

Using high resolution LIDAR DEM to reconstruct historical network of lakes and wetlands in the Northern part of the Moldavian Plateau, NE Romania

Mihai Ciprian Mărgărint* and Mihai Niculiță

“Alexandru Ioan Cuza” University of Iași, Faculty of Geography and Geology,
margarint.ciprian@yahoo.com

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A particular environmental feature of the northern part of Moldavian Plateau (NE Romania) is the large number of anthropic lakes along river courses. Even more, due to climatic, hydrological, hydrogeological and geomorphological settings and human activities (dominated by an extensive agriculture) this characteristic was mentioned and mapped in written records and cartographic representations in many historical stages of the humanization of this region. The need for water supply have forced the inhabitants to build dams of various sizes along the entire river network. Over the time, many dams were abandoned, while others have been relocated with a impressive dynamic at historical time scale.

Until nowadays, the spatial distribution of these historical generations of lakes was available only for certain periods (the case of historical maps) being characterized by numerous localization uncertainties and incompleteness.

Analizing recent high resolution Lidar DEM images, we have perform an accurate inventory of abandoned dams. Using „*generating contour*” function of Global Mapper v.15.0 package, we have recnstruct an approximately spatial extension of corresponding lakes. Some of them have been recognized on old maps (topographic map form 1894, 1940, 1960, 1984), while many others have been identified and mapped for the first time in this work. Alongside this new cartographic representations and the possibilities to asses the dynamic this environmental factor, this historical inventory of old dams represent a usefull database of lacustrine deposits of the studied region.