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Journal of Sedimentary Research

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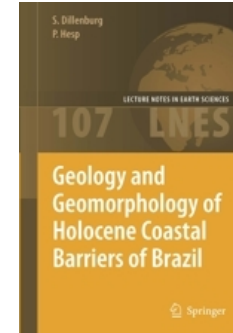
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Geology and Geomorphology of Holocene Coastal Barriers of Brazil, by Sérgio R. Dillenburg & Patrick A. Hesp, 2009.

Lecture Notes in Earth Sciences 107 . Springer, Berlin, Germany.

Hardcover (online version available), xvi + 380 pp. Price EUR 129.95. ISBN 978-3-540-25008-1.



A coastline of 9200 km length offers ample possibilities for the wide variety of coastal studies as compiled and presented in this book. It documents Brazil's coast in individual coastal sections with areal and satellite images and their maps, and with studied and measured surface samples and subsurface images that are variously described and interpreted. The long period during which Brazil's coastal geology was largely ignored by the international community now has come to an end with these fascinating studies that comprehensively document coastal dynamics, geomorphology and Holocene evolution of Brazil's coast.

Two introductory chapters outline coastal geology, climate, oceanography, general setting and dynamics. The editors carefully compare various Brazilian barrier types with definitions from literature. They conclude that barrier-island types are possibly overrepresented in literature and that just one type occurs only along the Brazilian coast. Regarding the origin of coastal barriers, again extensively compared with literature, it is concluded that many formed initially in Brazil and that these evolved subsequently at their present position as a consequence of migration during the postglacial marine transgression combined with a variety of coastal processes and various types of sediment supply. These factors together resulted in barriers that are either stable, retrograding or prograding over long time-spans.

The subsequent nine chapters deal with the evolution and development of individual Holocene barriers (barrier complexes) in each coastal state. Examples include barriers formed under micro- to macro-tidal ranges and wave- and wind-energy dispersal, and collectively present a surprising range of barrier types, including barrier islands, spits, attached, receding and prograding barriers, and strand plains. Inter alia some of the world's largest transgressive dunefield barriers are presented. The beautiful semicircular barrier coast of Pinheira (Sta. Catarina coast, S Brazil) is my favourite, with its challenging evolution of foredune ridges. Several interesting detail problems are discussed in various chapters; one is about large-scale transgressive dune fields that as a rule develop only poorly under humid conditions in the tropics, but that developed much better than expected in northern Brazil, where a pronounced dry season occurs.

The book provides a wealth of well illustrated information that was previously poorly accessible to scientists, students and managers of the types, evolution and dynamics of Holocene barriers. It gives ecologists, biologists and botanists dearly needed

information for their studies on the geology and geomorphology of this somewhat forgotten coast. The various parts of the book have been written by thirty authors, all experts in Brazil, as also shown by the extensive lists of up-to-date references that follow each chapter. The book fills without doubt a gap in the library of many geological departments. Unfortunately, the price may make it prohibitive for most students. Nevertheless the book is wholeheartedly recommended.

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