Cape York (east) QLD03.01.02

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 Cape York to Sharp Point.

Justification of Sensitivity

The sensitivity rating is between 3 and 4. The shoreline is stable but sediment supply is limited and predicted to decline.

- A number of north-east sandy beaches south of the Point have wide sand flats and mangrove development in the lee of York Island.
- From Fly Point into the Kennedy Inlet, a number of southeast facing beaches have backing transgressive dune fields extending a few kilometres inland. Although there are some blowouts, there appears to be significant sand supply in the region.
- On the southern side of Kennedy Inlet, extensive sand flats front a long beach and backing beach-ridge on a mangrove dominated shoreline (Short, 2006).

Other comments

- Sea-level rise.
- The Jacky Jacky Creek currently delivers around 100 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.
- 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)

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 (2006) *Beaches of the Northern Australian Coast: The Kimberley, Northern Territory and Cape York*, Australian Beach Safety and Management Program, University of Sydney Press