



Broken Bay NSW02.03.01

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 Third Point to Barrenjoey Head.

Justification of sensitivity

Sensitivity rating is a 3. There is evidence of past progradation and erosion has also been reported.

Other comments

Pearl Beach, surrounded by bedrock, is a highly reflective beach that could be susceptible to erosion

By contrast, Umina (or Ocean) Beach is shallow offshore, fronting a progradational beach-ridge or strandplain of Woy Woy. The beach has experienced local erosion, especially in the vicinity of the flood tidal delta at Ettalong (Ray and Hoffman, 1978). The seabed has been extensively studied (Hoffman et al., 1980; Wright et al., 1988) and mapped (Gordon and Hoffman, 1989).



Much of the margin of Broken Bay and the lower Hawkesbury River is flanked by sandstone cliffs; some of the area is National Park.

Confidence in sources

Medium confidence: The depositional history of the strandplain has been variously studied by Thom et al. 1982 and others. Gosford Council is engaged in the preparation of a CZMP that includes other sources of information.

Additional information (links and references)

Gordon, A.D., Hoffman, J.G., 1989. Seabed Information, 1:25,000 Sheets: Bate Bay, Sydney Heads, Broken Bay, Gosford, Public Works Department New South Wales Coast and Rivers Branch.

Hoffman, J.G., Gordon, A.D., Nielsen, A.F., Lord, D., 1980. Assessment of environmental impact marine aggregate project Broken Bay NSW. PWD Report 80022, vols 1 and 2.

Ray, N.W., Hoffman, J., 1978. Ettalong beach erosion study and management programme, Proceedings of the 4th Australian Conference on Coastal and Ocean Engineering, Adelaide.

Thom, B.G., Bowman, G.M., Gillespie, R., Temple, R., Barbetti, M., 1981. Radiocarbon dating of Holocene beach-ridge sequences in southeast Australia. Geography Department, Faculty of Military Studies, University of NSW, Duntroon, Canberra.

Wright, L.D., Coffey, F.C., Cowell, P.J., 1980. Nearshore oceanography and morphology of the Broken Bay-Palm Beach region: implications for offshore dredging. Coastal Studies Unit, University of Sydney, Technical Report 80/1.