



South Coast Tasmania TAS02.01.01

Regional Setting

This compartment extends from South East Cape to South West Cape.

It is strongly exposed to high-energy, south-westerly swells and frequently stormy conditions. However, most sandy beaches in this compartment are situated at the north end of deep rocky embayments and/or behind off-shore islands, resulting in some refraction and attenuation of swells reaching these beaches. Micro-tides occur here.

The dominant regional processes influencing coastal geomorphology in this region are the Mediterranean to humid cool-temperate climate, micro-tides, high energy south-westerly swells, westerly seas, carbonate sediments, interrupted swell-driven longshore transport, and the Southern Annular Mode (driving dominant south-westerly swells and storms).

Regional hazards or processes driving large scale rapid coastal changes include: mid-latitude cyclones (depressions), storm surges and shelf waves.

Justification of sensitivity

The sensitivity rating for beaches is 3 or 4. The compartment is not yet responding to sea-level rise, and some factors suggest these beaches may be medium-term or late responders to sea-level rise. The remainder of the compartment (hard rocky shores) is resilient.

Beach barrier sands in this compartment are probably mainly derived from shelf sand reworked onshore during post-glacial marine transgressions (may include sands of glacio-fluvial origin transported down the New River and South Cape Rivulet to the shelf from glaciated highlands during glacial low sea stands). Ongoing sand supply from present day rivers is negligible, although modelling suggests there



may be some ongoing sand supply from the shelf in the Coxes Bight to Prion Beach area ([Harris & Heap 2014](#)).

Little is known of the Twentieth Century history of beach behaviour in this compartment. Although most beaches have displayed notable erosion scarps in recent decades ([Cullen 1998](#)), recent beach monitoring demonstrates foredune fronts at Cox Bight and Prion Beach are continuing to show substantial recovery and there is not yet evidence of any trend towards progressive recession ([Eberhard et al. 2015](#)).

It is unlikely that sand is being lost from or transported between the beach embayments in this compartment. Although the high wave energies and frequently stormy nature of this coast might be expected to cause an accelerated response to sea-level rise, the deep embayments are probably somewhat attenuating wave energies. Given that there is probably little sand loss from each embayment and possibly some ongoing sand supply from offshore, the beaches in this compartment may be medium term or even late responders to sea-level rise.

Other comments

This coast is entirely uninhabited with national park land tenure, and is part of the Tasmanian Wilderness World Heritage Area. Infrastructure potentially at risk from coastal erosion or inundation is limited to a few walking track sections and campsites.

A few sections of this coast are potentially susceptible to inundation (mostly low areas associated with the embayed beach barriers). However, this is dominantly a steep rocky coast with little inundation hazard.

Confidence in sources

Moderate confidence: Based on several studies and recently-commenced beach monitoring work.



Figure 1: Compartment TAS02.01.01 South Tasmania.



Additional information

Recently-commenced beach profile monitoring for several beaches within compartment: www.tasmarc.info

Cullen, P 1998, *Coastal Dune Systems of South-Western Tasmania: Their Morphology, Genesis, and Conservation*, Nature Conservation Report No. 98/1, Parks and Wildlife Service, Tasmania.

Cullen, P & Dell, M 2013, *Geomorphological evolution of the Prion Beach and New River Lagoon beach barrier system*, Nature Conservation Report Series 2013/03, Department of Primary Industries, Parks Water & Environment, Tasmania.

Eberhard, R, Sharples, C, Bowden, N & Comfort, M 2015, *Monitoring the Erosion Status of Oceanic Beaches in the Tasmanian Wilderness World Heritage Area: Establishment Report*, Nature Conservation Report Series 15/3, Department of Primary Industries, Parks Water & Environment, Tasmania, Hobart, Tasmania.

Harris, PT & Heap, A 2014, 'Geomorphology and Holocene Sedimentology of the Tasmanian Continental Margin', in KD Corbett, PG Quilty & CR Calver (eds), *Geological Evolution of Tasmania*, Geological Society of Australia (Tasmania Division), pp. 530-539.