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ABSTRACTS
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trends in a multivariate data space to identify regions that have co-evolved and which identifies underlying tensions for KwaZulu-Natal province, South Africa. At various scales, potential sources of human insecurity and development patterns at odds with positive biodiversity survival are presented.

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Ecological evaluation is landscape ecology applied to conservation. Many efforts to provide the criteria to select conservation areas have been made in the last three decades and still there is not a reasonable agreement among scientist. This can be explained, at least in part, because such criteria cannot be laid down without enough clarity about why conservation is needed. The proposed method is an effort to overcome these limitations. In the first place ethically plausible conservation objectives are formulated to act as guiding principles for the scientific solution. Next, conservation types are differentiated to achieve the set of objectives, and the proper selection or design criteria that must be used in the evaluation of each conservation type are elaborated. In addition, the modern concept of landscape ecology correctly imposes to consider the individual conservation areas as components of a system in which topological and chorological relations as well as contributions among conservation types exist. From this follows that the spatial configuration is a complementary selection criteria in the design of the system. Human impact and management constraints are considered to have no scientific status. Therefore they are excluded from the ecological evaluation and treated in the subsequent decision making and management phases.

Fels, J.* 1, J. Watts 2, and K. Slocum 3. Terrain-based Simulation of Potential Natural Vegetation on a Sky Island Watershed in Southeastern Arizona. 1 Design Research Laboratory, North Carolina State University, Raleigh, North Carolina, and 2,3 Topographic Research Division, U.S. Army Topographic Engineering Center, Fort Belvoir, Virginia.

The capability to predict potential natural vegetation is important to the development of long-term management strategies for public lands. The 'sky island' environments of the American Southwest harbor forest, woodland, and grassland ecosystems unique on the continent. Computer simulation of natural vegetation patterns can help inform efforts to maintain and restore natural systems indigenous to these special environments, especially when natural patterns have been altered by human disturbance. This study was conducted on the Garden Canyon watershed in the Huachuca Mountains of southeastern Arizona. The study used vegetation data collected in the field and supplemented by photo-interpreted vegetation data. A digital elevation model of the study area was utilized in developing a multi-attribute digital terrain model to support vegetation analyses. Discriminant analysis and parametric classifier techniques were used to predict occurrences of major vegetation types in relation to terrain variation on three different geologic substrates. These models of vegetation-environment relationships demonstrate significant predictive capacity and support simulative mapping of potential natural vegetation, as well as reliability assessments for vegetation predictions. Comparisons of potential and current vegetation distributions may suggest where and how human disturbance has altered natural patterns.

Fernandes, J. 1, Baptista, P. 2, and L. Quinta-Nova* 3. A Method for Evaluating the Landscape Quality and Potential at a Regional Scale. 1 Department of Landscape and Biophysical Planning, University of Évora, Évora, Portugal, 2 Department of Landscape and Biophysical Planning, University of Évora, Évora, Portugal, 3 Escola Superior Agrária de Castelo Branco, Castelo Branco, Portugal.

A multidisciplinary, long term project aimed at developing and testing assessment and evaluation instruments for the ecological management of the landscape is being developed in the University of Évora (Portugal). The main project is divided in three sub-projects (Characterization of the conservation value of the SE Alentejo region; Identification of the main ecological processes and functions in Évora; and Analysis of the significance of ecological characterization methods in Apostiça). The main objectives to be achieved are to describe the ecological potential of the landscape, and determine the land-use practices and land-use intensities necessary to ensure the maintenance and promotion of the conservation value of the landscape, in order to assess the ecological value of a land-use structure and evaluate the sustainability of alternative land-use patterns. As preliminary conclusions we could say that the evaluation of the stability of a landscape by comparing the degree of correspondence of the nature of both levels of characterization – land-use distribution and homogeneous landscape units – is of particular importance in the evaluation of the fragmentation degree of that landscape, and the real disturbance determined by proposed land-use changes.