



Shellburne-Margaret Bays QLD03.02.03

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 Red Cliffs to Cape Grenville.

Justification of Sensitivity

The sensitivity rating is a 3, due to the protected north/northeast facing bays with sediment supply from the Cape Grenville dunefield.

- In the northern section of the compartment, a lower energy, mangrove fringed shoreline extends over Harmer Creek delta (Short, 2006).
- There is evidence of sediment input from the Cape Grenville dunefield at Wolona Point, where a parabolic dune has migrated across the Cape, onto the beach system on its northern side.
- Northeast facing sandy beaches in Margaret Bay extend from Round Point towards the MacMillan River Estuary. These are protected by Cape Grenville. There are also sand flats in the bay, 2-5 km wide.



- Further east in Margaret Bay, mangroves and cheniers occupy the north-facing, low energy section of the bay.

Other comments

The impacts of cyclonic events are likely to be more severe, with longer beach recovery times.

Confidence in sources

Medium confidence in sources.

Additional information (links and references)

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