

# ENVIRONMENTAL ANALYSIS USING GIS TECHNIQUES – CASE STUDY: NATURAL PARK OF “MORRO DO OSSO”, PORTO ALEGRE/RS

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**RESUMO:** Maps of environmental fragility/natural vulnerability to loss of soil are important products for environmental analysis and serve as an aid to environmental and territorial planning. The use of Geographic Information System (GIS) as a tool for environmental analysis and support decision making has proved very effective and its use has increased over the years. In this context, this work performed an integrated analysis of the elements of the physical environment (topography, soil, geology, geomorphology, climate, vegetation) and use and occupation in the region of “Morro do Osso” hill, one of the largest continuous green areas within Porto Alegre's urban area (Rio Grande do Sul), where a Conservation Unit covers a great area, in order to develop a Map of Environmental Fragility, using GIS techniques. The mapping method applied in this study is based in the Tricart's Ecodynamics Concept and has been widely used, serving as support for decision making in environmental planning. Each territorial unit was evaluated as “stable” “intermediate” and “unstable” unit, with values ranging from 1 to 3, according to its morphodynamic evolution's stage. Results of this work show that there is predominantly a balance between pedogenic and morphogenetic processes in the study area, with 85% of the area classified as Moderately Stable/Vulnerable to erosion. This map can support in the identification of most vulnerable/unstable areas and in need of protection/recovery within the limits of the Natural Park of “Morro do Osso”, as well as in the re-adaptation of the Park Management Plan.

**PALAVRAS CHAVE:** GIS, ENVIRONMENTAL ANALYSIS