



Temple Bay - Cape Weymouth QLD03.03.02

Regional Setting

The dominant regional processes influencing coastal geomorphology in this region are the wet tropics to humid sub-tropical climate, south-east trade winds, mega-meso tides, strong tidal currents, low to moderate south-east seas (local wind-waves), the dominantly terrigenous sediments with interrupted northerly longshore sediment transport (low-moderate), the El Nino Southern Oscillation (driving sea-level variability, tropical cyclone frequency, beach erosion/accretion cycles); and the Madden-Julian Oscillation (driving weather patterns including monsoons and tropical cyclones).

Regional hazards or processes driving large scale rapid coastal changes include: tropical cyclones, storm surges, river flooding, and variable longshore sand transport.

This compartment extends from Temple Bay to Cape Weymouth.

Justification of Sensitivity

Sensitivity rating is a 4. The shoreline is stable but sediment supply is limited and predicted to decline.

- There is a north-facing mangrove shoreline in the northern part of the compartment, and a narrower mangrove fringe on the northeast-facing coast at the southern end of the compartment.
- Most beaches are fronted by wide tidal flats but there are no extensive backing transgressive dunefields, as occurs further north.
- The Pascoe River delivers sand to the 1 km wide shoals at the river mouth. This sand is re-worked and transported north as subtidal sand waves (Short, 2006).



- The Olive-Pascoe rivers currently deliver around 340 kt/yr of suspended sediment, which is roughly 5.7 times what it would be under natural vegetation and runoff conditions (see Brodie et al., 2011), although bedload is only likely to comprise ~10% of the total.

Other comments

- A number of beaches in this compartment are protected by fringing coral reefs.
- The impact of cyclonic events is likely to be more severe, with longer beach recovery times.

Confidence in sources

Medium confidence in sources.

Additional information (links and references)

Brodie, J, Lucy A. McKergow, I P. Prosser, M F, Hughes, A and Hunter, H (2011) Sources of Sediment and Nutrient Exports to the Great Barrier Reef World Heritage Area, *Australian Centre for Tropical Freshwater Research report 03/11*

Short, A D (2006) *Beaches of the Northern Australian Coast: The Kimberley, Northern Territory and Cape York*, Australian Beach Safety and Management Program, University of Sydney Press