

## Assesment of Vegetation Mosaic and Alpine Landscape at a National Park from Eastern Mediterranean

Hülya ARSLAN<sup>1</sup>, Gürcan GÜLERYÜZ<sup>1</sup>, Mustafa GÖKÇEOĞLU<sup>2</sup>, Helmut REHDER<sup>3</sup>

<sup>1</sup>University of Uludağ, Faculty of Sci. and Arts, Dept. of Biology, 16059, Bursa, Turkey.

<sup>2</sup>Dept. of Biology, Faculty of Arts and Sci., Univ. of Akdeniz, 07058, Antalya- Turkey

<sup>3</sup>Technische Universität München, Institut für Botanik und Mikrobiologie, München, D 80290 München-Germany  
*arslanh@uludag.edu.tr*

**Aim of the study:** Uludağ is the highest mountain in the Marmara region including Thrace and Northwest side of Anatolian peninsula. The climate of the mountain changes with elevation and causes high “biological diversity”. Due to its altitude (2543 m) and various geological conditions, this mount is endowed with a rich flora containing numerous species and forming several well-distinguished vegetation types. But intensive anthropogenic pressures resulted from winter sport and recreational activities threat the alpine belt of Uludağ Mountain. In this study, we aimed to map the vegetation mosaic of the area about 3000 hectare on which the different activities were planned.

**Material and Methods:** Black-white aerial photographs (24X24 cm) were taken by plane with 1/ 10 000 scale by General Command of Mapping of the Turkish Republic in August 1992. The longitudinal overlapping of the photographs is 60-90% and latitudinal overlapping is 30%. These photographs were digitized by orthophotography technique in the mapping laboratories of the General Command of Mapping of the Turkish Republic, Ankara. 20 sections representing the whole investigation area were drawn with 1/ 2500-scale according to stereoscopic method. Geographic entities such as rivers, roads, buildings, borders of plant communities, contours etc. which described as “coverage” in GIS were drawn on the sections. Before the performing of GIS and preparing the maps (sections with 1/ 2500-scale), field studies had done by the controlling the borders of plant communities on the investigation site. Areas of 200 square meters and larger were marked on the maps. Outcome maps of vegetation types represented by different plant communities were performed with 1 / 35 500 scales.

**Results:** In this study, the vegetation mosaic of Uludağ National Park in 1993 was mapped by based on plant communities. Our results suggest that the vegetation mosaic of Uludağ National Park is composed of plant communities which are typical communities of alpine and sub-alpine belts of high mountains. In addition to monitoring the vegetation mosaic and assessing land-use impacts, the results of this study showed that aerial photographs and GIS techniques are important tools for the mapping the vegetation mosaic using plant communities. These vegetation maps can be used as floral database in order to monitor the changes and to set suitable plans and national park management principles in this area in the future.

**Acknowledgements:** This study based on a PhD Thesis (H. Arslan) was founded by a grant from the Research Fund of Uludağ University and Government Planning Organization (DPT Project No: 91/24) of Turkish Republic (to M. Gökçeoğlu).

**Keywords:** Vegetation mosaic maps, GIS techniques, Aerial photographs, Uludağ National Park, Turkey