



Port Davey - Bathurst Harbour TAS02.02.02

Regional Setting

This compartment extends from Hillard Head to Point St Vincent.

This is a complex re-entrant shoreline, mostly sheltered from regional high-energy swell except in outer parts (Port Davey). However, long fetches within parts of Bathurst Harbour generate energetic local wind waves (mainly westerly but with topographic steering). 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 swell-sheltered soft shores earn a sensitivity rating of 5. They are already receding and likely to be early responders to sea-level rise. The well-embayed, swell-exposed sandy beaches in Port Davey are rated 3. The remainder of the compartment (hard rocky coasts) is resilient.

Most of the shoreline of Port Davey–Bathurst Harbour–Bathurst Channel comprises hard rocky sloping shores resistant to erosion. Several swell-exposed sandy beaches in Port Davey show signs of erosion as well as recovery, and it is unlikely these are yet receding in response to sea-level rise. These beaches are deeply embayed between rocky headlands, and although there is negligible ongoing sand supply from rivers and probably little from offshore, they are unlikely to be losing sand, and mostly receive less (refracted) swell energy than more exposed beaches



outside Port Davey. They are likely to be medium term or slow responders to sea-level rise.

However, small swell-sheltered, sandy pocket beaches deeper within the ria are commonly showing active erosion scarps, with major tree roots being undermined and no signs of recovery (examples include Bond Bay and Balmoral Beach). Unusual saltmarsh-like, soft sandy-peat shores known as 'marsupial lawn' are also widespread in sheltered inlets, where they accumulate as the growth of intertidal herbs traps sand and organic debris. These shores are capable of natural recovery after erosion but are nearly everywhere showing active erosion scarps receding through backing *melaleuca* vegetation, with only sub-ordinate areas of recovering shores. There is no sand input to these shores (from river or shelf sources).

The soft, swell-sheltered, sandy and marsupial lawn shores are being eroded by local wind waves, and their apparently progressive recession without recovery (which the marsupial lawn shores should be capable of) is likely to be an early response to sea-level rise, and can be expected to continue. In some areas, shoreline recession will be halted by nearby rising bedrock slopes. In other areas, low, soft sediment, backshore infills may allow considerable shoreline recession.

Other comments

Bathurst Harbour and adjacent shores are part of the Southwest National Park and Tasmanian Wilderness World Heritage Area, and are uninhabited except for some private and Parks & Wildlife Service facilities at Melaleuca Inlet. Very little artificial infrastructure is at risk from erosion or inundation.

Increased inundation with sea-level rise is likely in some areas, but the majority of the shoreline is moderately sloping ground, with only narrow inundation-prone zones.

Bathurst Harbour and Channel are popular destinations for tourist boats, and boat wake erosion is potentially an erosion hazard. However, boat wakes do not explain most of the shoreline erosion observed to date, much of which occurs in shallow inlets rarely used by motorised vessels (e.g., Horseshoe Inlet).



Figure 1: *Compartment TAS02.02.02 Bathurst Harbour.*



Figure 2: Active recession of ‘marsupial lawn’ peat shores (a type of saltmarsh) is widespread in sheltered inlets around Bathurst Harbour and Bathurst Channel. This example from Horseshoe Inlet shows *Melaleuca* skeletons – which grow landwards of the marsupial lawn zone – isolated by several metres of recent shoreline recession. Photo by C. Sharples (2010).

Confidence in sources

Moderate confidence: Based on limited field observations by [Bradbury \(2010\)](#) and C. Sharples (unpublished). There are no detailed published studies to date.

Additional information (links and references)

Bradbury, J 2010, Eroding landforms within the ria estuaries of Port Davey: wave wake or sea level rise? Monitoring report for the decade 2000-2010, Department of Primary Industries, Parks Water & Environment, Tasmania.