The dilemma of recreational use versus nature protection – Responses from National Park authorities in Austria, Germany and Switzerland

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Abstract — National Parks in Central Europe, which attract millions of visitors annually, are being threatened by a wide variety of negative impacts. In this highly populated region, we find numerous hazards caused by infrastructure, agriculture and tourism. For this reason, preserving the environment is the main goal of the National park authorities. As visitor numbers increase, there is a consequential increase in environmental impacts and conflicts between different visitor groups. In order to balance tourism and conservation and to reduce and minimize negative effects on the ecosystem, authorities implement visitor management strategies. These require specified knowledge about visitor flows, visitor numbers and the main activities undertaken by visitors. Over the past years most european National Parks have adopted periodical visitor monitoring, to gather data about visitor numbers and characteristics. There exists however differences in quality and extent of monitoring programs. With this in mind, we surveyed a number of National Park authorities to gauge their perception of recreation use level, different National Park activities and the application of management tools in the parks. Overall we asked 21 authorities in Austria, Germany and Switzerland to complete a questionnaire which includes questions about current and expected visitor numbers, monitoring of the current recreation use and impacts, measures to control the recreational use, conflicts between nature and tourism and cooperation with other stakeholders in the area. The result of the survey suggests that most of the authorities (81%) simply estimate the recreational use in national park. More than half of authorities anticipate an increase of visitor numbers (especially in National Parks founded in the late 1990s) and none expect that numbers will decrease. They report various suitable protective measures that are in operation and accepted by the National Park visitors. All in all, the authorities consider any negative environmental impacts of visitor activities to be moderate.

Index Terms — national park tourism, recreation management, visitor activities, monitoring

1 Introduction

Pristine nature is the basis for most recreational activities and also the main motive for people to visit National Parks. These areas contain natural and cultural resources of great importance to the national as well as international community. Protected areas such as national parks offer a great variety of opportunities for tourism and recreational use. Socio-demographic changes and new trends in outdoor tourism, especially in sport activities, are leading to an increasing and constantly changing demand for areas which are suitable for a wide range of recreational activities [1]. However large visitor numbers are also a cause of ecological degradation. Too many visitors can cause unacceptable impacts on fragile natural and cultural resources, and can also cause conges-

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tion and other social impacts that degrade the quality of the visitor experience [2]. In Central Europe, National Parks tend to be located close to areas of high population density and sophisticated management plans are vital to prevent their overuse.

The dilemma of natural and landscape protection versus recreational use in these areas is the subject of complex debate. Explicit research studies have evaluated concepts of visitor monitoring and management, from both a theoretical and practical viewpoint. Our study explores the problem of visitor management from a management point of view, in order to provide a comprehensive picture of the on-site situation in National Park management.

2 MATERIALS AND METHODOLOGY

2.1 National Parks in Europe

There are almost 400 [3] national parks in Europe, offering visitors a wide variety of scenery. These range from alpine landscape, karst formations, lakes, rivers, tidal areas, islands, forests, fenlands, grasslands, and steppes, from the North Cape in Norway to Sicily. The largest concentration of national parks (95 national parks) is located in Scandinavia, where the first European national park was founded in 1909 in Sweden (Sarek National Park). In Central Europe (Austria, Germany and Switzerland) 23 National Parks cover an area from the Wadden Sea in the north of Germany to the Alpine National Parks in Austria and Switzerland. Legislation in the parks highlight four main goals: nature conversation, environmental education, recreation and research. To fulfil their conservation and recreation objectives, managers of protected areas have an array of strategies to manage both social and ecological impacts. Manning [4] describes management approaches as basic conceptual strategies to management that relate to achievement of desirable objectives. Management actions can range from the indirect, such as visitor education to more direct measures, such as use limit strategies. In recreation literature, indirect management practices are favoured due to their feasibility [4]. On the other hand the adoption of direct or indirect management practices depend on the nature and extent of negative impact.

2.2 Visitor Monitoring

National Park authorities have to carefully identify those strategies and measures that are most beneficial and feasible, in order to balance the conservation of the protected areas with recreational use. Their judgment should be based on monitored data in order to produce appropriate and comprehensible management actions. Visitor monitoring should consist of systematic and periodical measuring of human activity, to identify violation of natural resources or social conditions. Data sampling should be repeatable and replicable in nature, to enable comparison over different time intervals [5]. Collected data could be used for proper recreation and visitor management, and for prognoses of future development and needs of tourism marketing. Several methods of visitor monitoring in recreation areas are currently in operation. Practiced methods vary from quantitative, such as video observation and counting devices to qualitative approaches, like visitor surveys [6], [7].

2.3 Survey

With this in mind, in 2006 we surveyed a number of National Park authorities to gauge their perception of recreation use level, different national park activities and the application of management tools in the parks. Overall, 22 authorities in Austria, Germany and Switzerland were asked to complete a questionnaire of which 21 responded. A set of 18 open and closed questions based five main subjects were posed:

1. Estimation of current and expected visitor numbers
2. Conflict potential between recreational activities and nature conversation
3. Adoption of measures to control recrea-

tional use
4. Cooperation with relevant stakeholders

The data obtained has been statistically evaluated and the results are interpreted in terms of management practice.

3 Study finfings

3.1 Current and expected visitor numbers

Most of the National Park authorities (17 out of 21) estimate visitor numbers ranging from 20.000 to 2.500.000 visitors. To some extent they just count participants of national park activities (i.e. guided walks) or visitors of park attractions. The quality of investigation is varied and is mainly based on direct observations. Almost half of the authorities expect an increase in visitor numbers and none of them expect a decrease. National Parks founded after 1999 assume an increase in recreational use, while the more established parks expect a continuation in current visitor numbers.

3.2 Conflict potential

The most relevant recreational activities undertaken in the National Parks are walking, hiking, nature observation, visiting nature attractions or information centres and cycling.

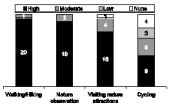

Fig. 1 Relevance of recreation activities (N=21)

Overall, the effect of these main activities on the environment is on a low or moderate level. Authorities rate the negative impacts of walking and hiking from low to moderate. It is in the area of outdoor sports that high conflict potentials between conservation and recreational activities exist. Popular recreational activities like canoeing and mountain biking, which are linked to a specific natural habitat are deemed to cause conflicts. Three authorities highlight mountain biking (performed in 17 NP) and canoeing (performed in 15 NP) as the main causes for interference with conservation goals.

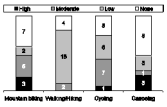

Fig. 2 Interference with conservation goals

Both activities have a high relevance in three protected areas only and are a specific problem in low mountain range and flood plain National Parks. The more popular activities of walking/hiking and cycling are rated as recreational activities with a low level of interference. Overall 13 authorities feel that the relationship between recreation and conservation will stay on the same conflict level. Two of them believe in a relaxation, but six administrations think that current conflict levels will increase. When asked for the reasons six arguments are mentioned: Increase in visitor numbers and nature sport activities, expansion of recreational use, development of infrastructure, loss of natural habitats, and decrease of environmental consciousness.

3.3 Adoption of measures

Various measures to control and manage recreational use are implemented in the National Parks of Central Europe. The most popular management tool is the adoption of visitor information systems, that inform visitors about the environment and regulations within the area. The majority of the parks focus on general management of visitor flows, employment of National Park Rangers and a ban on certain activities with obvious negative impacts on the environment. Very strict and highly controversial measures, like the limitation of visitor numbers are not very popular and only used by three National Park authorities. When asked about the effectiveness of applied measures to maintain the quality of

the environment in the protected areas, 16 authorities highlighted “National Park Rangers” as being of particular high importance while 12 identified the “Prohibition of access to sensitive areas”. Also the obligation to stay on designated trails, as well as visitor information systems, are evaluated as high to moderately effective.

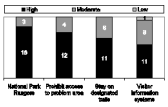

Fig. 3 Effectiveness of applied measures

3.4 Cooperation between stakeholders

Conflict resolution along with mistrust between local stakeholders and authorities, is a mayor challenge in long-term policy development. When asked about relevant stakeholders involvement in the development of visitor management strategies, tourism associations and nature conservation organisations are the most popular means of participation. Tourism companies, local authorities and other sector agencies were also mentioned. The surveyed authorities indicate common staff briefings, working groups, and periodic meetings of stakeholders as the main forms of cooperation. On the other hand less than half cooperate with sport associations and voluntary agreements exist in only seven of the parks that responded.

4 DISCUSSION

As previously mentioned, visitor monitoring is one of the basic tasks of National Park authorities, particularly with regard to the assessment of visitor impacts on natural resources, the estimation of visitor numbers and future trends base on reliable data acquisition [8]. The results of our survey suggest a great uncertainty on the part of authorities, in appropriate observation strategies to estimate visitor numbers. Suitable methods for identifying visitor-use characteristics are in the minority. These include type and size of user groups and estimations of the total recreational use in an area. The result of the survey also shows that mechanical or electronical counting devices are not in use in most of the surveyed National Park, which is an explanation for the weak visitor numbers quoted. Most of the data collected is based on active visitors who participate activities organised by the National Park authorities or use visitor centres. The characteristics and use patterns of passive visitors are not examined. Hennig and Laube [9] established that monitoring of passive visitors simply not exists in most of the National Parks. Only six authorities believed that an increase in visitor numbers would be the cause of future detrimental environmental impacts. It is surprising that few authorities foresee an increase in visitor numbers having a detrimental effect on the natural resources of their areas.

On the other hand without reliable data authorities can only speculate on the impact level. If we divide national parks by age, it is obvious that more recently established National Parks (established after 1999) assume an increase of visitor numbers. Some of them (i.e. Thayatal in Austria and Kellerwald-Edersee in Germany) are not as generally well known and consequently less visited. Recreational use is not comparable with traditional recreation areas like the Wadden Sea, where tourism has been a fact of life for more than 100 years. Conflicts between recreation and conservation goals seem to be moderate to low. In general outdoor sports activities are widely spread in the National Parks but just some activities are rated as a reason for negative impacts on the environment. As is common to other studies, canoeing and mountain biking are mentioned as “problem activity”. The findings of our survey do not differ greatly from previous studies. Garbe et al. [10] identify improper behaviour and neglect of regulations as the main cause

for conflict. They surveyed more than 400 stakeholders in recreational areas in Germany to analyse conflicts between recreation and conservation goals of Natura-2000 areas. Both of them are also seen as a major problem by the National Park authorities surveyed. A complex monitoring of visitor flows and impacts fail in most National Parks , due to the multiplicity of entrances to the areas and the high costs of such programs. The irregular data collection reflect a low level of funding and insufficiencies in stuff numbers. Visitor management in Central Europe already includes many different measures, but evaluation of its effectiveness is rare. Cooperation and a strong partnership between wide ranges of stakeholders, is necessary to take both conservation and commercial interests into account. Integrated approaches help to solve traditional conflicts between both interests. In Central Europe we find several examples of successful cooperation between different stakeholders, like voluntary agreements between authorities and canoe associations in Germany [11].

5 Conclusion

The successful development of tourism in a region is bound by several factors. Increased visitor arrivals could generate economic benefits for local communities but also endanger natural resources and the quality of the visitor's experience. Ecological and social carrying capacities need to be considered when developing tourism strategies and objectives. National Park authorities in Central Europe are faced with high and ever increasing visitor use. Appropriate data collection can be helpful for both resource and visitor management. Based on our results, we recommend a systematic monitoring of recreational use and aswell as measures that both deemed to be suitable and effective.

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