Berkeley River WA13.04.02

Regional Setting

The dominant regional processes are the wet-dry tropical climate (trade winds, monsoons); El Nino Southern Oscillation (driving high sea-level variability); Madden-Julian Oscillation (driving weather patterns including monsoons and tropical cyclones); mega to meso (limited) semi-diurnal tides; waves dominantly seas; episodic high river sediment discharges; mixed carbonate-terrigenous sediments; tidal sediment transport, and limited longshore transport.

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

This rocky coast compartment extends from Cape Bernier to Thurburn Bluff.

Justification of sensitivity

The sensitivity rating is a 3 as the shoreline is stable and likely to remain stable. The susceptibility ranking is attributed to the rocky cliffed coast.

Other comments

The coast has a comparatively straight rocky shore with cliffs, rock platforms and fringing reefs. Some arcuate sandy beaches are present updrift of the Berkeley River delta and its tidal flats. The beaches, flanked by tidal terraces, commonly bar a small embayment or inlet and are backed by active dunes.

Geomorphological features include sandstone coast and fault controlled creeks.

This compartment has a NE 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 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

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.