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Soil erosion susceptibility map of Lake Velence Catchment

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The objective of the paper is to produce a soil erosion susceptibility map of the area by the application of GIS methods. The catchment area of the Lake Velence (SW of Budapest) covers the south-eastern slopes of the Vértes Mountains, the northern part of the Mezõföld region and the Velence Range with a total surface area of 604.2 km2. The area is highly non-uniform, as reflected by the topography, the hilly and flat areas differing in age and structure alike. The soil erosion map susceptibility of Lake Velence catchment was created by applying the Universal Soil Loss Equation (Wischmeier and Smith, 1978). The area was divided into grid cells of 30x30 m. The dominant value for each USLE factor (R: rainfall and runoff factor; K: soil erodibility factor; LS: topographic factor; C: cover and management factor; P: protection factor) was defined for each grid cell and maps of each factor were created. Multiplication of the values of each factor map for each grid gives annual soil erosion vote for each cell (t/ha/year). For the calculation the raster overlay procedure was used applying IDRISI GIS. Regions with various soil erosion susceptibility are identified and explanations are provided for the areas in question. No direct connection between land use and soil loss could be found because of the mosaic-like pattern of the distribution of different land use types.