

Stokes Bay (King Sound - east) WA12.04.04

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 estuary-dominated compartment extends from Point Torment to Point Usborne.

Justification of sensitivity

The sensitivity rating is a 1 as the shoreline is accreting at present and likely to continue accreting. Sediment is supplied by several streams during flooding and is reworked by tidal currents along the north-east shore of the King Sound, as far as Point Usborne.

Other comments

Common landform assemblages:

East of Point Torment, the Fitzroy River delta derives its sediment from several streams; these include the May and Meda Rivers entering King Sound from the SE, and a number of streams draining the uplands to the north of Oobagooma Homestead, flowing into the sound from the NE. The sediments are largely supplied by rivers during flooding and reworked by tidal currents along the north-east shore of the sound as far as Point Usborne. Gently-sloping beaches with an extensive intertidal and supratidal zone (91%) flank the deltas and shore



Geomorphological features include the May River delta.

This compartment has a NW aspect.

Confidence in sources

Moderate confidence: Limited or no information specifically describing landforms or coastal landform change is available for the historical period. However, multiple photographic runs and other regional investigations of landforms have been published.

Interpretation of landform assemblages from satellite imagery, available literature and aerial photography.

Additional information (links and references)

Australian Beach Safety & Management Program (ABSAMP) database of over 12,000 beaches can be accessed at

<u>http://www.ozcoasts.gov.au/coastal/beach_intro.jsp</u> (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.