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E mail: Nhemmati@yahoo.com : : : *

Iran Research Institute of forest and Rangelands.Ekhtesasi. Ahmadi

- Modified Pacific Southwest Inter-Agency committee

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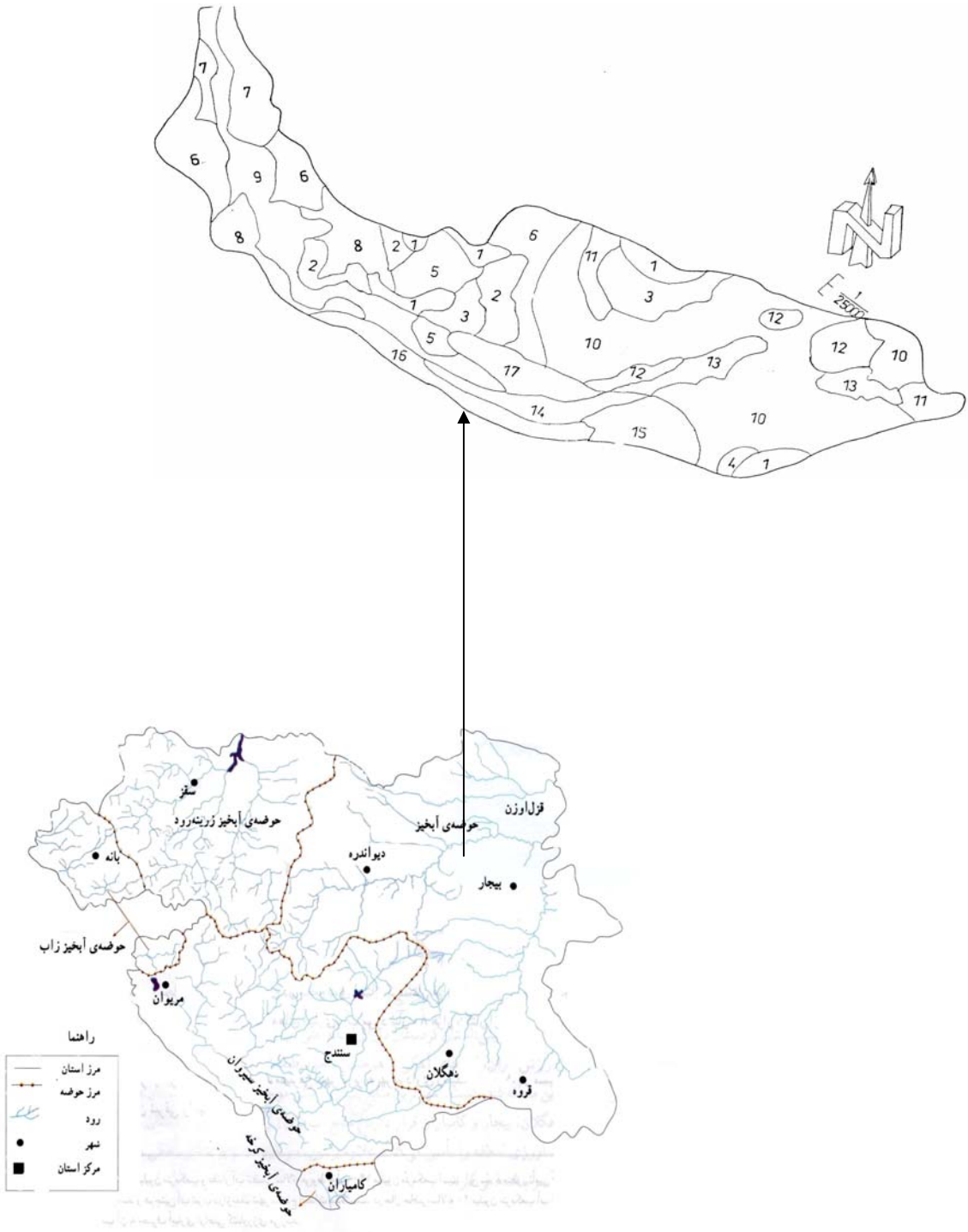
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نقشه‌ی حوضه‌های ابخیز استان کردستان

Estimation and comparison of water and wind erosion sedimentation potential by *MPSIAC* and *IRIFR.E.A* models in semi-arid regions (Case study: Nematabad watershed in Bijar)

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Abstract

Studying the influence of water erosion and wind erosion in the given watershed sediment yield and also the importance of estimation and comparison between water and wind erosion sedimentation yield potential and also the determining the efficiency of empirical methods such as IRIFER'S in the estimation of the amount of water and wind erosion are the objective of this research. In this study the homogeneous unit label (Ahmadi & Ekhtesasi method) is prepared and then according to the MPSIAC and IRIFER empirical methods, the amount of water and wind erosion is determined at each homogeneous unit. Furthermore, maps of land erodibility for water and wind erosion are prepared using modified MPSIAC and IRIFER'S models. Sedimentation potential was measured using the relation between sedimentation degree and the sediment production. In these researches, according to climatic and edaphic conditions of this studied region, it was found there is some inaccuracy with the factors like soil moisture and management of land use in order to estimate the wind erosion yield. If the IRIFER'S model is revised and improved it will be efficient in regions similar to the studied basin. It was also concluded that the improved MPSIAC, regarding direct measurements in the zone conducted simultaneous to this research, produces good estimates of water erosion yield. Finally, the research shows that IRIFER'S models quantitatively and quantitatively enjoys a reasonable precision. Quantitatively, the research shows wind erosion and water erosion contribute to decrease in the soil fertility by 22.6% and 77.4%, respectively. The total sediment amount in the studied regions is 9.7 ton/ha/yr, of which 2.2 ton/ha/yr is produced by wind erosion and 7.5 ton/ha/yr by water erosion.

Key words: Wind erosion, Water erosion, IRIFER E.A model, MPSIAC model, Sediment yield potential, Bijar, watershed, Empirical model.