

Abstract

Wind erosion is considered as one of the most important factors for lack of development in arid & semi-arid regions. For this reason identification of effective factors on wind erosion as well as determining the potential of wind erosion in an area is one of the main management initiatives that can be done to control & reduce the negative effects caused by this phenomenon. The case study in the present research is a part of Mokhtaran watershed located 40 km away from the west part of Sarbisheh Township, South Khorasan Province between 58°58' to 59°16' E & 32°22' to 32°47' N geographically. To determine & estimate the potential of wind erosion in agricultural & non- agricultural lands, experimental methods of IRIFER1, IRIFER2 and Arc GIS 9.3 software were applied. To achieve this objective topographic & geological maps of the study area, as well as Digital Elevation Model (with the resolution of 30 m), satellite & Google earth imageries & available information related to the objectives of this research were obtained from the data achieve of Jihad-e- Agriculture & Governate of South Khorasan. Following field visits to the study area the scope of application for each model (non-agricultural lands using IRIFER1 & agricultural lands using IRIFER2) was determined and for attaining more accuracy homogeneous units & geomorphology facies of the area were identified using the guidelines presented by Dr. Ahmadi. Following this step, the scores for the nine factors of each of the applied models was determined. Due to the importance of wind erosion, the potential of wind erosion & its intensity were specified & the wind erosion intensity maps were mapped finally. The results indicated that among agricultural lands, gardens & among non-agricultural lands, deposits facies from stream bed had the least intensity of wind erosion. Also dry lands & sandy lands had the most wind erosion intensity. Furthermore wind erosion intensity in agricultural lands is less than non- agricultural lands based on the results of this study.

Keyword: Wind Erosion Potential, IRIFR Model, Mokhtaran Plain



University of zabol
Graduate School
Department of Water and Soil
Rangeland and Watershed Group

**The Thesis Submitted to fulfill Degree of M.Sc
in the field of Watershed Management**

**Comparison of Wind Erosion Potential
in Agricultural and Non- Agricultural
Lands Using IRIFR Model in the
Mokhtaran Plain Sarbishe**

Supervisors:

Dr. A.Rohimoghadam

Dr. A. Pahlavanravi

Advisor:

H. M. Dehghani

By:

M. Gholami

October 2014