



Eastern Groote Eylandt NT03.02.01

Regional Setting

The dominant regional processes influencing coastal geomorphology in this region are the wet-dry tropical climate, trade winds, monsoons, irregular meso-tides, large seasonal mean sea-level range, low to moderate seas, seasonally high river sediment discharges, terrigenous sediments, the El Nino Southern Oscillation (driving sea-level variability & tropical cyclone frequency), 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 and river flooding.

This compartment extends from G.I Scott Point to G.I Cape Beatrice.

Justification of sensitivity

Sensitivity rating is a 3 overall. There is little evidence of shoreline change.

Other comments

At the northern end of the compartment, the Umbakumba dunefield comprises parabolic dunes that have been dated to have formed in four phases: late Pleistocene, a parabolic dunefield active 6-4 ka followed by stabilisation by vegetation; 2.3-1 ka with stabilisation; and the current active phase (Shulmeister and Lees, 1992). The section from Scott Point to Mamalimandja Point is comparable to another similar section south of Mamalimandja Point, fronting Angurugubira Lake. These are part of the Mesozoic Carpentaria Basin. South of this the coast is predominantly rocky with only small beaches, within the Proterozoic McArthur Basin.



Confidence in sources

Medium confidence: There is little evidence on which to base assessment.

Additional information (links and references)

- *An inventory of all the beaches in northern Australia has been compiled by Short (2006). This provides details of the geomorphology of each beach and other information that will be useful in determining the functioning of tertiary compartments:*
Short, A.D., 2006. Beaches of the northern Australian coast: the Kimberley, Northern Territory & Cape York. Sydney University Press.
- *There has been little comprehensive study of the coast of the Northern Territory. There is little information on the offshore characteristics of NT. A workshop was held in 2007 that summarised the nature of the offshore environment, recognising Joseph Bonaparte Gulf in the west, Arafura in the north, and the Gulf of Carpentaria in the east. The report is available at www.environment.gov.au/system/.../characterisation-workshop-report.rtf*
- Shulmeister, J., Lees, B.G., 1992. Morphology and chronostratigraphy of a coastal dunefield; Groote Eylandt, northern Australia. *Geomorphology* 5, 521-534.