



Geraldton WA07.02.07

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 Cape Burney to Glenfield Beach.

Justification of sensitivity

The sensitivity rating is a 5 as much of the coast is receding and likely to continue eroding in future. In addition, much of the coast in the embayments north and south of Point Moore has a long history of shoreline retreat.

Other comments

Common landform assemblages:

Broad sandy beach with well vegetated primary dune, often backed by parallel beach ridges or stabilised parabolic dunes (71%). Variable width sandy beach formed in areas protected by offshore reefs; may include some beachrock as low cliffs or headlands (15%). Arcuate sandy beach, which may be cusped or crenulate, formed between or in association with resistant headlands (14%).



Geomorphological features include a convex offshore reef, tombolo, beaches and dunes, limestone headlands and the Chapman River.

This compartment has a W aspect.

Confidence in sources

High confidence: Detailed information is available from multiple sources, including recurrent mapping of the shoreline movement, hydrographic and sediment distribution surveys, and numerical modelling of water circulation. Interpretation of landform assemblages from satellite imagery, aerial photography, site surveys and published information.

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>



Eliot I, Gozzard B, Eliot M, Stul T and McCormack G. (2012a) The Coast of the Shires of Gingin and Dandaragan, Western Australia: Geology, Geomorphology & Vulnerability. Damara WA Pty Ltd and Geological Survey of Western Australia, Innaloo, Western Australia.

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

Eliot I, Gozzard B, Eliot M, Stul T and McCormack G. (2012b) The Mid-West Coast, Western Australia: Shires of Coorow to Northampton. Geology, Geomorphology & Vulnerability. Damara WA Pty Ltd and Geological Survey of Western Australia, Innaloo, Western Australia.

http://www.transport.wa.gov.au/mediaFiles/marine/MAC_R_ShiresOfCoorowAndNorthamptonFullReport.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. (2011a) WACoast – Cape Naturaliste to Lancelin. Geological Survey of Western Australia

Gozzard JR. (2011c) WACoast –Lancelin to Kalbarri. Geological Survey of Western Australia

Richardson L, Mathews E & Heap A. (2005) Geomorphology and Sedimentology of the South Western Planning Area of Australia: Review and synthesis of relevant literature in support of Regional Marine Planning. Geoscience Australia Report Record 2005/17

Searle DJ & Semeniuk V. (1985) The natural sectors of the Rottnest Shelf coast adjoining the Swan Coastal plain. Journal of the Royal Society of Western Australia. 67: 116-136



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. (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 (2014a) Coastal Sediment Cells for the Mid-West Region between the Moore River and Glenfield Beach, 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-MidWest-CoastalSedimentCellsL.pdf>