



Assessing the influence of plant species on wind erosion in arid regions: (a case study of the Sebri region of Sabzevar, Iran)

Hanieh Pourjavad¹, Alireza Rashki^{2*}, Mohsen Hosseinalizadeh³

Received: 12/3/2017

Accepted: 14/4/2017

Abstract

The effects of vegetation on wind erosion, especially in arid areas, are known, but few studies have assessed the quantitative impact of plant species. The aim of this study was to investigate the effects of plant species on wind erosion and deposits. Three experimental sites were selected in Sebri, Iran. Two sites contained two plant species, *Launaea spinosa* and *Lactuca serriola* of different sizes and the third was a control site. During a field survey in the summer of 2015, erosion pins were installed around the species that were read at 21-day intervals. The Tukey test was applied to the data sets gathered at the three sites as well as at different areas around the species. To investigate the spatial variability of the wind erosion map and the role of vegetation, the data was interpolated by the ordinary kriging. The results showed that the size, shape and height of the plant affects wind erosion. The estimated effective distances were 2.8 and 3.4 times the plant heights for *L. spinosa* and *L. serriola*, respectively. The amount of erosion on two sides of the species were estimated to be 0.74 and 1 times the width and 0.31 and 0.45 times the length of these species, respectively.

Keywords: Arid region, Wind Erosion, Plant species, Interpolation, Sabzevar.

1. MSc, Department of Desert zone managements, Ferdowsi university of Mashhad

2. Department of Desert and arid zones managements, Ferdowsi university of Mashhad, email: a.rashki@um.ac.ir.

3. Department of Desert zone managements, Gorgan university of agricultural sciences and natural resources