



Onslow WA11.02.01

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 mixed sand and rock coast compartment extends from Locker Point to Coolgra Point (W).

Justification of sensitivity

The sensitivity rating is a 4 as the shoreline is stable but likely to start eroding. Stability depends on the irregular sediment supply, particularly from the Ashburton and Cane Rivers, as well as from offshore. The residual mounds on the salt flats indicate erosion of the salt flats by terrestrial overwash from the hinterland and flooding of the backshore basins. This is exacerbated by the incursion of tidal creeks, such as Urala Creek, Hooley Creek and Second Creek.

Other comments

Common landform assemblages:

The Ashburton River in the centre of the compartment is one of the largest and most dynamic river systems in the region. It has undergone several phases of avulsion, as evidenced by a floodplain with numerous deltas, foredune plain insets, backshore basins, palaeochannels, and abandoned shorelines marked by high dune ridges and



lithified cheniers. The compartment spans an area of long-standing and ongoing dramatic geomorphic change. Pulsatory sediment supply by flood discharge results in the formation of transitory shoals and spits that migrate along the coast to the east and west of the river mouth. Commonly, the intertidal shore is perched on rock pavements and platforms.

Geomorphological features include the active Ashburton River delta, cheniers, mud flats, tidal creeks and mangroves.

This compartment has a NW aspect.

Confidence in sources

High confidence: Detailed information is available from multiple sources including recurrent mapping of the shoreline movement.

Interpretation of landform assemblages comes from satellite imagery, aerial photography and available literature, as well as site visits and on-going monitoring of beaches near Onslow.

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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Eliot M. (2013) Application of Geomorphic Frameworks to Sea-level Rise Impact Assessment. Report 193-01-Rev 0. Prepared for Geoscience Australia. Damara WA Pty Ltd, Innaloo, Western Australia.

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Short AD. (2005) Beaches of the Western Australian Coast: Eucla to Roebuck Bay: 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.

Stul T, Gozzard JR, Eliot IG and Eliot MJ (2014c) Coastal Sediment Cells for the Pilbara Region between Giralia and Beebingarra Creek, Western Australia. Report prepared by Seashore Engineering Pty Ltd and Geological Survey of Western Australia for the Western Australian Department of Transport, Fremantle.
http://www.transport.wa.gov.au/mediaFiles/marine/MAC-R-Pilbara_CoastalSedimentCellsL.pdf