

The Coastal Geology and Dynamics of Niterói (Rio de Janeiro State, Southern Brazil)

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Urban development in coastal areas need medium- and -long- term studies before major alterations can be implemented on such a dynamic area. The coastal region of Niterói (Rio de Janeiro State, Southern Brazil) has been increasingly developed since the 70's. This coastal region belongs to two distinct dynamic environments: inside the Guanabara Bay a series of beaches form the Jurujuba Embayment; on the ocean side, moderate -to -high energy beaches, dunes, lagoons and a tidal inlet make up a more complex and dynamic barrier complex. The results of a continuous series of research since 1985 point out, not only the major problems, but the main geologic and dynamic aspects of this area. The existing problems result mainly from man-made alterations upon the coastal environment.

Beach erosion has been observed at Icaraí , Piratininga and Camboinhas. On the other hand, accumulation of sands is the main problem in the Itaipú Inlet since last dredging 20 years ago. Urban development has profoundly modified the geomorphology and sedimentation rates of the Piratininga and Itaipú Lagoons. The Piratininga Lagoon and Jurujuba Embayment exhibit the most altered sedimentation patterns of this area as opposed to the Itaipú Embayment.