



Barrow Island WA11.02.03

Regional Setting

The dominant regional processes are the sub-tropical arid climate (Trade winds), El Nino Southern Oscillation (driving sea-level variability), mega to meso semi-diurnal tides, waves dominantly seas, episodic high river sediment discharges, mixed carbonate-terrigenous sediments, and tidal sediment transport.

This coastline is susceptible to regional hazards, including tropical cyclones, storm surges and river flooding.

This coastal lowlands compartment extends from Peter Creek coast (E) to James Point.

Justification of sensitivity

The sensitivity rating is a 4 as the shoreline is stable but likely to start eroding. Stability depends on the balance of an irregular sediment supply, particularly from the Fortescue River, with the net movement of sediment by tidal creeks. Alluvial fans on the landward margin of the salt flats indicate deposition by the terrestrial streams during flooding of the backshore basins.

Other comments

Common landform assemblages:

The coast flanks the Fortescue River delta. The shore is irregular in planform with rocky outcrops occurring between areas of sediment accumulation. It is vegetated by mangroves and its continuity broken by 3 to 5 tidal creeks per 10km along the shore, as well as by the Fortescue and Du Boulay Rivers. Tidal creeks occur more commonly in the western part of the compartment as well as near the Fortescue River mouth. The hinterland comprises mainly mudflats and outwash plain.



Distributary fans from large tidal creeks and terrestrial streams extend into the mudflats.

Geomorphological features include islands, pro delta, active Fortescue River delta, cheniers and mudflats.

This compartment has a NW aspect.

Confidence in sources

Low confidence: Limited or no information describing landforms or coastal landform change is available for the historical period. Interpretation of landform assemblages comes from satellite imagery, aerial photography, site visits and available literature.

Additional information (links and references)

Australian Beach Safety & Management Program (ABSAMP) database of over 12,000 beaches can be accessed at http://www.ozcoasts.gov.au/coastal/beach_intro.jsp (also see Surf Life Saving site)

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http://www.transport.wa.gov.au/mediaFiles/marine/MAC-R-Pilbara_CoastalSedimentCellsL.pdf