



GIS-base analysis of potential land use around the Roman Augusta Raurica near Basel, Switzerland

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Augusta Raurica near Basel in Switzerland was one of the major Roman cities north of the Alps. Situated in the Upper Rhine Valley between Jura Mountains and Black Forest, the natural environment offered an ideal strategic location for establishing an urban center. However, the landscape limited intensive agricultural production in the vicinity of the city to the Rhine Valley and the smaller tributaries. While archaeological remains of Augusta Raurica east of Basel have been studied in detail, land use surrounding the city remains unclear. However, understanding land use and agricultural production around Roman cities is of particular importance for assessing the number of inhabitants and the economic status of the city and the surrounding region. In this study, we present a GIS-based landscape analysis of the region surrounding Augusta Raurica. Our aim is to identify spaces in the landscape surrounding Augusta Raurica which would have been suitable for Roman agriculture. Based on archaeological evidence, a set of criteria on topography and soil characteristics indicative of suitability for Roman agriculture was developed. These criteria were used to identify areas of potential suitability for Roman agriculture from DEM, soil and geologic maps. The results show clearly that the Quaternary landscape development constricted agriculture in the Upper Rhine Valley around Augusta Raurica. A comparison of the potential suitability of the landscape for Roman agriculture with the density of archaeological finds confirmed the selection of the criteria used to assess the Roman land use and highlighted the contribution of landscape ecology to archaeological research.