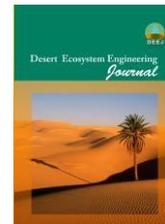




University of Kashan

Desert Ecosystem Engineering Journal

Journal homepage: <http://deej.kashanu.ac.ir>

Assessment of Desertification Potential Using IMDPA Model in Sistan Plain (Case Study: ZAHAK)

ZohrehHashemi^{1*}, Ahmad Pahlevanravi², Alireza Moghaddamnia³, Mohhamadreza Javadi⁴, Abbas Miri⁵

Received: Nov/01/2014

Accepted: Feb/04/2015

Abstract

Desertification phenomenon is not devoted to an especial climate, although its role in arid and semi-arid areas is clearer than other regions. In this research, four criterions of the wind erosion, soil, climate and vegetation cover have been considered for evaluating desertification potential and mapping of desertification intensity using to IMDPA model in ZAHAK Sistan region. Considering to evaluation of effective criterions in desertification of area in the IMDPA model, different indices of each criterion were evaluated and information layers of indices and criterion were provided. Results indicate that desertification intensity classified to information layer of wind erosion in two classes of the high (62205 ha) and very high (21309 ha), information layer of soil criteria in the two classes of the low (39121 ha) and moderate (44393 ha), information layer of climate in the one class very high (83514 ha), and data layer of vegetation cover criteria in the four classes of the low (24756 ha), moderate (5649 ha), high (14106 ha) ,and very high (39098 ha). Final map of the desertification intensity of area for information layers combination was provided using to geometric average. Evaluation results of the desertification potential of area indicate that 36.4 % equation 30405 hectare in the moderate level and 63.6 % equation 53109 hectare in the high level of desertification are included. Numerical value of criteria show climate criterion to numerical value 3.88 is the most effective factor in desertification intensity of area. Weighted average of desertification potential is related to severe class of desertification (2.74) in area of study.

Keywords: Desertification Potential, Desertification intensity, Wind erosion, IMDPA model, Sistan Plain.

1. Dedesertification Ms.c College of Natural Resources, University of Zabol Corresponding author Email: Hashemi_343@yahoo.com

2. Associate Professor College of Natural Resources, University of Zabol

3. Associate Professor College of Natural Resources, University of Zabol

4. Assistant Professor Islamic Azad university, Noor unit

5. Instructor College of Natural Resources, University of Zabol