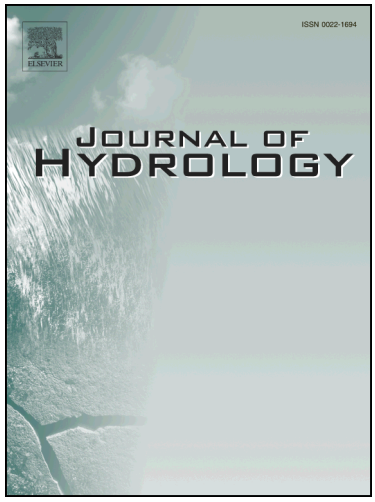

Research papers

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Infiltration Capacity of Roadside Filter Strips with Non-Uniform Overland Flow

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Abstract

The side slope to a roadside swale (drainage ditch) constitutes a filter strip that has potential for infiltration of road runoff, thereby serving as a stormwater quantity and quality control mechanism. A total of thirty-two tests were performed during three seasons in four different highways located in the Minneapolis-St. Paul metropolitan area, MN to analyze the infiltration performance of roadside filter strips and the effect of fractional coverage of water on infiltration. Three different application rates were used in the experiments. All the tests showed that water flow on the lateral slope of a roadside swale is concentrated in fingers, instead of sheet flow, at the typical road runoff intensities for which infiltration practices are utilized to improve surface water quality. A linear relationship between flux of water from the road and fraction of wetted surface was observed, for the intensities tested.