



Improving Rangeland Hydrology and Erosion Simulation Models: Coarse Particle Movement in Channels and Sediment Yield in Small Watersheds

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Sediment is a primary pollutant in streams across the southwest. Sediment loads are made up of a broad range of particle sizes from large rocks and cobbles to fine silts and clays. This research focused on the coarse sediment load. Coarse sediment yields and mass based particle size distributions associated with individual runoff events are reported from measurements at the outlets of two subwatersheds (3.68 and 4.53 ha) on the USDA-ARS Walnut Gulch Experimental Watershed. Sediment with particle size 4 mm was retained in pit traps located under the overfall of critical depth runoff measuring flumes. In addition, particle displacement was determined using an RFID system to track individual particles through a succession of flows. These coupled data sets provide new insight into the magnitude and characteristics of coarse sediment transport in semiarid watersheds, and are a critical resource for improving sediment transport algorithms.

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