

APPLICATION OF REMOTE SENSING IN THE IMPLANTATION OF CAMBUI PARK PARANÁ - BRAZIL

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Abstract

This work treats of the studies developed to the implantation of Cambui Park, situated in the Metropolitan Region of Curitiba, in the South of Brazil. This area has an important meaning as ecological remnant in an urban space, influenced by atmospheric and hydric pollution, and soils erosion. The use of LANDSAT-TM5 satellite images contributed to make land use map and environmental diagnostic which are basis to the planning and implantation of the Cambui Park. Population in the region and neighbour of that area have been considered as well as natural resources conservation: places for sports and leisure time, camping area environmental education also have been planned.

1 Introduction

Cambui Park is situated in Campo Largo, in the Metropolitan Area of Curitiba, the capital of State of Parana - South of Brazil, Figure 1 and 2.

This Park was conceived by a multidisciplinary team, in three stages: 1) a central area 154 ha - with a good proportion of vegetation and conserved natural resources; 2) the valley of Cambui River, which cross the first area, and 3) its river basin. This is the biggest space of the three stage and occupy about 50 % of the urban area of Campo Largo.

The importance of such Park is due to:

- the remarkable dimension of that place;
- the concentration of important local of environmental remnants;
- the potentiality of the Park area to leisure activities, recreation, sports, environmental studies, social and nature familiarity, which are result of positive incentive of the landscape perception;
- a strategic situation: in an urban space, and in a Metropolitan Area in the South Region of Brazil. This Region has been presented a significant urban and industrial expansion, and also, is geographically related to MERCOSUL - Common Market of South. It is an economic integration between Brazil, Argentina, Paraguai and Uruguai.

2 Data Collecting Information Producing

In order to establish the directives to Cambui Park, we have been taken demographic, social, economic, historical, physical and biological data.

Maps of slopes, geology, hydrography and vegetation to the three stages, have been produced, in 1:20.000 scale. The correlation between such maps shows the level of suscetibility, conservation or degradation of some places. Also, these information make possible to propose actions to recuperate

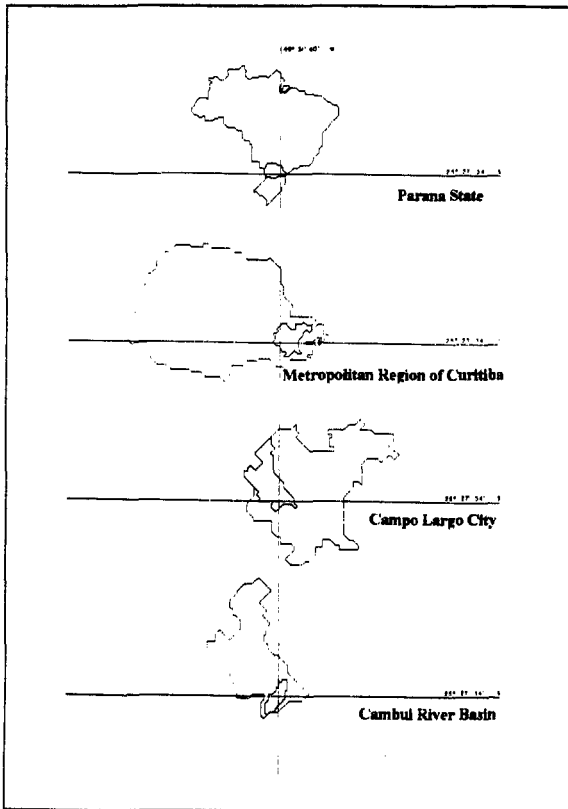


Figure 1: Situation of Cambui River Park in Metropolitan Region, Parana State and Brazil.

and define appropriated uses to those places, in order to raise the value of the environmental in the Basin and Valley of Cambui River.

Through the land use map of the Basin, in 1:20.000 scale, and by using aerial photographs and satellite image it was possible to define the extension of urban and agricultural occupation, distribution of industries, leisure places, and the compatibility or incompatibility between the uses and environmental.

The aerial photographs - 1:20.000 - 1990, have been used to identify in details land use in the Park - Basin level.

The satellite image Landsat-TM5, orbit 220/11+12 of 09/09/1990, with combination bands 3, 4 and 5, "the 5 red, 4 green and 3 blue", was used in a regional level, because the spacial resolution of satellite is 30 x 30 m in the land. That combination of "bands" made possible identify different stratum of the forest, and localize similar remnant in the region where the Park is.

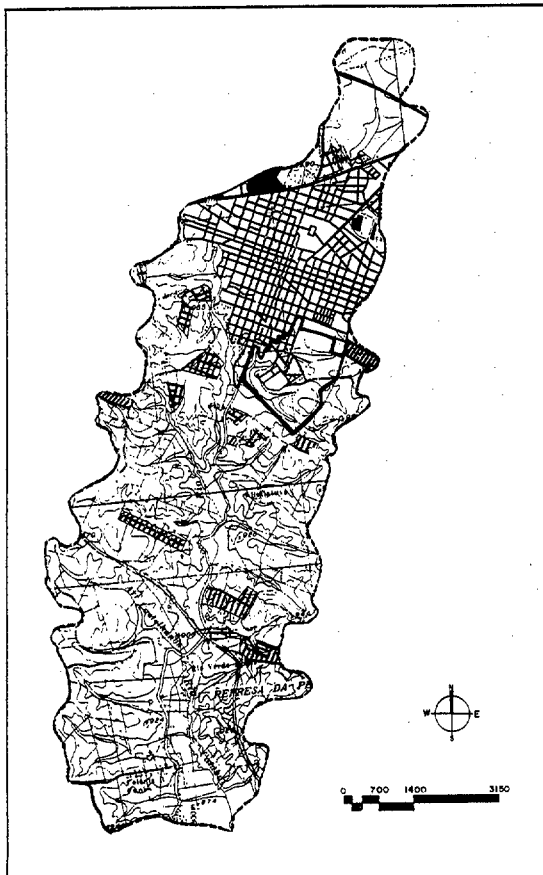


Figure 2: Situation of Cambui Park in Cambui River Basin.

Crossing digital image with the digitalized thematic maps it has been possible to make a spacial analysis of the area.

In the Valley River level, places where there are hydric/atmospheric pollutants emission and stench, have been mapped as critical points, in 1:20.000 scale.

In the central area of the Cambui Park, the maps of vegetation, hydrography, slopes, hypsometry and land use, have been made in 1:5.000 scale, to define preservation areas, conservation, and specific uses as recreation, sports, culture, environmental education.

3 Conclusions

The zoning made to the central area Park establish zone of intensive and extensive use, and preservation zone.

Zone of intensive and extensive use have foot paths among the vegetation, kiosks, pic nic places, theatre in the open air, historical houses, camping, sport courts, center of environmental education, tree nursery with a gardening school to train specialized handiwork, energetic forest, place to fairs, and a way to cyclist along the Valley River.

The preservation zones will be useful to maintain the integrity of local ecosystems, and to make possible the recuperation of important areas, which are presently in degradation. It will be allowed the visit of technicians and searches authorized to develop interesting researches to increase ecosystems preservation and knowledge of local fauna and flora.

A positive expectation has been growing up, related to the implantation and full appliance of the Directive Plan.

Although the implantation of Cambui Park be a process that is just starting, there is already evidences of acceptance and true interest among the direct and indirect people reached by this project.