Our Resilient Coast.
Our Future.

Sunshine Coast COUNCIL

Factsheet 3 | January 2020

The coastal zone

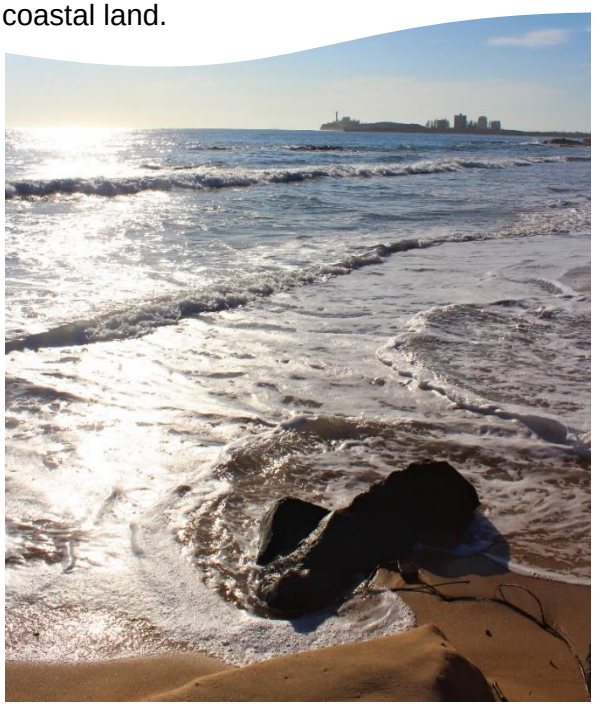
Our coastal landscape

Coastlines are the dynamic interface between land and sea. The Sunshine Coast Local Government Area includes:

- Over 60 km of open sandy shoreline
- Over 70 km of lower estuary foreshores
- Rocky headlands
- Areas of low-lying coastal floodplains.

Our coastal zone supports a diversity of social, cultural, economic and environmental values. Our beaches, estuaries, and wetlands are highly valued by local communities and visitors.

The coastal landscape experiences constant, and often rapid change. Wind and wave action continually work to move sediment and shape the shoreline and adjacent coastal land.



What drives change in the coastal zone?

Key drivers of landscape change in the coastal zone include:

Tides: The periodic rise and fall (or flood and ebb) of the daily tide moves sediment both on and off-shore and shapes the form of the beach and near-shore environment.

The Sunshine Coast experiences semi-diurnal tides, meaning there are two high tides and two low tides each day.

The difference between the lowest and highest tides experienced under normal conditions is called the tidal range. The tidal range is around 2.17m at Mooloolaba, but extreme weather events can cause considerably higher tides.

Wind and waves: Waves are generated by wind blowing across the water. Wind, combined with the morphology (shape) of the sea floor, drives the size, frequency, duration and energy of waves. Wave energy has the potential to move sediment both off-shore, on-shore, and along the coastline.

Data on tides, wind, waves and climate patterns are collected by buoys, gauges and weather stations situated along our coastline.

The Mooloolaba wave monitoring buoy was installed in 2000 and recorded its maximum wave height of 12.1 m in March 2004. A wave monitoring buoy was also installed at Caloundra in 2013.

https://www.qld.gov.au/environment/coasts-waterways/beach/monitoring/waves-sites

Image credit: Michael Wren

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What drives change in the coastal zone? (continued)

Weather and climate patterns: Local climatic conditions (e.g. dominant wind patterns) as well as extreme events like East Coast Lows will influence how the coastal landscape develops and changes over time. Extreme weather events can drive major coastline changes in a short period of time, including erosion (loss) of sand. Sandy beaches and dunes typically rebuild gradually between extreme events. Long-term changes in climate also influence sea level and coastal processes.

Sediment supply: Sediment is delivered to coastlines from catchments, rivers, dunes and off-shore environments. When historical sediment supplies reduce or cease, coastlines may be prone to erosion. When sediment supply is abundant, coastlines will tend to build seaward. The main source of sand to the Sunshine Coast is from northern New South Wales via long-shore drift.

Land use and population: The number of people living, working and visiting coastal zones is also a key driver of landscape change. Particularly as population increases, the development of urban areas, infrastructure and farmland, can restrict and/or accelerate change.

The population of the Sunshine Coast LGA is predicted to increase from around 300,000 to around 500,000 people by 2041.

How do we plan for change?

Understanding the key drivers of change in the coastal zone is important to inform management activities. Sunshine Coast Council undertake a range of studies linked to current and future management of the coast. These include assessments related to:

- Coastal erosion
- Storm tide inundation
- Weather and climate trends
- Water quality, coastal ecology, coastal landforms
- Values and uses of coastal areas.

This information informs the development and update of current shoreline management activities, as well as long-term strategic planning.