A New Technique for Implementing USGS Models for Assessing Postwildfire Debris Flows
Barbara C. Ruddy 1

A debris-flow basin can be one of the most devastating postwildfire hazards. Debris flows are Becoming, high-density studies of water, sediment, and debris that can be extremely destructive. The technique used in this study is a parameterized technique based on the drainag basin characteristics and the conditions of the debris flow. This study provides an overview of the techniques used in this study and the results obtained.

A set of empirical equations (models) were used to estimate the probability of debris flows occurring and volume of debris flows for restored drainage basins. These models were developed by Cannon and others (2011) and were derived from statistical data collected from recently burned drainage basins. The equation for debris flow probability is estimated using the following:

\[ P_{DF} = \frac{1}{1 + e^{-a \cdot (b + c \cdot D_{basin}}) \]

where \( P_{DF} \) is the probability of debris flow and \( D_{basin} \) is the basin area burned at moderate to high severity (square kilometers). The equation for debris flow volume is estimated using the following:

\[ V_{DF} = a \cdot D_{basin} + b \]

where \( V_{DF} \) is the volume of debris flow and \( D_{basin} \) is the basin area burned at moderate to high severity (square kilometers).

The technique used in this study is a parameterized technique based on the drainage basin characteristics and the conditions of the debris flow. This study provides an overview of the techniques used in this study and the results obtained.

For the continuous parameterization technique, each of the independent variables in the equation needs to be developed:

- The 1/3 second National Elevation Dataset was used to extract the debris-flow risk (which includes the drainage-basin boundaries and stream channels), the flow accumulation grid which provides the basin area, and slope grade.
- The rainfall intensity grid for a 10-meter elevation resolution was developed from the 2010 Burn Area Emergency Response (BAER) dataset.
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