Preface

This is the first book to cover the Holocene geology and geomorphology of the 9,200 kilometers of the Brazilian coast. It is written for third and fourth year undergraduates, post-graduate students, scientists and managers. It characterizes the Brazilian coast in terms of the Holocene geology, geomorphology, oceanographic and climatic conditions, and the location, morphology and evolution of the barrier types. Separate chapters outline the types of barriers and coastal dynamics in each state, beginning in the south and proceeding to the north. Some emphasis is placed on the stretches of coast where the detailed morphology and stratigraphy of barriers has been previously determined.

To date, the Brazilian coastal barriers have been largely ignored by the international community, partly perhaps because much of the past research has tended to concentrate on barrier islands, of which there are very few in Brazil. In contrast, the Brazilian coastal barriers display a much wider range of types than is generally assumed. The biggest and most spectacular transgressive dunefield barriers in the world exist in Brazil, and dominate the southern and northeastern coasts. Many have never been described before.

This volume provides a wealth of information on Holocene barrier types, evolution and dynamics. It provides managers, ecologists, biologists and botanists with much needed information on the geology, geomorphology and dynamics of the genesis, types, functioning and ecosystems of the Holocene barriers extending along the entire Brazilian coast.

The book has eleven chapters, written by thirty contributors. Each one is an outstanding researcher in coastal environments, Holocene geology and/or geomorphology. In the following, Chap. 1 provides a brief review of coastal barrier definitions and types, and discusses the principle factors controlling their evolution and formation. The second chapter presents a broad-scale overview of the Brazilian coast, identifying the main factors acting to differentiate various sectors along that coastline, and the factors that control the large-scale development of these coastal depositional systems. The following nine chapters outline the types and evolution of barriers of the southern, southeastern, northeastern, and northern coastal regions of Brazil.

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Fig. 3.8 – Thanks to Wiley for permission to reprint figure 4 from Hesp et al. (2007) Morphology of the Itapeva to Tramandaí transgressive dunefield barrier system and Mid- to Late seal level change. Earth Surface Processes and Landforms 32:407–414 (Copyright year 2006, Wiley Interscience). Fig. 3.20 – Thanks to Elsevier for permission to reprint figure 6 from the paper of Dillenburg SR, Tomazelli LJ, Barboza EG (2004) Barrier evolution and placer formation at Bujuru Southern Brazil. Marine Geology 203:43–56 (Copyright year 2003, Elsevier).

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