



## Caledon Bay NT03.01.02

### 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 Wanyanmera Point to Cape Shield.

### Justification of sensitivity

Sensitivity rating is a 3 overall. Much of the shoreline is rocky and not sensitive. Extensive dunes are present but appear to still be accreting.

### Other comments

This compartment is part of the Carpentaria Basin and largely Mesozoic, but with Proterozoic Arnhem province outcrops. The shoreline receives relatively high wave energy because the southeast tradewinds have a large fetch (Short, 2006). This is a highly irregular section of coast controlled by rocky headlands. A small crescentic embayment at the northern end of this compartment (beach NT1117) is backed by a sequence of foredune ridges and transgressive dunes. Beach NT1125, north of Point Alexander (also granite) is backed by transgressive dunes, but Caledon Bay is predominantly surrounded by bedrock exposures, although with a sequence of swash aligned beaches in this low-energy embayment. Similarly, Trial Bay is also



bedrock fringed. However, the beach to the south of it (beach NT1261) is backed by extensive transgressive dunes, and several of those that are east facing between here and Cape Shield also support well-developed dunes.

### **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](http://www.environment.gov.au/system/.../characterisation-workshop-report.rtf)*