Recreation impact research in Turkish Mediterranean; Studies in Olimpos-Beydağları National Park

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Abstract

Recreation is a pleasant activity that people realise as a function of enjoyment, relaxation and refreshing themselves. Recreational activities often take place in natural settings and could create various impacts on the natural environment. Impact is defined as an undesirable change and even the most careful visitor can cause various forms of damage such as soil compaction, alteration of plant cover, disturbance of fauna etc. On the other hand the quality of recreation activity highly depends on the integrity and naturalness of the recreation settings.

Antalya is the most important tourism site in Turkey and Olimpos-Beydağları National Park serves a great contribution to the tourism potential of the region and is widely visited due to its rich diversity in natural features and recreational facilities since its establishment in 1972. However there is no detailed study on the impacts of recreational activities. The aim of this study is to investigate the impact of recreational activities in Turkish Mediterranean in case of Olimpos-Beydağları National Park in Antalya region. Vegetation and soil characteristics were chosen as impact indicators and recreation impacts were examined in picnic sites and hiking trails.

Since trampling impact has been diverse and severe, vegetation and soil response to trampling can be characterised by different ways. Impacts on vegetation were analysed according to Kutiel et al. (1999) and Whinam & Chilcott (2003) while impacts on soil were assessed by Kutiel et al. (1999) and Monz et al. (2000). Relevantly sampling design was based on Cole and Monz (2004) in picnic sites and Hall and Kuss (1989), Marion & Leung (1997), Kutiel et al.(1999), Whinam & Chilcott (2003) in hiking trails. Based on two methodological approaches, impacts were measured by the comparison of used and unused (control) sites.

Information on the number of plant species, overall percentage of vegetation cover, plant height, relative percentage of each species and bare ground were collected for vegetation analysis. Attributes such as soil compaction level, soil moisture and organic matter content were evaluated for the soil analyses. Information on visitor numbers was available for picnic sites but not existing for the hiking trails. In order to relate impact results with user density and to produce recommendations for carrying capacities, visitor monitoring studies were carried out in the trails and crowding studies both in picnic and beach sites and hiking trails according to Manning & Freimund (2004) and Manning (2007).

Impacts on Vegetation

Study results showed that trampling impacts on species richness, vegetation cover and height was already evident by being higher on controls and lower both in picnic sites and trails. Due to characteristics of the Mediterranean climate there were seasonal differences. Species richness and vegetation cover were measured highest in spring, whereas vegetation height was measured in summer.

Impacts on Soil

Trampling impacts on soil was rather diverse in picnic sites and trails. Soil moisture levels were very similar in used and unused plots in trails whereas soil compaction level was higher in used plots. On the other hand soil moisture and compaction levels were higher in used plots in picnic sites. However, organic matter content was found higher on unused plots both in picnic sites and hiking trials as expected due to trampling and correspondingly soil compaction in the trails.

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Estimating Visitor Flows in Hiking Trails

Two approaches were tested to estimate visitor flows in hiking trails. The first approach was using a visitor monitoring board - a kind of self-registration notice board that asking visitors to write the number of people in their group that using the trial. The second approach was using a wild-view photo camera sensitive to movement. Visitor numbers provided by the self registration boards were generally higher than photo camera records in all trails. Comparing this two approaches, the data on visitor flows maintained by photo camera with the details of date, hour and second were more efficient than the data received by visitor monitoring board based on the solidity of the information provided by the visitors.

Crowding Studies for Picnic - Beach Sites and Hiking Trails

Crowding studies showed that number of people that visitors like to see simultaneously changes between 15 to 45 people in beach sites and 12 to 48 people in picnic sites. On the other hand, visitors' preference for crowding in hiking trails was between 0 to 4 people that they would like see at once.
Understanding the nature of the recreation impacts enables us to set up principles for management plan towards a better environmental protection and maintaining recreation quality in the national park. With regards to study results and extensive size, management plans for Olimpos-Beydağları National Park need to be both site specific and activity specific. Hereby based on the visual assessment of different levels of users' densities acceptable crowding capacities can be also an effective tool in visitor management initiatives in the national park.

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