Zabol University
Faculty of Natural Resources
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Thesis for obtaining a master's degree in environmental science and engineering

Field: Environmental Science and Engineering - Land Assessment and Planning

Title: The effect of visual pollution on the aesthetic/spatial suitability of tourism in Golestan National Park

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Winter 1401

Abstract

Golestan National Park (the first national park in Iran) with an area of 91,895 hectares is located in the northeast of the country and on the border of the three provinces of Golestan, Semnan and North Khorasan.

Since the second half of the 20th century, the tourism industry has made great progress in the world, and natural areas can be used as tourist sites as well as areas that are very useful for human visual and mental relaxation. Improper use of natural areas causes damage to the environment, one of the damages that humans and especially tourists cause to the environment is visual pollution. The present study was conducted in Golestan National Park to evaluate the effect of visual pollution on the aesthetic quality of the landscape. First, a field visit was conducted to obtain and record the coordinates of points with visual pollution, and then a questionnaire survey of tourists present in Golestan National Park was conducted in order to investigate their opinions on the effect of visual pollution on the aesthetic quality of the landscape. 12 criteria with a positive effect on the aesthetic quality of the landscape and 3 criteria with a negative effect on it, which were identified and mapped as visual pollution. All map layers in the range of 0 to 255 were fuzzy standardized and then weighted by Analytical Hierarchy Process (AHP). Weighted linear combination (WLC) method was used to merge the layers to obtain the layer containing the continuous values of landscape beauty and visual pollution. Further, visual/aesthetic pollution was evaluated in three optimistic, intermediate (medium) and pessimistic scenarios. The evaluation of the opinion of tourists showed that none of the mentioned variables caused too much ugliness in the investigated area. Most of the responses of tourists to the factors causing visual pollution in the region were insignificant and very low. Therefore, the thresholds for determining the effect of visual pollution on aesthetic quality were considered to be 0, 25% and 50%, and in other words, in the optimistic scenario, visual pollution has no effect, and in the pessimistic scenario, with a weight of 50%, it has reduced the value of the aesthetic quality layer. The classification of the layers of the three mentioned scenarios into 5 layers based on the natural fracture method based on the data histogram showed that the first layer (scenes with less aesthetic quality) has the highest extent compared to the other layers. This floor occupies 48.85%, 51.34%, and 52.4% of the total area in the optimistic, average, and pessimistic scenarios, respectively, which indicates the

increase in the area of the floor with low aesthetic quality due to visual pollution. The fifth floor (views with the highest aesthetic quality) in the optimistic, average and pessimistic scenarios occupied 8.55%, 7.77% and 7.35% of the total area respectively, which is a small difference considering the small. The area of the polluted points that have the highest weight (0.49) in producing the visual pollution layer can be justified. Of course, it should be mentioned that this floor has the highest aesthetic value and the loss of these values cannot be ignored. The loss of the values of this class was obtained in the average scenario and thus, based on the average values of 1.69 and 2.39, and the range of values of this class in the optimistic scenario was from 81 to 140 to 46 to 133 and 5, respectively. It decreased from 7.5 to 132.5 in two medium and pessimistic scenarios. These results, taking into account the range of tourists' opinions from optimistic to pessimism, can be of interest to decision makers in locating and designing recreation zones of Golestan National Park.

Keywords: Criteria, Visitors, Extensive and Centralized Recreation Area, Environmental Management, Vandalism