THESIS

RAINFALL RUNOFF MODELLING OF SIMLY DAM CATCHMENT USING HEC-1

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ABSTRACT

The ability to predict the hydrological behaviour of a watershed is an important aspect of watershed management. The aim of the most hydrological modesls is to provide fairly good estimates of the future performance of a hydrological system so that the resources could be better managed. HEC-1 model was selected for estimating volumes of runoff from observed rainfall data.

The simly catchment area upto Chaniot is 49 square miles and the shape of the basin is irregular and elongated. Fifteen rainstorm events for the Simly Dam catchment were selected and optimized. The Snyder unit hydrograph parameter TPR (basin lag time) and Cp (Snyder's peaking coefficient) were also optimized.

After estimating the parameters of the HEC-1 model its performance was evaluated by simulating fifteen different rainstorm events. The simulated and observed hydrographs match very well. Furthermore, the results of the simulation runs showed that the HEC-1 model can be effectively used to estimate the volumes of runoff. Therefore, HEC-1 model can be used with confidence for estimating the volumetric contribution to the Simly Dam and similar other catchments.

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