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Multi-temporal changes detection of vegetation covers in Navah-Kooh semiarid forests using Remote Sensing (1975-2015)

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Abstract

Desertification process has always been led to destruction of vegetation cover and soil and water resources that can occur in different climatic conditions, the intensity of which depends on the natural conditions of the region. Due to the increase in destruction of vegetation as one of the most important consequences of desertification, monitoring the changes and assessment of their trends are essential for planning and resources management. Therefore, the aims of this study were to map the vegetation cover of Navah-Kooh semiarid forests in Sarpol-e-Zahab, and asseying the type and trend of changes using multi-temporal images of MSS, TM, ETM+ and OLI sensors during a 40-year period (1975-2015). In this regard, the NDVI and classification method were used to enhance the images. Also, the images difference and calculating the area of changes classes were used to determine the type and trend of changes. The results indicate that there are the greatest increasing changes in the rare to normal vegetation class (with area 13.881 km²) in the periods 1984-1987, and also in the non-vegetation to rare vegetation class (with area 10.789 km²) in the periods 1975-1984. Whiles, the maximum of decreasing changes were observed in the normal to non-vegetation class (with area 6.944 km²) in the periods 1992-1998, and also in the normal to rare vegetation class (with area 5.592 km²) in the periods 1987-1990. Overall, the results of changes detection have shown a decreasing trend in vegetation cover of the study area that could be said the main reasons of the destruction are the forests dryness by oak, droughts duration and road construction.

Keywords: Vegetation Cover, Monitoring, Changes Trend, Remote Sensing, NDVI, Navah Kooh.

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