



Batemans Bay NSW02.06.02

Regional Setting

The dominant regional processes influencing coastal geomorphology in this region are the humid warm to cool temperate climate, micro-tides, south-easterly Tasman Sea swells, easterly seas, dominantly quartz (terrigenous) sediments with northerly longshore transport in the northern part, and the El Nino Southern Oscillation (driving beach erosion/accretion cycles, cyclone frequency).

Regional hazards or processes driving large scale rapid coastal changes include: East Coast Lows (extra-tropical cyclones), mid-latitude cyclones (depressions), and storm surges (<1m).

This compartment extends from Three Islet Point to Mosquito Bay Head.

Justification of sensitivity

Sensitivity rating is a 3, although much of the compartment is sensitive to erosion or inundation.

Other comments

Batemans Bay is a drowned river valley at the mouth of the Clyde River (Wright and Thom, 1976; Thom et al., 1986). Unlike most estuaries in NSW, it is a relatively open embayment and its shores are dominated by the settlement of Batemans Bay. Several sections of the shoreline have been protected or reclaimed. Much of the settlement is low-lying and inundation during high tides or storm surges is already a problem. Swell, only partially reduced by the Tollgate Islands, penetrates into the Bay and there are a series of curved beaches. Sediment accumulation has been relatively limited over the mid to late Holocene, with a sequence of chenier ridges (sandy beach ridges overlying mud) recorded inland to almost 2km and dating to about 3000 years ago at Cullendulla Creek (Donner and Jungner, 1981). There is limited barrier development in other embayments around the margin. Long Beach is backed by foredunes and then low bluffs, though with a dammed wetland in the



middle. Surfside Beach is backed by a narrow strandplain, which contains a subdivision called Surfside, several properties of which have been subject to inundation or erosion (Treloar et al., 1989). Corrigan's Beach is backed by a low open public space; it represents land that has been reclaimed following accretion of sand in the shelter of the training seawalls that protect the marina and foreshore to the north. Casey's Beach has erosion problems; the road runs very close to the shoreline and there is a rock seawall to protect it. Much of this is sensitive.

Confidence in sources

Medium confidence: Council has undertaken extensive investigations of vulnerability to sea level rise.

Additional information (links and references)

Donner, J., Jungner, H., 1981. Radiocarbon dating of marine shells from southeastern Australia as a means of dating relative sea-level changes. *Annales Academiae Scientiarum Fennicae Series A. III Geologica-Geographica* 131, 5-37.

Thom, B.G., Roy, P.S., Short, A.D., Hudson, J., Davis, R.A., 1986. Modern coastal and estuarine environments of deposition in southeastern Australia. Department of Geography, University of Sydney, 12th International Sedimentology Conference. Guide to Excursion 4A, p. 279.

Treloar, P.D., Gordon, A.D., Carr, R.S., 1989. Batemans Bay Ocean Inundation Study. Proceedings of the 9th Australasian Conference on Coastal and Ocean Engineering, Adelaide.

Wright, L.D., Thom, B.G., 1976. Remarks relating to the stability of the Clyde river-mouth bar and depositional patterns in Batemans Bay. In Batemans Bay Waterway Planning Study, Laurie Montgomerie and Pettit, Sydney, Addendum to Appendix B, 1-7.