



Endeavour River - Cape Kimberley QLD03.06.02

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 Endeavour River to Cape Kimberly.

Justification of Sensitivity

This compartment has a sensitivity rating of 3. The shoreline is stable, with resistant bedrock and enclosed pocket beaches.

- Much of the southern section of this compartment has a bedrock coast where the forest meets the sea. A number of beaches have localized sediment sources.
- North of the Bloomfield and Arran Rivers, southeast facing beaches are more susceptible to erosion. Although, Walker Bay to the south is more protected, with a north-facing mangrove fringe.
- Endeavour and Annan River sediments: The Endeavour River currently delivers around 375 kt/yr of suspended sediment, which is roughly 5 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

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)

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