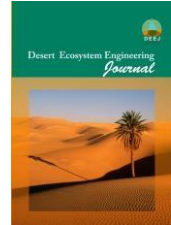




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Analysis of Nebka landscape in Negar plain of Bardsir

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Abstract

Plants, in arid and semi-arid regions, are leading to form the Nebka geosystem using the decrease of wind speed and the stabilization of quicksand, which they play an important role in desert greening and protection of the environment and natural resources. Therefore, identification of plant species adapted to the environmental conditions in format of Nebka efficiency assessment is very important for stabilizing the quicksand. Hence, this study tries to assess the Nebka efficiency in Negar plain of Bardsir using AHP and TOPSIS models comparatively, till we can be achieving an optimal recognition for the selection of the most suitable plant species to stabilize the quicksand. In this regard, at first the most important morphometric parameters of 241 Nebkas from *Tamarix macatensis*, *Calligonum comosum* and *Alhagi mannifera* species, including the height, base diameter, slope, and volume of Nebka and canopy cover and height of plant, were sampled via transect method. Then, Nebka morphometric parameters were assessed and prioritized using TOPSIS and AHP models. The results show that based on the AHP model, *Tamarix mascatensis* Nebka with the weight of 0.676, has the most importance and priority to the stabilization of sands. Also, *Calligonum comosum* with the weight of 0.269 has less importance than the *Tamarix mascatensis* and more importance than *Alhagi mannifera*. The results of TOPSIS model show that *Tamarix mascatensis* species, with relative proximity 1 to the ideal, have the highest priority in stabilizing the quicksand. Also, *Calligonum comosum* species with relative proximity 0.5 to the ideal is the most preferable after *Tamarix mascatensis* species. However, according to the results of the two models, *Tamarix mascatensis* and *Calligonum comosum* species can be suggested as a suitable species for stabilizing the quicksand via the development of Nebka geosystem in the study area.

Keywords: Nebka, Quicksand, Efficiency Assessment, TOPSIS, AHP, Negar Plain.

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