



Norwegian Bay WA10.02.03

Regional Setting

The dominant regional processes are the Mediterranean to arid climate; the El Nino Southern Oscillation (driving sea-level variability); Southern Annular Mode (driving south-westerly swells and storms); strong sea breezes; micro to meso tidal, mainly diurnal; south-westerly swells; southerly seas; and carbonate sediments with moderate northerly longshore transport.

This coastline is susceptible to regional hazards, including extra-tropical cyclones, mid-latitude cyclones (depressions), storm surges, and river flooding (sub-regions only).

This mixed sand and rock coast compartment extends from Point Cloates to Winderabandi Point.

Justification of sensitivity

The sensitivity rating is a 4 as the shoreline is currently stable but likely to start eroding. Cuspate forelands in the lee of coral reefs, and sediment supply from the reefs and inshore lagoons are susceptible to changing metocean conditions.

Other comments

Common landform assemblages:

The shape of the shore is controlled by the offshore reefs and tidal flows in the gaps between them. As a result, the shoreline tends to be rhythmic in shape. Four large cuspate forelands have developed within their lee, with a narrow sandy beach continuous along the shore. The cuspate forelands carry a diverse range of dunal systems, including episodic transgressive dunes, beach ridge and foredune plains, blowouts and mobile sand sheets.



Geomorphological features include fringing coral reefs, cusped forelands, beaches and dunes.

This compartment has a W aspect.

Confidence in sources

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

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http://www.transport.wa.gov.au/mediaFiles/marine/MAC_R_ShiresOfSharkBayAndExmouthFullReport.pdf.

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

Gozzard JR. (2011d) WACoast –Gascoyne. Geological Survey of Western Australia

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.

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