Main theme	Sub - Theme	Code Number
Natural Resources	Water	20

Study Name	**Surface Water Modeling for Humret Es-sahin Area Using Watershed Modeling Systems**
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Date of Study	2006
Objectives	In order to predict the runoff volume from the three main wadis in the study area of Humrt Es-sahin (salt) (ed-dafali, el-Mintar, and Um esh-shananir); the rainfall-runoff (HEC-1) model was utilized using watershed Modeling System (WMS). The study aimed at evaluating the model; to comment on needed changes or modifications in the calibration process.
Output and Recommendation	The results show that no differences between the predicted runoff volume using rainfall distribution curve of five-year return period and that predicted with ten-year return period. Also the result show high variation between measured and predicated runoff volumes using the average antecedent moisture condition before calibration; except for ed-Dafali Basin at the year 2002/2003. It is recommended that: • Further calibration could be performed with spatial distribution data of soil and land use/land cover and with more rainfall-runoff data • All runoff gauging stations should be equipped with rainfall intensity recording devices so that time series analysis can be performed. • More extensive data about the channel cross section and roughness coefficient should be made available for the purpose of channel routing. • Finally, in order to get the runoff over the whole basin, additional runoff gage stations are needed to install at the down stream of the basins.
Development Aspects	it can be concluded that when using the SCS-CN method with rainfall-runoff (HEC-1) model for small basins, the model was good in prediction of the surface runoff volumes with storm by storm analysis, taking in consideration the land use/land cover, soil type and AMC as important factors. Then the HEC-1 model could be generalized for the study area it could be used in order to suggest best conservation techniques considering the previous
Remarks	This thesis was submitted in partial fulfillment of the requirements for Master's degree in Land, Water, and Environment. Faculty of Graduate Studies, University of Jordan https://doi.org/10.2174/1874378101105010026