Ecological Networks to Balance Development and Conservation: Examples from Land Use Planning in the Netherlands, USA and Argentina

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Current land use planning is caught between the increasing pressure on the rural area for economical development and the need to preserve natural landscapes and reserves. The challenge is to find a balance between both objectives in land use plans. Ideally, ecosystems, habitats and species can be protected by preserving large areas from human exploitation. However, this often conflicts with the demand for economical development, especially in the more urbanized areas. The concept of ecological networks offers a way of balancing these two conflicting demands by integrating biodiversity conservation with the exploitation of natural resources. This is done by embedding areas in the landscape, e.g. corridors and stepping stones, which are necessary to ensure the continued functioning of ecological processes or the viability of species populations. To implement the concept, land use planning plays an important role.
This paper presents a brief description on the fundamentals of the concept of ecological networks and discusses the application of the concept in land use planning. Three examples of the application of the concept will be given. The first example deals with a study to apply the concept in the human dominated, agricultural landscape in the Netherlands. The second example focuses at the application of the concept in urban landscapes in the USA. The third example includes a first application of the concept in Argentina, combining land use changes and habitat protection. The results will be discussed and conclusions drawn on the applicability of the concept in land use planning.

The paper is related to the conference theme: Land Use and Ecosystems Interactions, while the approaches and methods fit into the transatlantic comparisons, is multidisciplinary, aims at integration and uses different modelling-techniques.

Key-words: land-use-planning; development and conservation; spatial concepts; ecological networks; transatlantic comparisons; modelling.

(see diagram for details).