

Scamander Coastal Adaptation Study

Community workshop | 24 June 2025 | Scamander Sports Complex

Agenda

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Introduction

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Study site

03

**Conceptual model of
rivermouth**

04

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05

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change**

06

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07

The process

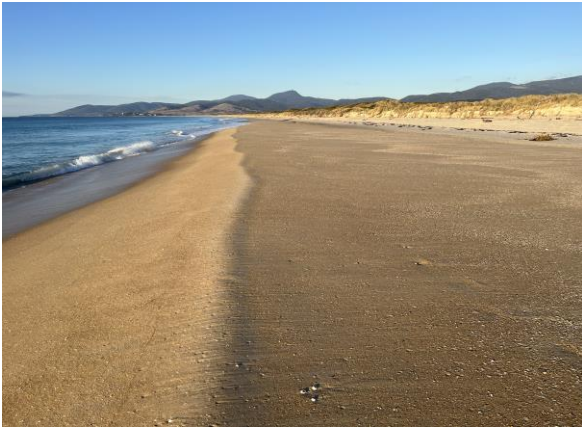
01 Introduction

Project and aims

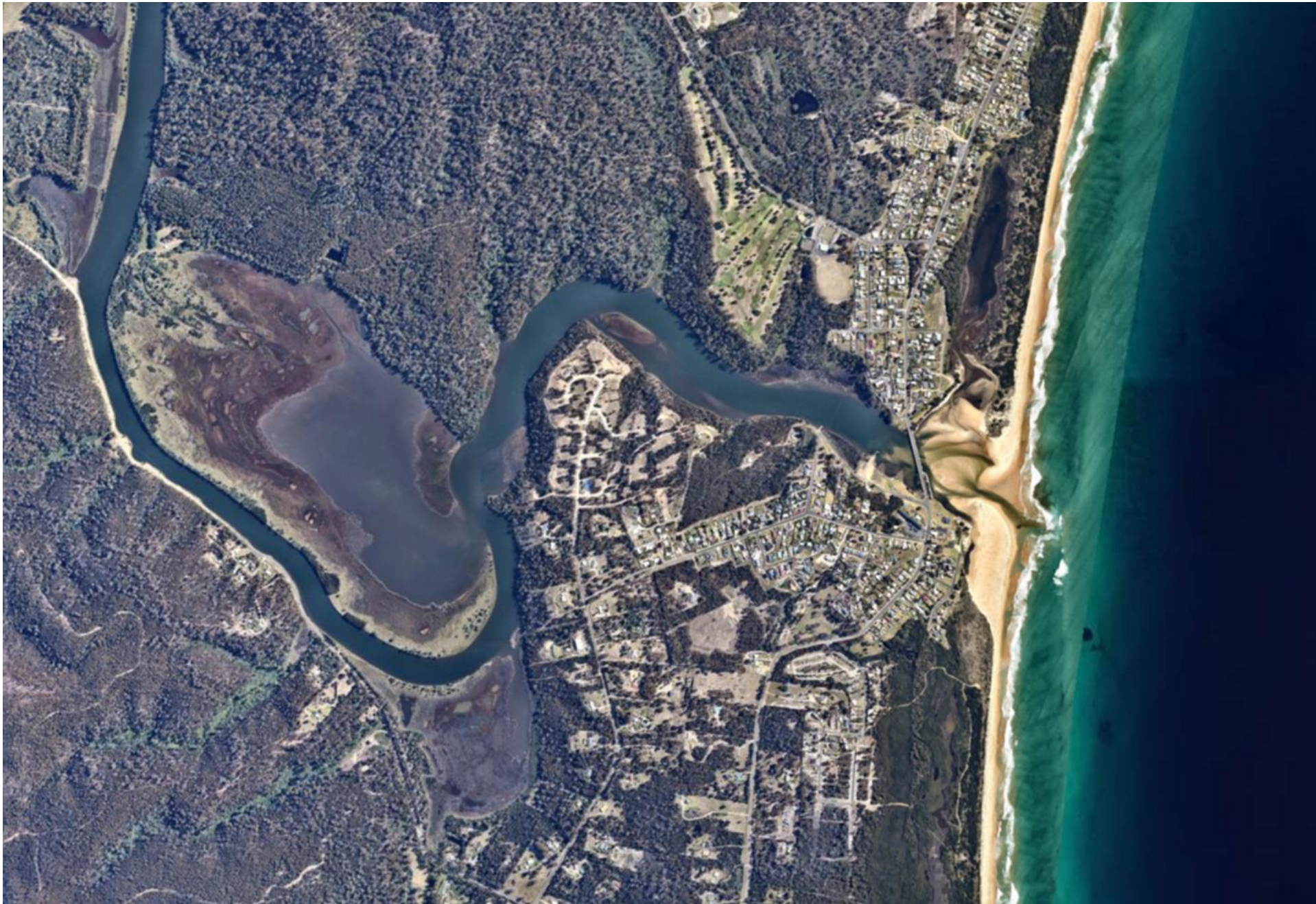
- Better understand the coastal and estuary risks and impacts on the community
- Moffatt & Nichol look into the coastal processes and possible engineering solutions
- SGS will assess the land use planning solutions, community costs and benefits of various adaptation pathways
- The aim is to recommend on short and long term management solutions

02

Conceptual understanding of rivermouth



**Key
features**



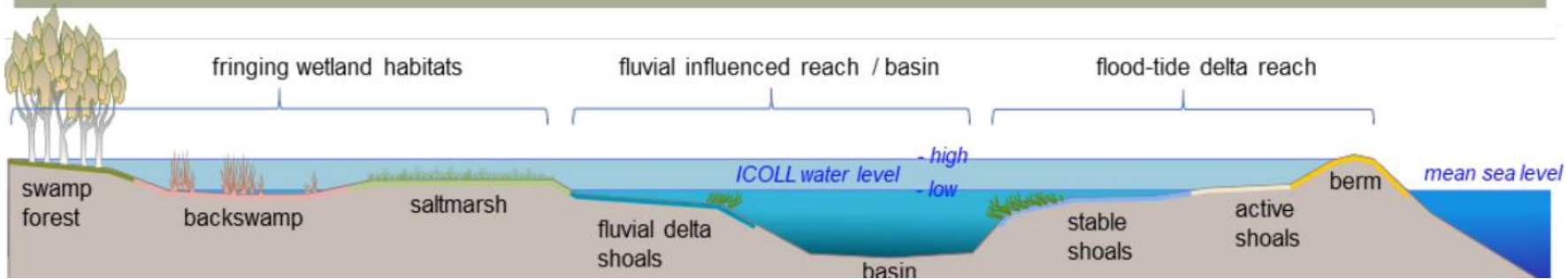
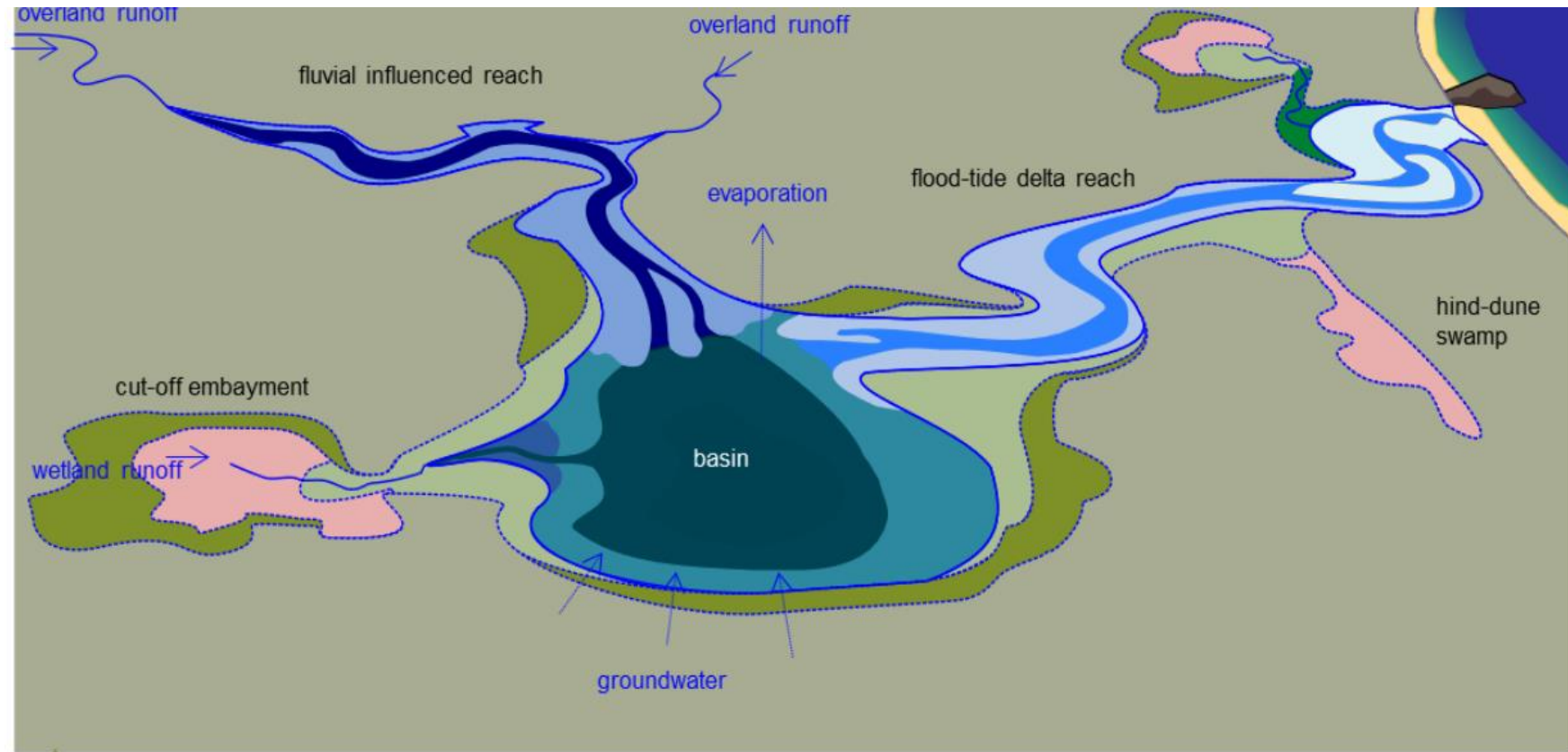
**Key
features**



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**Key
features**



Scamander estuary is in a group known as “Intermittently Closed and Open Lakes and Lagoons” (ICOLLs) . Source: [NSW Environment Dept.](#)

Key features

Frequently asked questions - technical

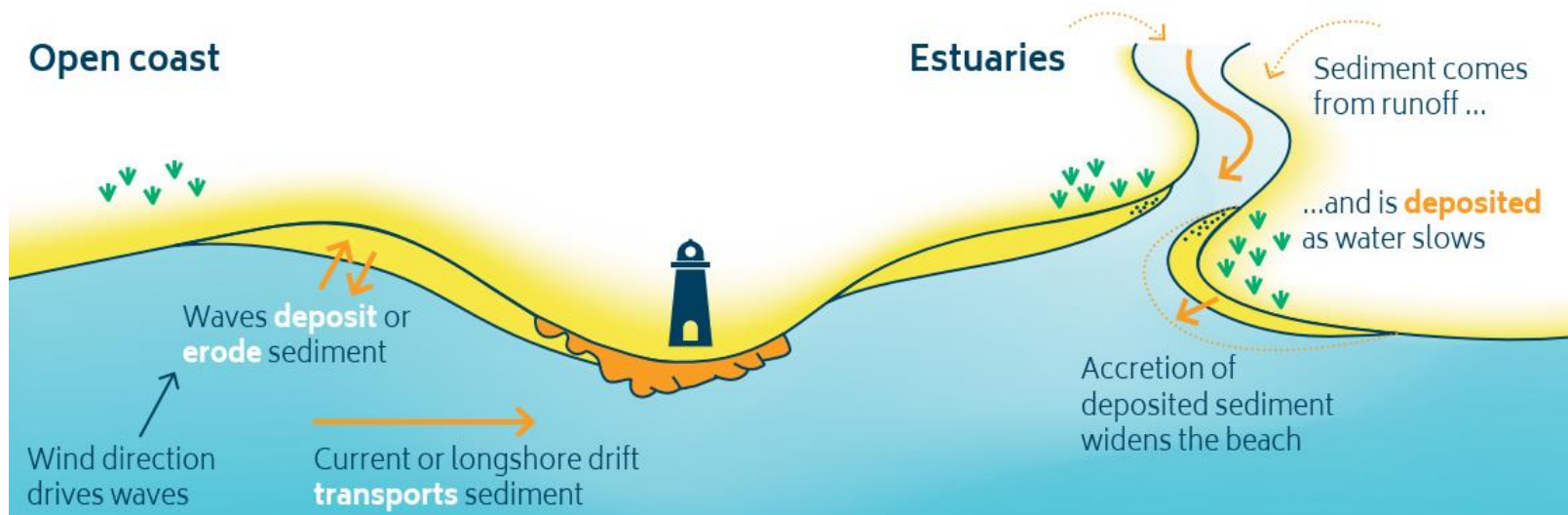
- What is an 'ICOLL'?
 - *'Intermittently Closed and Open Lakes or Lagoons (ICOLLs). This refers to lakes that naturally alternate between being open and closed to the ocean. A dynamic sand beach barrier, also known as a berm, which is continuously influenced by the movement and redistribution of sand and sediments, separates ICOLLs from the ocean. These berm changes are also affected by waves, tides, flood flows and winds'.*
- Where are ICOLLs located?
- Why do ICOLLs open and close to the ocean?

[Form and function of NSW intermittently closed and open lakes and lagoons \(2021\)](#)

NSW Department of Planning, Industry and Environment

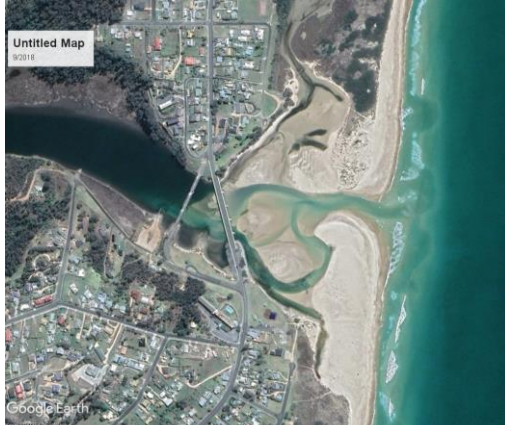
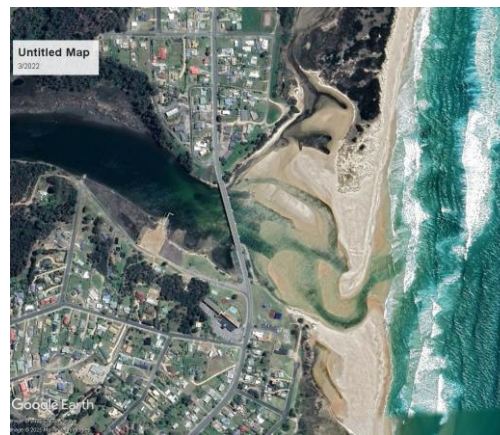
03 Processes

- Astronomical tides
- Ocean conditions (inc. waves, storm surge)
- Wind (important for dune forming)
- River flows (inc. flood flows)
- Long shore sediment transport
- Entrance state (open / closed)
- Human management (training walls, rock wall, bridges)



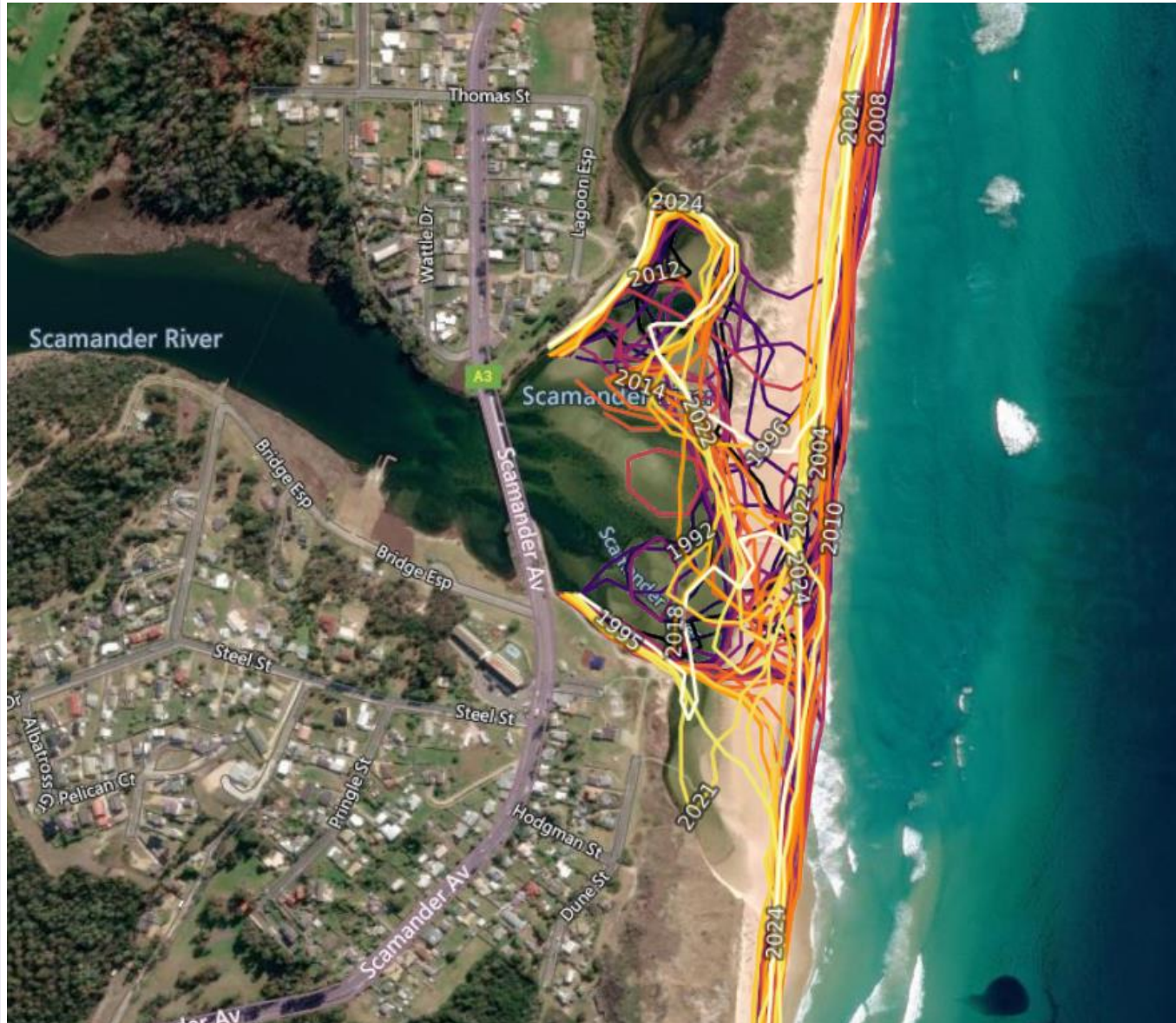
What shapes our coastlines (CoastAdapt)

Processes

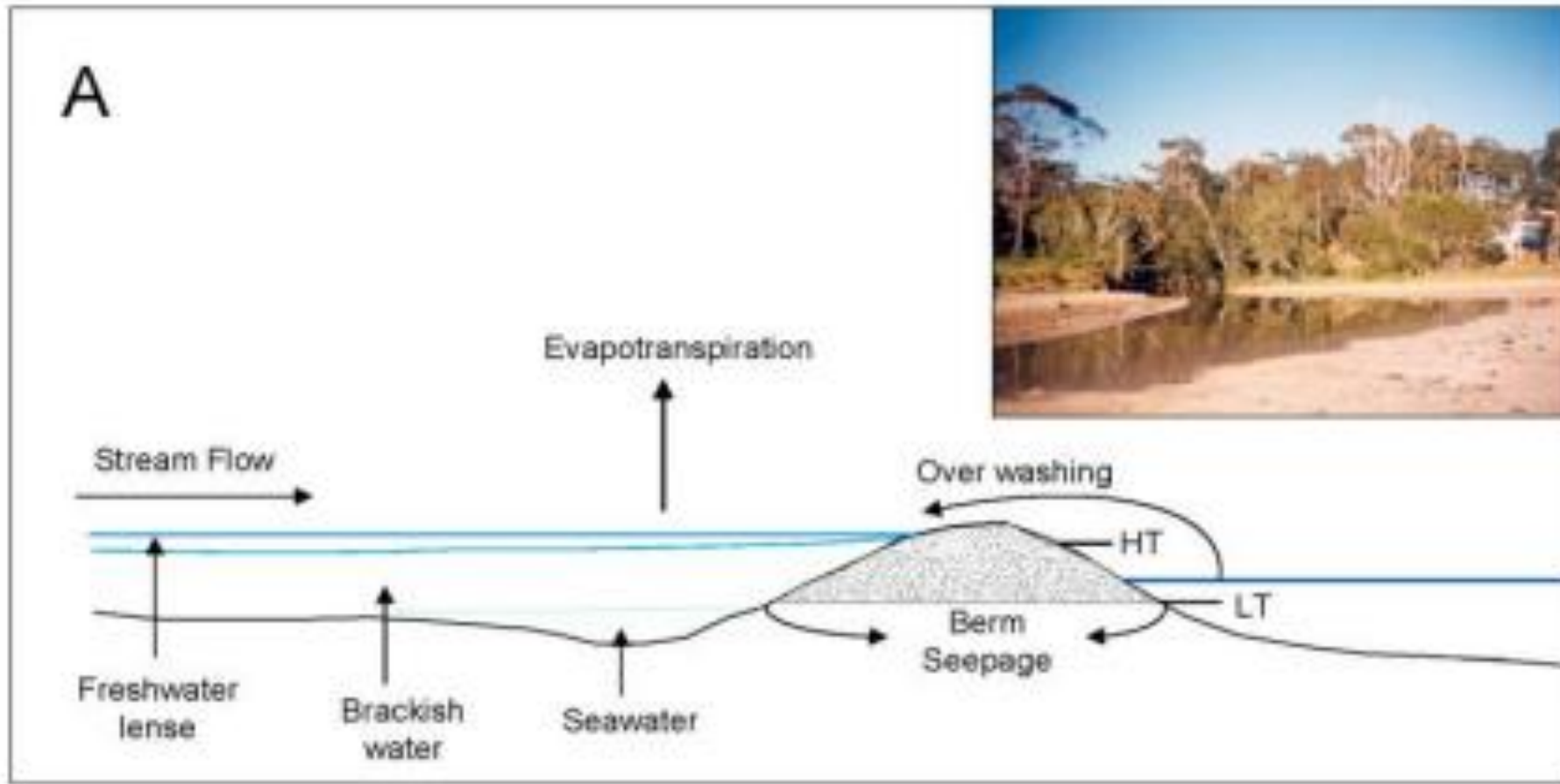


Processes

Processes

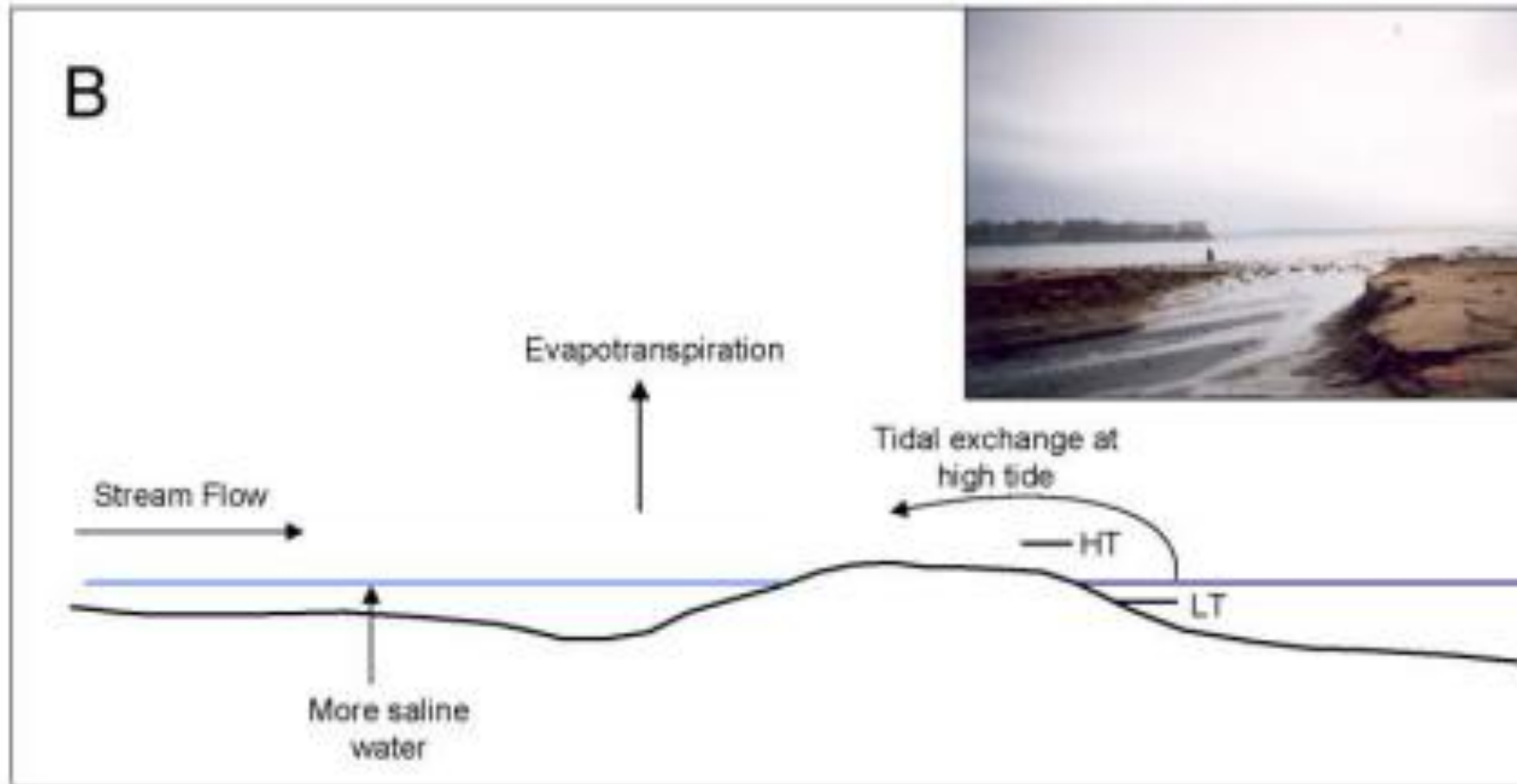


Digital Earth Australia Coastlines



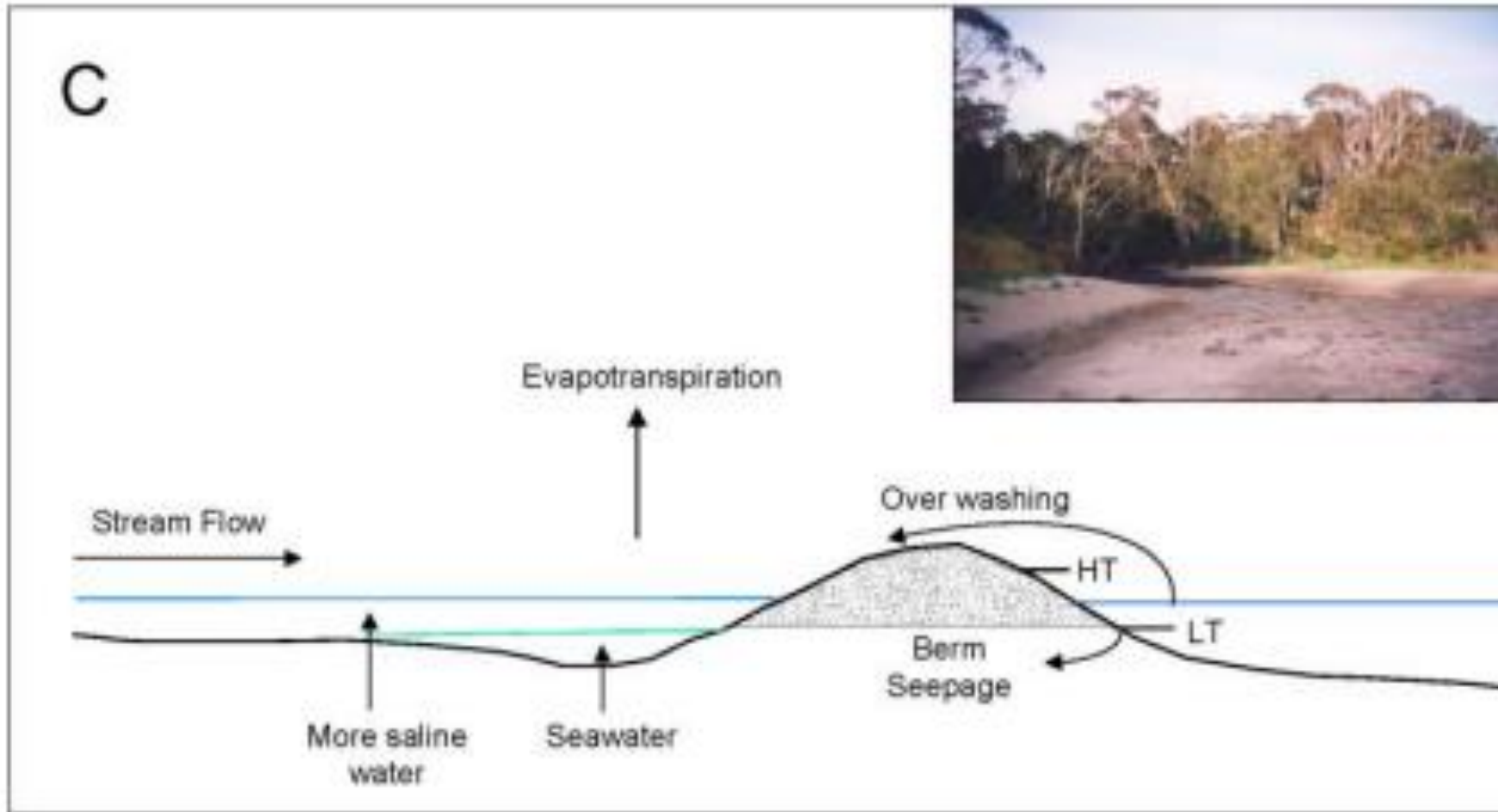
Processes

ICOLL hydrology: Closed and full



ICOLL hydrology: Berm breeched, ICOLL drains

Processes



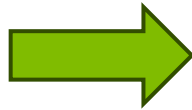
ICOLL hydrology: Berm rebuilt and closed again

Processes

04 **Impacts of climate change**

Climate change will impact coastal hazards

- Sea level rise
- Increased storm intensity
- Increased rainfall intensity

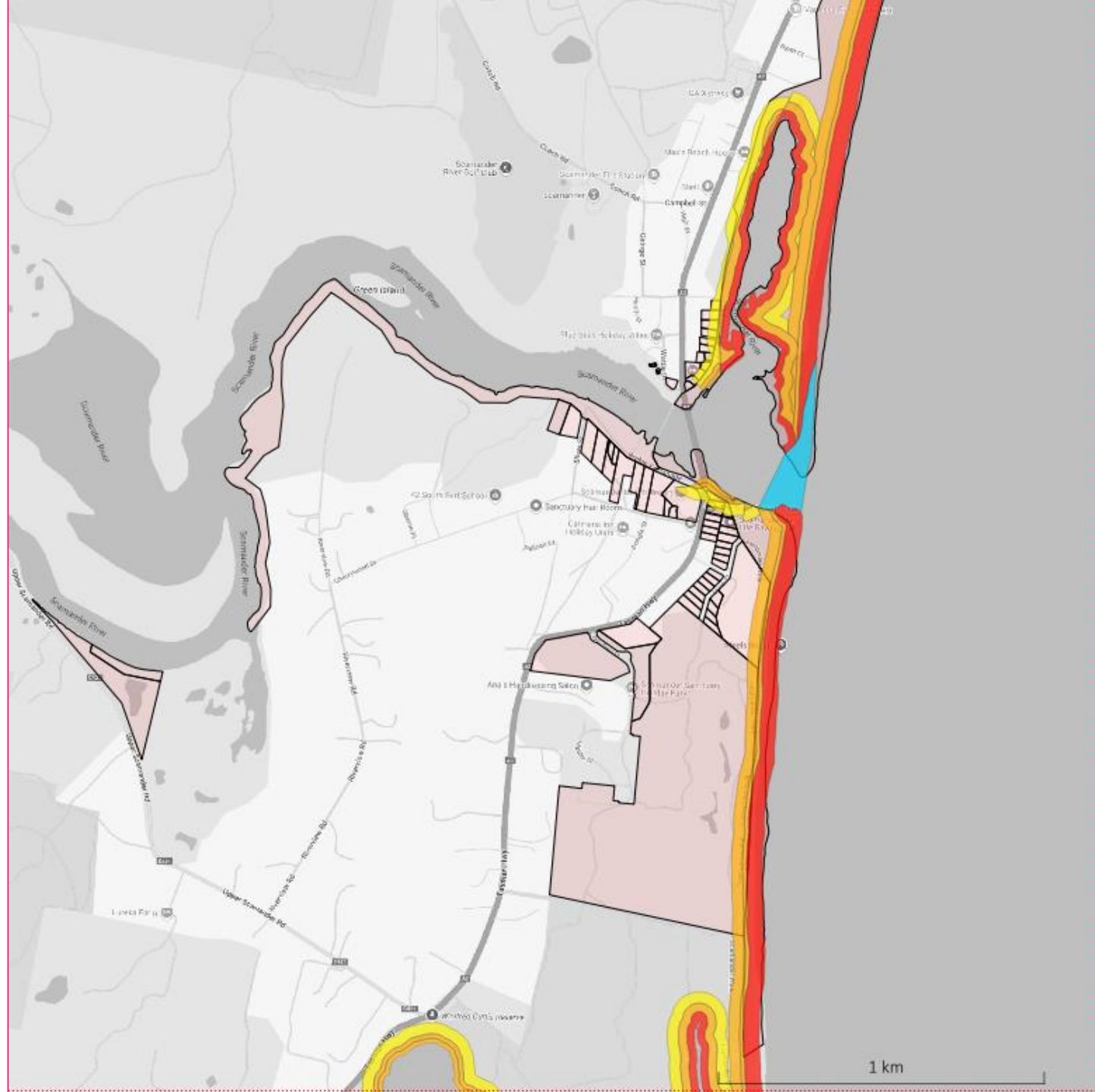
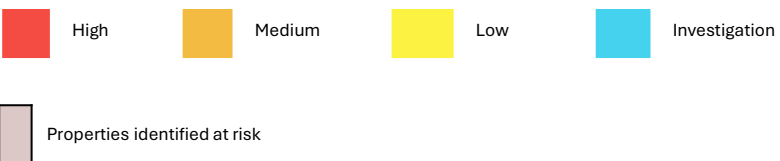


- Increased risk of inundation and erosion, and subsequent public or private property asset damage
- Altered ecological conditions and therefore character of the area for flora and fauna
- Changes in land use patterns to meet the lifestyle and logistical preferences of residents
- Pressure on stormwater and drainage systems
- Loss of culturally significant sites

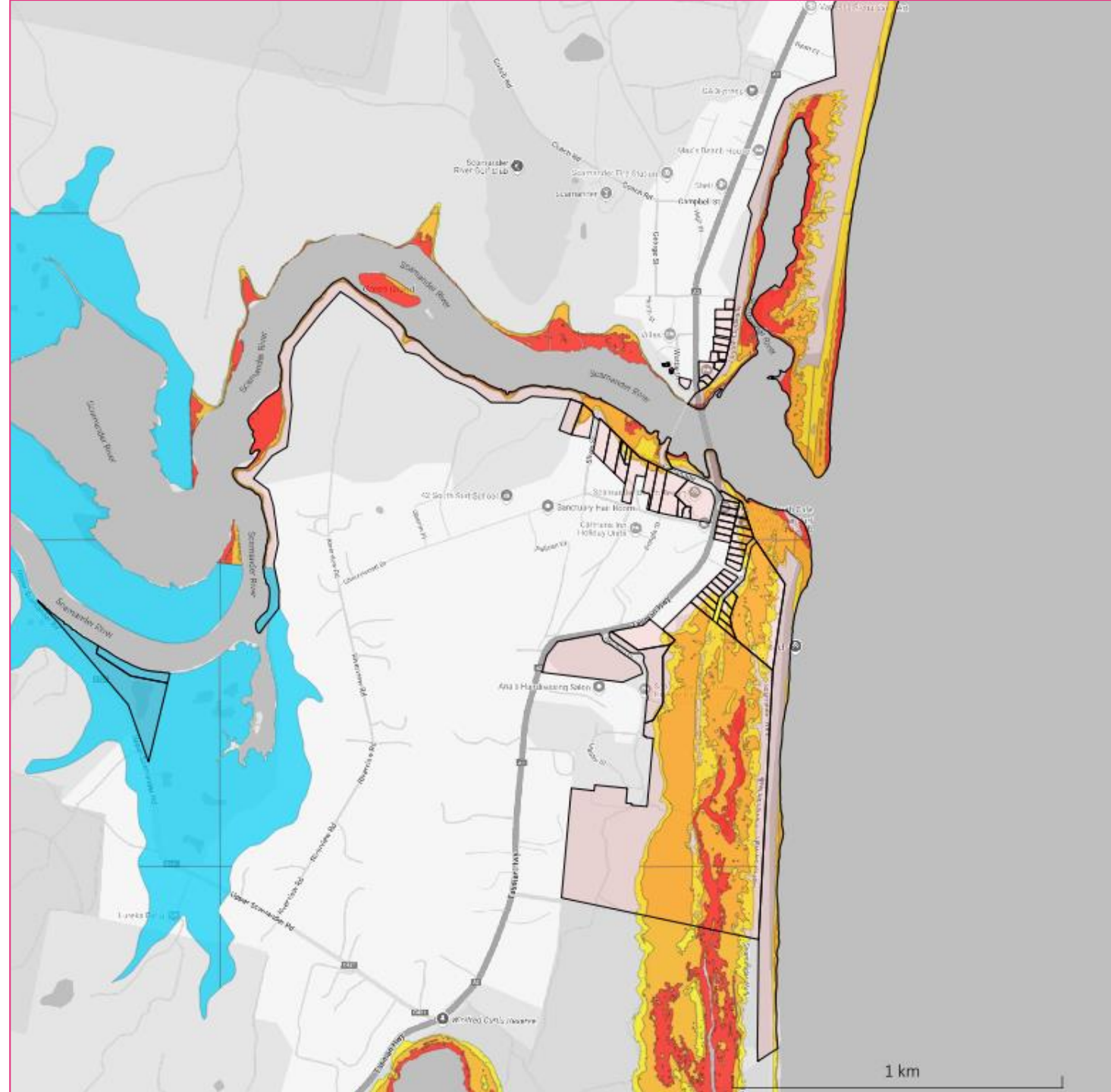
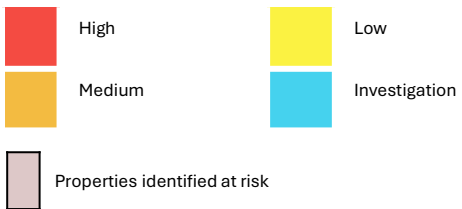
Hazards

- Coastal Erosion
- Estuary foreshore erosion
- Coastal Inundation
- River Flooding
- Overland flooding (runoff/drainage)
- 'Compound' or 'coincident' Flooding (can occur when entrance is open)

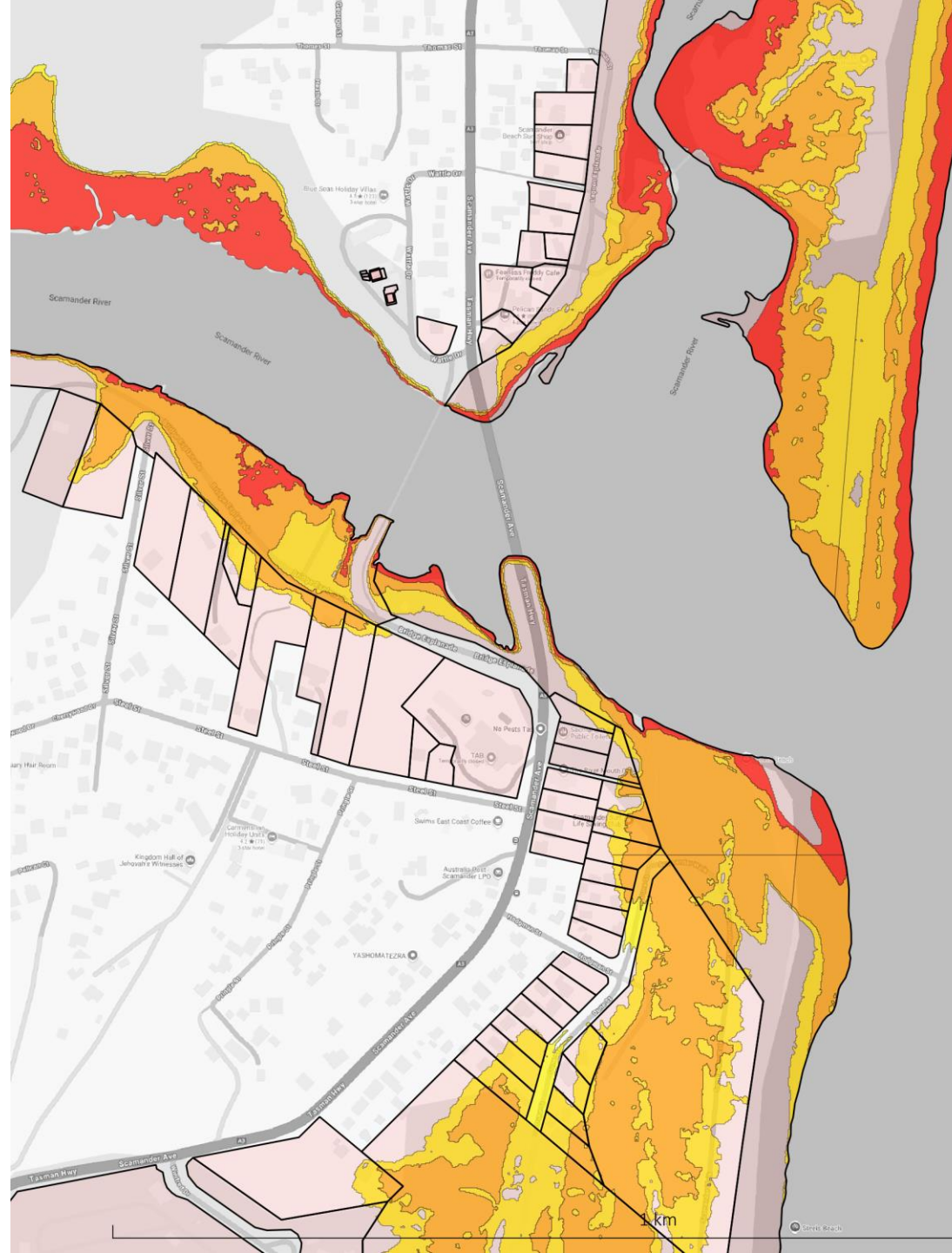
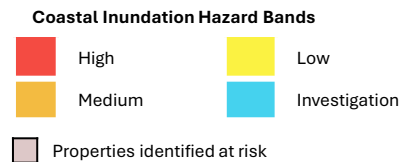
Coastal Erosion Hazards



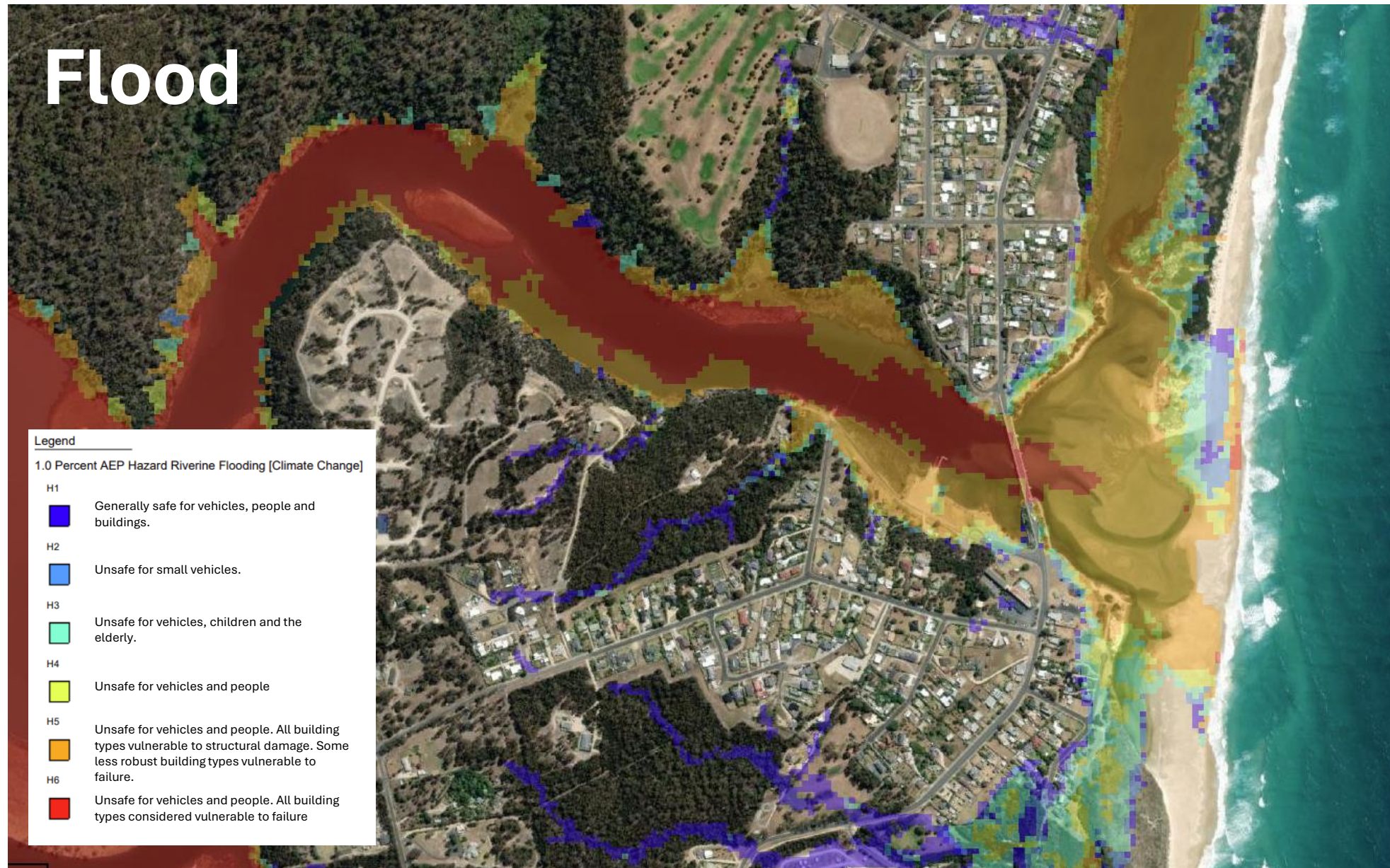
Coastal Inundation Hazards



Coastal Inundation Closeup – rivermouth properties



Flood



Key impacts

- **Property:** possible damages, reduced property values, cost of clean up
- **Community:** damage to infrastructure, community facilities, anxiety
- **Ecological:** bird habitat, wetlands, fish mortality
- **Tourism and recreation:** high use site, caravaners, day trippers, surfers

November 2022

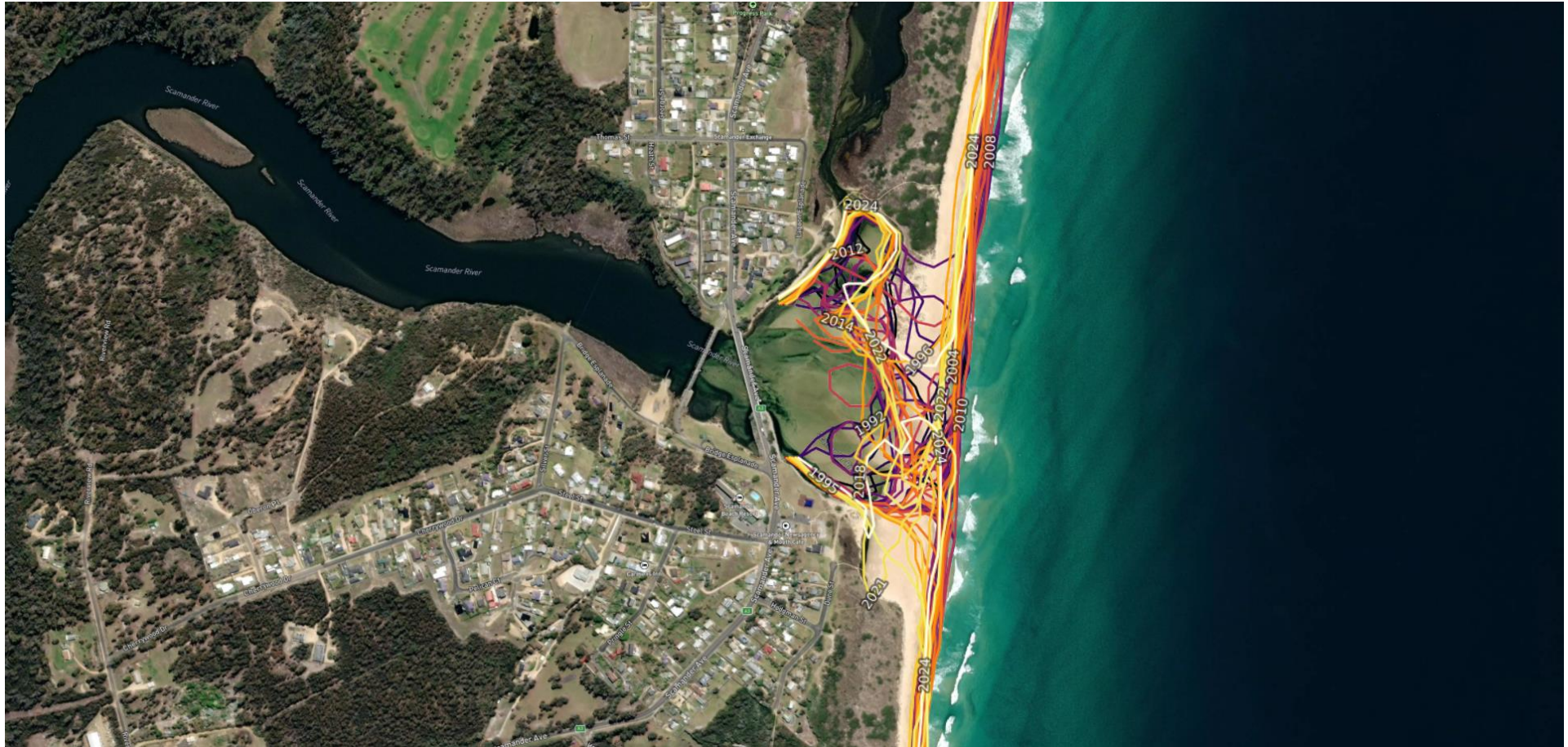


What values at risk are you concerned about?



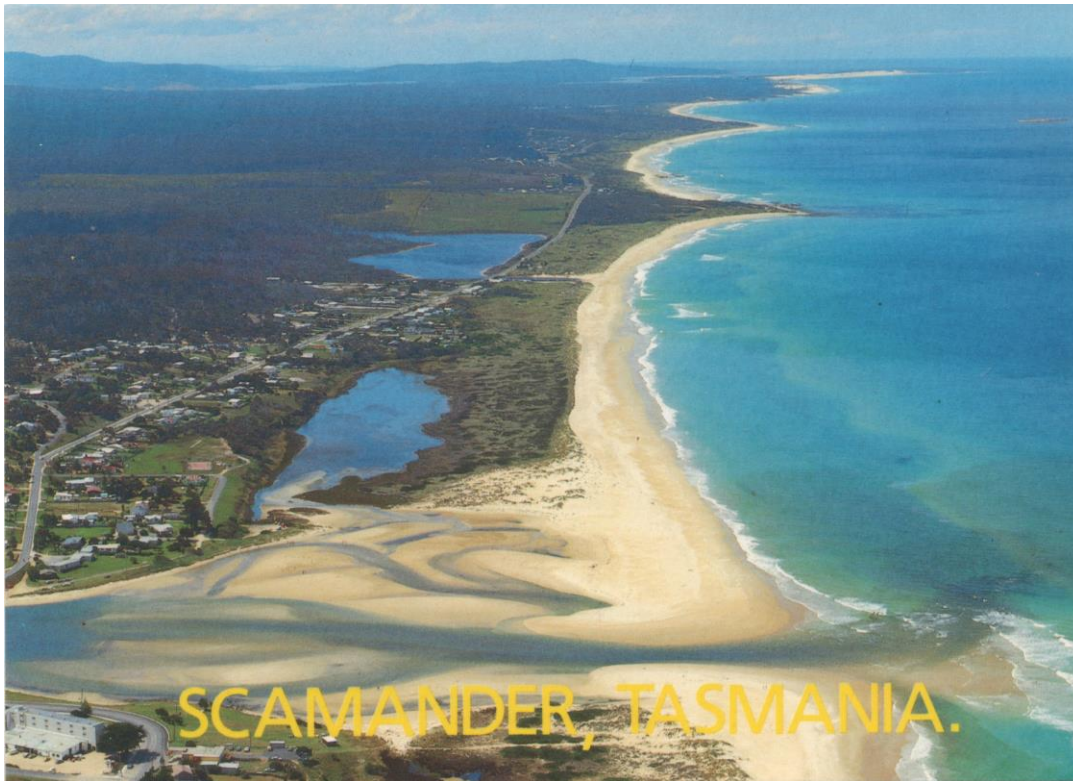
05 **Historical context**

The river mouth is a dynamic environment



Source: Digital Earth Australia (2025), <https://maps.dea.ga.gov.au/#share=s-ww7v45nnOgX0gRltRfiWb7lcPF1>

Scamander River in previous decades



Building rock wall, 1989



Flooded river in 2023



Waters approaching Dune St, 2022



Clean-up in 2022

With a variety of past management options

Retreating rock wall



Dune vegetation early 1990s



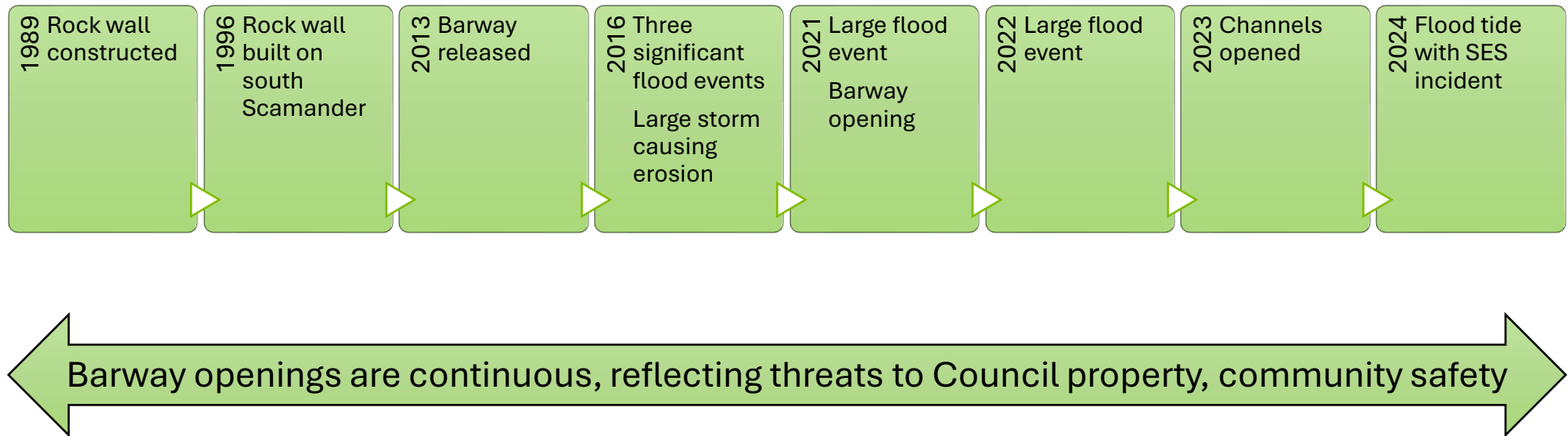
Barway opening 2021



Barway opening 2024



Timeline – Scamander River mouth










06

Adaptation options to consider

Options

1. Land management, planning and design
2. Nature-based methods
3. Engineering
4. Preparedness

Adaptation Option	
	Non-intervention Allow marine and coastal processes to occur and ensure public safety
	Avoid Limit development of new sites within coastal hazard areas through planning policies
	Nature Based Construct new natural coastal ecosystems, or restore or rehabilitate existing ones
	Accommodate Design structures that reduce the exposure to and impact from coastal hazards
	Retreat Relocate or decommission assets and values away from identified coastal hazard zones
	Protect Construct or enhance physical barriers to protect assets from coastal hazards

1	Non-intervention		Non-intervention
2	Avoid		Planning to avoid current and future risk
3	Nature-based		Dune / vegetation enhancement Dune and beach nourishment
4	Accommodate		Redesign/upgrade infrastructure
5	Retreat		Planned relocation of built assets / land use transition
6	Protect (major engineering)		Feasible engineering to retain beach
			Feasible engineering to hold the line (no beach)

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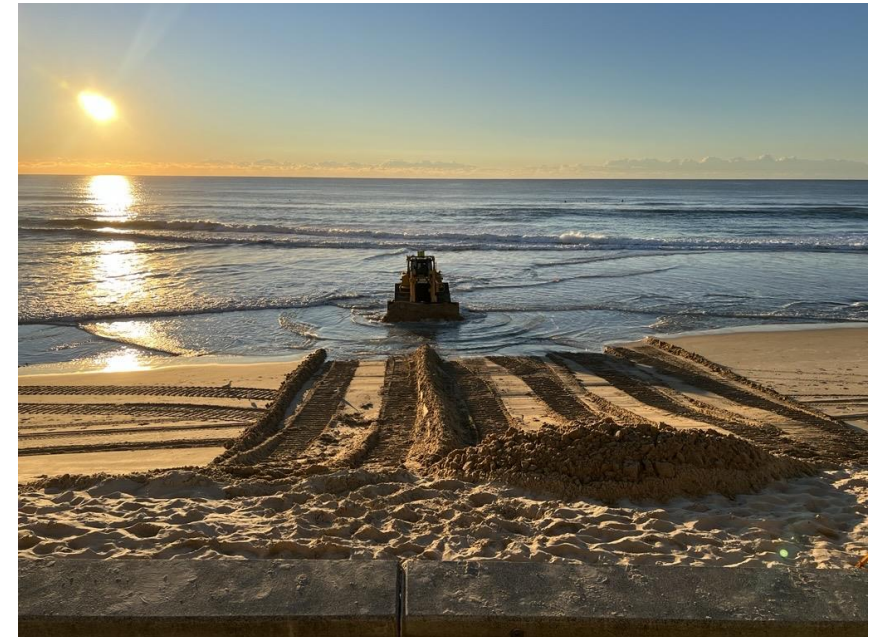
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07 **Adaptation pathways**

What are adaptation pathways?

Pathways describe how the area is likely to change, look and function if certain changes are made. They include consecutive interventions over time.

Each pathway manages risk, but the community, economic and environmental outcomes vary from pathway to pathway.

We must consider:

- **Flexibility**
- **Triggers**
- **Trade-offs**
- **Thresholds**

Key principles of successful adaptation planning

- Developing risks must be actively managed. Doing nothing is not an option.
- Honest and transparent communication with the community
- Government is not responsible for the protection of private property against natural hazards
- In principle, there should be no subsidy to occupy hazardous locations

Principles for managing coastal hazards of the Department of Environment and Natural Resources Tasmania (includes Parks & Wildlife Service)

What sort of options have you been thinking about?



What's next?

Stage 1	Hazards and values assessment	June – August 2025
<ul style="list-style-type: none">• Coastal hazards• Cost of risk analysis		
Stage 2	Options and adaptation pathways	August – October 2025
<ul style="list-style-type: none">• Draft adaptation pathways• Cost-benefit analysis		
Stage 3	Community and stakeholder engagement	October 2025
<ul style="list-style-type: none">• Community workshops• Testing and refining adaptation pathways		
Stage 4	Reporting	Early 2026
<ul style="list-style-type: none">• Draft Coastal Hazards Risk Management Plan• Finalise Coastal Hazards Risk Management Plan		

Community and stakeholder engagement

Things to consider

What is at risk?

- Flood/erosion damage to public and private property
- Community sense of place

What is gained, or lost?

- Reduced exposure to flood/erosion damage and losses
- Habitat
- Beach access

What might be different?

- Climatic conditions differ from expectations
- Property values fall independent of action

How would it happen?

- Who decides and who pays, whose risk?
- How could this process fail?
- What would happen if it does fail?