

## **Delineation of Environmentally Sensitive Areas (ESA) as a tool for greenway planning in Hungary**

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### **Introduction**

Hungary has one of the largest proportion of tilled land in its territory in Europe. The percentage of ploughed land has recently grown as high as 50 percent and agricultural land (ploughed land, orchards, vineyards, gardens, grass-lands) represents 65.2 percent. At the same time the forests make up only 18.8 percent altogether (the average in Europe is 35 percent), while the ratio of nature conservation areas (6.5%) is close to that of Europe (6%). The high percentage of agricultural land, the monotonous, unified parcel structure has caused large-scale homogenization in the landscape. The low level of landscape diversity brought about poor landscapes and a simplified land-use structure. The vast, uniform strips of land, the enormous areas without ridges and borders not only reduced biodiversity, but also contributed to the visual poverty of the landscape.

The isolated nature conservation areas function only as stepping stones in the greenway network.

In the European Union several initiatives, directives draw attention to the degradation of landscape and the need to reverse negative trends. The Natura2000 ecological network under the Habitat Directive<sup>1</sup> set the objective of creating a unified ecological greenway system by 2005. The intended integrated ecological system would include the protected areas, the Natura2000 areas, and the ecologically sensitive areas (ESA). The Pan-European Biological and Landscape Diversity Strategy (PEBLDS<sup>2</sup>) and the European Landscape Convention focus on the integration and standardization of different actions taking place in nature and landscape protection.

### **Aim of the study**

In Hungary the Environmentally Sensitive Areas (ESA) are but the last elements in shaping the national ecological and greenway network. The aim of the research at this time was to define the assessment method of environmentally sensitive areas and to designate these areas for the purpose of laying out the greenway network. The environmentally sensitive areas – according to the European definition – are primarily agricultural lands of low intensity cultivation where the principal task is to maintain the traditional land-use, and preserve the biological and landscape diversity, while protecting the cultural and visual-esthetical values.

In our defining the aim of the study, the using of an integrated approach of landscape protection was important consideration. The support of the environmentally sensitive areas plays a significant role in the EU agro-environment protection subsidization (CAP<sup>3</sup>). The

<sup>1</sup> Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, amended through Council Directive 97/62/EC of 27 October 1997

<sup>2</sup> The Pan-European Biological and Landscape Diversity Strategy (PEBLDS) adopted by the Conference of Ministers on an Environment for Europe, Sofia, October 1995.

European Landscape Convention of the Council of Europe. 20 October 2000. Florence

<sup>3</sup> Common Agricultural Policy

restoration of traditional extensive, environmentally sound land-use would affect 12 percent (1.2 million hectares) of Hungary's land.

In the course of defining the Environmentally Sensitive Areas on a national level it was essential to take into consideration the landscape ecological, the cultural and natural conditions of the landscapes.

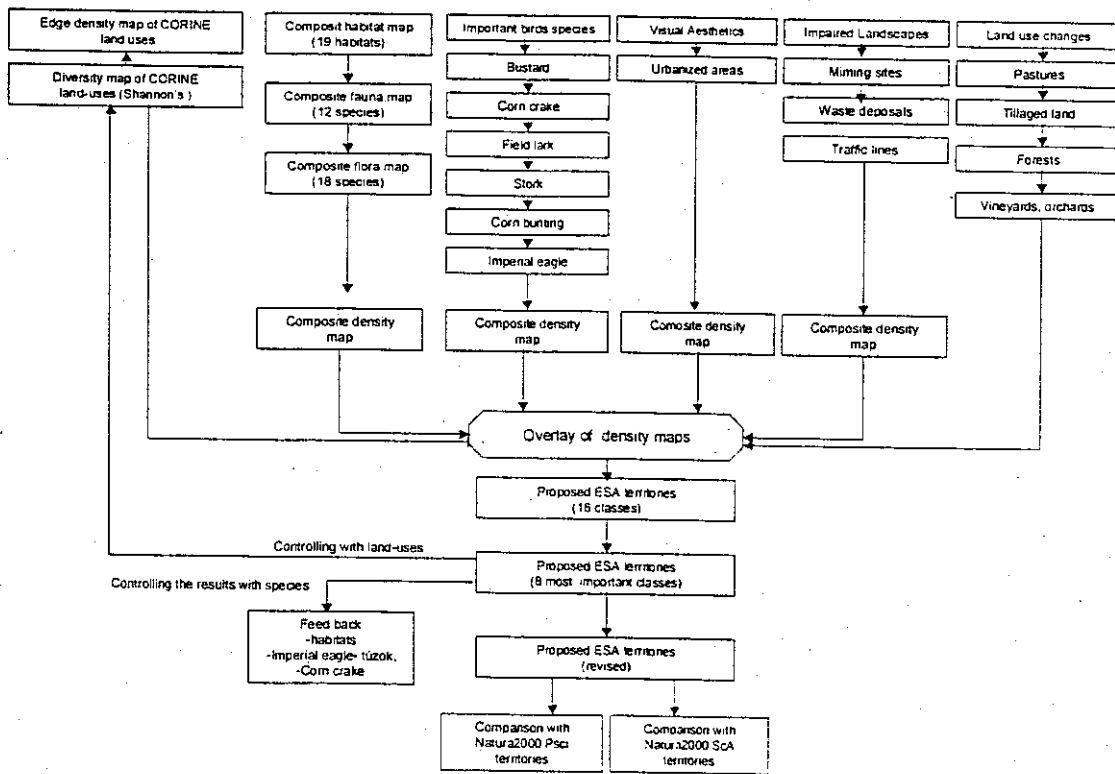
### Method

The delineation of Environmentally Sensitive Areas was carried out in two steps. In the first step the method of assessment was developed on the national level. As the result of that exercise a density map with a sensitivity range was produced showing the areas on a scale of 1:100 000.

In the second step the localization of particular areas will be continued on the site level. This localization will be performed based on the national database but the allocation of ESA-s and rules for their management will be fine-tuned by the competent nature conservation officials, regional planners, and the landowners.

During the process of localization biological and landscape indicators were used for the site selection. The databases were the following: CORINE land-use database<sup>4</sup>, national indicator database for habitats, flora and fauna<sup>5</sup>, land-use history time series database, visual-aesthetics analyses of landscape, assessment of impaired landscapes.

For the composite assessment density, diversity and priority maps were produced based the factors analyzed. The individual layers (maps) were transformed into UTM grid system and combined in a GIS database. The results of composite assessment were later rechecked and finalized by comparing the starting datasets. The results of assessment were also compared with those of the existing territories of the Natura2000 network.



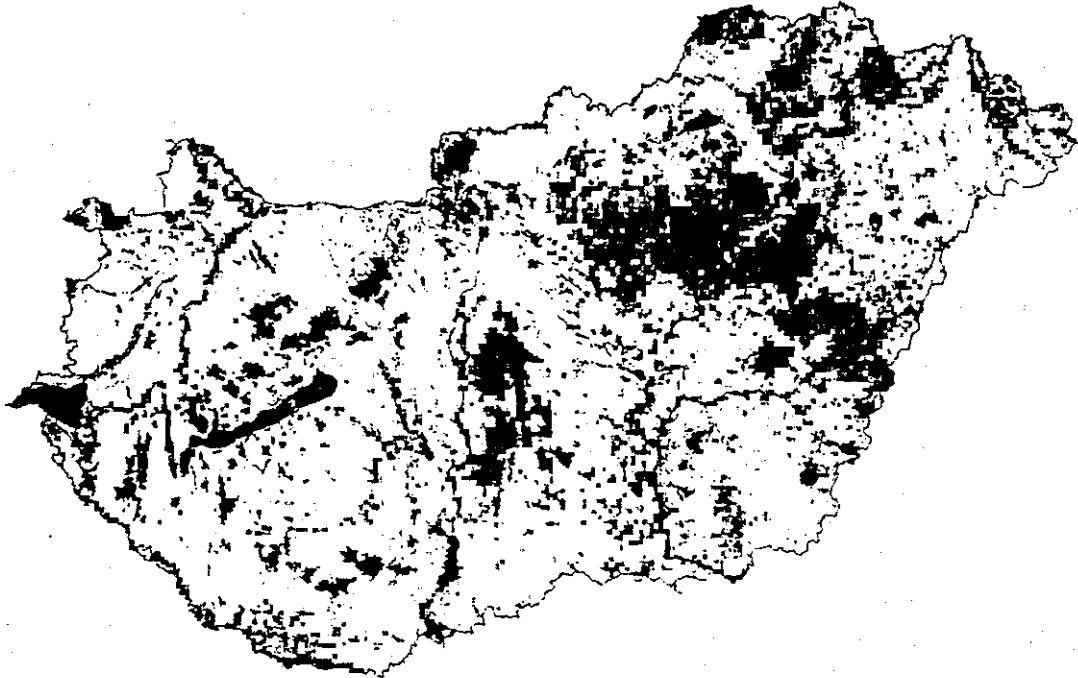
Method of designation ESA territories

<sup>4</sup> CORINE Land-use and landscape assessment database (2002)

<sup>5</sup> EVITA database (2002), Ecological and Botanical Institute, Hungary

## Results

According to the results of combined assessment ESA territories were delineated on the national level. While presently only 6.5 percent of the national territory is nature protected area, the size of ESA territories in our proposal could reach 37 percent.



*Nature protected areas (gray) and designated areas of ESA territories (brown scale)*

The intensity values provide guidance in determining the most important sites. Buffer zones and ecological corridors to link the protected sites, to fill the gaps and to maintain the visual amenities of landscapes can be designated for further elaboration of greenway planning. Evaluation at the national level can be a starting point and a tool for regional planners, landscape architects, nature conservation experts for preserving and restoring the character of Hungarian landscapes.