

FACT SHEET

Vulnerability and Risk



Bellarine
Bayside
Coastal Management

Once we know the areas likely to be exposed to coastal hazards, we can assess the vulnerabilities and risk for the values, uses and infrastructure for those areas.

We are working together with Wadawurrung to understand risks to Coastal and Sea Country values, guided by Wadawurrung knowledge and care for Country.

Values, uses and infrastructure were assessed in the risk assessment in these categories:

- Ecosystems and habitats
- Natural features and landscapes
- Recreation and tourism
- Buildings, structures and access
- Post-colonial Heritage sites

COASTAL VULNERABILITY

Coastal vulnerability is the susceptibility of people and places along the coast to adverse impacts from coastal hazards. It's based on:

- Exposure – the degree to which an asset or value is exposed to a given hazard.
- Sensitivity – the degree to which an asset or value stands to be impacted by the effects of a hazard.
- Adaptive capacity – the capacity for an asset or value to respond to a hazard and adjust accordingly to lessen the adverse effects or overcome the hazard.



COASTAL HAZARD RISK

A risk assessment was undertaken for each precinct and value.

Using a tailored risk assessment matrix, each coastal hazard risk was assessed by its **likelihood** of occurring and the impact to coastal values and uses if it did occur (**consequence**).

Likelihood	Consequence Level				
	Negligible	Minor	Moderate	Major	Extreme
Likely	Medium	Medium	Significant	High	High
Possible	Low	Medium	Significant	High	High
Unlikely	Low	Medium	Medium	Significant	High
Rare	Low	Low	Medium	Medium	Significant

Likelihood

The vulnerability assessment was used to inform the **likelihood of exposure to coastal hazards** for each value in each precinct.

The following likelihood definitions were used for inundation and erosion:

Descriptor	Inundation and erosion
Likely	1% AEP* storm tide with 0.0m SLR * OR Permanent inundation with 0.0m
Possible	1% AEP storm tide with 0.5m SLR OR Permanent inundation with 0.5m
Unlikely	1% AEP storm tide with 0.8m SLR OR Permanent inundation with 0.8m
Rare	1% AEP storm tide with 1.4m SLR OR Permanent inundation with 1.4m

*SLR = sea level rise

*1% AEP = a 1% chance that seawater during a storm tide event will exceed or equal the expected level

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Consequence

The consequence rating for each **potential impact on coastal values** was estimated using the following definitions, supported by the VRC Guidelines.

An example below:

Consequence rating	Access/lifestyle Access to key sites, services and activities underpinning community lifestyle, wellbeing and culture.
Extreme	widespread, permanent impact with no viable alternatives.
Possible	widespread, temporary disruption, with limited alternatives available. Full recovery expected to take several years.
Unlikely	localised, temporary disruption, with limited alternatives available. Full recovery expected in < 1 year.
Rare	Isolated and temporary short-term disruption, with some alternatives available. Full recovery expected in < 1 month.
Negligible	Negligible disruption.

Economic analysis

A high-level economic analysis has been undertaken to understand the economic base case. The base case informs an understanding of current and emerging economic implications from coastal hazards such as loss of income, impacts to tourism and damage to infrastructure.

The base case:

- provides additional detail on economic risk
- gives an economic perspective on the need to proactively manage coastal hazard risk and adapt
- contributes to the evaluation of adaptation options in Stage 5.

Adaptation prioritisation

Adaptation priorities have been determined based on the severity and urgency of identified risks based on both

- the economic risk assessment, and
- the results of the coastal hazard risk assessment

While numerous assets are at risk, the most urgent for adaptation planning is identified due to the combination of:

- Cultural significance
- potential loss
- high exposure
- community reliance

Next steps: Stage 5- Adaptation actions and pathways

Adaptation planning will consider a range of options to manage coastal hazard risk including order, timing, triggers for action, how the risk changes over time and in different places.

Stay connected



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