



Melville Bay NT02.04.02

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 Rimbija Island to Cape Arnhem.

Justification of sensitivity

Sensitivity rating is a 3 overall. Most of the shoreline is rocky and not sensitive.

Other comments

This compartment is part of the Carpentaria Basin and largely Mesozoic but with Proterozoic Arnhem province outcrops. It comprises several large embayments, including: Buckingham Bay, with extensive wetlands flanking Buckingham River; Arnhem Bay, which is well protected and has mangroves around much of its shores; and the smaller Melville Bay, in which Gove is situated. The rocky eastern shores of the Wessel Islands and the several other islands in this compartment are not sensitive.



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.lrm.nt.gov.au/_data/assets/pdf_file/0015/13920/21_buckingham.pdf