

FACTSHEET No.2 - Coastal landscape

Our coastal landscape

Across the Gympie region, the coastal landscape supports a diversity of cultural, economic and environmental values, and is highly valued by our Traditional Owners, local communities and visitors to the area. The coastline extends north from Cooloola Beach, around Double Island Point, along Rainbow beach, around Inskip Point and across Wide Bay and Tin Can Inlet.

The Gympie coastal landscape is characterised by extensive elevated dune systems along the open coast, rocky headlands (e.g. Double Island Point), as well as coastal plains, bay and inlets. Features of the coastline include sandy beaches, mangroves, estuaries, wetlands and associated ecosystems.

One of the more challenging aspects of the coastal landscape is that it experiences constant, and often rapid change. Wind and wave action continually work to move sediment and shape the shoreline and adjacent coastal land. Understanding the key drivers of landscape change in the coastal zone is the first step to developing a strategic plan to balance key values and landuse, both now and into the future.

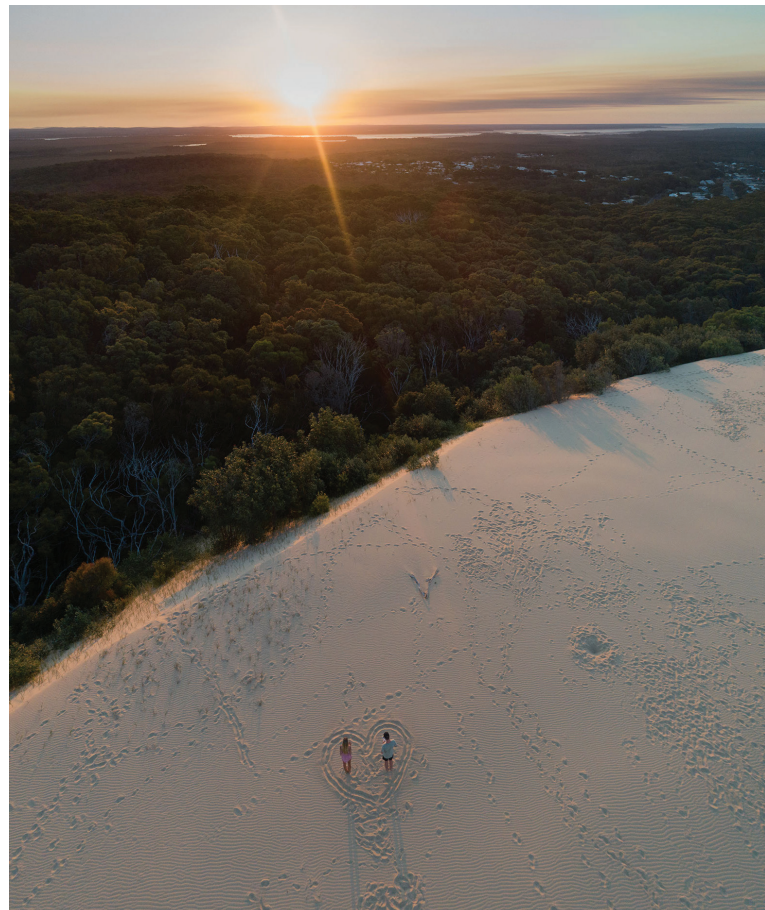
What changes do we need to plan for?

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 Gympie 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 2.94 m at Tin Can Bay, 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



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Weather and climate patterns

Local climatic conditions (e.g. dominant wind patterns) as well as extreme events like cyclones and 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 offshore 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 Gympie coast is the long-shore drift that moves north along the coast.

Population dynamics

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.

How do we plan for change?

Understanding the key drivers of change in the coastal zone helps to inform management activities. This includes pro-active planning to mitigate the risk of 'coastal hazards'. Coastal hazards typically include flooding of low-lying coastal land and erosion of the existing shoreline. Managing the risk (likelihood and consequence) of coastal hazards involves understanding which areas are likely to be impacted, both now and into the future. The development of a coastal hazard adaptation strategy, as part of the *Cooloola Coast – The Resilient Coast* project, will assist to inform both short and long-term management of our coastline.

Fact sheets in this series

- Terminology
- Coastal landscape
- Coastal hazards
- Coastal hazard adaptation

More information:

<https://www.gympie.qld.gov.au/resilientcooloola>

