

MALLORCA LITORAL LANDSCAPE TAXONOMY WITH GIS AS TOOL TO ASSESS LOCAL PLANNING

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During last decades the island of Mallorca has experienced an important development as a main tourist resort. This fact has had a dramatic influence on its natural resources. The change has taken place largely on the coastal areas. The urban and regional planning of the past can be considered highly responsible for this environmental damage.

Cartographic modelling and multivariate analysis techniques has been applied to an environmental georeferenced data base to develop a landscape taxonomy of the Mallorca coast.

The possibilities of the integration between cartographic modelling techniques and the multivariate analysis have been studied in order to develop a territorial classification. These techniques are usually included in the most common GIS raster software or are available from statistical packages. The GIS Databank of the UIB GIS Lab will be used to design an special Territorial Expert System. Land classification has been developed according with territorial capacity for carrying urban development.

The methodology has been applied in three steps: (1) Selection of Environmental Variables (SEV) 'multivariate analysis of the data', (2) Land Environmental Classification (LEC) 'Cluster Analysis -K means method, (3) Carrying Capacity Detection (CCD) 'Crosstabulation analysis between land clusters groups and planning restrictions'. In other words, the target are: first, to detect what are the main environmental variables responsible for the landscape structure; second, using this SEV variables, develop a landscape classification LEC; and third, analyse what kind of carrying capacity CCD has each land group versus the different potential planning classifications.

This is the first step to the develop of an expert system to assess environmental impact assessment of the municipal planning projects.

The paper will show the first results of the study and will gives a general overview about the environmental situation of the litoral of Mallorca in relation with the impacts of the use of the land and its environmental value.

The study has been developed in the GIS Lab of the University of the Balearic Islands. The hardware used has been: WS - Sun Sparc, PC-486; and the software ARC-INFO and BMDP.