

DEVELOPMENT OF THE HIGHWAY EROSION ASSESSMENT TOOL (HEAT) FOR EVALUATION OF ROADSIDE SLOPES

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Abstract

This paper describes the development and implementation a procedure used to evaluate the success of vegetated erosion control throughout the state of California. However, evaluating of the success of vegetated roadside erosion control is a difficult task due to the variability among sites, as well as the multitude of factors that may collectively affect soil and vegetative system stability. To aid in this task, a tool called the Highway Erosion Assessment Tool (HEAT) was developed. HEAT is an end-user software program used for recording, calculating, and summarizing data collected by personnel evaluating the success of vegetated erosion control. Data were collected on-site that related to slope, vegetated coverage, soils, parent material, aspect, and other factors and entered into the program. Climate data were collected before site evaluations, while predictive models, such as Morgan, Morgan, and Finney, and the Revised Universal Soil Loss Equation (RUSLE) were used by the program after site visits to help estimate expected soil loss at each site. The program allowed large amounts of both qualitative and quantitative information to be assembled over the short duration (3 months) of the statewide erosion control evaluation, much of which was then analyzed using statistics or other quantitative methods.

Key Words: Erosion, evaluation, soil, vegetative cover, California