



Loess relief degradation in urban peripheries and selected problems with land management (case study: Lipniak Gully, Lublin, E Poland)

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The research was conducted in the peripheral area of a relatively large city (350 thousand residents) in its major part located on a loess plateau. The study object was a neglected road gully dissecting a dry valley. Soil and sediment sampling permitted the reconstruction of the development of its relief from the Late Glacial, with particular consideration of anthropogenic changes. The history of land use was reconstructed based on archival maps and documentation. Plant associations were also identified. Land management was proposed in accordance with the principles of sustainable development.

The studied landform was determined to originally constitute an erosional-denudational valley with asymmetric slopes, developed during the last phases of the Late Glacial. In the Holocene, the relief was strengthened by a oak-hornbeam forest, where deep Luvisols developed. In the 19th century, the forest was gradually cleared, and the land was cultivated. A ground road was made along the valley floor. A road gully developed over a century of its use, with a depth of up to 4 m. Soil erosion on the slopes, uneven due to varied use, changed the direction of their asymmetry. In the 2nd half of the 20th century, low urban development reached the gully's vicinity, because the gully was designated the boundary of Lublin.

Currently, the area is located within the city boundaries. The valley-gully system Lipniak, however, is wasteland along its considerable section. Plant succession occurred towards natural and ruderal associations. Neglecting the gully favours its inhabitancy by animals (among others foxes). Unfortunately, it also contributes to its littering. The local community has expressed the need for the management and ordering of the area to make it available for recreation with the maintenance of its natural values. In response to such needs, a project was prepared involving the construction of a walking-cycling path along the gully, connecting the nearby residential districts. Relevant recreational infrastructure was planned, as well as management of the vegetation.