

Abstract

Restoration practices have important impact on soil surface and functional characteristic of rangelands. So, for the sustainable utilization of the rangelands, these changes should be recognized and managed. The study was conducted to recognized effect of restoration practices on rangelands health in Jiroft city. The model of land scape function analyze was used. Three sites include Enclosure (Jbalbarz), Farrow and crescent intake with grazing management (Anbarabad) was selected. Sampling was done using randomized systematic method along transects 50 and 100m and in each transect, patches (including vegetation) and inter patches (the distance between two patches) were identified. Then length and width of the patches and distance between them was measured. Five replicates of each patches and inter patches selected and 11 soil factors was assessed. In the studied sites and control sites functional indexes include infiltration, stability and nutrient cycling was calculated through sum of scores and change to percent values (using software LFA). The results showed that the effectiveness of management activities applied, rangeland functional indicators and characteristics have been changed, so that the enclosure site improved the range conditions. In addition, comparison between crescent intake and the control site showed that the indicators of rangeland health in ecological patches of the crescent intake was more than the control site. Comparison between farrow treatment and the control site revealed that the indicators of rangeland health in ecological patches of the farrow treatment was more than the control site. Kruskal-Wallis test of mean comparison (SPSS) showed significant difference in three functional indicators among all restoration practices ($p < 0.01$). Results of soil regression model indicated that parameters of soil surface resist, litter cover, orig and incorp, Soil surface roughness, canopy cover, slake test and deposited materials were the most sensitive parameters. Overall, restoration practices included enclosure, farrow and micro-catchment with grazing management in Jiroft city had got positive effects on rangeland health.

Keywords: Functional indexes, Ecosystem Function, Restoration Practices, Jiroft rangeland, Soil surface properties.



University of Zabol
Faculty of Water and Soil
Department of Range and Watershed Management

**The thesis submitted to fulfill Degree of M.Sc
in the field of Range Management**

**Effect of the improvement operations on
ecological indexes of rangeland health using
landscape function analysis method in Jiroft
rangelands**

Supervisor

Dr. M. Ebrahimi

Advisors

Dr. M. Ajourlo

M.Sc. N. Madadzadeh

By:

M. Arab Sarbizhan

October 2013