

# Cape to Cape Resilience Project

FACTSHEET 2 Terminology



This fact sheet provides a description of some of the more commonly used terms relevant to coastal hazard adaptation and the Cape to Cape Resilience Project.

## The coastal setting

**Marine and coastal environment** – In Victoria, this includes all private and public land and waters between the outer limit of Victorian coastal waters (3 nautical miles) and five kilometres inland of the high-water mark of the sea, and 200 m below the land surface, as defined in the *Marine and Coastal Act 2018*.

**Marine and coastal processes** – The physical, chemical and biological processes that occur in the marine and coastal environment over short and long timescales, such as sediment transport, erosion, accretion, changes in coastal and marine flora and fauna.

**Coastal geomorphology** – The physical shape, processes and patterns associated with the coast, including landforms, soils, and geology.

**Landform** – A naturally shaped feature of the earth's surface. Landforms range in size from small features apparent at a local scale (e.g. dunes and shore platforms) to large structures apparent at land system or regional scales (e.g. estuary systems, coastal compartments).

**Coastal compartment** – A length of the coast bounded by large geologic structures (e.g. a headland, cape or river mouth), where changes in geology or geomorphic features control and influence the form of the coast. The Cape to Cape study area is a coastal compartment.

**Sediment compartment** – A length of coast where natural barriers control local sediment transport processes, with land features acting as sediment sources, transport pathways and sediment sinks. Typically, sediment exchange to adjacent compartments is restricted, often due to natural features which can divide the compartment and its processes from its neighbour.

**Coastal cliff** – A steep rock face or slope near the sea.

**Shore platform** – The horizontal or gently sloping rock surfaces in the intertidal region, present at the base of many cliffed coasts.

**Shoreline** – A discrete line representing the landward limit of the sea at a point in time. Methods to define shorelines may be based on a fixed vertical level (e.g. height above sea level or Australian Height Datum / Australian Chart Datum), or by identifying the apparent interface of water and land using tools such as aerial photography.

**Beach** – The portion of the marine and coastal environment that is, at some point, subject to wave action. The landward limit of a beach is where there is a marked change in material, form or vegetation. The seaward limit of a beach is generally the mean low tide water line.

**Estuary** – A partially enclosed coastal waterway that is influenced by tides and coastal processes; a zone where fresh water mixes with salt water. Estuary systems may be permanently or periodically open to the sea.

**Tides** – The periodic rising and falling of the sea resulting from gravitational attraction of the moon and sun and other astronomical bodies acting upon the earth.

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**Intertidal zone** – The area that is above water level at low tide and underwater at high tide (the area within the tidal range).

**Relative sea level** – Sea level as measured by tide gauges with respect to the land.

**Climate change** – A change in the state of the climate (such as temperature, typical weather) that persists for an extended period, typically decades or longer. Climate change may be due to natural processes such as solar cycles, volcanic eruptions, as well as persistent human-induced impacts on the earth's atmosphere.

## Coastal hazards

**Coastal hazards** – Natural coastal processes that may negatively impact on the marine and coastal environment, including impacts on human use, values, property or infrastructure. Hazards include coastal erosion and inundation (flooding) due to storm tide and sea level rise.

**Storm surge** – Elevated sea level at the coast caused by the combination of low pressure and high winds associated with a severe storm.

**Storm tide** – The total elevated sea height at the coast during a storm, combining storm surge and the predicted tide height.

**Coastal erosion** – The process of winds, waves and coastal currents shifting sediment away from a localised area of the shoreline.

**Sea-level rise** – An increase in the mean level of the ocean. Relative sea level rise occurs where there is a local increase in the ocean level relative to the land, which might be due to ocean rise and/or land subsidence.

**Groundwater** – Water that fills and flows through the spaces between soils and rocks e.g. water found below the surface of the land. Groundwater can be influenced by tides and waves, similar to estuaries.

**Short-term erosion (storm bite)** – Erosion that occurs on a short-term basis, often during a storm. The shoreline and beach then gradually regain sediment (rebuilds).

**Long-term erosion (recession or retreat)** – A continuing movement of the shoreline position in a landward direction, occurring either gradually over many years, or when the shoreline does not recover following a short-term erosion event.

**Accretion** – Where sand is deposited (instead of eroded) and builds up over time. Accretion typically occurs during the calmer seasons. Beach accretion is generally a more gradual process than beach erosion, and may be short term, long term, or episodic.

**Saline intrusion** – The long term / permanent movement of sea water (saltwater) into freshwater areas, including groundwater and aquifers (e.g. where bore water is drawn from), upstream waterways or water bodies, resulting in increasing salt concentrations in previously freshwater dominated areas.



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## Resilience and adaptation

**Coastal vulnerability** – The susceptibility of people and places along the coast to adverse impacts from coastal hazards. Includes the degree of exposure, and ability to cope with, respond to and adapt to coastal hazards.

**Risk assessment** – A systematic process of evaluating the potential risks (likelihood and consequence) of coastal hazards, helping to inform a response and adaptation actions.

**Resilience** – The capacity of social, economic, and environmental systems to cope with a hazardous event, trend or disturbance, responding or reorganising in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.

**Adaptation** – The process of adjustment to actual or expected disturbances such as coastal hazards. In human systems, adaptation seeks to proactively manage or avoid harm or make use of beneficial opportunities. Some natural systems may benefit from human intervention in helping to facilitate these adjustment process.

**Adaptive capacity** – The ability of systems, institutions, humans, and/or natural environments to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.

**Coastal adaptation** – Future modification of behaviour through change in coastal land management, land-use or infrastructure, that reduces or prevents adverse impacts associated with coastal hazards.

**Adaptation pathway** – A sequence of actions and decision points over time, applied in order to achieve adaptation objectives. Pathways include thresholds or triggers for when decisions need to be reviewed, and actions implemented. Victoria's *Marine and Coastal Policy (2020)* advocates the pathways approach to manage coastal hazard risk.

## References

- > Marine and Coastal Policy (DELWP 2020) [marineandcoasts.vic.gov.au/coastal-management/marine-and-coastal-policy](https://marineandcoasts.vic.gov.au/coastal-management/marine-and-coastal-policy)
- > CoastAdapt Glossary [coastadapt.com.au/resource-centre](https://coastadapt.com.au/resource-centre)
- > OzCoasts [ozcoasts.org.au](https://ozcoasts.org.au)

## How can I get involved in the project?

To ensure you keep up to date with the Cape to Cape Resilience Project and upcoming events and activities:

- Visit the project website at [marineandcoasts.vic.gov.au/coastal-programs/cape-to-cape-resilience-project](https://marineandcoasts.vic.gov.au/coastal-programs/cape-to-cape-resilience-project)
- Sign-up to receive progress updates and notifications – email [capetocape.project@delwp.vic.gov.au](mailto:capetocape.project@delwp.vic.gov.au)
- Read our latest project updates at the website
- Ask us a question – email [capetocape.project@delwp.vic.gov.au](mailto:capetocape.project@delwp.vic.gov.au)

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