



Cape Flattery - Endeavour River QLD03.06.01

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 Cape Flattery to Endeavour River.

Justification of Sensitivity

This compartment has a sensitivity rating of 3. The shoreline is stable, with significant sediment reserves in extensive dune fields. The headlands are comprised of resistant metasediments and Jurassic sandstone.

There is evidence of the following:

- Erosion and extensive blowouts, but given existing extensive reserves of silica sand dunefields, this is unlikely to be a major erosional issue over the next 100 years.
- Sand waves migrating northward along the coast between Cape Bedford and Cape Flattery (Short, 2006).



- Minor dune blowouts at the southern end of the compartment, towards Endeavour River.

Other comments

- Extensive silica dune fields at Cape Bedford (extending 22 km inland and covering 17,000 ha) and Cape Flattery (extending 28 km inland and covering 43,500 ha) are most likely sourced from localized eroded sandstones.
- 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)

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

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.