



Georeferenced historical forest maps of Bukovina (Northern Romania) – important tool for paleoenvironmental analyses

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The historical region of Bukovina is one of the most forested areas of Romania. The name itself, beech land, suggest the high wood resources located here. The systematic wood exploitation started in Bukovina during the Austrian rule (1775 – 1918). To fully asses the region's wood potential and to make the exploitation and replantation processes more efficient, the Austrian engineers developed a dedicated mapping system. The result was a series of maps, surveyed for each forest district. In the first editions, we can find maps crafted at different scales (e.g. 1:50 000, 1: 20 000, 1: 25 000). Later on (after 1900), the map sheets scale was standardized to 1: 25 000. Each sheet was accompanied by a register with information regarding the forest parcels. The system was kept after 1918, when Bukovina become a part of Romania. For another 20 years, the forest districts were periodically surveyed and the maps updated. The basemap content also changed during time. For most of the maps, the background was compiled from the Austrian Third Military Survey maps. After the Second World War, the Romanian military maps ("planurile directe de tragere") were also used. The forest surveys were positioned using the Austrian triangulation network with the closest baseline at Rădăuţi.

Considered lost after WWII, an important part of this maps were recently recovered by a fortunate and accidental finding. Such informations are highly valuable for the today forest planners. By careful studying this kind of documents, a modern forest manager can better understand the way forests were managed in the past and the implications of that management in today's forest reality. In order to do that, the maps should be first georeferenced into a known coordinate system of the Third Survey and integrated with recent geospatial datasets using a GIS environment. The paper presents the challenges of finding and applying the right informations regarding the datum and projection used by the Austrian and Romanian forest surveyors, to correctly georeference the maps. A case study, demonstrating the usefulness of such old cartographic informations in understanding the forest landscape evolution is also included. The georeferenced map sheets provide an excellent basis of the paleo-environmental researches. Assessing the changes of the forest cover ratio is important for the analysis of the recent flash flood events at the eastern slopes of the Carpathian Mts.