

## Abstract

Improper exploitation of mines affects soil quality adversely. In recent years, improper exploitation of mines in the Segzi region has produced variety of difficulties in the region. t and sand were measured. Landscape function analysis (LFA) was used to evaluate degradation in ecosystems. ere decreased in the affected areas by mining. However, those indices showed better conditions in the control site of gypsum mine Soil quality deg were selected around gypsum and clay mines, respResults showed that mining had adversely affected soil physical and length were randomly located in each site. Vegetation patch size, inter-patch distance, plant litter cover, vegetation cover, soil surface crusting, erosion rate and typedust particles are examples. The aim of this study radation, changes in natural habitats, reduction of surface and ground waters quality and quantity, and increasing damage to human health by n r each. Three transects with 50 m idth, plant density in 100 m<sup>2</sup> with PCQ method were measured to cover, soil surface relief and slake test. Only soil surface structural and functional aspects of natural terrestrial ecosystems in Segzi region and to compare degradation level in ecosystems around gypsum and clay mining operations. Two and one sites was to investigate the effect of gypsum and clay mining o, sediment material, soil surface conditions, soil stability against erosion, perennial plants cover, soil surface relief, in each site. Plant canopy cover, plant height and w chemical properties, vegetation and ecosystem structure and function in the Segzi region. Structural and functional indices` values of ecosystem w ectively, with a control site fo nature and vascular evaluate vegetation structure on each site. Soils were sampled in intra and inter patches at the depths of 0-15 and 15-30. Soil pH, EC, CaCo<sub>3</sub>, CaSo<sub>4</sub>, OM, clay, sil ( $\alpha = 0.05$ ). Changes in ecosystem structure and function was related ( $\alpha = 0.05$ ) to variations in soil physical and chemical properties. All indices were significantly different between the experimental sites of clay mine and control except plant litter plants were affected in the experimental sites of gypsum mine ( $\alpha = 0.05$ ). Changes in vegetation and soil are clues of increasing desertification trend in the region. If desertification over the threshold level of the region it will impose irreversible impairments on the Segzi region.

Key words : Segzi ecosystem -Mining- Landscape Function Analysis- desert ecosystems- Gypsum mines – Desertification



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**Gypsum and Clay mining impacts on  
desert ecosystems function using  
landscape function analysis (LFA)  
(case study: Segzi - Isfahan)**

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