

Study of erosion processes in watersheds by topographical maps (For 90 Years Anniversary of N. Kalinichenko)

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Erosion control and protections of rivers is a crucial task of environment recovery.

Especially bad situation shaped in gully systems and river valley sides within river water protection zones. Erosion results in river contamination, drain and silting.

Erosion process intensity studies ongoing in watersheds focus on identification of its morphometric structure for further building of environmental facilities including protective forest stands that will enable rational use and growth of cropland productivity, soil fertility and its protection against erosion, regulation and rational use local runoff water, protection of rivers and water bodies against drain, silting and contamination and development of favourable environment.

One of erosion process study procedures – office study by topographical maps. It is based on identification of erosion impacts on gully systems and its watersheds by the following 4 parameters: gully network roughness, gully rate, gully density, gully intensity. These parameters ratio sets a scale of ravine gully damage rate.

Erosion process development intensity, slope steepness and soil cover condition determines ratio of areas for grassland amelioration and forest amelioration. Forest amelioration operation design defines parameters of protective forest plantations, width and type of planting – tree-shrub, tree-shady depending on profile, planting pattern, tree and shrub species composition – main, associated, shrubs, ploughing type depending on the area soil dryness slope steepness, share of various protective forest plantations (runoff regulating, gully side, ravine side, river-side, gully, ravine, river source and river valley side stands), share of the most favourable land (grasslands, forest lands, croplands) spacing.