GEOGRAPHIC VARIABILITY OF RAINFALL EROSIVITY ESTIMATION AND IMPACT ON CONSTRUCTION SITE EROSION CONTROL DESIGN

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Abstract

The Revised Universal Soil Loss Equation (RUSLE) often is used by erosion control planners to estimate the soil loss from urban construction sites when sizing sediment ponds and determining the soil loss under vegetative mats. This project used the existing, complete-year rainfall record followed a combination of the annual rainfall pattern and topography (the Appalachian mountains bisect the state). Two case studies of the impacts of these calculations were developed to show the impact of using different values of R on the design of sediment ponds and predicting vegetation establishment. The results of these scenarios indicate that the source of data to predict R can affect the frequency and cost of sediment pond maintenance and may under-predict the protection level required of a vegetated erosion control mat.