



De Courcy Head NT02.02.02

Regional Setting

The dominant regional processes influencing coastal geomorphology in this region are the wet-dry tropical climate, trade winds, monsoons, mega to meso (limited) tides, semi-diurnal, waves dominantly seas, episodic high river sediment discharges, mixed carbonate – terrigenous sediments, tidal sediment transport, limited longshore transport, the El Nino Southern Oscillation (driving high sea-level variability), 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, king tides and river flooding.

This compartment extends from Cape Croker to Angularli Creek.

Justification of sensitivity

Sensitivity rating is a 3. There is no evidence on which to indicate patterns of shoreline change.

Other comments

The Croker Island group includes the Grant, Lawson, McClure, Oxley, and New Year Islands, which are mostly calcareous sand derived from coral and other reef organisms, and each is less than about 20 km². South of Cape Croker, dunes are actively forming. Minjilang, the principal settlement on the island, sits in a crescentic Bay between headlands. South of this, there is a smaller bay which has a prograded sequence of ridges. Most of the rest of this coast is cliffed. The mainland coast is also cliffs, sometimes with beaches in front of these lateritised bluffs. Mountrorris Bay is backed by low bluffs, but several of the beaches front a short sequence of beach ridges implying ongoing sediment supply. Malay Bay is a sand-rich embayment with submerged megaripples, and a sequence of beach ridges or cheniers that have prograded up to 4km (Short, 2006). Cape Cockburn is a bedrock



headland with shore platforms at its foot. South of De Courcy Head, which forms a laterised cliffline, there are extensive partially vegetated parabolic dunes, with TL ages indicating deposition around 8ka, with further deposition 2.8-1.9ka (Lees et al., 1990). The easternmost section of this compartment is backed by bluffs 10-20 high, with narrow beaches at its foot, terminating at Laterite

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*
- Lees, B.G., Yanchou, L., Head, J., 1990. Reconnaissance thermoluminescence dating of northern Australian coastal dune systems. Quaternary Research 34, 169-185.