



Function of riparian vegetation in retaining sediment in forested and agricultural catchments.

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Riparian areas are special vegetation zones that are frequently used as buffer strips to mitigate sediment movement from upland forest and agricultural management areas. These areas are often called streamside management zones. They are strips of land along rivers or lakes that are given special management consideration. Their size, shape, and management are governed by various combinations of economic, ecological, and regulatory factors. Riparian zones function as and are often recognized as important barriers or treatment areas that protect water resources from non-point source sediment. Vegetation and the geomorphic characteristics of these buffer strips produces infiltration, filtering, and deposition of sediment-laden water flowing off of intensively managed forestry and agriculture lands. The effectiveness of vegetation in riparian areas for trapping sediment depends upon the velocity of water flow, size distribution of sediments, slope and length of slope above the riparian buffer, slope and length of the buffer strip, depth of water flow into the riparian zone, vegetation characteristics such as type, density, and height. Data on sediment removal by forest vegetation buffer strips suggests that two main actions occur. First, the forest edge environment promotes sediment removal from surface runoff. Second, the sediment is sorted as it moves through lower gradient zones of the riparian buffer. This paper will examine these processes and illustrate them with examples from forest management operations and agriculture. It will also provide a critical examination of buffer strip size recommendations.