



Gully types in Șacovăț catchment, Moldavian Plateau, Eastern Romania

Adrian Andrei and Mihai Niculita

Al. I. Cuza University of Iasi, Geography and Geology Faculty, Geography Department, Iasi, Romania
(mihai.niculita@uaic.ro)

Moldavian Plateau, Eastern Romania is an area where soil erosion is a widespread phenomenon, given the dissected topography, patterns of land use and climate. Gully erosion plays an important role in the soil erosion processes. We have used a high resolution DEMs, high resolution satellite imagery and old aerial images to delineate gullies in the Șacovăț catchment. This catchment has a surface of 314 kmp from which 17 kmp are covered by gullies, resulting a density of 0.05%. We have identified various gully types: continuous and discontinuous, bank gullies, hillslope gullies, road and path gullies and relict gully systems.

Road and path gullies have small dimensions, under 2000 sqm, 2 to 5 m in width, up to 500 m in length, 1-2 m in depth, and can be discontinuous.

Bank gullies have under 2000 sqm, up to 2000 sqm in surface and up to 500 m in length. Their depth can be similar to bank height, up to 5 m.

Hillslope gullies have under 1 km in length, under 100 000 sqm surface, up to 3 in depth and around 20 m channel width. Small hillslope gullies (1000 to 2000 sqm) are in general discontinuous.

Relict gully systems have are big dimensions (300 000 to 1 000 000 sqm surface, widths of the channel up to 250 m, 1 to 3 km length, and up to 25 m depth of the channel) and usually present dendritic patterns, with newer bank and hillslope gullies which are hydrologically and morphologically connected to the relict gully channel. Is usual for these gullies to have the channel filled with bank failures and landslides triggered by its deepening.

The gullies from Șacovăț catchment are in continuous evolution, the relict gullies needing dating while the fresh gullies needing monitoring, especially in the context of climate and land use changes due to deforestation.