OFFSHORE BATHYMETRY AND SEDIMENT PATTERNS OF SYDNEY BEACHES

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JUNE 1979

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ABSTRACT

The submarine topography and the pattern of surface sediment has been examined for twelve Sydney beaches in an attempt to define the seaward boundary of the active sediment zone for each beach.

The bathymetry is dominated by inherited bedrock forms and the basement topography exhibits evidence of prolonged periods of low sea level and former still stands. The sand bodies associated with each beach fill relict drainage channels and the channel interfluves form extensive areas of exposed rock.

Two texturally distinct sand bodies are identified. An inshore sequence of seaward fining grain size and an offshore belt of coarser material. A textural discontinuity marking the interface between these two sand bodies and the seaward boundary of the active zone is manifest at only three beaches. The seaward boundary at the other beaches is marked by rock.

Each beach has strongly individual textural characteristics. Grain size gradings occur along the coast and along individual beaches. This pattern can be related to the irregular nature of the bathymetry, causing an uneven distribution of wave height at the shoreline. A model of offshore bathymetry and sediment patterns for the Sydney beaches is presented.

ACKNOWLEDGEMENTS

I would like to thank Professor J. L. Davies for the supervision of this study and Dr Andy Short for the supervision of the field work.

I am particularly indebted to Peter Crosier for his expert seamanship and enduring nature under often uncomfortable conditions, and to my wife and many of my friends for their assistance.

I would like to thank Dr Steve Riley and Ken Roussell for their help and advice and Allan Willard of U.N.S.W. for work on the photomicrographs.

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