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RESILIENCE TO CLUSTERED DISASTER EVENTS ON THE COAST

Martyn Hazelwood

Geoscience Australia

An Australian Government Initiative

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BACKGROUND

- Coastal communities and infrastructure are at risk from the impacts of storm surge
- Clustered surge events means little time for recovery of the coastline
- Not accounting for the impact of clustered events underestimates the risk to coastal assets

OBJECTIVE

1) Demonstrate a methodology to quantify the coastal impacts of clustered storm surge events.

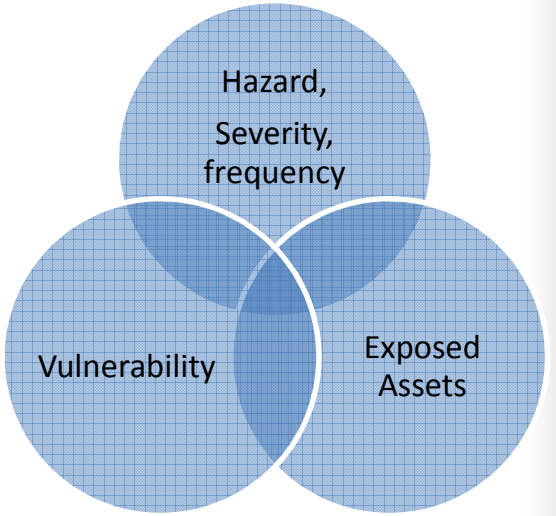
→ As basis for risk management: to inform decisions around resource investment in e.g. disaster mitigation, planning and recovery

→ At a range of scales suited to use by National, State and Local Government agencies

METHODOLOGY

Risk Assessment Methodology

- Impact focus
- Consider clustered events



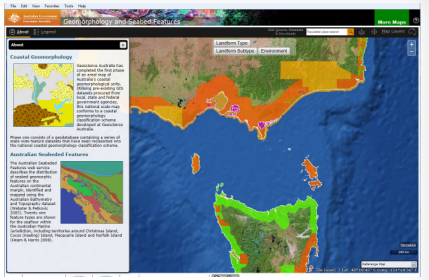
Coastal Compartments framework

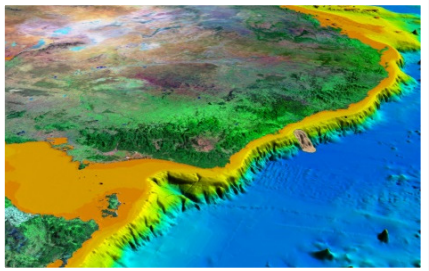
→ functional units for shoreline response

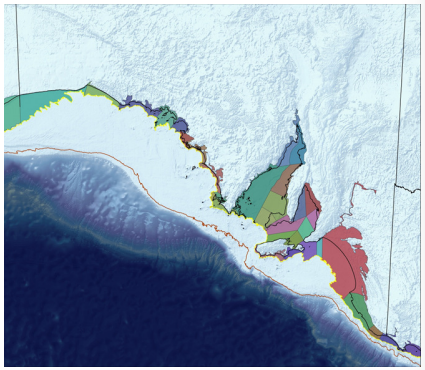
- Process based
- Allow scaling results, consistent approach
- Modelling & management applications

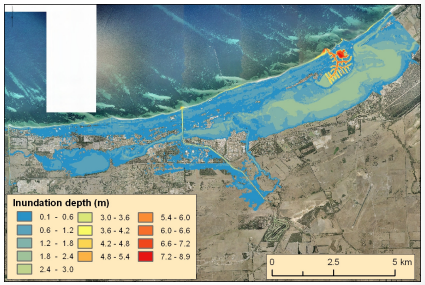
METHODOLOGY

- Identify coastal landform systems that are vulnerable to erosion during storm surge events;
  - → Case study sites
- Model clustering as part of frequency and severity storm events;
- Assess numerical models quantifying coastal response to storm surge based on coastal system characteristics;
- Collect field data to validate findings;
- Quantify the impact of clustered storm surge events on coastal assets (buildings and infrastructure).









OUTCOMES

- A demonstrated methodology
  - for quantifying the impact of clustered events on coastal infrastructure;
  - for including clustering as part of integrated quantitative risk and impact modelling approach for storm surge
- Recommendations for integrating coastal studies across a range of scales (local/regional/national);
- Recommendations for a national approach to the acquisition of coastal data for studies to minimise the impacts of coastal risks.
- The development of a nationally consistent methodology to assess the potential impact of coastal hazards.

PROJECT TEAM

1) Research: **GA:** Dr. Scott Nichol, Martyn Hazelwood, Dr. Martine Woolf, **UQ**: Prof. Tom Baldock, Dr. David Callaghan. &c.
2) End-users of the Coastal Management Cluster: David Hanslow (OEH NSW), Shona Prior (DPAC, Tas), Doug Fotheringham (DEWNR SA), Robert Schwartz (DSITIA QLD)

THANK YOU!

- Martyn.Hazelwood@ga.gov.au
- Scott.Nichol@ga.gov.au