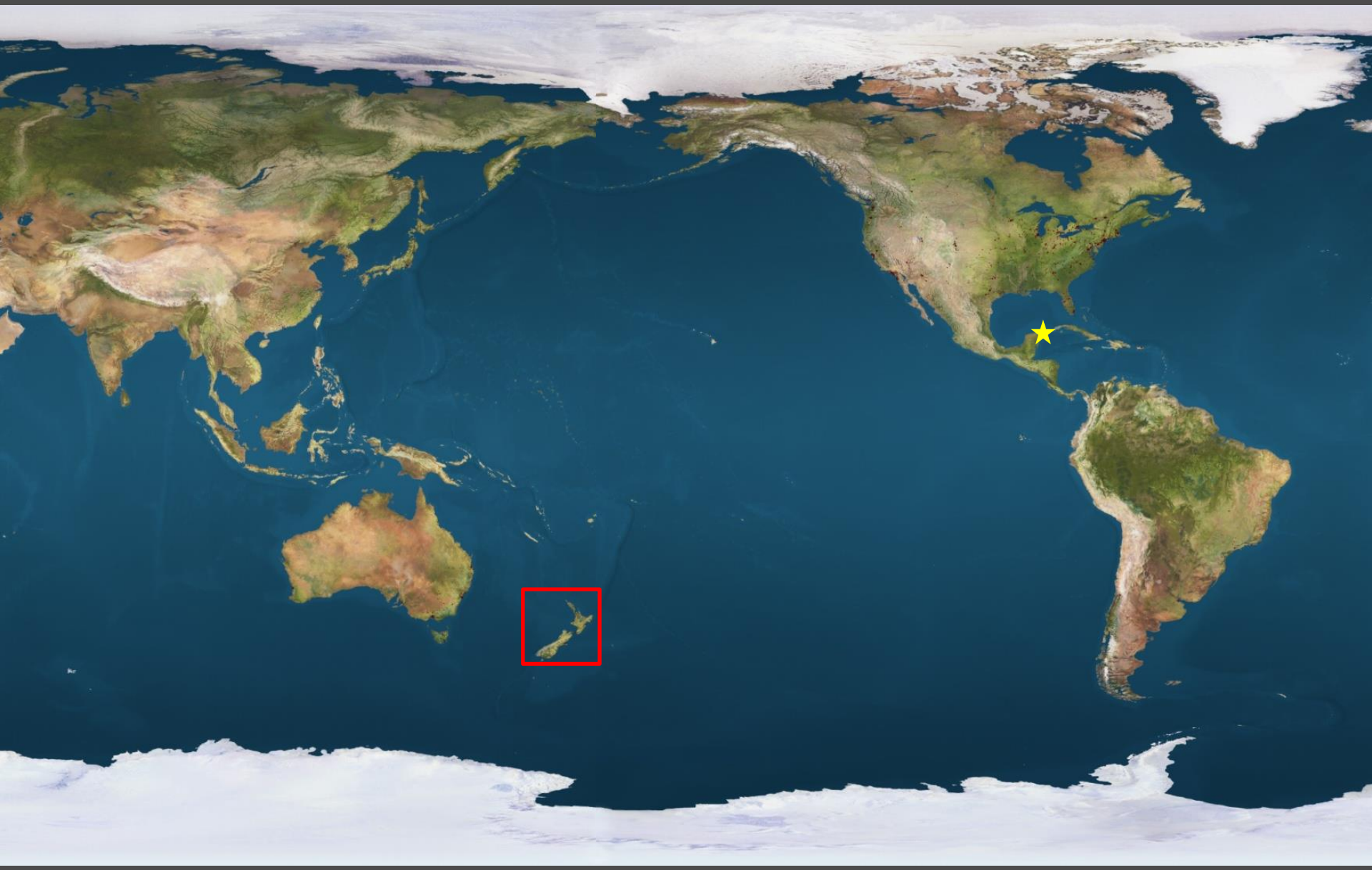
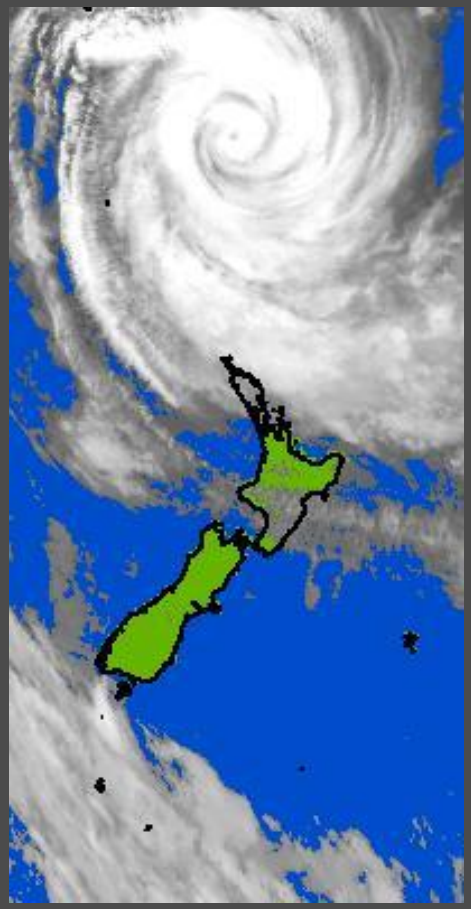
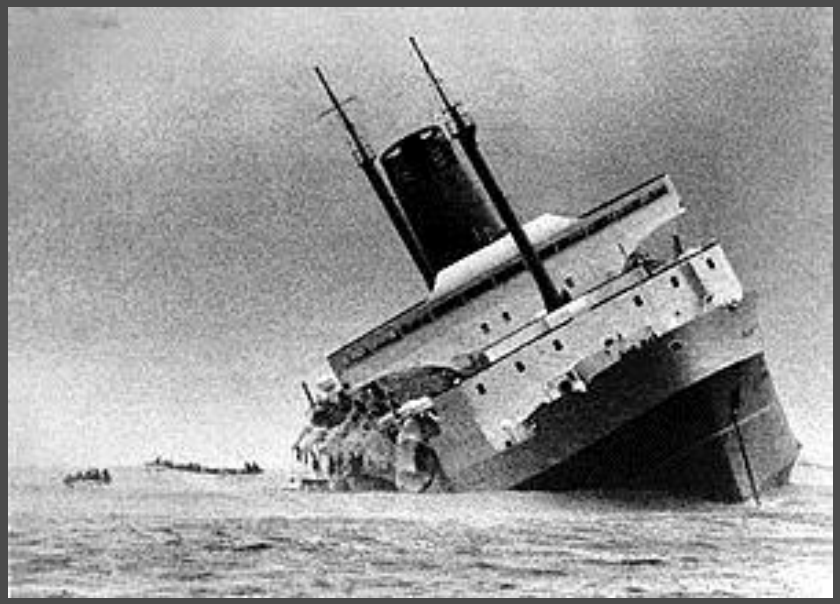
New Zealand



Disaster Risk in New Zealand

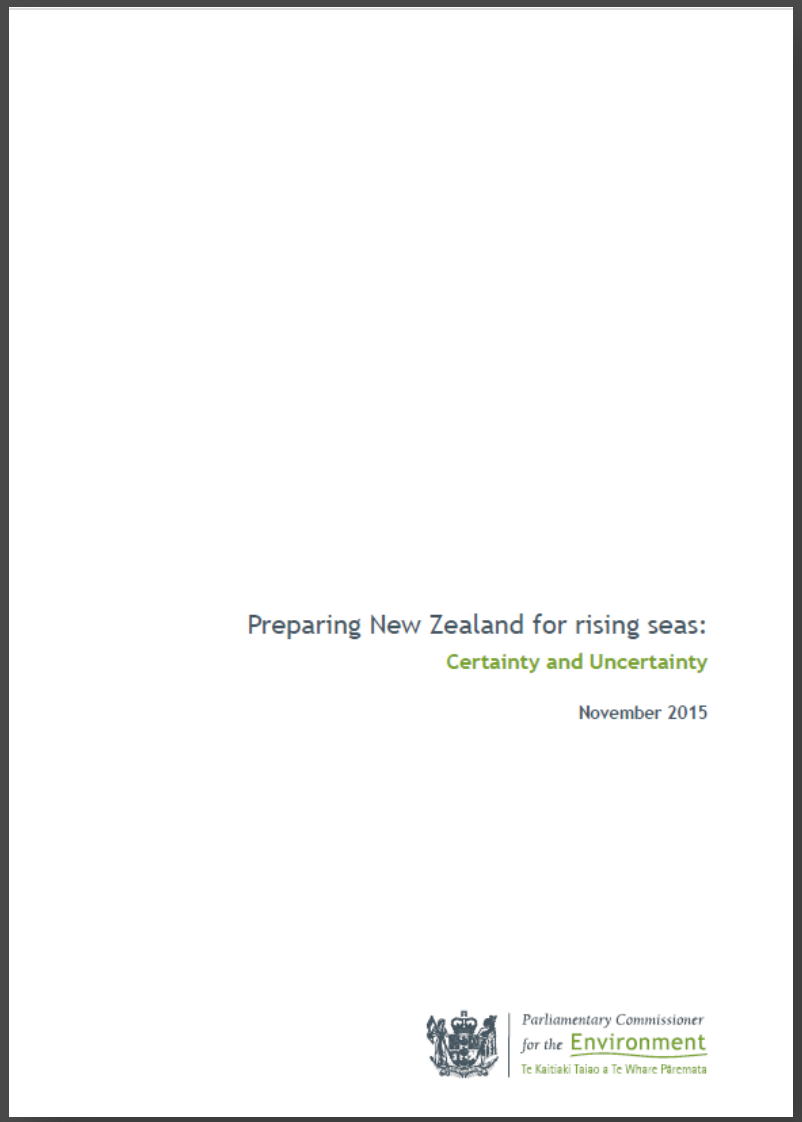


Cyclone/Extreme Weather Risks



National Risk: Sea Level Rise

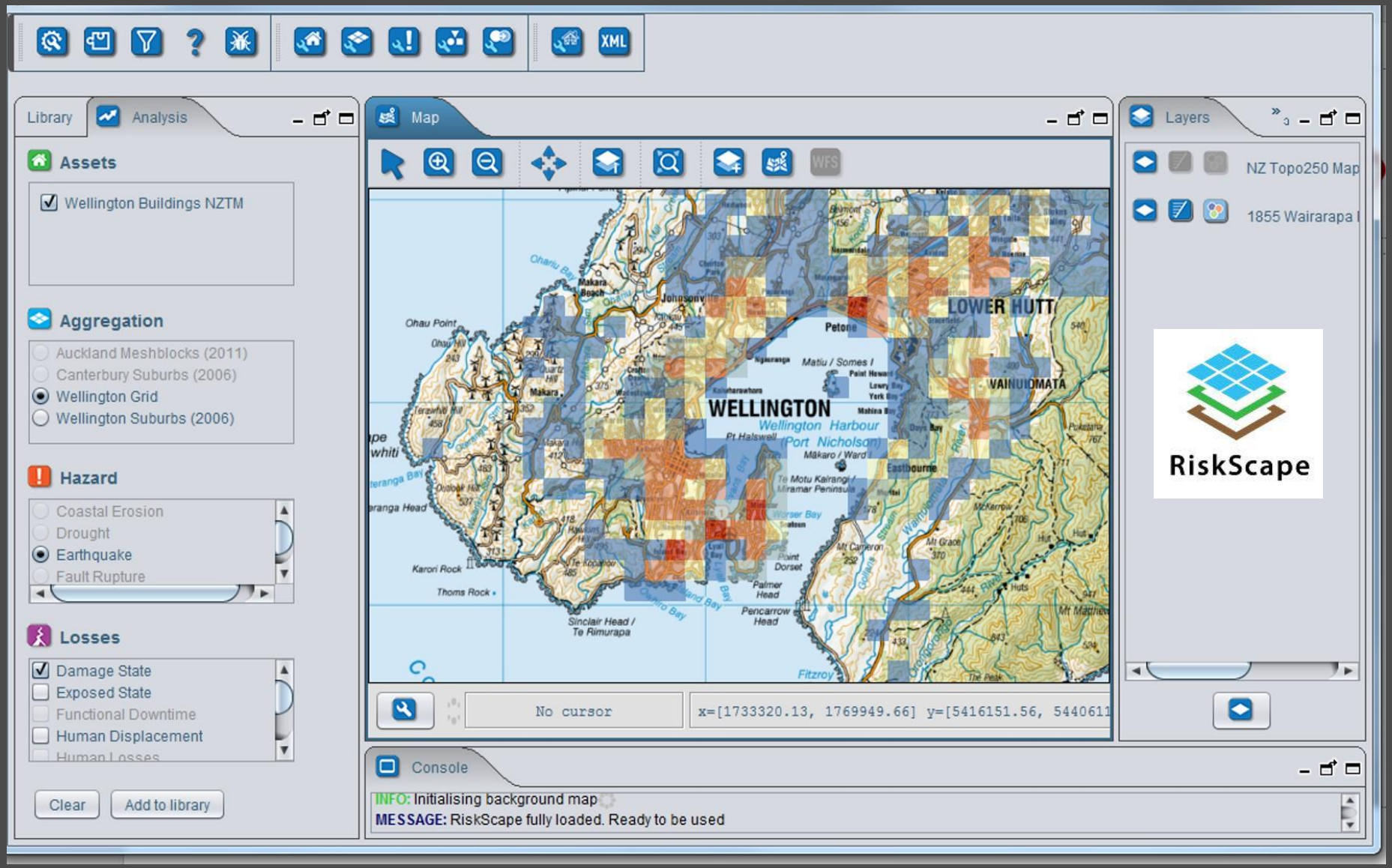
- **Assessment of all NZ communities exposure to future sea level rise scenarios**
- **Provides a 'starting point' for local government in New Zealand to engage with communities on this challenging issue**
- **Better direction and guidance is needed in three broad areas:**
  - Scientific assessment of the impact of a rising sea on coastal hazards
  - The process of engaging with the community
  - The planning and management decisions that follow.


Preparing New Zealand for rising seas:
Certainty and Uncertainty

November 2015

Parliamentary Commissioner for the Environment
Te Kaitiaki Taiao a Te Whare Pāremata

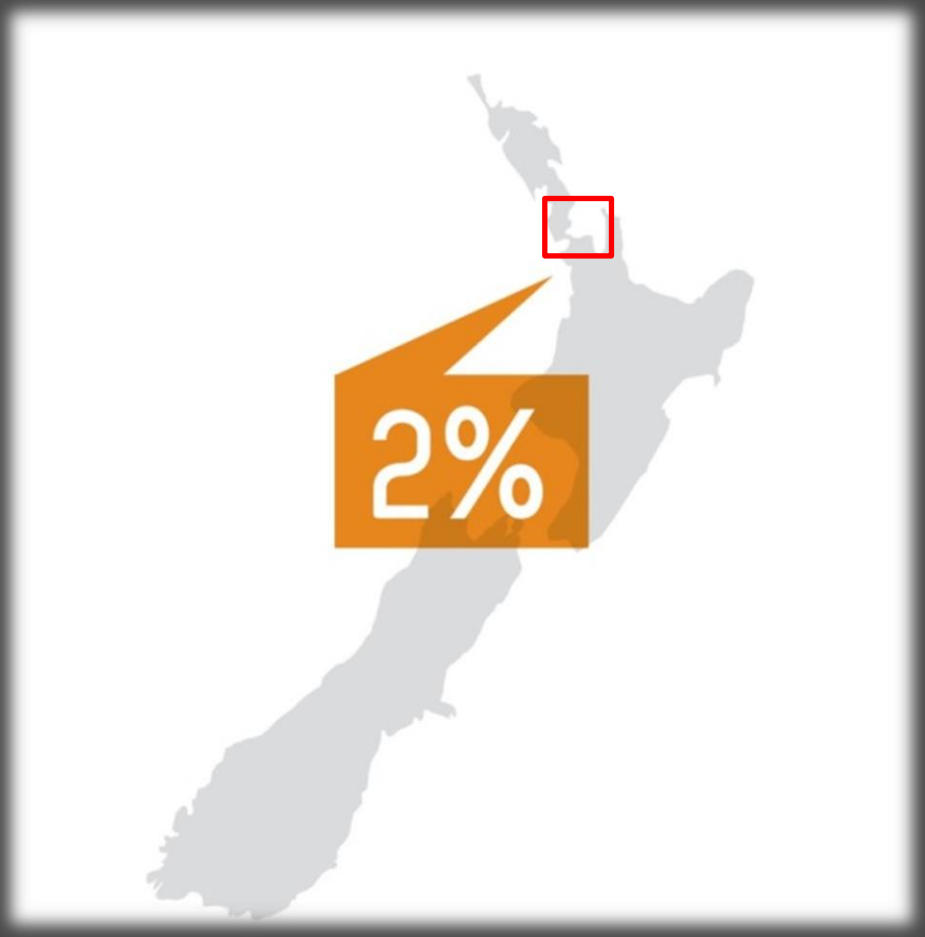
RiskScape

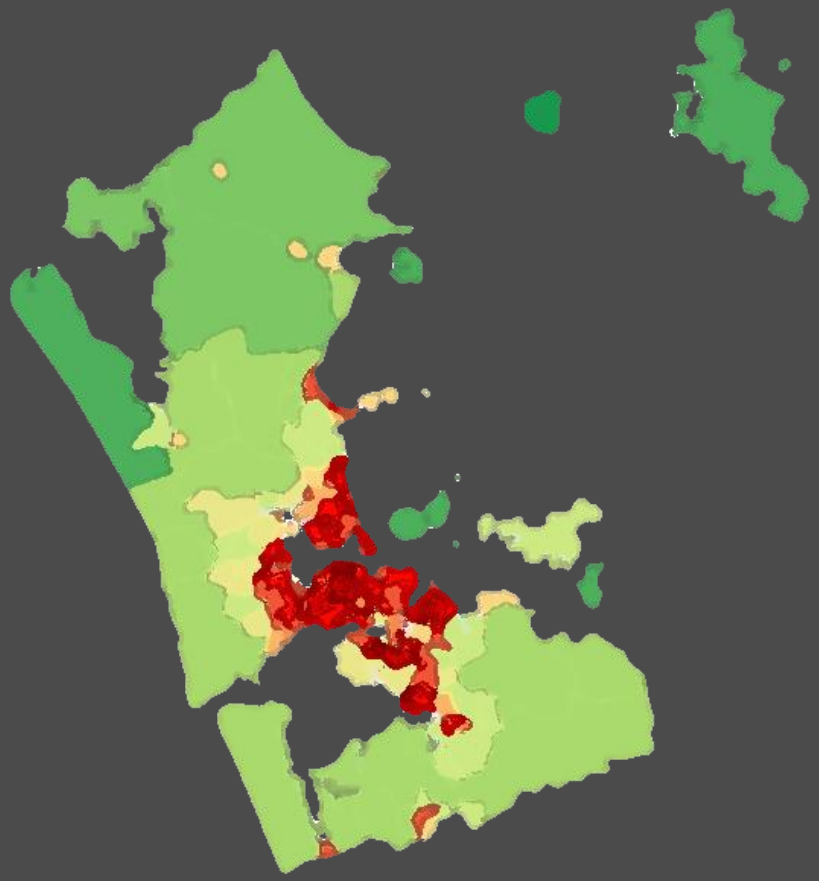


www.riskscape.org.nz

Auckland, New Zealand

- New Zealand Population: 4.6 Million
- Auckland City: 1.5 Million





Auckland, New Zealand

Case Study: Managing Auckland's Coastal Inundation Risk

Case Study: Managing Auckland's Coastal Inundation Risk

Storm Surge: High Tide + Pressure + Wave Effects

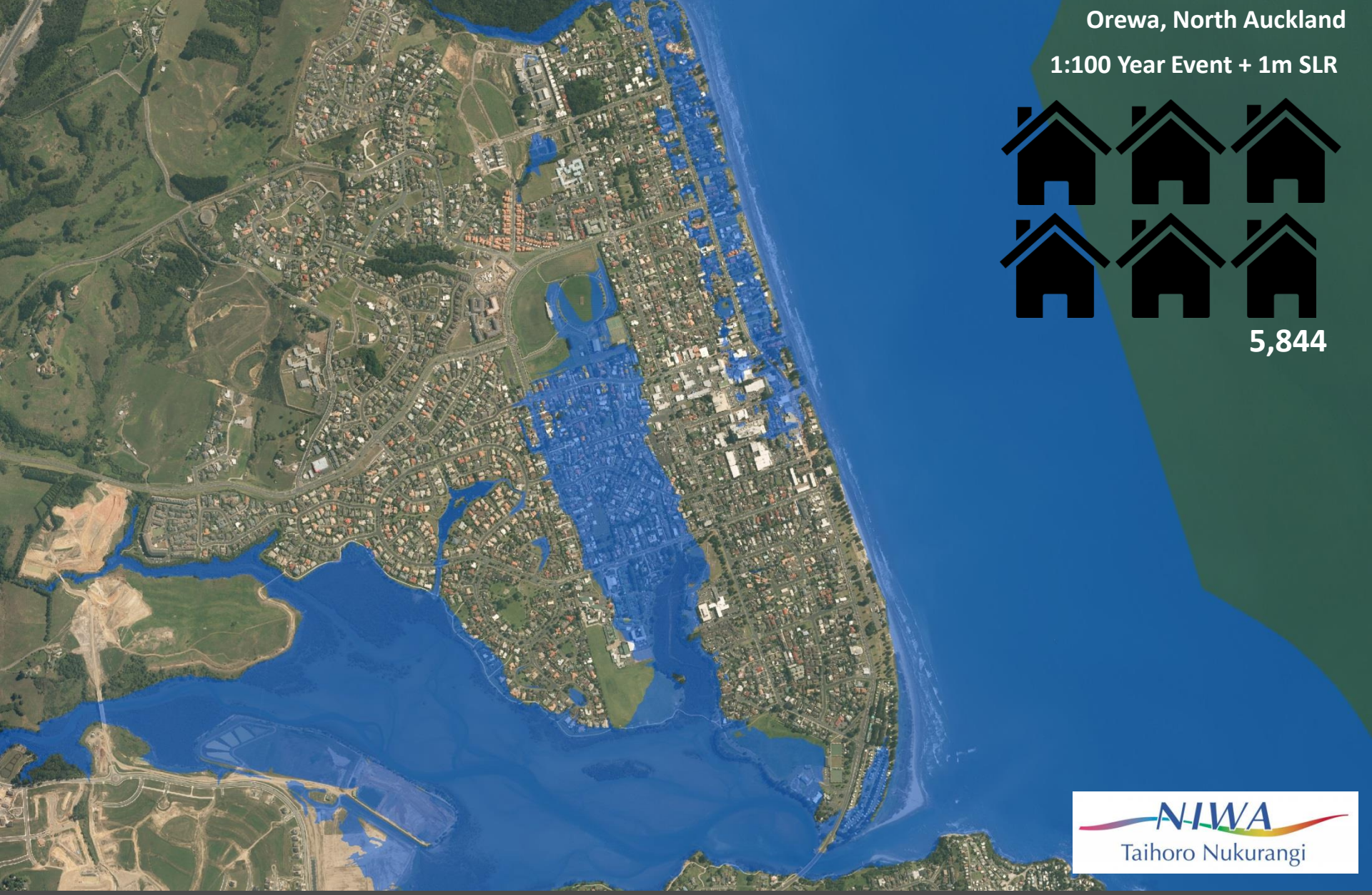
High Tide + Pressure Effects

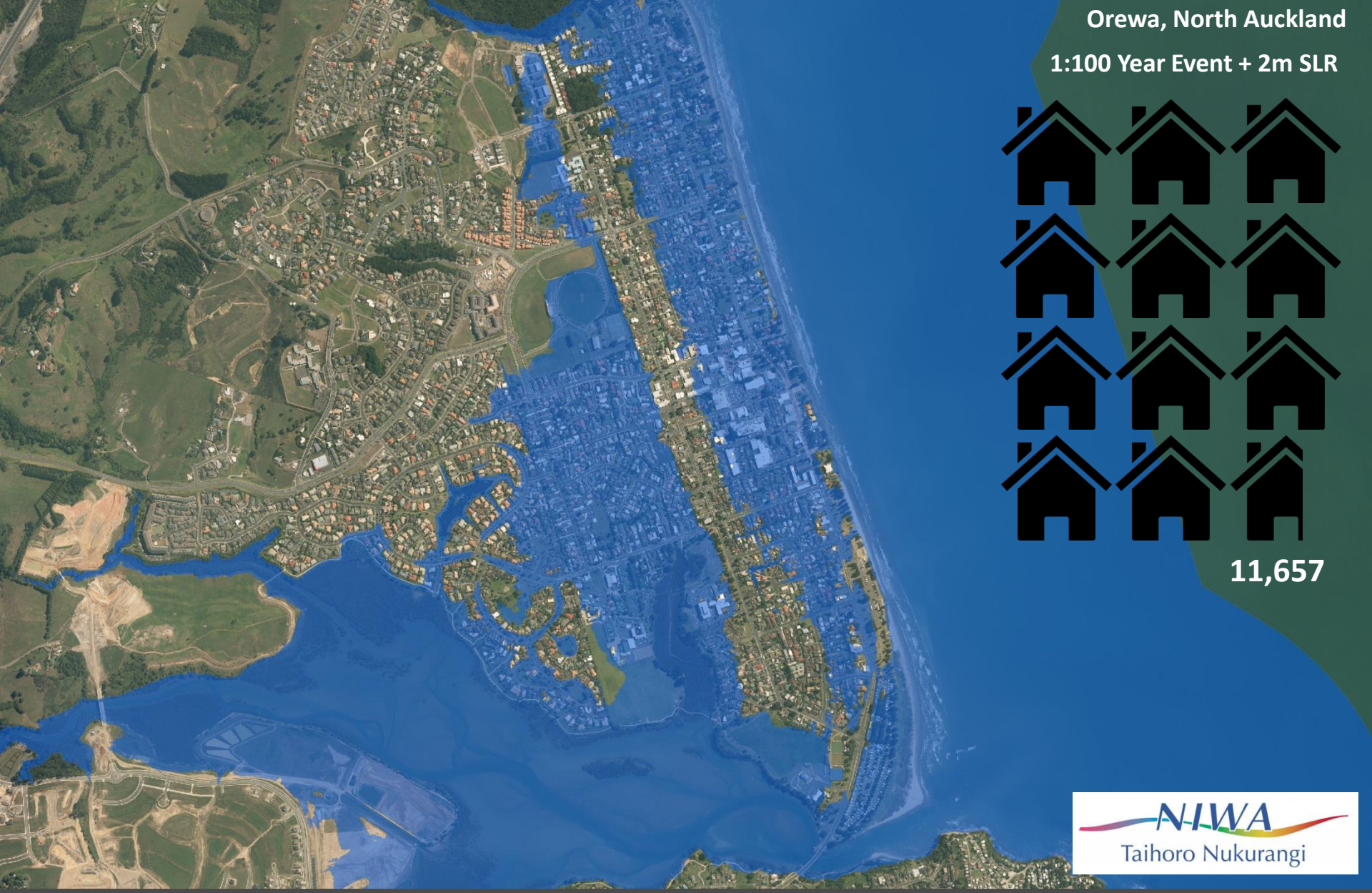
High Tide


Orewa, North Auckland
1:5 Year Event
1,238
NIWA
Taihoro Nukurangi


Orewa, North Auckland
1:20 Year Event
1,462
NIWA
Taihoro Nukurangi

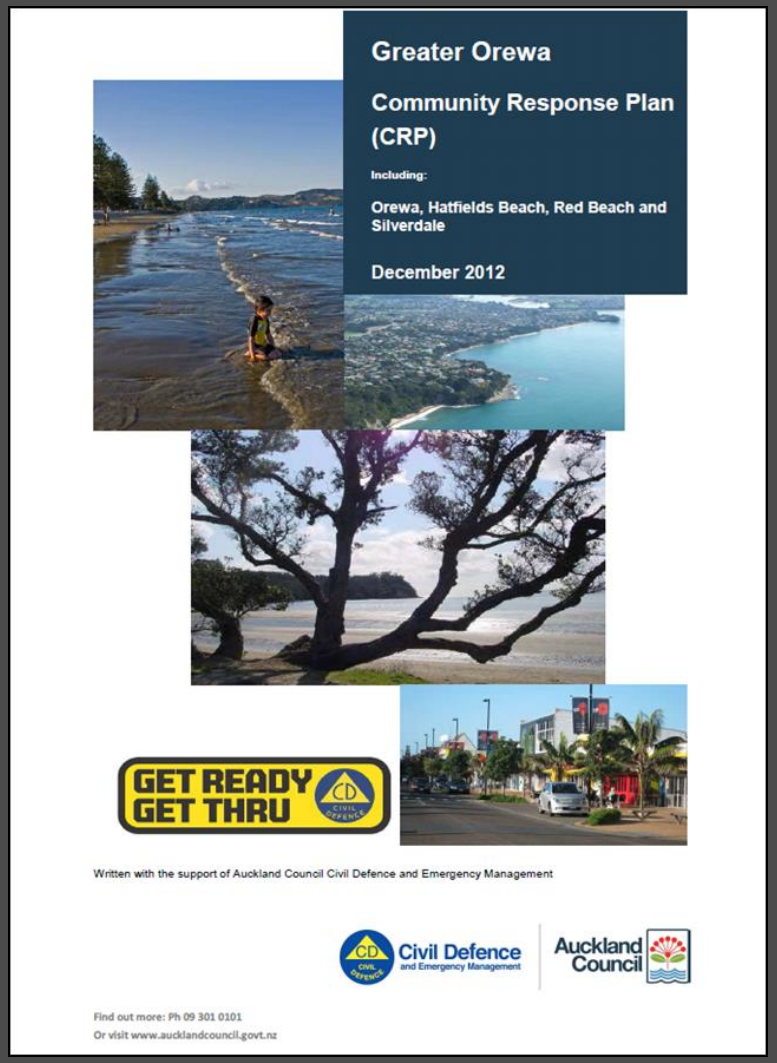

Orewa, North Auckland
1:100 Year Event
1,766
NIWA
Taihoro Nukurangi


Orewa, North Auckland
1:100 Year Event + 1m SLR
5,844
NIWA
Taihoro Nukurangi


Orewa, North Auckland
1:100 Year Event + 2m SLR
11,657
NIWA
Taihoro Nukurangi

Observations

Community



Greater Orewa

Community Response Plan (CRP)

Including:

Orewa, Hatfields Beach, Red Beach and Silverdale

December 2012

GET READY GET THRU

Written with the support of Auckland Council Civil Defence and Emergency Management

Civil Defence and Emergency Management

Auckland Council

Find out more: Ph 09 301 0101

Or visit www.aucklandcouncil.govt.nz

Regulations for New or Existing Buildings

- For new dwellings & substantial modifications, additions or extensions. Finished floor must be above 1:100 year event + 1m sea level rise.

- **Avoid** subdivision and development in greenfield areas for a 1:100 year event + 2m sea level rise.

Regulations for New Infrastructure

- Allow construction of infrastructure in the 1:100 +2m sea level rise **only where:**
  - cannot be practically located elsewhere
  - does not increase inundation risk
  - designed to withstand 1:100 year events
- Auckland Infrastructure Agencies use maps and data to inform future infrastructure planning.

Applying New Zealand's DRM Lessons: Building Capacity Internationally

- **Strengthened Indonesian Resilience: Reducing Risk from Disasters (StIRRRD) www.stirrrd.org.nz**
  - Local government disaster risk reduction action and implementation plans
  - Local DRR regulations and cross-sectoral co-ordination
  - Connecting local government with local universities for research and support
  - Empowering women in DRR
- **Pacific Risk Tool for Resilience (PARTneR)**
  - Hazards impacts and modelling for the Pacific
  - Integrated disaster risk data management
  - Sustainable and targeted training

Thank You

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