

Preparation of Erosion Susceptibility Map using Fuzzy Theory

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Erosion susceptibility describes the erosion to be expected without protection by plants and in absence of conservative practice. It is therefore a useful concept for planning and development where alternative land utilization types are considered.

In this work, erosion susceptibility map has been prepared for Delichai watershed in north part of Iran. For this purpose lithological map, geomorphologic units map, vegetation cover, and slope data layers were analyzed using fuzzy theory in a GIS environment.

The watershed was classified in four classes. The intense sustainability zone covers 3% of the study area and from geological point of view consists of Quaternary deposits and the slope is more than 25%. The low susceptibility zone covers 20% of the study area and is consists of limestone and dolomite. The slope in this zone is less than 12%.

In high erosion susceptibility zone soil conservation practice have been proposed.

The prepared erosion susceptibility map provides basic data that are useful in many development projects. The study also indicates the effectiveness of fuzzy theory to analyze qualitative data.