



**University of Zabol**

Management of graduate education  
Faculty of Water and Soil

Dissertation for master's degree  
in watershed science and engineering

**Title:**

Evaluation of small watershed structures in controlling sedimentation in Shurestan  
watershed in South Khorasan

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## **Abstract**

One of the most important measures taken to control sediments in watersheds is the mechanical operation of watersheds, which has been implemented in the past years in the country's watersheds, including Shurestan. In order to evaluate the role of small watershed structures in controlling the sedimentation of Shurestan watershed in South Khorasan, first, based on the information available in the archives of the General Directorate of Natural Resources, as well as numerous field visits and the facilities and capabilities of the ArcGIS program, the location of watershed structures has been determined. Then, by directly measuring the sediment volume of all structures, the amount of sediments deposited in different structures was investigated. The results of this research showed that the amount of erosion and sedimentation in the study area has good conditions compared to other areas in the country and the amount of erosion in this area is not high. It is significant, the location of the structure is effective in the amount of sediments and its texture, stone and mortar and gabion structures do not have a significant volume compared to earth dams due to its small reservoir, fine-grained trapped sediments and the amount of organic matter. Compared to the soil of pastures and even agricultural lands, it is significant.

**Keywords:** watershed structures, sediment deposition, soil erosion, ArcGIS program, MPSIAC model, Shurestan watershed