



Halifax Bay (north) QLD03.07.08

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 Lucinda to Eleanor Creek.

Justification of Sensitivity

Sensitivity rating is a 4 as the shoreline is stable but sediment supply is limited and predicted to decline:

- Relict Holocene sediments from Herbert River create a sand spit and extensive sand flats at Lucinda Point.
- There is a northerly drift of sand along Forest Beach, with accumulation around Forest Beach spit sheltering some of Taylor's Beach.
- Northerly drift along Gentle Annie Beach with backing series of beach ridges.
- No new sources of sediment.



Other comments

- Sediment is likely to decline at the southern end of the compartment, although northerly movement will continue over the next 100 years.
- 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)

Coventry, R J, Hopley, D, Campbell, J, Douglas, I, Harvey, N, Kershaw, A P, Oliver, J, Phipps, CVG. and Pye, K (1980) The Quaternary of Northeastern Australia, *Chapter in* Henderson, R.A. and Stephenson, P.J. (eds.), *The Geology and Geophysics of Northeastern Australia*, Geological Society of Australia, Queensland Division, Brisbane (pp 375-419), ISBN 0 909714 67 3

Pringle, A W (1991) Fluvial Sediment Supply to the North-East Queensland Coast, Australia, *Australian Geographical Studies*, Vol.29(1), pp.114-138

Short, A D (2000) *Beaches of the Queensland Coast: Cooktown to Coolangatta*, Australian Beach Safety and Management Program, University of Sydney Press