

Marambaia Bay, Restinga da Marambaia (Rio de Janeiro, Brazil).

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Marambaia Bay, Restinga da Marambaia (Rio de Janeiro, Brazil). Marambaia Bay is located along the Marambaia barrier island western sector (on its northern margin) and faces Sepetiba Bay, which runs the southern coastline of Rio de Janeiro state (SE Brazil). The development of the “Marambaia barrier island – Sepetiba Bay – Marambaia Bay” complex is not fully understood, but recent research indicates that the barrier island began its formation Mid-Holocene, under normal regressive conditions. Marambaia Bay is set in a sector composed of beach ridge truncations and by the presence of a flying spit (Ponta da Pombeba). Sepetiba Bay circulation is influenced by fluvial discharge in its eastern section and by an exchange with the adjacent ocean, especially in its western section as the barrier island affects this process. The tides play a fundamental role, being the main component for current flow inside both bays.

Marambaia Bay exhibits a sedimentary coverage of very fine sand with some regions of very coarse silt that are moderately sorted. Morphological characteristics of the Marambaia Bay shoreline indicate areas of extreme sediment removal, with erosive scarps that translate as a flat and retinalized shoreline. As shown in the photograph above, the predominance of sediment removal allows for the exposure of sandstones that are cemented by organic material and iron oxides. This feature is semi-consolidated, composed of coarse to medium fine sand and covered by what seems to be humic acids. Similar features were found in other sites along the Rio de Janeiro coastline and are associated with pedogenetic processes common in barrier islands during the Holocene. (Photograph taken on 6 March 2015 by Breylla Campos Carvalho, Instituto Brasileiro de Geografia e Estatística (IBGE), Rio de Janeiro, RJ, Brazil.)