

Journal of Engineering and Applied Sciences 2016 vol.11 N14, pages 3004-3013

Evaluation of Siltation of rivers with intensive economic development of watersheds

Marinina O., Yermolaev O., Maltsev K., Lisetskii F., Pavlyuk Y.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© Medwell Journals, 2016. In regions with a high degree of agricultural development with an active development of erosion processes and the critical level of degradation of the river network to which the Middle-Russian Upland belongs, the evaluation of sedimentation for various combinations of natural and economic conditions becomes an immediate problem. The evaluation of the silting-up of rivers, the catchment areas of which are undergoing an intensive economic development has been done at the regional and sub-continental level which allowed the adaptation of the GIS-analysis techniques for different scale levels. A possibility of assessing the risk of silting-up of rivers by calculating the sediment transport using hydraulic formulas and then comparing the sediment transporting capacity and sediment-production rate has been shown.

<http://dx.doi.org/10.3923/jeasci.2016.3004.3013>

Keywords

Erosion, Fluvial system, Sediment load, Sediment transporting capacity, Watershed fluvial morphology