

Geomorphological Map of the Rio de Janeiro State, Brazil

DANTAS, M.E and FERREIRA, C.E.O. Geological Survey of Brazil
- CPRM, Rio de Janeiro, Brazil

This is a composed in 1:250.000 scale map the recognition of the morphostructural (Atlantic Orogenic Belt and the Cenozoic Sedimentary Basins) and morphosculptural domains of Rio de Janeiro. The relief compartments were defined in two main categories -aggradation and degradation landforms- using morphological and morphometrical parameters such as: relief amplitude; slope; hillslope geometry; drainage density and pattern.

The Atlantic Orogenic Belt is composed by metamorphic and igneous rocks of Neoproterozoic age affected by an extensional tectonic which occurred between the Jurassic and Early Tertiary age and was caused by the South Atlantic opening. This tectonic has generated a sequence of normal faults, producing the coastal ranges and the high escarpments of the Serra do Mar and Mantiqueira.

The uplift of blocks resulting from this tectonic event produced a succession of residual uplands, aligned ridges, structural valleys and depressions that mark the hilly and mountainous morphology that was dissected until the Late Cenozoic in adjustment to local or to general base level.

The Cenozoic Sedimentary Basins are composed by sedimentary rocks of Early Cenozoic age and sediments of Quaternary age. The sedimentary rocks were stored in continental basins of Eocene-Oligocene age or next to the ocean on the Northern State, represented by the "Barreiras Formation". This formation, with a characteristic tableland morphology, was deposited until Early Pleistocene time. The sediments of the fluvial-marine and coastal plains were generated by transgressive-regressive cycles during the Quaternary, resulting in a succession of bays, lagoons, fluvial-marine plains (mangroves) and beach-ridges that mark a drowned lowland morphology.