

# **PERCEPTION OF CULTURAL LANDSCAPE OF GUANABARA BAY-RIO DE JANEIRO, BRAZIL AND REPRESENTATION IN VIRTUAL REALITY**

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This paper falls within the research "Perception of Cultural Landscape of Guanabara Bay-Rio de Janeiro, Brazil and Representation in Virtual Reality", which has been developed by Federal University of Minas Gerais (UFMG) Geography Department, Laboratory of Cartography. This work is a study on the characterization of the cultural landscape of the Guanabara Bay / RJ - Brazil, using GIS techniques. This technology is increasingly present in the sciences that deal with spatial data such as geography, for example. With the help of the GIS, analysis of elements and topographic representation of the landscape through digital mapping has been much facilitated. Thus, the object of analysis, the Guanabara Bay, will be studied in order to investigate its remarkable points in search of the characterization of its cultural landscape.

However, making them more real is a difficult task in the studies in this area, because represented space and perceived space not always match with the real space. This way, the study of perception of cultural landscape acquires a relevant factor to improve the representation techniques regarding the spatial elements.

The research studied how the spatial perception occurs, how it varies throughout the time and the culture, and if there are factors to facilitate its understanding. The goal is to promote greater objectivity for different groups of users, ie people from the area of study related to space science as well as lay people. Therefore, the correct graphics processing of spatial information, with the support of the geoprocessing tools, can build products that are motivating the mapping observation of the landscape, increasing links between observer and observed landscape but also identifying care that result in improvements in the techniques of cartographic representation.

The Guanabara Bay, being one of the most important natural and cultural references of the State of Rio de Janeiro and Brazil, was chosen as the study area to apply the techniques of representation of the cultural landscape through virtual reality. The bay has great historical value in the understanding of the evolution of human occupation of the city of Rio de Janeiro, so we tried to identify how different people "understand" this landscape, which forms part of their living space, subjective, which can be felt or "perceived".

The process of environmental perception is selective, since it identifies the individual, in accordance with his values and his experiences, the various details in the environment that surrounds him. Since it is possible that individuals can make a mental mapping through the learning process, because this is the result of information received and selected by him. Therefore, when describing the qualities of the perceived environment and setting preferences, you can push individuals to take an action or conduct environmental expectations from themselves. In order to reach the major goal, this sub project approaches visual communication techniques and the assembling of virtual reality applications focusing on the reduction of noise between no-experts users and managers of spaces.

Thus, from maps of the Guanabara Bay, the user selects points of navigation, among the notable points chosen by local people through interviews, deciding where to look. The navigation is

assembled considering a set of photographs containing 50% overlaying among them. This permits the depth and 3D effect. Because it is based on photos, the representation of the reality is very faithful. There are wide possibilities to alter the scale, through approaching or tracking out. Finally, as the set of photographs was obtained from a focused point of the observer inside the ambient, there is a strong relation between image and user.

Faced with the above construction of communication products supported by technical cartographic geoprocessing can promote the representation and observation of the cultural landscape of Guanabara Bay, with a view to encouraging look at the landscape and encourage the development of links between users and their living space.