



Rockingham Bay QLD03.07.05

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 Tam-O Shanter Point to Cape Richards.

Justification of Sensitivity

The sensitivity rating is 4. The shoreline is stable but sediment supply is limited and predicted to decline. This compartment features:

- A narrow strip of modern sediment, strongly influenced by longshore drift and outlets of the Hull, Tully and Murray Rivers.
- An extensive sequence of Holocene beach-ridges (Forsyth et al., 2010; Not et al., 2009), backed by mangroves and tidal flats.
- Murray and Tully River sediments. The Tully currently delivers around 200 kt/yr of suspended sediment, which is roughly 8 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

- This compartment includes the whole of the mangrove-lined Hinchinbrook Channel, plus the protected Missionary Bay and western side of Cape Richards.
- 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)

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