

## Abstract

Nowadays One of the problems of environmental degradation due to improper management of watersheds is human. Deforestation, introduction runoff rate increases, under a clear sky and on the other hand increased the risk of floods unpredictable increases. Computer software development and understanding of the governing processes provide the catchments take advantage of a variety of mathematical models. Since the results of some models with the actual values match the increased use of models in watershed studies. Land use changes in the watershed significant impact on the hydrological cycle and water resources of the basin is a result, therefore, key to understanding the effects of land use change on basin hydrologic responses to determine appropriate strategies for sustainable development of water resources in watersheds. Given that in recent years Latyan widely utilized agricultural land upstream of the dam is located, evidence suggests that lack of proper cultivation and use of excessive pesticide contaminated water entering the dam would be Latyan Log in muddy floods the dam will reduce the shelf life Latyan dam (dam 25 km northeast of rivers Latyan on Tehran Metropolis is located in Lavasan). In this regard, to estimate the flow, runoff and sediment yield that farmers in the Dam to Dam and influences have created in terms of land use, The present study aimed to calibrate and validate the dam basin Latyan SWAT hydrological model to simulate the flow of runoff and sediment load was carried out. In order to evaluate the model and sensitivity analysis of multiple indicators and variables were used SUFI2. Based on the results of the investigation, has 69451.65 hectares, equivalent to 694.516 ha basin and sub-basin and inter-basin 31 and 64 hydrological unit is Valml Which is the largest sub-basin of 8118.54 hectares and the number 2 unit has an area of 80.28 hectares and the response hydrological basins and the smallest number two hydrological response unit and is, Results for runoff model calibration coefficients R2, Br2, NS, respectively, 0/55, 0/55, 0/52 and 0/78 for validation, 0/49, 0/75. And also for the application of calibration coefficients in R2, Br2 , NS respectively with 0/77, 0/56, 0/77 and 0/67 respectively sediment in the validation stage 0/51, 0/65 Shows that the model validation process has been successful for runoff model calibration phase deposition has been more successful. Other results indicate that runoff and sediment load in the simulation model with acceptable performance. The results of the simulation showed that the use scenarios, soil and hydrological depth of runoff into the dam increased permeability is reduced and the amount of deposits increased Latyan The land use change scenarios simulated rain-fed agriculture and poor pasture and rangeland city to city and garden average runoff volume with reduced permeability, increased sediment load is reduced.

Keywords: land use change, SWAT2012, SUFI2, runoff, sediment, Jajrood



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