Car traffic in a national park: visitors' perceptions and attitudes

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Introduction

National parks provide important yet sometimes competing landscape functions such as the protection of natural resources as well as recreation opportunities. As visits to these areas continue to increase or at least be maintained at a high level, demand for access and use can damage the ecological integrity of sensitive environments, reduce the quality of visitor experiences, and generate conflicts among stakeholders regarding appropriate management responses. A sustainable tourism concept requires area managers to provide opportunities for high quality visitor experiences and to preserve natural environments protected from negative tourism-associated resource impacts (Cahill et al. 2008). Impacts on the experience quality between recreationists employing different recreation activities in protected areas are often asymmetrical (Manning 1999). Visitors may feel disturbed because the social goal and behaviour of those encountered interfere with their own motivations. Research has found potential conflicting encounters between different visitor groups (Jacob and Schreyer 1980). Human elements in a predominantly natural landscape have been found to be more acceptable if the components are perceived to fit into the settings (Behan et al. 2001). In these environments individuals are expected to be disturbed by different kinds of noise (Marin et al. 2011). Research findings showed that human-caused noise detracts from the quality of the visitor experience in natural areas. In this context, it is expected that an interaction of different types of recreation activities (e.g. motorised visitors and hikers) are the sources of potential user conflicts. For example, studies in Scandinavia have demonstrated that when skiers encountered a snowmobile their experience quality was significantly reduced (Vittersø et al. 2004). Car-based tourism in national parks is an example that is expected to degrade the area's naturalness, create conflicts between different user groups and interfere with existing types of recreational uses (Tarpinian 2010). Against this background, the study evaluates (a) visitors' perceptions and of area density and (b) attitudes towards car traffic in a popular coastal national park in Germany by applying an on-site survey. The trail conditions were depicted by digitally manipulated images, displaying combinations of different use levels with various visitor numbers and presence of car traffic on trail.

Study area and methods

A case study design is applied in a popular coastal national park in Germany, namely the Wadden Sea National Park to evaluate how visitor characteristics such as experience, motive and type of activity may influence the evaluation of recreation conditions. In an on-site visitor survey (N=509), we used questionnaires in conjunction with a set of digitally modified images that showed a range of density levels of car traffic on a trail to an island. The empirical data has been collected on the Hamburger Hallig, located within national park territory. The whole area is part of Zone 1 ("Wild area with no public access") of the National Park and an important breading area and resting ground for seabirds. The Hallig is approximately 50 ha in area and is connected with the mainland by a 3.5 km causeway, which is open for car traffic. The island (which is partly excluded from the prohibition of access) can be reached easily from the mainland and constitutes an important destination for day trips. The main tourist activities during the season are hiking, cycling, bathing and bird-watching. The questionnaire was developed to obtain quantitative data about the sample population's characteristics and attitudes towards social conditions on the trail and potential conflicts between hikers, cyclists and car traffic.

Study results and discussion

Results show that the presence or absence of a car in the scenario has the greatest influence on overall scenario ratings. Overall, respondents seem to prefer low use levels and the absence of car traffic on the trail to Hamburger Hallig. The crowding ratings strongly increase when use level is high and car traffic is combined in the scenario. An implication of study findings is that there is no obvious inter-visitor conflict between hikers and cyclist on trail. The presence of car traffic was the most influential attribute for all respondents and influenced conflict perception remarkably. A comparison of visitor groups shows that first time visitors and cyclists are less tolerant of the presence of cars than frequent visitors and hikers. The study results indicate that the presence of cars on the trail to the Hallig seems to negatively affect non-motorised visitors' ability to attain recreational benefits. Most of the visitors expect a nature experience and annoyance from car traffic may not be part of their anticipated experience. Limitations of our study are that (a) some salient attributes have been ignored and thus not been included in the study design and (b) the local context within which the experiment took place. Further research might include the attitude of motorised visitors and their acceptance of potential management measures such as a strict use limit for car traffic on the trail. In addition, computer animated scenario presentations could be applied to integrate motion-related factors (Reichard and Arnberger 2010). From a management perspective, social carrying capacity of the study area can be described as an asymmetrical conflict of interest between motorised and non-motorised visitors rather than as an absolute conflict over the number of visitors to the area.

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