

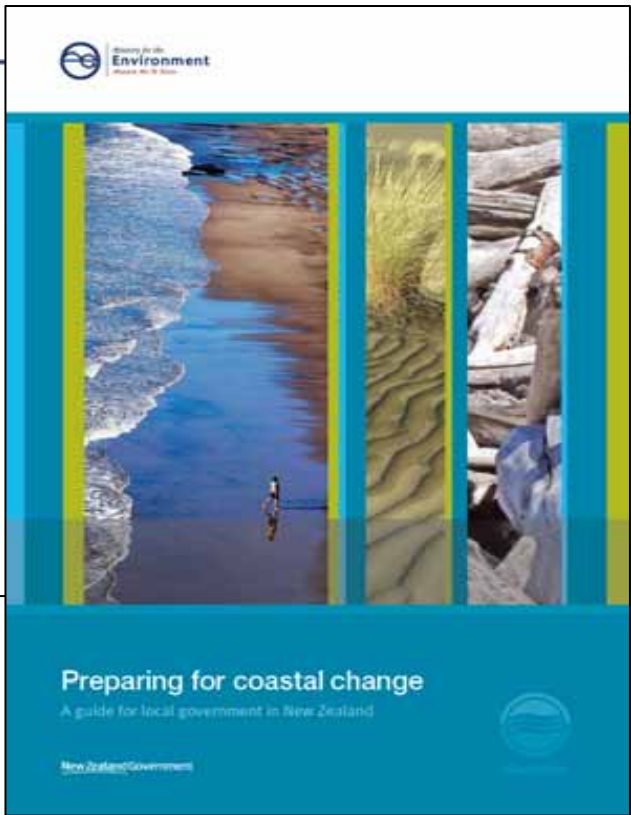
Keeping pace with a changing climate

Jacqui Yeates and
Warren Gray

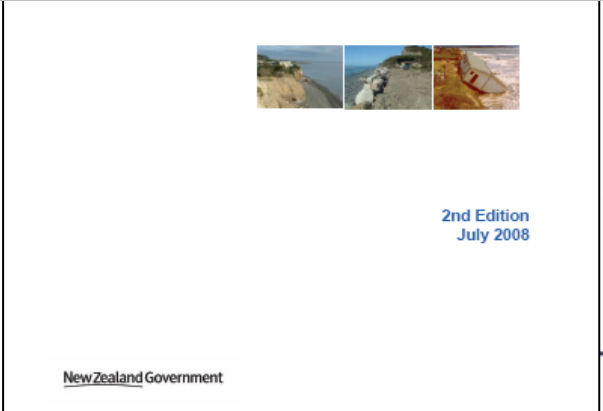


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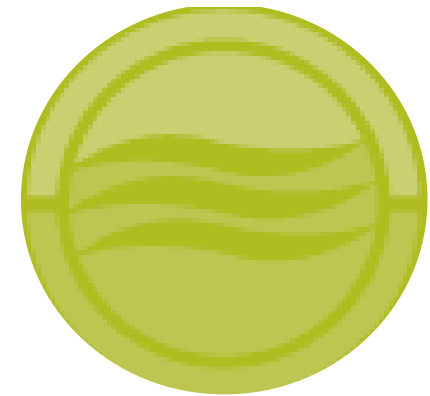


www.mfe.govt.nz/publications/climate/



MfE Adaptation Programme

- Central government coordination role
- Partnering with priority stakeholder
(local govt, planners, engineers, insurers, surveyors, Lifelines utilities)
- Scoping a national environmental standard on sea level rise
- Flood risk management
- Adaptation resources
 - Web-based toolbox
 - Educational resources
 - Urban resources



adaptation



Planning for sea-level rise

The problem:

- effective and efficient planning for future sea-level rise is hindered by not having a nationally recognised and accepted projection to plan for, resulting in local authorities continually facing re-litigation on the projection selected

Outcomes sought:

- a reduction in time and cost to local authorities spent identifying which future sea-level rise projection to plan for
- a reduction in the risk of re-litigation of the projection selected
- ensure the NES can be easily updated to reflect the best available sea-level rise information



Proposed NES on future sea-level rise

Provide certainty around planning for sea level rise by providing numbers to plan for through regulation

When planning for time frames out to the 2090s:

- Assess the consequences of a base value sea-level rise of **0.5m relative to the 1980–1999 average**, *along with*
- an assessment of potential consequences from a range of possible higher sea-level rise values. At the very least, all assessments should consider the consequences of a mean of at least **0.8m relative to the 1980–1999 average**
- Beyond 2100 plan for **10 mm/year**



Draft NPS on Flood Risk Management

- Analysing whether an NPS most cost-effective tool to assist local authorities
- Considering alternatives to an NPS



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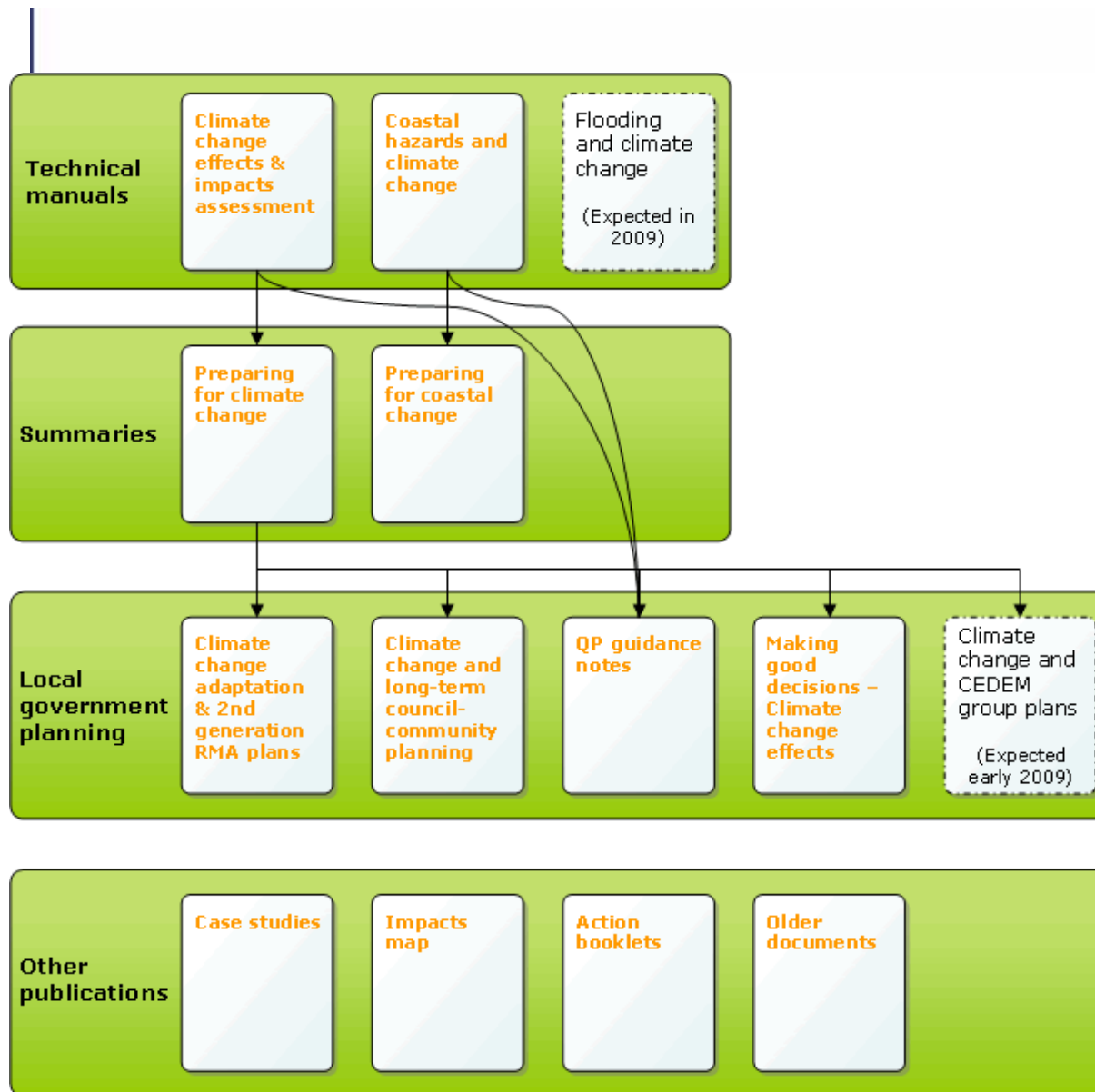


Flooding and Climate Change - Guidance for local government

- New – Due December
- Flow Box
 - Tools for estimating the effects of climate change on flood flow
 - Engineers
- Flow Plan
 - Incorporating climate change into flood risk management
 - Planners
- Road tested on engineers, planners



<http://www.climatechange.govt.nz/physical-impacts-and-adaptation/publications.html>



- Technical manuals
- Summary documents
- Local government planning
- Case studies
- Other publications



Some cross-government adaptation initiatives

- Ministry of Agriculture and Forestry

Undertaking a Five Year Adaptation Programme – part of larger programme on climate change

- Department of Conservation

Identifying likely existing and potential effects of climate changes on NZ's natural heritage, visitor assets and developing guidance for prioritising responses

- Ministry of Health

Part of trans-Tasman research to investigate impacts and risk to health infrastructure

- Department of Labour

Looking a future employment scenarios as result of climate change

- Ministry of Civil Defence and Emergency Management

Integrates adaptation into 'business as usual' streams of work

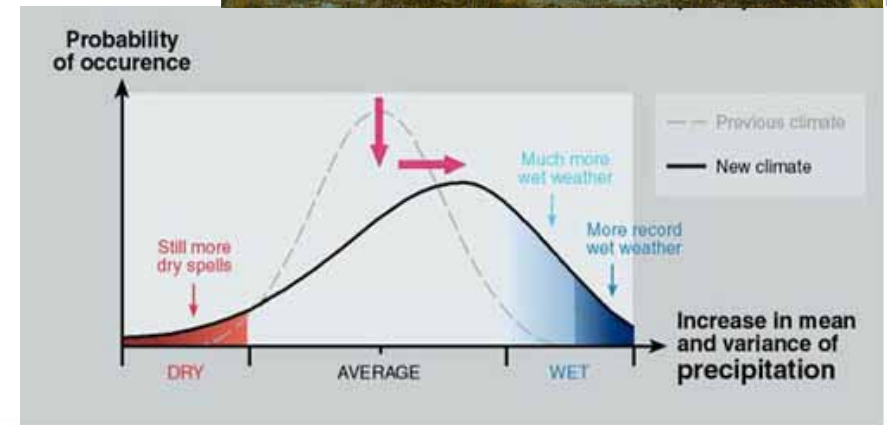
- Government funded research

Range of impacts and adaptation research funded from various sources

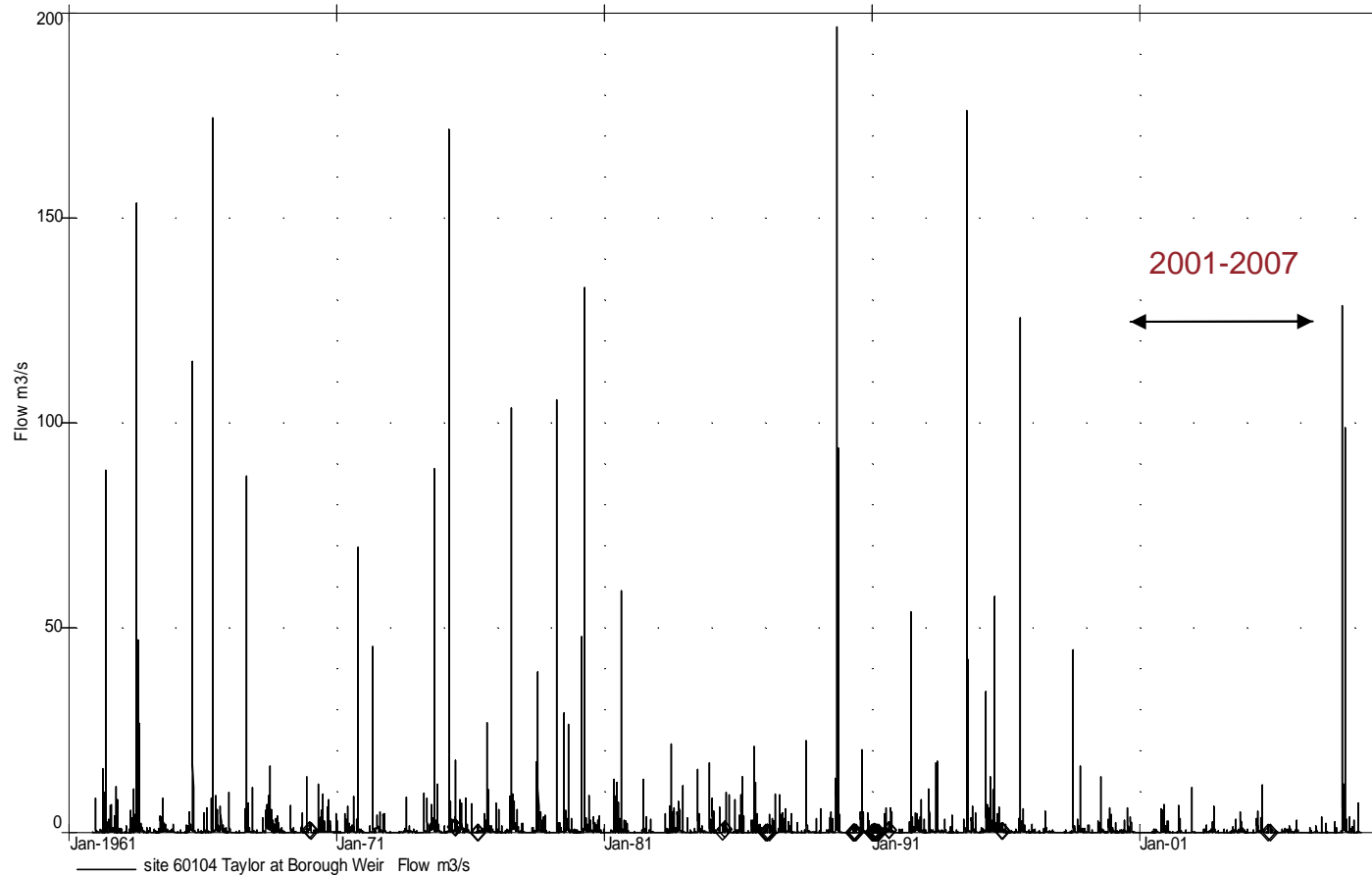
Research – information to come

- Missing floods
- Wind, storms, storm tracks
- Waves and Storm Surge
- Rural Fire, Drought, Flood risk
- Snow

- A council case study



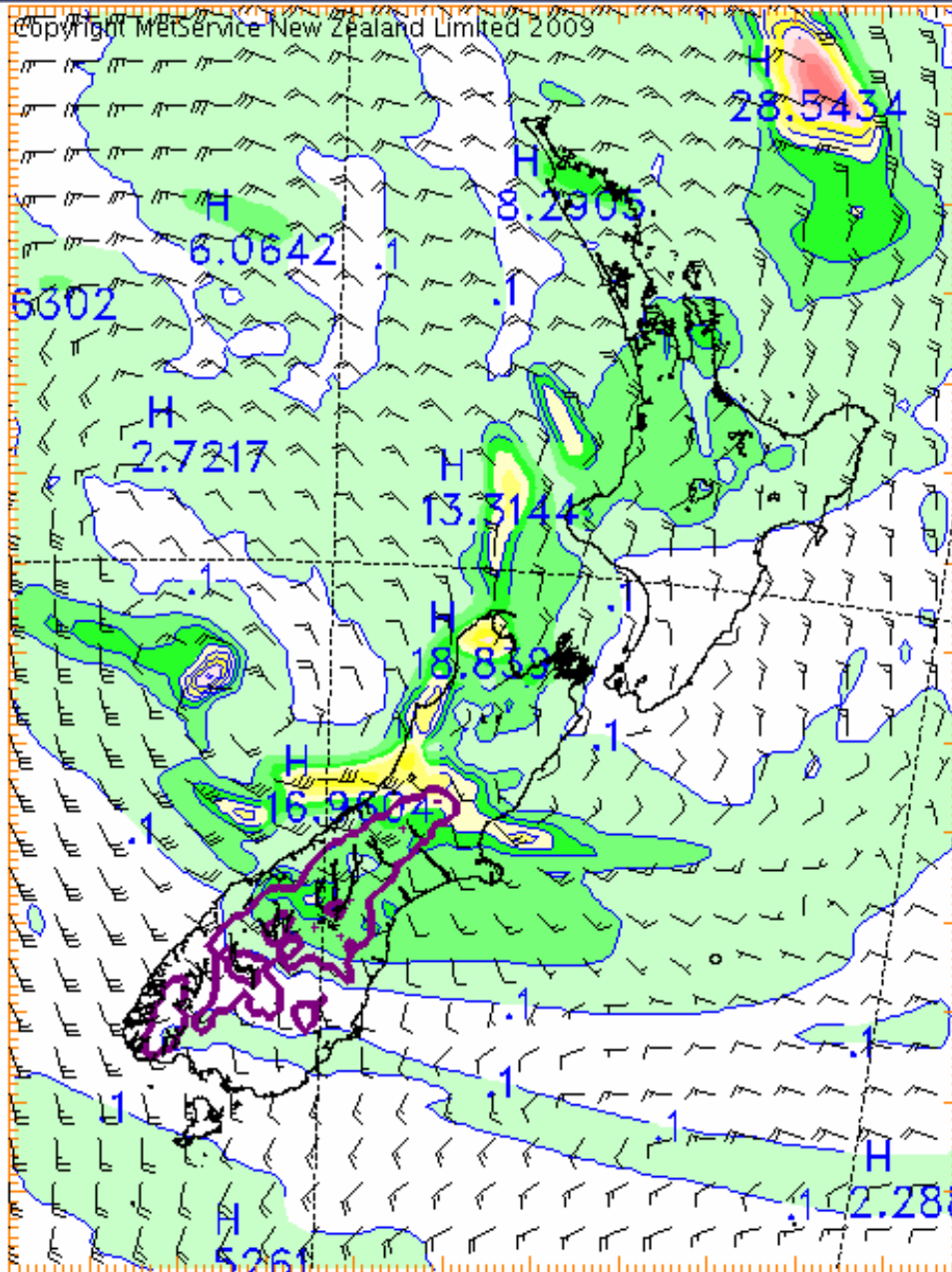
Taylor River, Nov 1961 to Feb 2009



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Friday?



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Wind, Storms and Storm Tracks

- How much wind and from where
- Need to know storm intensity/frequency
- Storm tracks
- Also looks at thunderstorm potential
- Due December this year!!!



Waves and Storm Surge

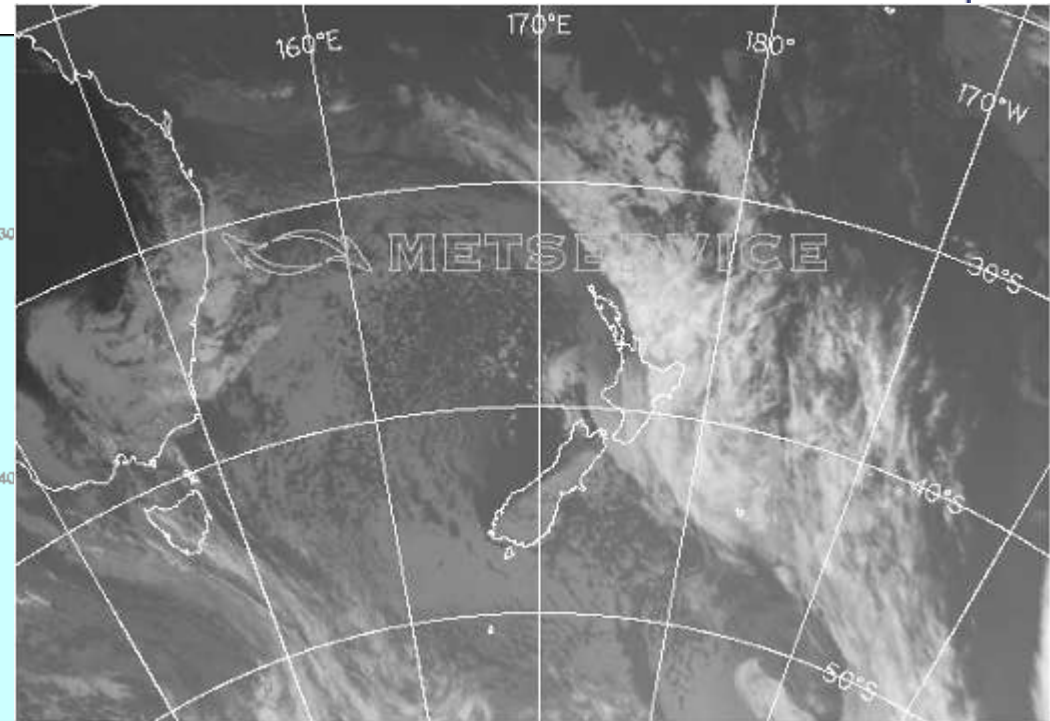
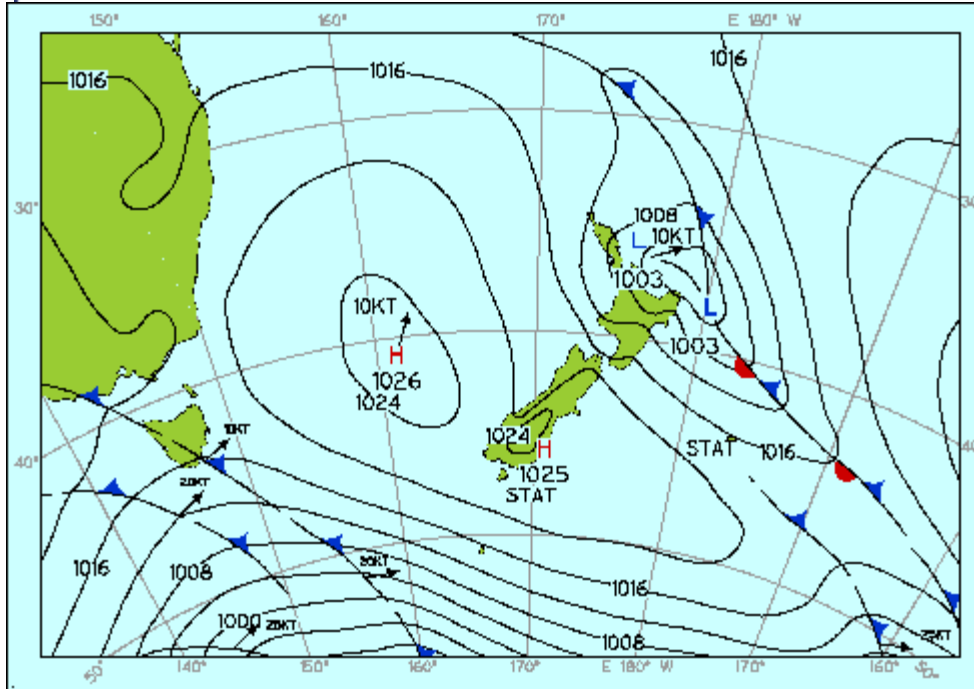
- 40 year Hindcast
- 50 m depth
- Still need local model
- Future
- Due 2011



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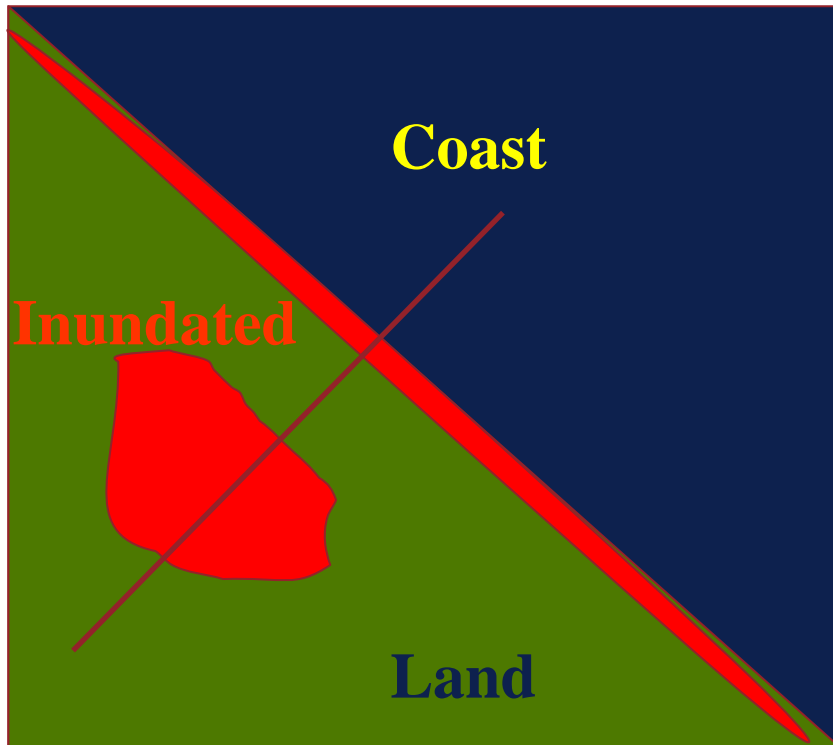
Climate change and snow



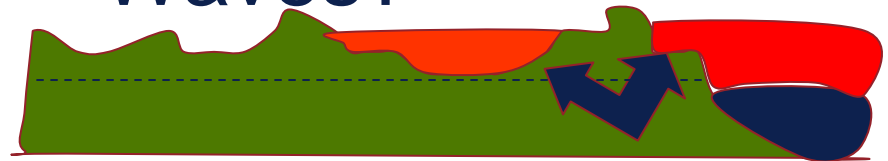
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Sea level rise – affecting inland areas!



- Storm water
- Ground water
- Pumping?
- Business as usual?
- Waves?





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