



Pardoo River WA12.01.03

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 the Condini Landing to Shoonta Well.

Justification of sensitivity

The sensitivity rating is a 2 as the shoreline is stable but likely to start accreting. At present, much of the coast is accreting, as indicated by small chenier plains and spits. Local areas of erosion are associated with tidal creek activity, particularly near Condini Landing and in the embayment west of Cape Keraudren. Such areas have a higher susceptibility rating (5) and should be more closely examined should management be required.

Other comments

Common landform assemblages:

Landforms in the compartment indicate a transition from the deltaic plain of the De Grey River to a tidal creek dominated coast. The shore has two main components. First, a sandy beach abutting chenier ridges and grading into sandy tidal flats extends along much of the shore. Tidal creeks in this northern sector are separated by rock outcrops at the shore, and subtidal rock platforms in the inshore waters.



Second, cheniers, spits and dune ridges have formed along the south-eastern section of the shore, with spits indicating a net littoral drift to the east. Here, narrow sandy beaches grade onto sand flats approximately 1km wide.

Geomorphological features include a pro delta, embayed coast, rocky headlands, tidal creeks and mangroves.

This compartment has a NNW 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, available literature, and site visit and survey by helicopter along the shore.

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)

Australian Maritime Safety Authority (AMSA). (2006) Oil Spills Response Atlas. Australian Government Canberra. Available at <https://www.amsa.gov.au/environment/maritime-environmental-emergencies/national-plan/general-information/OSRA/index.asp>

Baker C, Potter A, Tran M & Heap AD. (2008) Geomorphology and Sedimentology of the Northwest Marine Region of Australia. Geoscience Australia, Record 2008/07. Geoscience Australia, Canberra. 220pp.

Brocx M & Mene yK (eds). (2011) Symposium on Limberley Marine and Coastal Science. Journal of the Royal Society of Western Australia, 94(2): 55-418.



Eliot I, Nutt C, Gozzard B, Higgins M, Buckley E & Bowyer J. (2011). Coastal Compartments of Western Australia: A Physical Framework for Marine & Coastal Planning. Report to the Departments of Environment & Conservation, Planning and Transport. Damara WA Pty Ltd, Geological Survey of Western Australia and Department of Environment & Conservation, Western Australia

Lyne V, Fuller M, Last P, Butler A, Martin M & Scott R. (2006) Ecosystem characterisation of Australia's North West Shelf. North West Shelf Joint Environmental Management Study. Technical Report No. 12. CSIRO.

Semeniuk V. (1993) The Pilbara Coast: a riverine coastal plain in a tropical arid setting, northwestern Australia. *Sedimentary Geology*, 83: 235-256.

Semeniuk V. (2008) Holocene sedimentation, stratigraphy, biostratigraphy and history of the Canning Coast, north-western Australia, *Journal of the Royal Society of Western Australia*, Supplement Volume 91(1): 53-148.

Sharples C, Mount R, Pedersen T, Lacey M, Newton J, Jaskierniak D & Wallace L. (2009) The Australian Coastal Smartline Geomorphic and Stability Map. Version 1: Project Report. Geoscience Australia & Department of Climate Change, www.ozcoasts.gov.au/pdf/SmartlineProjectReport_2009_v1.pdf

Short AD. (2006) Beaches of the Northern Australian Coast: The Kimberley, Northern Territory and Cape York: A guide to their nature, characteristics, surf and safety. Australian Beach Safety and Management Program. University of Sydney Coastal Studies Unit and Surf Life Saving Australia. Sydney University Press. Sydney, New South Wales.

Wilson B. (2013) *The Biogeography of the Australian North West Shelf: Environmental Change and Life's Response*, Elsevier, Amsterdam.