

## **Soil Survey Supporting Environmental Planning for Silva Jardim and Rio das Ostras Quadrangles, RJ, Brazil**

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This study is part of the Embrapa Solos project for pedo-environmental characterization of Brazilian middle south region ecosystems. The objective was to identify and classify soil spatial distribution in Silva Jardim and Rio das Ostras' Quadrangles under a 1:50.000 mapping scale. The area was selected due to severe environmental problems resulting from increasing urban pressure. This region is the second touristic site in Rio de Janeiro State. The soil survey was focused to support environmental planning for the "Região dos Lagos" area, which is located between the footslope of "Serra do Mar" mountains and the state shore line. The area is about 3.000km<sup>2</sup> and extends between latitudes 22°30' and 23°00'S and longitudes 41°45' and 42°30'WGr. All the survey and profile data, morphological and analytical attributes with respective geometric representations, was stored in a GIS environment. The landscape was represented by 45 pedoenvironmental units, whose have been characterized according to soil classes, drainage conditions, primary vegetation and landforms. As result, the soil environment reflects mainly the variations of geological substratum, landforms, and soil climate conditions. Derived information was generated according to intrinsic characteristics and ambience, where suitable soils for an intensive use with lower level of degradation are: Latossolos (Ustox) and Podzólicos (Ustults) for highlands with slopes  $\leq 20\%$ ; and Planossolos (Aqualfs) e Solos Aluviais (Fluvents) for lowlands. In conclusion, the soil survey offers a great contribution to understand environmental conditions, representing a key factor to guide land use planing under rational and sustainable point of view.