Investigation of Land Sequence Trend of Anzali Wetland Using Landscape Ecology Approach

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Abstract

Anzali International Wetland is a natural and freshwater wetland located on the southwest coast of the Caspian Sea in Guilan province. The purpose of this study is to investigate the trend of the Anzali Wetland territorial sequence by examining the temporal changes of the landscape pattern and the driving forces of these changes. For this purpose, TM and OLI satellite images of 1994, 2008 and 2018 were used to produce land cover changes maps and to quantify and phenomena occurring in the land using NP, CA, PD, LPI and PLAND metrics. Then, DPSIR was used to provide appropriate solutions for wetland conservation, resuscitation and management. According to the results of this study from 1994 to 2018 at forest-agricultural class level with increasing NP and increasing CA creation phenomenon, at the level of wetland and wetland plants classes with decreasing NP and increasing CA aggregation phenomenon and due to metric decrease PLAND, PD, NP, CA and LPI for water class have witnessed the elimination and disappearance of this class. The driving forces identified in this research are agriculture, population growth, industry, and tourism, with many adverse effects including increase cultivation area of wetland margins, the introduction of domestic, industrial and agricultural wastewater into the wetland, reducing groundwater quality, Reduced habitat for aquatic species, birds. Investigation of changes in the landscape pattern indicates that natural sequences of human origin have occurred in the area under study, which has gradually become the dominant human sequence.

Keywords: Landscape metrics, Analytical model DPSIR, Anzali Wetland, Remote Sensing.