



*“Gheorghe Asachi” Technical University of Iasi, Romania*



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## USING OLD MAPS AND SOIL PROPERTIES TO RECONSTRUCT THE FOREST SPATIAL PATTERN IN THE LATE 18TH CENTURY

**Iulian Cătălin Stângă**, Lilian Niacșu\*

*“Alexandru Ioan Cuza” University of Iași, Faculty of Geography and Geology, 20A Carol I Blvd., 700505 Iasi, Romania*

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### Abstract

Deforestation has been recognized as an important environmental threat in the hilly area of Eastern Romania during the last two centuries. Nowadays, these former forested lands are extremely degraded through soil erosion and gullyng due to improper human impact. Under such background, the paper aims at reconstituting the natural forest cover of the late 18<sup>th</sup> century, prior the aggressive deforesting actions. The methodology is based on two key elements: old maps and soil typology, both integrated into a GIS database. As results, the old maps allow a rough estimation of forest extent in the late 18<sup>th</sup> century (at least 65% of the region, comparing to 20.7% at present) but the calculated cartographical errors provide an imprecise spatial image. Therefore, through its different remanent properties because of the inertia to land cover changes, the soil comes to complete the survey. Since there is a good correspondence between the ecological conditions of forest development and the pedogenetical conditions of luvic soils formation, we argued that before the late 18<sup>th</sup> century the lands under forestry occupied at least 70% within the study case. The complementarity of the criteria, based on totally different elements, provides the confidence and the validity of the results for this timeframe and spatial scale of analysis. Thus, this study offers highly promising potential to reconstruct the past spatial of forest in regions where there are no other useful documents in order to substantiate the management plans for durable environmental development according to the natural ecological pattern.

*Key words:* forest reconstitution, old maps, soil cover, zonal natural forests

*Received: September, 2014; Revised final: March, 2015; Accepted: March, 2015*

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\* Author to whom all correspondence should be addressed: e-mail: [lilianniacsu@yahoo.com](mailto:lilianniacsu@yahoo.com), Phone: +40 0740 316071, Fax: +40 0232 201474