

Establishment experience and current state of gully ravine systems in the Zelenodolsky district of the Tatarstan Republic

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In 60–90-es of the last century the Tatarskaya (now East-European Forest Experiment Station) FES researchers developed a package of operations and recommendations on forest amelioration of eroded soils in the forest steppe zone and established a number of numerous soil protection and forest amelioration sites in agricultural and forest lands of the Tatarstan and mid Volga region.

The goal – to study soil erosion forest amelioration operation findings. The sites selected according to literature sources and the TatLOs research reports over 1967-1994.

The paper gives description of 5 experiment production forest ameliorations sites established to control linear soil erosion and gully ravine systems «Phahri yary», Kyshanger», Nikolskaya», «Grylbay», Naratly Syza» located in the Volga left bank area in the Zelenodolsky municipality of the Tatarstan Republic.

The paper presents data on the site locations, its 1st survey condition, a package of soil erosion operations based on approbation and introduction of various soil protection forest amelioration technologies, soil treatment, establishment of protective shelterbelts of various tree species and mixture, simple hydro technical facilities, sowing of perennial grasses etc.

In 2015 the authors conducted survey of these gully ravine systems with temporary sample plots and forest plantations. Current state of protective shelterbelts and background of undergrowth and live soil cover as well as brief specifics of tree species sanitary state is presented. The table covers silvicultural characteristics of the stands as of 2015. Conclusions on soil erosion stop provide the whole range of soil erosion operations.

In conclusion the authors give summarized findings on the paper subject and give a conclusion on high soil erosion efficiency of the established sites.