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Jacket picture: Sandra Wall Reinius
Preface

I have held on to several of the initial ideas behind this thesis, but along the journey new thoughts and encounters have taken me onto different tracks as well. The journey does not end here. Given that this licentiate thesis includes an unfinished draft of an article and thoughts about further research within the overall PhD thesis, I have opened up for discussions and comments that will help me reach the end of the journey.

I would like to acknowledge a number of people who made this licentiate thesis possible. I would like to express my appreciation for support and valuable comments by Peter Fredman, Annika Dahlberg, Gunnel Forsberg, Anna Skarin, Lennart Bäck, Robert Pettersson, Malin Zillinger and Rosemarie Ankre. C. Michael Hall has been an important source of inspiration, thank you. Andrew Byerley improved my English. I am grateful to all of you who helped me to collect the data and put it in order, and thanks to Andreas Holmström for introducing me to the SPSS. I would also like to thank all the tourists in the Lapland Mountains who most kindly answered my questions. Of course no acknowledgement of mine would be complete without David, Adam and Samuel, who are always present and remind me of other things in the world.

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Östersund, January, 2006

Sandra Wall Reinius
Introduction

Tourism in natural settings (nature-based tourism) composes a growing share of the global tourism industry (Eagles 2001; Saarinen 2004). Nature-based tourism appears in several forms, and can be performed through various activities in many kinds of natural settings. Mountain regions and protected areas have long been important sites for nature-based tourism. Such places are often peripheral, characterised by natural and amenity-rich landscapes, and tourism is often encouraged in areas where significant changes have occurred in the social and economic structures (declining labour needs in mining, logging, and farming). When tourism and recreation are encouraged or supported, this is often based on the argument that there will be economic benefits to the local communities (Marsh 2000). The positive economic impacts that can follow from tourism development are, beyond new employment for managing the area, associated with the development of transportation, accommodation, recreational facilities and tourism businesses (Marsh 2000; Weiler & Seidl 2004; Hall 2006). While some protected areas may produce economic benefits, it should be emphasised that others have few facilities, services or products to offer, or have poor infrastructure and are thus difficult to access, and in some areas the visitors need to be very self-sufficient (Marsh 2000; Hall 2005). In some areas, expectations regarding tourism and recreation and its contribution to regional development are unrealistic. Tourism has been used as a mechanism that offers salvation from local economic crises (Hall & Boyd 2005), but not infrequently tourism has failed to benefit the local people.

Saarinen (2004) suggests that what we see and value as attractions in natural landscapes are cultural projections created by tourism and modernization in general. It seems like a constructionist perspective may be a useful approach when trying to understand the use of nature and the divergent meanings (subjective, emotional, and symbolic meanings) and values various stakeholders ascribe to a landscape. From that perspective, our ways of thinking about the natural world are shaped by our time, our place, and our culture. That is, ideas of nature never exist outside a cultural context, and the meanings we assign to nature reflect that context (Cronon 1995). Natural settings are marked off, interpreted, museumised and labelled for the purposes of visitors and society (MacCannell 1992; Mels 1999; Saarinen 2004; Sandell 2005). Labelled natural settings such as national parks and other protected areas are human products and thus include ideas about nature. Our ideas about nature affect our use of the landscape and thus also how natural resources and cultural heritage are managed. The idea, or image, of nature in peripheral areas is associated with being clean, pristine, and wild, which then provides opportunities for tourism and recreation, education, adventure and enjoyment (Johnston 1995). Saarinen (2005) states that these created images affect nature politics and touristic demands.

One of the fundamental questions tourism researchers seek to answerer is: Why do tourists travel? To answer this question one must consider the factors that condition their travel behaviour, what influences their choice of destination and what activities are undertaken. Issues including tourist behaviour, motivation, values and experiences will provide a better understanding of what the tourism demand appears to be like. Various authors have discussed tourism demand in relation to protected areas, not least because many countries promote their national parks as “must-see attraction” (Boyd 2004). Weiler and Seidl (2004) have discussed how the designation “protected area” increases interest in these sites as tourist destinations. Furthermore, Dharmaratne et al. (2000) have indicated that for tourists, the fact that an area is protected is an important factor in their choice of destination. However, the extent to which designations actually influence choice of destination and what the tourism demand really looks like in relation to protected areas have not yet been extensively empirically examined.
Tourist demand must also be seen in the wider context of positive and negative impacts on the environment, the economy and the culture of the places visited. Tourists are hardly ever the only users of a landscape and in regions where the landscape is used for several purposes conflicts may arise due to e.g. competition over the resources. Management of landscapes should ideally include different interests, e.g. nature preservation, cultural heritage and economic development (in the context of the Swedish Lapland Mountains, this can be exemplified by national parks, Sami heritage, reindeer herding and tourism). To balance the different human uses of resources we need to have knowledge about the land-users and their interaction in the landscape. In Sweden, there is a great need for information concerning recreation and tourism in the mountain regions (SOU 1995:100; Heberlein et al. 2002). Vuorio (2003) emphasis that data on tourism and outdoor recreation is needed in many phases of the planning process: environmental impact assessment, spatial planning of and for utilisation and management of the area, and the implementation of the plan for the area. The effects and impacts of tourism, as well as tourists’ relations to other land-users, can be recognised through studies of tourists’ experiences, attitudes and behaviour, which contribute important information in the management of the landscape.

**Purpose and outline of the thesis**

This thesis deals with the classical dilemma concerning the use and preservation of resources. Within this broad field, this thesis contributes with empirical information about one of the main users, the tourists, in protected areas in the Nordic periphery. The main objective is to investigate tourism and recreation in order to enhance landscape management.

- **One purpose of this thesis is to explore and analyse the interactions between tourism and other land-uses, particularly reindeer herding.** The focal point is to analyse the interaction between hikers and reindeer both as an attraction, where the hypothesis is that reindeer are worth seeing and significantly contribute to the visitors’ experience, as well as interaction as a problem. The latter relates to the hypothesis that the human-reindeer interaction constitutes a conflict of interest between land-users, i.e. where the hikers disturb the reindeer. Tourism interactions are examined in two studies, which are presented in Paper I and Paper II.

- **Another purpose of this thesis is to analyse the significance of protected areas in tourism, particularly the effect of protected areas on tourists’ travel behaviour and inclination to visit specific sites.** The importance of different protection status (national parks, biosphere reserves and world heritage sites) and their function as touristic markers is discussed in Paper III.

This thesis comprises this introductory section, the aforementioned three papers and a number of appendices. The introductory section presents the purpose and demarcations of the thesis. It also contains a brief account of some basic issues in tourism, i.e. nature-based tourism. A conceptual overview of the concept of nature and wilderness is included in the introductory section as well as a discussion about nature protection. Furthermore, a description of the study area is given, and the methods are presented. The introductory section ends with a concluding discussion and some proposals for further research.

In the three papers, empirical results from visitor surveys are analysed. **Paper I**, “Recreation at Tree Line and Interactions with Other Land-use Activities”, is written together with Anne Tolvanen¹, Bruce Forbes² and Yrjö Norokorpi³. It summarises results concerning the impacts

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of recreation and tourism in mountain birch ecosystems, and describes the interaction between recreation and tourism and other land-use activities, such as nature conservation, forestry and traditional livelihoods (i.e. reindeer herding). The author of this thesis is responsible for the parts of this paper regarding the conditions in Sweden and for the empirical work carried out in the Lake Torne Area. The paper is published as a book chapter in *Plant Ecology, Herbivory, and Human Impact in Nordic Mountain Birch Forests*, edited by Wielgolaski, F. E., Karlsson, P. S., Neuvonen, D. & Thannheiser, D., and published in the series of Ecological Studies, Springer-Verlag, Berlin Heidelberg, 2005, Vol. 180, pp. 203-217.

**Paper II**, “Human – Reindeer Interactions: Reindeer as Attraction – Hikers as Disturbance?”, describes and analyses the interaction between hikers and reindeer in the Swedish World Heritage Site of Laponia. The focal point of the paper concerns the two dimensions of interaction, which can be identified as attraction and conflict. In relation to this, management actions are discussed. The paper is solely written by the author of this thesis. Paper II is a manuscript and still a work in progress.

**Paper III**, “Exploring Protected Areas as Tourist Attractions”, is co-authored with Peter Fredman. It presents results from three surveys conducted in the Lake Torne Area, the World Heritage Site of Laponia, and the Fulufjället National Park, and discusses the significance of area protection on tourists’ travel behaviour and inclination to visit specific sites. The paper examines protected areas in relation to different concepts in a tourist attraction system. The first author (author of this thesis) has been responsible for the theoretical parts of the paper and the data collection in the Lake Torne Biosphere Reserve and the Laponian World Heritage Site. The second author (Peter Fredman) has been responsible for the statistical analyses and the data collection in Fulufjället. The paper has been submitted (December 2005) to the *Annals of Tourism Research*.

The appendices include a map over the study area, the questionnaire administered to the visitors in the Lake Torne Area (used in Paper I and III), the registration card and the questionnaire administered to the Laponian visitors (used in Paper II and III). The last appendix shows the interview questions used to study hikers in Laponia (Paper II).

**Demarcations**

Before going on with a closer look at the central themes and concepts in this thesis, some limits must be set. Within the multifaceted field of tourism research, the focus of this thesis is on the tourist (his or her motivation, experiences, activities and interaction). This thesis is based on data about visitors to the Nordic periphery, particularly the mountainous part of Swedish Lapland. The word *periphery* refers to peripheral areas, which are characterised by e.g. geographical remoteness from mass markets, a lack of effective political and economic control over decisions affecting their well-being, and out-migrations flows (see further Hall & Boyd 2005).

This thesis concentrates on the dominant summer activity, backcountry hiking, among visitors in particularly protected areas within the studied region. Less attention is given to other activities related to nature-based tourism, such as cross-country skiing or snowmobiling. Tourist activities involving hunting and fishing are not included in the thesis for the reason that these activities are regulated within protected areas. Empirical data have been collected in

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3 Finnish Forest and Park Service, Finland
4 European Tourism Research Institute, Department of Social Sciences, Mid-Sweden University, Sweden
2002, 2003 and 2005, and a brief background of the history of tourism in the Lapland Mountains is given in the introductory section.

Other users of the landscape in the Lapland Mountains, except for the tourists and the tourism sector, are the Sami people, through their cultural heritage and reindeer herding; nature conservation (nature reserves, national parks etc.); nature supervision (including e.g. inventory of predators, water conditions etc., and establishments for outdoor recreation); and planning and management authorities. These land-users are partly included in the thesis. The transportation sector (actors representing the railway, the roads and the aircraft) is given less attention. Other sectors of the society (such as settlements and hydroelectric power) are present in the Lapland Mountains, but not within the protected areas.

In this thesis, management refers to management of the resources in a landscape with the objective of taking the interests of different land-users into consideration. Land use planning in Sweden is defined as a municipal responsibility. Environmental legislation of nature conservation is of national interest but is administrated and managed by the regional County Administrative Board (Vuorio 2003; Eknert 2005). Landscape management has been dominated by natural sciences in the environmental discourse, but humanistic and social landscape research is important in many different aspects of landscape management (Saltzman & Stenseke 2004). Landscape planning and management requires information from both social and natural sciences, for example regarding information on environmental impacts (wear and disturbance), the level of use of the resources, baseline data regarding preservation, demands from outdoor life activities (tourism and recreation) and changes in different industries, as well as on status indications for handling resource conflicts. Management actions concerning the resources, including tourism and recreation management, can take many different forms, above all depending on trends and on the specific objectives (Manning 1999; Vuorio 2003).

**Nature-based tourism: attractions, impacts and conflicts**

The whole tourism system can be simplified to include a consumer side (demand from tourists), a producer side (tourism supply), and the movement between the generating areas (the tourists’ homes) and the host areas (the visited sites or destinations). The channels of transport (air, land and water transport) and communication carry the tourists to and from the tourist destination. Figure 1 proposes that tourism lies within physical, technological, social, cultural, economic, and political environments. The tourist generating areas include elements of the tourism sector, e.g. ticket selling, travel agents, and the marketing and promotional activities conducted by the competing destination regions. The destination includes e.g. accommodation, services, attractions and events (Leiper 1990a; Witt & Moutinho 1994).
In addition to defining tourism in relation to its consumption and production, tourism is increasingly being interpreted as one dimension of temporary mobility and circulation (Bell & Ward 2000; Hall & Williams 2002). Bell and Ward (2000:88) define temporary mobility as a form of “territorial movement which does not represent a permanent, or lasting, change of usual residence”, and thus implies a temporary redistribution of population from one region to another. However, temporary moves are repetitive events of variable duration, and the absence from home can last from a few hours to weeks or months, and they can be either production-related e.g. business travels, or consumption-related e.g. vacations (Bell & Ward 2000).

Tourism can be defined in many ways depending on the purpose, e.g. if tourism is to be identified in a certain research context or used in tourism statistics (Pearce & Butler 1999; Bell & Ward 2000; Hall & Page 2002; Hall & Williams 2002; Williams 2003). The definition formulated already 25 years ago by Burkart and Medlik (1981) still functions as a kind of standard definition of the concept of tourism: tourism is a temporary movement of people from their normal place, away from the place of residence and work. The purpose of the movement, or travel, and visits at one or several sites is for vacational, personal or business reasons, but not for employment at the visited places.

Tourism in natural settings and tourism activities based upon the use of natural resources can be called nature-based tourism. Nature-based tourism has become known as an umbrella label for more specific subtypes of tourism. With nature-based tourism, Hall and Boyd (2005) include different forms of tourism in natural settings, as well as forms of tourism that focus on specific elements of the natural environment (e.g. safari or wildlife tourism). Nature-based tourism is related to leisure activities and closely associated with outdoor recreation. Outdoor recreation has been defined as leisure activities undertaken in the outdoors often in the participants’ immediate region, but not by necessity, and it is usually not commercialised (Naturvårdsverket 2005c). As recreation becomes increasingly commercialised, the distinction between recreation and tourism is not always clear (Hall & Page 2002).

Accessibility (transportation routes and infrastructure) to nature in peripheral areas is one major factor in the development of nature-based tourism. The lack of accessibility and remoteness from settlement and infrastructure is also considered to be positive in nature-based tourism, since the remoteness and “naturalness” may increase the quality of the experience (Hall & Boyd 2005). Nevertheless, transportation routes make it possible for travellers to reach tourist sites in the periphery, and it also encourages the establishment of tourist facilities and services (Johnston 1995). Hall and Boyd (2005) state that accessibility to
the market is the most important factor influencing the location and distribution of the tourism industry. Accessibility embraces a wide range of meanings (Mitchell & Town 1977; Jones 1981). The concept refers to the ability of people to reach the destination they are headed for. Hall and Boyd (2005) measure accessibility in terms of the degree of remoteness (both the absolute distance and time distance) from an urban centre to a peripheral area. Significant changes in access between the urban centre and the peripheral area can result in a redefinition of what periphery means. Such a change in access is due to development, changes and improvements in transport technology and in transport infrastructure. With time and space compression, the access to peripheral areas increases.

**Attractions and values in nature-based tourism**

Tourist attractions are fundamental for a journey to take place. Research on tourist attractions has been undertaken from different approaches and with different definitions of what an attraction is and how it functions (MacCannell 1976; Lew 1987; Leiper 1990b; see also Paper II and III in this thesis). One of the first attempts to characterise a tourist attraction was made by MacCannell (1976). He divided the attraction into three components: a tourist, a marker, and a sight. Leiper (1990b) has developed a theory of tourist attractions, where he suggests that attractions can be regarded as systemic constructs. Tourist attraction systems are subsystems within the whole tourism system. The three elements of the attraction system: the tourist (with certain needs), the marker (e.g. information) and the nucleus (visited site), are connected and form the system. Even though MacCannell’s and Leiper’s attraction theories are useful in explaining attractions, Vittersø et al. (2000) have highlighted the importance of the subjective meaning, including symbolic and emotional values, that tourists ascribe to attractions. Kyle and Chick (2002) refer attraction to the perceived importance or interest in an activity or a product, and the pleasure that derives from participation or use. Thus, in its widest context, attraction includes things for the tourists to see and do, but also services and facilities (Lew 1987; Witt & Moutinho 1994).

Landscapes become attractions not least through the meanings that are ascribed to them by promotional agencies and tourists. Peripheral areas often retain high aesthetic amenity values (Hall & Boyd 2005). The overall attractiveness of a site depends on different components, e.g. the natural and cultural resources, the number and importance of attractions, the tourist facilities, accessibility and management (Deng et al. 2002). These factors, together with tourism marketing and promotion, are identified as pull factors (Dann 1977; Pomfret 2006). The tourists’ motives and reasons to travel also depend on the individuals’ motivation. Leiper (1990b) has suggested that tourists are pushed by their own motivation toward the places where they expect their needs to be satisfied, and not pulled by places’ inherent power. The motivation is influenced by a number of factors, such as needs and desires, availability of time and money, or images, perceptions and attitudes (Cooper et al. 1993). For example, tourism push factors in mountaineering-related activities (backpacking, skiing etc.) are summarised by Promfret (2006) to include challenges and risks, relaxation and escapism, attaining status, problem solving (e.g. route finding, terrain analysis), and developing one’s abilities.

Motivation variables have been investigated in a number of studies in order to identify qualities of backcountry hiking that motivate tourists to visit natural settings (e.g. Bäck & Hedlund 1982; Higham 1997; Wall 2003; Kyle et al. 2004; Wall 2004; Fredman et al. 2005; and Paper II and III in this thesis). Natural beauty, natural scenery and experiencing nature are important motivators for backcountry hikers. Experiencing wilderness, remoteness, and peace and quiet are also high-ranking motives. Wall (2004) and Wall and Fredman (Paper III) also found that the availability of marked hiking trails is an important factor for visiting the
high mountains of Sweden and to some extent even the availability of lodging and services, while transport and accessibility are considered to be of less importance for the hikers.

Hendee et al. (1978) have identified values for recreationists and tourists associated with wilderness. First, *experiential values* concern experiences associated with the aesthetic appreciation of nature, escapism (finding freedom away from the constraints of city living) and seeking solitude (feeling of being alone). Secondly, also associated with wilderness experience is the idea that wilderness can provide *mental and moral restoration* for the individual in the face of modern civilisation. This values wilderness as a “reservoir for renewal of mind and spirit” and in some cases offers “an important sanctuary into which one can withdraw, either temporarily or permanently, to find respite”. Nature can be a place of spiritual renewal, where the individual faces physical challenges and improves self-development and a feeling of self-reliance (Endensor 2001; Hall & Page 2002).

**Tourism impacts**

Tourism development can be a promising option for peripheral areas in terms of industry-diversification, especially when there are few other alternatives. However, tourism should not be seen as a solution for all problems. Tourism and recreation gives rise to both positive and negative impacts in the destination area (e.g. Mathieson & Wall 1982; Shaw & Williams 1994; Hohl & Tisdell 1995; Hammitt & Cole 1998; Hall & Page 2002). Table 1 shows some potentially positive and negative impacts of tourism divided into three dimensions: economic, social and environmental. Tourism impacts affect both hosts (locals) and tourists, but as locals spend more time in the destination area, they are likely to be most affected by positive and negative factors (Pettersson 2004). Pettersson states that for the locals, the degree of tourism development can be a difficult balancing act between positive and negative impacts.

**Table 1. Possible impacts of tourism**

<table>
<thead>
<tr>
<th>Economic impacts</th>
<th>Social impacts</th>
<th>Environmental impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job opportunities</td>
<td>More contacts</td>
<td>Increased</td>
</tr>
<tr>
<td>Higher incomes</td>
<td>Increased knowledge</td>
<td>consciousness</td>
</tr>
<tr>
<td>More varying occupations</td>
<td>Improved self-confidence</td>
<td>Protection of wildlife</td>
</tr>
<tr>
<td>Broader economic base</td>
<td>Improved situation for women</td>
<td>and environment</td>
</tr>
<tr>
<td>New activities</td>
<td>Population growth</td>
<td>More attention to cultural heritage</td>
</tr>
<tr>
<td></td>
<td>Better social service</td>
<td></td>
</tr>
<tr>
<td><strong>Negative</strong></td>
<td>Alienation</td>
<td></td>
</tr>
<tr>
<td>More seasonal jobs</td>
<td>Criminality</td>
<td></td>
</tr>
<tr>
<td>Rise in prices</td>
<td>&quot;Disneyfication&quot; of culture</td>
<td></td>
</tr>
<tr>
<td>Increased dependence</td>
<td>Erosion</td>
<td></td>
</tr>
<tr>
<td>Costs of development</td>
<td>Littering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pollution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Noise</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Pettersson 2004.*

Positive economic impacts, including job opportunities, are often given as a reason for tourism development. Tourism consumption brings income to tourism entrepreneurs and acts as a stimulus for related industries and increased government revenues. Thus, tourism has a multiplier effect, which means that the economic impacts are larger than the direct income of the producers (Mathieson & Wall 1982; Shaw & Williams 1994). However, the positive economic impacts from nature-based tourism for local communities may be very limited, because the visitors spend most of their time out in nature where there may be few facilities,
services or products to consume, and the visitors might be very self-sufficient (sleeping in own tent, eating food that they brought with them etc.) (e.g. Marsh 2000). In organised and packaged nature-based activities (such as ecotourism, safari, guiding, or more exclusive group tours) the tourists usually have higher expenditures and thus bring economic benefits to the local community and/or other actors within the tourism sector (Hull 1998; Hall & Page 2002).

Economically, tourism can be an unstable industry, vulnerable to variations in incomes and preferences of people outside the host community and to national and international policy changes. Tourism is strongly steered by seasonality, and the impact of fluctuating demand is one of the major operational and policy concerns of the tourism industry (Baum 1999). The tourist destinations might also deal with the fact that many goods that tourists demand in peripheral areas have to be imported; operating costs for tourism facilities may be excessive, with high transport costs leading to very expensive supplies, high electricity charges and machinery servicing. The host community may also fail to attract tourists or only appeal to a very limited segment of the tourism market and thus product diversification may be difficult (Hohl & Tisdell 1995; Hall & Page 2002). It should also be noted that the larger share of the tourists’ expenditures are restricted to accommodation and transportation, which may imply that an economic leakage will occur from the region and that less of the tourist expenditures contribute to the local community (Hohl & Tisdell 1995; Hull 1998).

The major focus on the social impacts of tourism has been on the population of the tourist destination. Hohl and Tisdell (1995) affirm that tourist developers might not adequately consider the interests of local populations, especially indigenous peoples. The main concern is that powerful groups outside the host region may overrule local interests once development takes place. Pettersson (2004) also emphasises the risks of ‘disneyfication’ of culture, that is, commercialisation of activities that involves staged, metaphoric and touristic images (see also Cohen 1993). However, significant research has been carried out on the tourists themselves in relation to social impacts, e.g. issues concerning the level of use of the tourist resource or the experience of crowding (Manning 1999).

Disturbances to natural areas as a result of tourism and recreational use has been defined as resource, environmental or ecological impact. Most research on environmental impacts has concerned trampling vegetation and disturbing wildlife (e.g. Knight & Gutzwiller 1995; Hammitt & Cole 1998; Hall & Page 2002; see also Paper I and II in this thesis). Different tourist activities affect soil, vegetation, wildlife and water differently (Hammitt & Cole 1998). Impacts on wildlife resulting from nature-based tourism are varied and often difficult to identify, observe and interpret. Research findings have, for example, described avoidance behaviour by animals as a result of human interaction, but less attention has been given to the long-term effects of this behaviour (Vaske et al. 1995). The impacts of tourism and recreation on wildlife can be direct or indirect. Direct impacts include harassment in different forms, e.g. displacement of animals, redistribution of animal home ranges, altered flight behaviour. Indirect impacts result from e.g. changes in vegetation, air contamination, building development, trail networks, roads or other environmental variables (HaySmith & Hunt 1995; Vaske et al. 1995). Hiking is extensive in the environment and may disrupt wildlife, particularly by displacing animals from an area (Knight & Cole 1995). Mathieson and Wall (1982) highlight some of the problems that are associated with studies of the environmental affects of tourism, e.g. there is often a lack of information regarding what the conditions were like before tourists arrived, the difficulty of distinguishing between changes induced by tourism and those induced by other activities, and that few longitudinal studies have measured long-term impacts.

The environment and nature-based tourism are closely entangled, not least because the condition of the environment is important and serves as the main basis for attracting tourists.
Without an attractive environment there would be little tourism. In nature-based tourism development there is a tension between use and protection. This tension or paradox refers to the promotion and use of the natural resources and at the same time the desire to conserve the natural resources (Mathieson & Wall 1982; Emmelin 1997; Hall & Boyd 2005). Deng et al. (2002) state that no type of tourism can be sustainable in the absence of appropriate planning, monitoring, evaluation, and management. Furthermore, Deng et al. assert that sustainable nature-based tourism development can only be achieved when the behaviour of destination managers, stakeholders, and tourists is ecologically, economically and ethically responsible. Hall and Boyd (2005) emphasise that if tourism is to be encouraged it must not be seen to take priority over existing traditional activities, and instead that tourism should be promoted such that it is complementary with other resource-based users.

Tourism conflicts and management actions

Identifying and understanding conflicts in tourism and recreation have been in focus in a number of studies (e.g. Stankey 1973; Jacob & Schreyer 1980; Kuss et al. 1990; Schreyer 1990; Schneider & Hammitt 1995; Ewert et al. 1999; Manning 1999). Conflict can in general be defined as a struggle between individuals or groups within a society due to competition for, and limited access to, scarce resources or opportunities. Conflicts in tourism and recreation often include the allocation of resources, perceptions of goal interference, differences in motivations and changes in land or resource use (Ewert et al. 1999; Manning 1999). Jacob and Schreyer (1980) developed a conceptual framework for analysing the social psychological dynamics of conflict in outdoor recreation participation. They define conflict as “goal interference attributed to another’s behaviour” and this definition has been developed in a theoretical model by Manning (1999). The focus on goals is based in the belief that recreation is essentially goal-directed behaviour and the frustration of one’s goal in any situation would therefore likely result in feelings of conflict (Schreyer 1990). Recreation literature classifies conflicts into four broad types of conflict (Schreyer 1990; Manning 1999):

1. Recreation vs. other resource uses
2. Recreation vs. resource managers (e.g. when management actions not satisfy the visitors)
3. Interactivity conflict (e.g. conflicts between users in different types of recreation activities)
4. Intra-activity (e.g. differences in behaviour within the same activity group, crowding).

For this thesis, the first type of conflict is of most interest in understanding the interaction between hikers and other resource uses, i.e. reindeer herding (Paper I and II). According to Schreyer (1990), this type encompasses almost the entire domain of decision-making.

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5 *Sustainability* often means different things to different people and in different contexts. Harvey (1996) declares that it is very hard to be in favour of unsustainable practices. Different interest groups (business developers, environmentalists etc.) can have very different opinions of how e.g. nature should be used in a sustainable way (Uddenberg 2001). The World Tourism Organization (2006) defines sustainable tourism: “Sustainability principles refer to the environmental, economic and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability”. The WTO as well as the Swedish Tourist Authority (2004) state that sustainable tourism should: 1) Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity. 2) Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance. 3) Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation. See also Hall & Lew (1998). The concept of sustainable tourism is grounded in the definition of sustainable development as defined in “Our common future” (WCED1988).
concerning resource allocation and competition for access to resources, but it has not generally been in focus in the analysis of recreational conflicts, while the interactivity conflict type has been the centre of attention in considerable research.

Conflicts may have many causes, some of which may even go beyond the recreation environment and result from conflict in society in general. As such, they may represent forces over which tourism and recreation planners and managers have little control (Schreyer 1990). One example of this concerns the ongoing discussion about indigenous peoples rights to land and resources. In these cases, conflict solutions perhaps are to be found in the national and international political and legislation agenda and not in a specific region. However, management action are important as recreational and tourism activities may need to be harmonised with other resource uses (Williams 2003).

Several studies suggest that the management of tourism and recreation is needed to minimise tourism’s negative impacts and conflicts (e.g. Knight & Gutzwiller 1995; Hammitt & Cole 1998; Manning 1999; Ewert et al. 1999; Hall & Page 2002; Eagles et al. 2004). These studies outline a diversity of alternative management practices that might be applied to problems such as conflict and environmental impacts. Management actions can take many different forms, above all depending on trends and on the objectives. Monitoring and separation of land-use activities is one example of management action used as a means of conflict resolution, and it normally implies that one or several user groups have to change temporal or spatial use patterns etc. (Manning 1999; Vuori 2003).

Manning (1979; 1999) suggests that recreation management practices can be classified based on their strategic purpose. Basic strategies include increasing the supply of recreation opportunities, limiting recreation use, reducing the impacts of existing use, and increasing the durability of the resource. Management practices can also be classified on the basis of whether they act directly or indirectly on visitor behaviour (Figure 2). Indirect management practices attempt to influence the decision factors upon which visitors base their behaviour, while direct management practices act directly on visitor behaviour.

![Figure 2: Indirect and direct management tactics.](https://example.com/figure2.png)

**Source:** Remodelled from Manning 1999.

*Figure 2. Indirect and direct management tactics.*

Information and education programs are indirect management practices, and are generally supported by visitors, but their potential effectiveness may depend upon a number of variables such as; type of problem, the attitudes and norms of visitors, the medium by which a message is delivered etc. Manning (1999) summarises that the indirect management actions have been found to be effective in influencing recreation use patterns, enhancing visitor knowledge of low-impact behaviours, influencing visitor attitudes about management policies, and reducing littering and vandalism. Direct management practices include regulations to control visitor behaviour, e.g. limiting camping to designated campsites only,
restrictions on the building of campfires, restricting fishing or hunting, zoning over time or spatially (e.g. prohibiting motor use). Even though the direct management actions leave little or no freedom of choice, it has been argued that these actions are supported by visitors when control over the impacts of recreational use are needed and thus enhance the quality of the visitors’ experiences (Manning 1999).

**Nature, wilderness and nature protection**

Historically, the increasing demand for recreational experiences of nature and ‘wild country’ may be related to changing attitudes towards the environment (Hall & Page 2002). The meanings and values we assign e.g. nature, culture and wilderness are not static. What is considered to be a resource and the value of it alters over time in accordance with changes in the needs and attitudes of society.

**Understanding nature**

First noted is that what has been regarded as nature has varied hugely over time and across different societies and traditions (Macnaghten & Urry 2001). The distinctions and interconnections between nature and culture have been an issue for academic discussions for decades. To begin with, the words *nature* and *culture* derive from Latin. The Latin word *natura* means birth, or giving birth, (Olwig 1995), and *cultura* means cultivation, or cultivating something (Anderson 2001). An Internet encyclopaedia relates nature to the material world in general, often meaning things not affected by humans (flowers, animals, geology etc.), as an opposite to culture, society or civilisation, while culture in general has become understood as a human “way of living” (Wikipedia.org, 2006). Anderson (2001) highlights the classical idea of culture as the human cultivation of the earth and its transformation to an even more human-centred idea in 15th-17th century Europe. By then culture came to be understood as the raising of human faculties through works of scholarship and invention, meaning the cultivation of the human mind. Through Europeans voyages and contacts with other places, culture also became a framework for perceiving ‘other’ human groupings or societies. In geography, the conception of culture has had major impact, e.g. Carl Sauer in the 1920s and the Berkeley School, and Duncan and “the new cultural geography” (e.g. Duncan 1980; Cosgrove & Daniels 1988; Olwig 1996).

‘The question of nature’ has been discussed in the social sciences and humanities by various authors (e.g. Cronon 1995; Soulé & Lease 1995; Harvey 1996; Macnaghten & Urry 1999, 2001; Castree & Braun 2001; Whatmore 2002). Castree (2001) argues that nature is both a concept and all those physical things to which the concept refers. This can be exemplified with how Ingold (2000) distinguishes between two kinds or versions of nature: ‘really natural’ nature (the object of the study for natural scientists) and ‘culturally perceived’ nature (the object of the study for social scientists). When nature is understood as human construction, nature is viewed as an idea. The nonhuman and the human worlds are entangled with our values and assumptions that the two worlds can never be fully separated (Cronon 1995). Cronon asserts that what we mean when we use the word nature says as much about ourselves as about the things we label with that word. He states that no nature is natural; nature is a cultural construction that reflects human judgments, human values and human choices. He also adds that this is not how people in general speak of nature, because one of the most important implications of the word is that it is not of our own making.
In environmental philosophy, values of nature are in focus and these values have been divided into anthropocentrism (i.e. human centred) and biocentrism (i.e. ecology centred) values, with a parallel in the “use vs. preservation” dichotomy. The anthropocentric values of nature imply that everything is evaluated according to how it benefits and has potential for direct human use, or if it is unprofitable to humans (Munthe 2001; Hall & Page 2002). Hall and Page (2002) emphasise that in anthropocentrism, societal values are placed above ecological values, that is, a focus on e.g. recreational and aesthetic rather than environmental qualities and values. In contrast, biocentrism refers to what is valuable in nature, such as complexity, variety and diversity. These values are seen as natural in nature and biocentrism gives priority to the preservation of natural resources. All life is equally valuable and humans are not the centre of existence (Munthe 2001; Hall & Page 2002). Closely associated with the biocentric values of nature are ecocentrism and deep ecology. Castree (2001) argues that ecocentrism, which advocates a holistic approach, is associated with a fundamental respect for and need to go back to nature, which has grown from the green movement since the early 1970s. Finally, a more radical perspective of nature value is what is termed deep ecology (also part of the green movement). Deep ecologists argue that nature should be held as valuable not because it satisfies a human need but as an end in itself with intrinsic values of species, systems and processes (Hall & Page 2002).

Nature has historically been viewed with hostile intent; an idea abetted by the Judeo-Christian tradition of believing the natural world belonged to humans for both their exploitation and development (Ewert & Stewart 2004). Kellert (1995) asserts that the concept of nature can be understood as the traditional Judeo-Christian view of nature or the traditional Eastern (Buddhist-Hindu) conceptions of nature. The Judeo-Christian view has the most anthropocentric attitudes toward the natural world, with tendencies toward human superiority and hegemony toward nature. This view comes from the idea of a single God who created all of physical nature for human use, which has permitted humans to exploit and dominate nature. In the Eastern view, everything created has been portrayed as a fundamental oneness and the human obligation is to coexist with rather than conquer nature. Kellert argues that it is important to note that the Eastern and Western conceptions of nature are associated with traditional religion and culture, and as countries modernise and become highly industrialised the distinction between these traditions becomes less obvious.

Wilderness – defined area or a state of mind?
If nature is a contested idea, wilderness is even more so. From a constructionist perspective it can be argued there are no landscapes of wilderness (Saarinen 2005). The word ‘wilderness’ is derived from the old English word wild(d)eornes or wil(d)deor meaning wild deer or wild animal. The etymological derivation is that the land is wild, uncultivated, and inhabited only by wild animals (Mels 1999). The meaning of wilderness has changed over time and between different cultures. Mels states that the concept of wilderness is closely related to ideas of landscape, nature and national park and to the human role, place and view on earth. Historically, wilderness has been one of the main sources of “the other” in western society. Wilderness was what lay beyond the boundaries of a ‘civilised’, ordered landscape. The perception of wilderness as an alien landscape of fear is originally from the Northern European set of attitudes towards nature. Both the Northern European and the Mediterranean traditions defined and portrayed wilderness as a landscape of fear, which is outside the safer bounds of human settlements (Hall & Page 2002).

In the eighteenth century the wilderness had no positive connotations, but under the influence of romantic movements in the nineteenth century it changes to be something like Eden. Wild areas were of interest for conservation and recreation (Cronon 1995). However, wilderness is a concept with many layers of meaning and Tuan (1974:112) claims that “wilderness cannot be defined objectively: it is as much a state of mind as a description of nature”. As Mels
(1999) has recognised, wilderness has a metaphoric meaning and can signify any desolate region or area of human loneliness. This can be exemplified by the Wilderness Policy in New Zealand that defines “the idea of wilderness as being one that embodies the notions of remoteness, solitudes, freedom, romance and a feeling on empathy with wild nature” (Higham 1998). The difficulties of defining wilderness, since the word acts both as a noun and an adjective, has been discussed by Nash (1982). According to Nash, there is no specific place that is wilderness, but the term rather refers to a quality that produces a certain mood or feeling. The subjective feeling or meaning can be assigned by the individual to a specific place.

The trouble with wilderness

Swedish nature, particularly in the north of the country, is frequently profiled as Europe’s last wilderness and of giving an image of a “not-by-human-activity-affected” Swedish nature (Müller 1999:70). One example is a book about the Laponian World Heritage Site in northern Sweden “The last wilderness in Europe: Laplands’ World Heritage Site” (Kihlberg 1997). Several questions are raised in my mind when I see titles like this one: What does this tell the reader of the book? What messages are delivered? What consequences are possible when the reader gets an image of a wild country? In other words, what happens when marketing operators, managers, tourists etc. naturalize human landscapes as wilderness? Cronon (1995) asserts that it is perhaps time to rethink wilderness because the more one knows of the wilderness area’s history, the more one realises that wilderness is not quite what it seems.

Individuals understand their relation to the world at different levels and kinds of abstractions. This can be exemplified with the different views temporary and long-term users have about the same landscape. There is a distinction between a tourist’s holiday place and a lived place: e.g. the visitor sees beauty, while the inhabitant sees a place where he or she works. Nabhan (1995:91) calls this “the cultural parallax of wilderness concept”. A cultural parallax might be considered to be the difference in views between those who are actively participating in the habitats within their home range (e.g. reindeer herders) and those who view those habitats as landscapes from the outside (e.g. tourists). According to Nilsson Dahlström (2003), an area can only be perceived as wilderness by someone who is detached from the area and does not belong there. In the case of the Swedish Lapland Mountains, Beach (2004) asserts that, the landscape which passing tourists might consider being wilderness is instead home ground for Sami herders dwelling in the land. Nilsson Dahlström (2003) argues that the lack of substantial historical evidence of Sami presence in northern Sweden (e.g. ancient buildings, monuments, settlements, roads, fields for cultivation) has caused people from the outside to perceive the reindeer herding area as “untouched” by human beings. By erasing the presence of indigenous peoples as humans, and casting them as part of nature, a vast emptiness is created in which tourists can become explorers and experience apparently pristine nature (Waitt et al. 2003).

The concept of wilderness is a creation of history and culture (Cronon 1995; Williams 2002; Saarinen 2005) and the removal of Indians to create an uninhabited wilderness reminds us just how invented and constructed the American wilderness really is. The removal of history or flight from history can represent a false hope of an escape from responsibility, the illusion that we can wipe clean the slate of our past and return to the tabula rasa that supposedly existed before we began to leave our marks on the world. The wild is then understood as that outside civilisations’ geographical and historical reach (Waitt et al. 2003). There is a central paradox because wilderness embodies a dualistic vision in which the human is entirely outside the natural. If nature has to be wild, then our presence in nature represents its fall. By definition wilderness leaves no place for human beings, then also by definition it can offer no solution to the environmental and other problems that confront us (Cronon 1995). Cronon
elucidates that it is not the things we label as wilderness that are the problem, for nonhuman nature and large tracts of the natural world do deserve protection, but rather what we ourselves mean when we use that label. He also states that people should always be conscious that they are part of the natural world, and tied to the ecological systems that sustain their lives. Cronon affirms that any way of looking at nature that encourages us to believe we are separate from nature – as wilderness tends to do – is likely to reinforce environmentally irresponsible behaviour.

The perception of the wilderness is not only an abstract idea, but also has a strong impact on the way nature is experienced, protected and managed practically. The treatment of the wild as a pristine exterior of an original nature sets the parameters of contemporary environmental politics and the basis for today’s management of e.g. national parks. Nilsson Dahlström (2003) exemplifies how the contemporary environmental discourse contributes to the image of the Swedish World Heritage Site Laponia:

“The dominant discourse, formulated by international and national environmental authorities, provides a picture of Laponia as ‘untouched’ nature with ‘original’ flora and fauna, a timeless outdoor museum much appreciated by mountain tourists and environmentalists. The subordinated discourse, for instance that of local Saami reindeer herders, presents Laponia as a Saami cultural landscape caring both physical and cognitive memories of an extensive use of the area since time immemorial. According to the dominant environmental discourse, then, Laponia is primarily a natural landscape, but according to local Saami reindeer herders the distinction between ‘nature’ and ‘culture’ is in many ways an irrelevant distinction to make.” (Nilsson Dahlström 2003:169)

**Protection of nature**

The nineteenth century marked the beginning of an important change in the meaning of the idea of wilderness and these areas were of interest for conservation and tourism. According to Oelschlaeger (1991), the wilderness was an endangered species in need of preservation. However, Runte (1977:65) claims that nature conservation and the national park idea evolved out of cultural anxiety, a search for a distinct national identity, rather than a recognition of what has come to be called “the right of rock”.

The conservation debate in Sweden as well as in the Anglophonic countries involved connection with nationalism and romantic attitudes towards wild nature. Ideas of protecting nature emerged at a time when Western countries were modernising, industrialising and urbanising, followed by changes in the social-economic situation and environment (Hall 2000; Boyd 2004). Both in Swedish and in American society, the wealthy ‘leisured’ class, philosophers, artists and intellectuals fostered the romantic reaction to increased industrialism and urbanism (Hall & Shultis 1991; Sandell 1995; Mels 1999). In Sweden, rural unemployment, population growth, distressed areas and the end of the union with Norway contributed to a need to define Swedish self-identity. The unstable social situation worried politicians and they exclaimed a necessity of finding unifying symbols for the people (Mels 1999).

Parallel to these nationalistic ideas, was a focus on utilising spaces for economic development interests. Areas that could not realise annual economic output from the land or forest, termed “worthless lands”, could thus be set aside for conservation and thereby bring in revenues form tourism (Runte 1977).

The preservationist movement in the United States led by John Muir wanted to preserve wilderness for spiritual and aesthetic reasons. The first national park, Yellowstone, was
established in the United States in 1872. In Sweden the conservation movement was led by natural scientists who were inspired by nature protection in the United States, Prussia and Austria (Motion i andra kammaren 1904:194). The first Swedish national parks were established in 1909 (Svensk Författningssamling 1909:56). To summarise, nature protection was as much a symbol of nationalism as the protection of aesthetic landscapes and economic development through tourism. Many national parks were, and still are, established in remote, depressed and rural regions - in areas where traditional native lifestyles have been threatened, and/or where other economic activities have proved unstable (Marsh 2000).

During the twentieth century, the world’s protected areas increased considerably and today represent thirteen percent of the total land area (UNEP-WCMC 2005). The International Union for the Conservation of Nature (IUCN) defines a protected area as “an area dedicated primarily to the protection and enjoyment of natural or cultural heritage, to maintenance of biodiversity, and/or to maintenance of ecological life-support services” (Ceballos-Lascuráin 1996:29). In practice, most nations use several categories of protection with many different management objectives and where a variety of types of human use are permitted. National parks have become the most recognised and globally pervasive way of perpetuating natural heritage over the past century (Mark unpublished). Nevertheless, national parks represent only one type of a range of protected areas, other forms of international protected areas are e.g. Biosphere Reserves, Marine Reserves, World Heritages Sites, Wilderness Areas and Natura 2000 Reserves.

The reasons for establishing national parks in Sweden include the protection of nature, scientific research, and recreation and tourism. One requirement for establishing national parks in Sweden is that they must be on publicly owned land and the Parliament makes decisions concerning them. The National Environmental Protection Agency decides on the management and recommends new parks. More generally, it can be said that the parks must consist of large “untouched” areas that represent different types of the Swedish landscape. (Naturvårdsverket 2005a).

Over the last number of years, there seems to have been a discursive shift in Swedish policy concerning the management of protected areas (Bergeå & Ljung 2004). Sandell (2000) has identified the shift in establishing national parks in Sweden from a central and protective view to one where national parks are based on local conditions. He states that the main reason for this shift in strategy was the local resistance and scepticism to national park proposals during the 1990s, e.g. the debate over the establishment of a large national park in the northern part of the Swedish Lapland Mountains. Sandell (2000; 2005) argues that there was a conflict between very different views of conservation and outdoor recreation, as well as a tension between centralised and decentralised development strategies and a tension between landscape perspectives of utilisation and conservation.

In a number of policy documents, new dimensions of nature protection and social involvement in management have been presented. One example is the official publication by the Swedish government “En samlad naturvårdspolitik” (Skr. 2001/02:173), where the involvement of stakeholders has a key-role to play in the planning process of nature protection. The document emphasises the importance of e.g. public participation (local landowners, tourists and recreationists and other users, such as entrepreneurs, businesses, and permanent households and second home owners, should to a greater extent be incorporated in planning and management of nature protection), regional development through nature protection and tourism, and outdoor recreation for public health. The Swedish government underlines outdoor recreation and nature-based tourism as fundamental components in planning and managing nature protection and the government also stresses the need of research within this field (Skr. 2001/02:173; Naturvårdsverket 2005c). Swedish nature
protection includes two essential elements: 1) to maintain good opportunities for outdoor recreation and nature experiences with the basic value of public health, and 2) to maintain ecosystems, including the protection of flora and fauna and geological formations, with the aim of biological diversity and sustainable use of nature resources (Skr. 2001/02:173:11).

**Study area - The Lapland Mountains**

The Swedish mountain region makes up about one third of the country, but includes less than two percent of the total population (Heberlein et al. 2002). About 90 percent of the total nature conservation areas (national parks and nature reserves) in Sweden are located in the mountains (Naturvårdsverket 2005b). The mountain range stretches for over 1000 kilometres along the border with Norway and the gentle topography makes many areas in the mountains well suited for hiking and cross-country skiing. There are also about 40 major downhill ski areas in the region. Heberlein et al. (2002) found in their study of tourism patterns in the mountain region that almost a quarter of all adult Swedes visit the mountains in a single year and that over 85 percent of these visits are for recreation and leisure.

The study area is located in the north-western part of the Swedish mountain region, in the county of Norrbotten (Appendix 1). The Lapland Mountains have attracted travellers for centuries. Sami peoples, explorers, adventurers and tourists have been attracted to the area because of the natural resource base and the scenic value. Today Sami reindeer herding together with tourism constitute the main economic interests in the region. The indigenous Sami people have for a long period of time inhabited the northern part of Scandinavia (Sápmi), and historically the Sami have been occupied with reindeer herding in combination with hunting and fishing. During recent decades there has been a decline in reindeer herding. In spite of the fact that only ten percent of the Swedish Sami are occupied by herding reindeer (about 1900 reindeer herders in 2003), reindeer herding is regarded as fundamental in the Sami culture. In general, reindeer herding contributes between ten to fifty percent to family incomes, and the major economic output is from meat production (Lundqvist 2003). Few reindeer herders can live solely from reindeer herding, and many families are obliged to seek other sources of income. In recent decades, there has been a mechanisation of reindeer herding methods, in the same manner as for agriculture and forestry, in order to rationalise the industry. Rationalisation together with few other occupational alternatives, have attracted many Sami to engage in tourism (Pettersson 2004).

Human settlements and activities or industries other than reindeer herding are present in the Lapland Mountains. Bäck (1996) has described the development of different land users in the region, such as the transport and infrastructure sector, the mining industry, the hydroelectric power stations, environmental conservation, tourism and recreation, as well as fishing, hunting and forestry. Bäck concluded that there is competition for nature resources, and that as the different actors advance their interests over time, the reindeer herding industry feels threatened from many sides.

Of Sweden’s 28 national parks, six are situated in the Lapland Mountains, including the three largest in Sweden. Except for the national parks, the study area also includes several nature reserves (established from the 1960s), one World Heritage Site, one Biosphere Reserve, as well as Nature 2000 Reserves (Naturvårdsverket 2005b). The northern most part of the Lapland Mountains is called the Lake Torne Area. The Lake Torne Area was designated by UNESCO as a Biosphere Reserve in 1986. The purpose of the reserve is to preserve biodiversity and to develop the area in a sustainable way. Supporting education, monitoring
and research are other main goals. Several protected areas are included in the Biosphere Reserve; two national parks (Abisko was established in 1909 and Vadventjäkka in 1920) and three nature reserves (Lake Torne 2003).

The World Heritage Site Laponia is located further south in the study area and comprises the four national parks of Muddus, Sarek, Padjelanta, and Stora Sjöfallet, two nature reserves Sjaunja and Stubba, and two wetlands listed on the International Convention of Wetlands, as well as the adjacent areas of Sulitelma, Tjultodalen, and Rapadalen (Länsstyrelsen i Norrbottens län 2001). World Heritages are identified as sites with outstanding global values that should be preserved for all humanity. Sites will then be preserved for future generations and become the shared responsibility of the international community as a whole. The World Heritage status is meant to help to build support for protected areas through raising awareness, increasing protection, enhancing funding, improving management and harnessing tourism (UNESCO 2006). Laponia was added to the World Heritage List in 1996 with regards of the natural and the cultural qualities. The World Heritage Committee considered the site to be:

“of outstanding universal value as it contains examples of ongoing geological, biological and ecological processes, a great variety of natural phenomena of exceptional beauty and significant biological diversity including a population of brown bear and alpine flora. It was noted that the site meets all conditions of integrity. The site has been occupied continuously by the Saami people since prehistoric times, is one of the last and unquestionably largest and best preserved examples of an area of transhumance, involving summer grazing by large reindeer herds, a practice that was widespread at one time and which dates back to an early stage in human economic and social development.” (UNESCO, January 2006)

Laponia is the cultural landscape of the Sami peoples and one of the best preserved examples of a nomadic area in northern Scandinavia. Today, seven Sami villages are located within the World Heritage Site and several Sami summer villages are to be found in the reindeer pastureland. In relation to the designation as a world heritage site, discussions were held regarding its function, meaning and management. Many people (for example the tourist entrepreneurs and the local communities) hope that the fact that the area has become a World Heritage Site will lead to increased tourism in the area (Mulk 2002).

Tourism in the Lapland Mountains
The temporary mobility of people to the northern periphery in the Swedish Lapland Mountains has developed from being an exclusive experience of exploring scientists to a popular destination for leisure activities. This change has many causes, but the development of transportation and infrastructure belong to the most important ones. The improvement of the infrastructure within the mountains, and also information about the mountains, can be said to have started in the late nineteenth century, e.g. through the foundation of the Swedish Touring Club (STF). A new era started from the 1870s, when the Lapland Mountains were mapped and books from the scientific expeditions were published (Svenonius 1908). At the end of the nineteenth century, the interest in the own nation and its nature increased. Svenonius, who was a geologist and an editor for the annual publication from the STF for many years (Biörnstad 1986), wrote in 1908 about Lapland as a tourist country and stated that the tourists should imitate the life of the Sami; “to wander the mountains and valleys, and thereby get to know the country and the rivers and to love them” (Svenonius 1908:277, author’s translation). He described the mountains as pristine and magnificent with a monumental scenic beauty, and this was also what attracted the first tourists. Tourism in the Lapland Mountains first started in Stora Sjöfallet, although on a modest scale and only very
few people could travel to the area, above all because of economic reasons (Bäck & Hedlund 1982). In the Lapland Mountains, tourist services largely started as a railway-based and large-scale tourist station in Abisko in the beginning of the twentieth century. It was due to the railway that “the landscape became a real tourist country. After the railway was established, Lapland has more visitors in a single year than it used to receive in a decade” (Svenonius 1908:279, author’s translation).

Tourism increased by ten percent annually in the Lapland Mountains from the 1950s to the middle of 1970s. After the road construction was completed between Kiruna and Narvik in 1984, there was an increase in the number of tourists staying over night. But, in the 1990s, when the road itself no longer attracted curious tourists, the number of tourists started to decrease (Bäck 2002).

Today, there are marked trails for hiking and cross-country skiing in most parts of the Lapland Mountains. The STF and the Bádjelánnda Laponia Tourism Association (BLT) run about thirty mountain cabins and tourist stations. Along the main roads there is a diversity of accommodation but only in the Lake Torne Area ski resorts are located. Almost 30 percent of the summer visitors come from abroad. Among the Swedes, one third comes from the county of Stockholm; about one in ten lives in the county of Norrbotten, and the rest have their home address in counties with high population numbers in southern Sweden (Wall 2003; Wall 2004).

The train is the dominant means of transportation for both summer and winter visitors (Wall 2003; Wall 2004). There are a number of explanations for this, but one of the most important reasons might be the distance between the Lapland Mountains and the more populated areas in southern Sweden. It takes about eighteen hours to drive from Stockholm to the Lake Torne Area. Comparing the respective shares of different means of transportation of today with the situation in 1980, reveals an increase in the use of airplane and private car (Bäck & Hedlund 1982; Wall 2004).

The study area varies in terms of levels of accessibility, infrastructure and tourism activities. The railway and the highway are located on the south shore of Lake Torne. Several touristic establishments are also located there, and the village of Abisko has about 200 permanent residents (Thorell & Forskningsrådsnämnden 1999). The tourism activities are related to the establishments to a very high extent. The Lake Torne Area attracts tourists both during the winter (downhill skiing and cross country skiing) and the summer (backpacking). The Laponian Area is more difficult to access as neither highway nor railway runs through the area. However, it is possible to travel to the area by car and by bus in the summer time. The tourism activities are not at all to the same extent related to the tourist stations, as in the Lake Torne Area. The Laponian Area attracts primarily backpackers during the summer.

It is rather difficult to examine the local economic effects of tourism, but some economic reports can be found for the county level. Between 1997 and 2002, the average tourism turnover increased by 34 percent in the county of Norrbotten (about 7 percent per annum). Tourism generates about 2,000 job opportunities annually (full-time employment) in the county as a whole, which can be compared with the number of job opportunities in agriculture and forestry (Danielsson 2003; Resurs AB 2003; Fakta om Norrbottens län 2005). In the communities of Jokkmokk and Gällivare about 100 persons are employed in tourism respectively, whereas in Kiruna 300 are employed in tourism (Danielsson 2003). In the communities of Kiruna and Gällivare, the tourism sector is regarded as important for the economy, but not as important as the mining and manufacturing industries (Årsredovisning Kiruna kommun 2004; Gällivare 2006).
Methodology

Visitor studies can be carried out as studies on local and regional levels, as national screener studies and as longitudinal studies (Naturvårdsverket 2005c). Observations, interviews, and telephone and mail surveys are often used in recreation research. Many recreation areas, particularly backcountry areas, rely on self-registration as primary source information. However, different biases are possible with these approaches, particularly regarding representativeness. National screener studies or household surveys represent another approach in recreation research. They are more likely to be representative of recreation participation patterns for the general population than are on-site studies (Manning 1999, Vuorio 2003; Naturvårdsverket 2005c).

In tourism research there is an ongoing need for statistical insights, but qualitative approaches offer a great deal of potential in understanding actions, problems and processes (Phillimore & Goodson 2004). Phillimore and Goodson argue that one of the strengths of tourism research is that it is not bound to fixed disciplinary boundaries with their associated methods, and is therefore free to combine a range of approaches and even research paradigms to give a more fluid approach to research.

For the purpose of exploring the tourists’ characteristics, motives, attitudes and interactions in the Lapland Mountains, both quantitative (mailed questionnaires) and qualitative (interviews) research methods have been used. This thesis particularly presents results from the quantitative studies. Two different mailed (postal) questionnaires have been used and the questionnaires’ design was based on previous surveys on outdoor recreation and tourism in Sweden (e.g. Bäck & Bäck 1986; Hörnsten & Fredman 2002; Vuorio, 2003; see also Ryan 1995). The descriptive statistics and statistical analyses of the results from the questionnaires have been carried out in the Statistical Package for Social Sciences (SPSS).

Data collection in the Lake Torne Area 2002-2003

Mailed questionnaires (Paper I and III)

The aim of the survey was to collect year-round baseline information on visitor characteristics, patterns of activity, motives, and visitors’ attitudes within the Lake Torne Area (Appendix 2). The survey was conducted among people visiting the Lake Torne Area during the year 2002. The survey thus included both summer and winter visitors. Addresses for the mailed questionnaire were received from hotels in the area. I contacted four hotels in the area and presented the aim of my research. Three of the hotels had also participated in earlier research (Bäck & Bäck 1986). However, the respondents were selected at random from the registration books from four hotels, i.e. Riksrånsen, Björkliden, Abisko Tourist Station and Camp Abisko. The questionnaire was mailed to 721 Swedish visitors and 142 visitors from Norway, Finland, Great Britain and Germany, i.e. a total of 863 persons. Two reminders were sent out, including a new questionnaire in the second one. The final response rate was 67.1 percent (70.1 percent from Sweden and 52.2 percent from outside Sweden).

The positive aspects of receiving addresses from registration books are that this procedure is a fast, easy and cheap way of reaching the visitors. In this case, this was also the procedure utilised in earlier research in the Lake Torne Area (Bäck & Bäck 1986).

Apart from the hotels that were selected for this study, there is other accommodation in the area, for example youth hostels and caravan parking places. This study includes only visitors
who were registered at any of the four selected hotels. It does not include day visitors to the area, nor visitors passing through, nor people who began or completed their several-day hikes or several-day cross-country ski trips without staying at one of the selected hotels. In a few cases the addresses was also out of date. It should be noted that the respondents may have stayed only one night at one of the hotels on route to his/her final destination, and thus not interested in the mountain area specifically.

Data collection in the Lapland Mountains (including Laponia) 2003 and 2005

Registrations cards and mailed questionnaires (Paper II and III)

This quantitative data collection procedure was divided into several steps. A common difficulty with surveys among tourists in large nature areas is how the researcher is going to reach the tourists. In general, the aim of a survey is that it should be done effectively and reliably, and be as representative as possible. In this study, registration cards were combined with a follow up mailed questionnaire. During the summer of 2003, registration cards were distributed to thirteen different mountain stations and mountain cabins in an area reaching from Abisko in the north to Kvikkjokk in the south (called Lapland Mountains)\textsuperscript{6}. The thirteen mountain stations and cabins were chosen according to their geographical location along different hiking trails or “entry-points”. The objective was to reach as many visitors as possible, but also to have a geographical distribution of the registration cards in the area. The selection of the mountain stations/cabins was based on previous knowledge about the number of visitors at each site and on the visitors’ movements (Bäck & Bäck 1986). Seven of the thirteen sites were located in the northern part of the Lapland Mountains and six in the southern part (in the Laponian World Heritage Site).

Visitors older than fifteen years of age were requested by the staff to fill in the registration card with name, address and to answer three short questions (Appendix 3). The questions were formulated in co-operation with some of the main stakeholders in the area: the Swedish Touring Club (STF), the Bádjelánda Laponi a Tourism Association (BLT), the County Administrative Board, and a tourism project called Laponia – Sustainable World Heritage Site. The registration cards were written in Swedish, English and German. Well before the hiking season responsible persons at the STF and at BLT were contacted and informed about the research project and about the importance of the registration cards. Afterwards, STF and BLT informed their personnel and information and guidelines were also sent to the staff working in the mountains regarding how to distribute and collect the cards. Each station and cabin received a wall chart in three languages; Swedish, English and German, to give information about the research to the visitors. The registration cards were distributed to the visitors from late June until the beginning of September (the “hiking season”).

The co-operation and dissemination of information by the staff cannot be underestimated and my experience is that, if possible, a personal meeting is to be preferred. At one of the mountain cabins, the staff did not collect the registration cards, and the cards never reached me, so twelve different mountain stations and cabins were finally included in the study.

Table 2 shows the statistics deriving from the registration cards. The total number of registration cards with correct addresses was 2,335. As shown in Table 2, half of the cards were from the northern and southern part (the Laponian WHS) of the Lapland Mountains respectively. According to the registrations cards, the average age was 44 years and 52.5 percent were male.

\textsuperscript{6} The name of the sites with registration cards: Kårsavagge, Abiskojaure, Unna Allakas, Alesjaure, Vistas, Kebnekaise Tourist station, Hukejaure, Kaitumjaure, Saltoluokta Tourist station, Aktse, Darreluoppal, Ståloluokta och Låddejåhkå.
Table 2. Data statistics from the registration cards in the Lapland Mountains in 2003, divided after sites in Laponia and sites in the northern part of the Lapland Mountains.

<table>
<thead>
<tr>
<th></th>
<th>Completed registration cards</th>
<th>Mean age</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sites in Laponia</td>
<td>1,182</td>
<td>50.5%</td>
<td>46 years</td>
<td>50%</td>
</tr>
<tr>
<td>Sites in the northern part</td>
<td>1,153</td>
<td>49.5%</td>
<td>41 years</td>
<td>54%</td>
</tr>
<tr>
<td>Total</td>
<td>2,335</td>
<td>100%</td>
<td>44 years</td>
<td>52.5%</td>
</tr>
</tbody>
</table>

Registration cards are one of the few ways of getting the hikers’ addresses and the procedure gives a relatively large sample of visitors (Manning 1999). Another advantage is that questions on the registration card can then be followed up in the mailed questionnaire. This procedure is highly dependent on the staffs’ engagement, and after visiting and talking to them at half of the included sites, the staff related that very few of the visitors did not fill in a card. However, some criticism can be raised toward the procedure. In this type of procedure, where visitors fill in cards on a largely voluntary basis, one will probably find unrepresentativity in the sampled population. In this survey, only visitors at twelve mountain stations and cabins are included. Missing visitors are people who spent time in other cabins, and people hiking off trails or sleeping in tent without paying the service fee to the station or cabin. In the registration card, some visitors left incomplete names or addresses (less than four percent).

All registration cards for people living in Sweden and Germany were selected for the follow up questionnaire because nine out of ten addresses were from one of these countries. The mailed questionnaire contained a number of attitude related questions concerning e.g. tourism and outdoor recreation and management (Appendix 4). Questions regarding travel to the area, hiking routes, economic and social demographical variables were also included. A section in the questionnaire contained questions concerning reindeer and another section concerned the World heritage designation of Laponia. Two reminders were sent out, including a new questionnaire. The questionnaire was mailed to 1,690 Swedish visitors and 301 visitors from Germany. The total response rate was 76 percent (74.6 percent from Sweden and 80.8 percent from Germany).

On-site interviews in Laponia (Paper II)

On-site semi-structured interviews were carried out with 26 persons (17 different interview situations) over a period of two weeks in the summer 2005. The interviewees were hikers in the Laponian World Heritage Site who stayed at one of the selected places: Saltoluokta and Ritsem Tourist station, Kisuus and Kutjaure mountain cabins. These four places were selected because of their geographical and strategic location regarding popular hiking trails. These places were also accessible within a one-day hike from the road and it was therefore possible to carry out interviews at different places within the two-week fieldwork. In the smaller mountain cabins of Kisuus and Kutjaure, all present visitors were approached and requested to participate in the survey. In the larger Saltoluokta and Ritsem tourist stations, persons who were not obviously occupied with something (cooking, putting up the tent, on their way to the sauna etc.) were requested to participate. One person refused to be interviewed due to a lack of time. Each interview took about 40 minutes (with a variation of 30 to 90 minutes depending on the characteristics of the interviewees and their experiences). The interviewees were both men and women, Swedish and German, and they were between 17 and 64 years of age. Depending on whether the persons were hiking in company or alone,

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the interviews were carried out as individual or group interviews. Six interview situations were carried out with two or more persons at the same time, while eleven persons were interviewed alone (ten of those were also hiking alone). In addition to questions regarding their encounter with and attitudes towards the reindeer, they were asked about their motives for their visit, their experiences of hiking, Sami culture etc. (Appendix 5). All interviews, except for one, were recorded with a micro cassette and field notes were taken. Afterwards, the interviews were transcribed and analysed in relation to the different themes.

Several positive aspects are related to the utilisation of interviews. In this thesis (Paper II), the interview results have been treated as complementary information to the questionnaire regarding the interaction between hikers and reindeer. The interviews gave a deeper understanding of the attitudes towards reindeer, and experiences gained from interaction with them. Because of the semi-structure outline of the interviews it was possible to have more communication with the hikers and also presented possibilities for using follow-up questions and visible aids (maps and information sheet regarding reindeer herding). My experience is that the hikers were very positive and willing to talk about their visit in the mountains. There are, however, some difficulties associated with interviewing hikers. These kinds of relatively time-consuming interviews (and the fact that recording and field notes were involved, as well as maps and other visible aids) can only take place when the hikers are not walking and the interviews were therefore restricted to different tourist accommodations. The interviews could only be carried out during late afternoons or evenings when the hikers arrived at the overnight place. This means that interviews are a rather ineffective way of collecting data and the researcher can never know if someone will come to the cabin or how many people will arrive.

**Summary and conclusions**

**Paper I**
This thesis explores tourism attractions and land use interactions in the Lapland Mountains. The focus is on protected areas and interactions between hikers and reindeer. In Paper I, a short description is given concerning the interaction between tourism and other land use activities, such as nature conservation, forestry and reindeer herding, in the northern Scandinavian mountain birch region. It is argued that recreation and tourism can cause conflicts with other stakeholders due to competition for the same resource. This type of recreation conflict is classified as ‘recreation vs. other resource uses’ and this type of conflict has not generally been in focus in recreational conflicts, and is thus less studied than e.g. interactivity conflicts, or ‘recreation vs. recreation’, (see Schreyer 1990; Manning 1999).

Conflicts easily arise when recreation and tourism have negative impacts on nature. Tourism has an impact on the environment throughout the year, but in the form of different activities, which are often concentrated within different areas (cf. Hammitt & Cole 1998). The paper summarises long-term impacts on trails for hiking and cross-county skiing. The investigations show that ecological changes, e.g. compacted soil, reduced thickness of the soil humus layer, and wear, are inevitable even after slight and short-term trampling, particularly on slopes and at higher elevation with a long recovery period. The investigations also show that camping has an even greater impact on vegetation than hiking in mountain birch ecosystems. It is noted that the direct influence of skiing on vegetation is not as great as that of hiking and camping, but machines press and compact the snow and delay the timing of snowmelt. These direct impacts of tourism and recreation are negative since the values of the environment decreases as a consequence of wear and decreased visual quality. This is one example of the paradox with respect to nature-based tourism development, since without an attractive
Impacts of tourism and recreation on nature, such as wear and erosion, disturbance to animals and reduced visual and aesthetic values, may lead to a conflict situation with nature conservation interests. One major problem concerning recreation and forestry may arise when forest owners lose direct income from selling wood, while the benefits may go to the development of infrastructure for tourism and hence to people who are not forest owners. Regarding the conflict situations between recreation and reindeer herding, the most severe is related to disturbances to reindeer caused by snowmobiling, hiking and visitors with dogs, as well as avoidance of tourist resorts, leading to e.g. the increased use and overgrazing of remaining grazing lands.

It is concluded that conflicts may be reduced by valid indicators, measures, standards, education and participatory management planning, where the opinions of different stakeholders are considered (cf. Manning 1999; Skr. 2001/02:173). Furthermore, it is suggested that in areas with high wear, the complete closure of trails or artificial structures such as stairs or cover by gravel or pavements, are probably the only methods to protect the environment from further wear.

**Paper II**

Tourism interactions have further been investigated in Paper II with the hypothesis that the hikers disturb the reindeer, and that the hiker-reindeer interaction is seen as a conflict of interest. The study about hiker-reindeer interaction has also focused on the importance of reindeer for the hikers’ experience. It is concluded that the reindeer constitute a significant part of the visitors’ experience, particularly for the first-time visitors, and for those from the southern part of Sweden as well as for the German visitors. The experience of viewing reindeer strengthens the attraction to visit the Lapland Mountains and the presence of reindeer is interpreted as having a subjective meaning, which includes the emotional values that tourists ascribe to the presence of reindeer (cf. Vittersø et al. 2000).

A majority of the hikers stopped and watched the reindeer when they saw them. The hikers themselves described flight behaviour by the reindeer as a result of humans observing and/or approaching the reindeer (see also e.g. Reimers et al. 2003). Direct impacts on reindeer (including avoidance and flight behaviour, displacement and redistribution of the reindeer) may negatively influence accumulation of body fat reserves and thus winter survival for the reindeer (Colman et al. 2001). The increased movement may also increase the wear of the vegetation (Vitnes & Nelleman 2001; Skarin et al 2004). The hypothesis that the hikers disturb the reindeer can partly be confirmed through the hikers description of reindeer behaviour. On the other hand, the results also show that one third of the reindeer continued with what they were doing even when being observed by hikers. This research finding get support from earlier research by Colman et al. (2001), Skarin et al. (2004) and Skarin (unpublished), who found that reindeer can increase their level of tolerance and become habituated to humans.

Even though more research and analysis is needed regarding the hiker-reindeer interaction (above all interviews with reindeer herders), it is concluded that potential as well as existing
negative impacts from tourism and recreation must be handled through management actions to avoid or minimise conflicts of interests (cf. Ewert et al. 1999; Manning 1999; Williams 2003). Management practices can be classified on the basis of whether they act directly or indirectly on visitor behaviour (Manning 1999). In the Laponian World Heritage site, the indirect management practice, such as information, was the most popular desired management action among hikers to handle conflict situations between hikers and reindeer. Information is generally supported by visitors (Manning 1999; Vistad 2002; Vuorio 2003). Although, one can question if information is an effective way to influence the visitors’ behaviour, perhaps it depends on how and where information is given.

The study about hikers and reindeer has focused on the Laponian World Heritage Site, which is identified by UNESCO as a site of outstanding global cultural and natural values that should be preserved for all humanity. The Sami heritage and the reindeer herding has been given additional attention through this designation. The existence of reindeer and reindeer herding is of course important for the reindeer herders and is a fundamental component in the Sami culture, but this paper shows that it is also important to defend the existence of reindeer from a tourism perspective. The reindeer are associated with the Swedish mountain region and the reindeer contribute to a positive image of that region. When tourism poses problems for the reindeer, it does not only threaten the reindeer herding and thereby the Sami heritage, but also one of the values that attract people to the mountains. Contemporary landscape management has to be aware of what tourists value in the landscape, and know about the capacities of the cultural and natural resources, i.e. reindeer herding, so that tourism and reindeer herding can coexist.

**Paper III**

Production of natural areas for tourist consumption started over a century ago when certain natural settings were marked off, museumised, and labelled as national parks (MacCannell 1992; Saarinen 2004; Sandell 2005). The establishment of national parks was as much a symbol of nationalism as protection of aesthetic landscapes, nature protection and economic development through tourism (e.g. Runte 1977; Mels 1999; Marsh 2000). Even today national parks and other protected areas are promoted and sold as tourist attractions and the different labels of these areas seem to shape the tourists’ perception of these areas, even before they have visited them. When a label functions as a mental image or an idea, or as an informative element of a place, MacCannel (1976) and Leiper (1990b) for example identify this as a tourist marker. The function of protected areas as touristic markers is discussed in Paper III. Paper III investigates the significance of protected areas in tourism; particularly the effect of protected areas on tourists’ travel behaviour and inclination to visit specific sites. The empirical data was collected through surveys of visitors conducted in three different areas in the Swedish mountain region: the Fulufjället National Park, the Laponian World Heritage Site and the Lake Torne Biosphere Reserve.

It is concluded that protection status matters to tourists, and that it affects the decision to visit the area, but to a variable degree between the three study areas. Considerably more visitors in Fulufjället were affected by the protection status (national park) in their decision to visit the area, compared to the other two areas. In Laponia, where national parks have existed for a long time, the effects of an additional designation (i.e. World Heritage Site) were marginal. However, the results showed that the World Heritage label projected important information to some visitors, and it gave the visitors expectations and positive connotations (cf. Leiper 1990b). Only a smaller share of the visitors to the Lake Torne area was aware of the biosphere reserve and the label had basically no effect on the travel decision. This result can be confirmed by Eagles (2001) and Nolte (2004) who states that the biosphere reserve label is less known than the other two labels.
The different labels of the protected areas function as touristic markers, but the name ‘national park’ has a stronger effect on visitors, than the labels of ‘World Heritage Site’ and ‘Biosphere Reserve’. It is suggested that markers may act with different force in their roles or functions depending on our mental associations and external impacts, such as information. In the newly established national park in Fulufjället, the relatively strong effects of the label may be related to marketing, information and media coverage.

Designations of protected areas usually carry enormous expectations that more tourists will be attracted to the place (Hall forthcoming), and when tourism and recreation are encouraged in protected areas, it is based on the argument that economic benefits will accrue to the local communities (Marsh 2000). When the Laponian area was designated as a world heritage site, the local communities and the tourist entrepreneurs hoped that the designation would lead to increased tourism in the area (Strategiplan för Turismutveckling i Laponia 1998; Mulk 2002). According to the research findings in Paper III, only five percent of the visitors were affected by the protection status (as a world heritage site) in their decision to travel to the area. It is therefore relevant to highlight the often unrealistic expectations regarding protected areas and its contribution to regional development. Nevertheless, tourism in protected areas can result in social, environmental and economic benefits for local people if managed in an appropriate manner, particularly with a change in approach from fortress conservation to participatory management planning (Scheyvens 2002). Economic benefits are also tied to tourism development of accommodation, facilities, services and activities, as well as development of infrastructure and transportation.

Themes for further research ideas

A first theme for further research ideas relates to what kind of desirable tourism development the management authorities consider for the Laponian World Heritage Site. In relation to that, it is also of interest to investigate how tourists’ experiences towards different attractions in Laponia, as well as how knowledge about tourism interactions with other stakeholders, are incorporated in planning and management of nature protection according the new Swedish nature conservation policy (Skr. 2001/02:173).

There is always a tension in landscape between the “untouched” or “wild” and the desire to develop, manage and control. Blaikie (2001) argues that it is necessary to link the human construction of nature to the policy process and he advocates an environmental policy that recognises issues of power and knowledge. He wishes the policy to specify the social ends of the environmental policy and to incorporate the local people, and thereby have a more democratic approach, which is attendant to the economic, cultural and social impacts of the policy. Blaikie’s standpoint becomes important in the discussion of environmental justice, which is vital when considering nature conservation policies. The concept of nature as human construction is not only an approach in contemporary geography, but an approach that will have implications for more ‘practical’ environmental policy. Kyle et al. (2004) have noted a significant shift toward a new social paradigm with regard to the managerial philosophy underlying public land management. This new paradigm places greater emphasis on understanding the subjective, emotional and symbolic meanings associated with natural places, as well as on understanding places as changeable and dynamic contexts of social interaction and memory (Stokowski 2002). There are similarities between the environmental policy promoted by Blaikie, the new paradigm as described above, and the new Swedish nature conservation policy (Skr. 2001/02:173). It is of interest to follow up these new
dimensions of nature protection e.g. with the stakeholders’ involvement in the planning process and to study how social values are incorporated in environmental policy and management.

A second theme for further research would be to analyse the concept of wilderness in environmental management policies and to compare the views of management authorities, tourists and reindeer herders regarding the “the wild country”. When the meaning of wilderness refers to an individual state of mind, a definition is elusive and then the term wilderness instead should be used as a feeling or an experience [vildmarkskänsla] rather than a description of an area. However, one must question whether or not it is a problem to refer to an area as wilderness although people have used the area for a long time. It is a problem if the cultural heritage is neither seen nor taken into consideration, or if the cultural traces or use of the area are not accepted. If the definition of wilderness is uncultivated and uninhabited land and if Laponia is called wilderness, then the reindeer herding is invisible. Calling Laponia wilderness may feel like a rejection of the people living in the area and of their own personal relationship with the land, as well as a denial of their ancestor’s existence on and past use of the land. A fundamental problem with preservation is to create understanding for the historical dimension in the landscape (Germundsson & Riddersporre 1996). I claim that it is exactly the same with using the word wilderness.

Finally, does wilderness exist at all? Many people and texts use the term wilderness as a description of a defined area. It is clear that people can experience wilderness and perceive an area as wilderness, even though the area, in an etymological meaning, is not a wild land. We know that the Lapland Mountains have been inhabited for a long time; even so, the visitors think of the area as wilderness and that the wilderness is of great importance as a reason for visiting the area (Pettersson & Wall 2005; see also Paper II and III in this thesis). Perhaps it does not matter what we call the landscape of Laponia as long as it is visible that this landscape is, as all landscapes are in different ways, a combination of culture and nature. Among all of us who care about the environment, it is important to criticise, rethink and analyse the meanings of concepts (nature, nature protection and wilderness), as well as the consequences that different meanings will give to the place or for the local community.
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Svensk Författningssamling. 1909:56. Lag angående nationalparker.


Paper I

Recreation at Tree Line and Interactions with Other Land-use Activities

Anne Tolvanen, Bruce Forbes, Sandra Wall and Yrjö Norokorpi

15 Recreation at Tree Line and Interactions with Other Land-Use Activities

A. Tolvanen, B. Forbes, S. Wall and Y. Norokorpi

15.1 Introduction

The relatively undeveloped nature of large areas of the Fennoscandian sub-alpine transition zone from the coniferous timberline to the Nordic mountain birch tree line provides an ideal environment for recreation. The first national parks in Europe were established in Sweden in 1909, in Finland in 1938 but in Norway not until 1962, in order to preserve areas for nature conservation and recreation. In all Fennoscandian countries, large conserved areas are mostly situated in the north and mainly in the mountain birch forest and above, in Norway also in southern mountain districts. In nearly all conserved areas in Finnish Lapland and also in Sweden and Norway, recreation is very important. Recreation is also active around large tourism business areas, such as Saariselkä, Ylläs and Levi in Finland, Sälen, Idre, Vemdalen, Åre, Riksvik and Björkliden in Sweden, and Geilo, Hemsedal, above Lillehammer, Trysil, Voss, Oppdal and Bjørnfjell/Narvik in Norway, all of them mainly in the mountain birch zone. The relative importance of tourism as a source of income is constantly increasing above the coniferous timberline, with a simultaneous relative decrease in traditional sources of livelihood, such as forestry and farming. At present in Finland, the income from tourism exceeds the income from agriculture and forestry in many rural municipalities (Saastamoinen et al. 2000).

Recreation is based on so-called everyone’s rights, which are exceptionally wide in Fennoscandia. Free access to and use of both public and private land are allowed, provided no harm is caused to people, animals or vegetation. Traditional outdoor activities, e.g. hiking, skiing and biking, and gathering of berries and mushrooms are allowed for everyone, whereas restrictions are sometimes made regarding, e.g., camping for more than one night in the same place. In national parks, local people are usually allowed to continue hunting and fishing and reindeer herding, but the increase in recreation may in some parks lead to restrictions on the possibilities of continuing these traditional
activities. In order to maintain future tourism activities at ecologically, socially and economically sustainable levels, practical measures are needed to determine the appropriate levels of sustainability. To achieve this difficult and complex aim, close cooperation between research, administration, planning and local people is crucial (see Chaps. 23 and 24).

Generally, research on the ecological impacts of recreation in mountain regions started in Fennoscandia during the 1960s (e.g. Wielgolaski 1978), which is considerably later than, e.g. in North America and Great Britain, where vegetation studies were carried out as early as the 1930s (Bates 1935). Most published Finnish studies on ecological impacts of mass recreation have been carried out south of the mountain birch region (e.g. Kellomäki 1973; Nylund et al. 1979; Malmivaara et al. 2002). Hoogesteger, however, investigated the vegetation changes around wilderness huts in Finnish and Swedish Lapland (Hoogesteger 1976, 1984; Hoogesteger and Havas 1976), while Tolvanen et al. (2001) and Forbes et al. (see Chap. 14) have studied the impact of experimental trampling on regeneration at and above the mountain birch belt. In Swedish Lapland, regeneration of subarctic heath vegetation was monitored in the experimental studies of Emanuelsson (1984), while Norwegian studies carried out in the mountain birch tree-line region have investigated the effects of, e.g. expeditions on heath vegetation and soil (Gellatly et al. 1986), experimental or recreational trampling on the recovery of fen, grassland and heath vegetation (Arnesen 1999a,b), and the recovery after 22 years of natural regeneration following trampling within three vegetation types in the low alpine zone (Wielgolaski 1998).

In this chapter, we summarize results on long-term impacts of recreation at coniferous timberline and mountain birch ecosystems, based on case studies carried out mainly in the Pallas-Ounastunturi National Park in Finland and in the Lake Torne area in Sweden during recent years. The common aims of the studies have been to investigate whether recreation is ecologically sustainable in these environments, and the levels of sustainability in such regions. This chapter does not discuss controlled trampling experiments, which are reviewed in Chapter 14. There has been a remarkable amount of research done on recreation near the Finnish coniferous timberline and in mountain birch regions, but most of the studies are unfortunately still unpublished or available only in Finnish. A comparable situation occurs in Sweden. Other objectives of this chapter are to discuss the interaction of recreation and tourism with other land-use activities in coniferous timberline and mountain birch ecosystems, such as nature conservation, forestry and traditional livelihoods, and also to discuss tourism from the viewpoint of sustainability. Although all kinds of outdoor activities in nature are classed as recreation, most recreation studies have concentrated on the traditional nature-oriented recreation activities, i.e. hiking, cross-country skiing and camping. These activities are most popular in nature conservation areas, where a significant amount of the research is being carried out. Nevertheless,
the increasing off-road traffic by four-wheel motor vehicles and snowmobiles has had more impact on the environment than any other tourist activity, particularly near tourist resorts. In this chapter, tourism is understood as both outdoor recreational activities and infrastructures to support recreation, plus the cultural and economical impacts by visitors.

15.2 Case Study Areas

Studies have been carried out at the coniferous timberline and in subalpine mountain birch environments in the Finnish Pallas-Ounastunturi National Park and Urho Kekkonen National Park (UKK park) since the early 1990s. In Sweden, studies have been carried out near the northern boreal-subalpine tree line with Nordic mountain birch and some pine trees in the Lake Torne area since the early 1980s, and recently in the south Jämtland mountain area (e.g. Bäck and Bäck 1986; Bäck and Jonasson 1998; Wall 2001; Vuorio 2003).

Pallas-Ounastunturi National Park belongs to the northern boreal zone, and the vegetation of the lower areas of the park is coniferous heath vegetation. A 100-km-long subalpine fell range runs through the middle of the park. The location of the timberline is approximately at 420 m a.s.l., ranging from 470 to 380 m at the western and eastern slope, respectively (Seppänen and Norokorpi 1998). On the southern fells of the national park, the timberline is formed by Norway spruce without a pure mountain birch belt above it. The timberline ecosystem is influenced by crown snow load, i.e. accumulation of frost, ice and snow on tree crowns, to such an extent that the severity of snow damage makes the growth and regeneration of birch impossible at higher altitudes than spruce (Norokorpi 1994). In the northern parts of the park, there is a mountain birch belt above the coniferous forests formed by Scots pine because of more barren and drier soils. The so-called crown snow-load limit is located at higher altitudes and it is not a minimum factor to tree growth there (Norokorpi 1994).

Pallas-Ounastunturi National Park was established in 1938 in order to protect locally valuable forests and mires and local cultural habitats, such as meadows and reindeer pastures near the tree line. The number of annual visitors is approximately 100,000; the number has increased 2.5- to 4-fold over the past 20 years (Penttilä et al. 1998). It is estimated that 40% of tourists visit during the summer and 60% in winter (Tervo 2003). The park has 200 km of official skiing trails and 120 km of hiking trails (Penttilä et al. 1998). Hence, recreation has an impact on the environment throughout the year, but in the form of different activities, which are often concentrated within different areas. The annual maximum visitor number of certain wilderness huts and camping sites approaches 5000, and during the nights of peak periods there may be 150 people in a camping area (Trast 2001). Due
to the heavy impact of people in Pallas-Ounastunturi National Park, the park is classified as class IV according to the Protected Area Management Categories of the IUCN (Penttilä et al. 1998). Class IV indicates a protected area managed mainly for landscape conservation through management intervention. Usually, national parks with a lower human impact are classified as class II, which indicates a protected area managed mainly for ecosystem protection and recreation.

UKK park is located in eastern Lapland in the upper coniferous and Nordic mountain birch ecosystems, with a special creeping birch form (var. appressa) in the north of the park (cf. Chap. 7). The park became a popular tourist area in the 1950s (Rautio et al. 2001), and the number of visitors has grown dramatically with the development of the tourist resort of Saariselkä. The estimated number of annual visitors is in the order of 150,000 people, but it varies depending on the calculation method and whether day hikers or wilderness hikers are counted (Rautio et al. 2001).

The Lake Torne area is located in the northern part of the Swedish Lapland Mountains, in the county of Norrbotten. Parts of the Lake Torne area are designated by UNESCO as a Biosphere Reserve, within the research programme Man and Biosphere (MAB). The Lake Torne Area Biosphere Reserve consists of mountains, valleys, meadows and lakes. The landscapes are characterized by subalpine mountain birch forest and alpine and subalpine heaths (Wall 2001). Several protected areas are included in the Biosphere Reserve; two national parks and three nature reserves. The national park of Abisko was established in 1909, and Vadvetjåkka National Park in the far north-west of the study area was set up in 1920 (Bäck 2002).

Tourism in the Swedish Lapland Mountains began in the 1880s, although at a modest scale. Development of the communication network, maps and travel books, and improvements in the infrastructure in the region (establishments for overnight stops, trail markings) were important factors behind the expansion of tourism at the end of the 19th century and beginning of the 20th century in the mountains of northern Sweden, but also in many mountain and mountain birch regions of southern Norway. The Swedish Touring Club (Svenska Turistföreningen, STF) was of great importance for the development of mountain tourism (Bäck and Bäck 1986). Tourism increased by 10% per year in the mountains of Norrbotten from the 1950s to the mid-1970s. After road construction was completed in 1984 between Kiruna and Narvik, for a long distance through the Nordic mountain birch forest, the number of tourists staying in hotels increased to more than 166,000 (Bäck and Bäck 1986). However, the number of tourists started to decrease in the 1990s due to the reduced attractiveness to adventurous tourists (Bäck 2002). Several tourism establishments are presently located on the south shore of Lake Torne (Fig. 15.1), three of which have ski lifts for downhill skiing. In the area there are marked trails for winter and summer activities. A visitor survey of hotel visitors in 2002 reveals that 50% of the tourists come during summer (June to
September) and 45% during winter (January to May), while the period from October to December is quiet in the area. About 75% of winter visitors go downhill skiing, while the most popular summer activity is one-day hiking (65%), followed by several-day hikes (20%; Wall, unpubl.).

15.3 Monitoring Studies on the Impact of Recreation on the Environment in Lapland

In the national park Pallas-Ounastunturi, large-scale surveys have been repeatedly carried out since 1991 to investigate the condition of hiking trails (Norokorpi, unpubl.). Besides the surveys, trail investigations have been made in order to estimate the suitability of contrasting vegetation types, soil characteristics, slope, altitude and aspect for hiking (Koivula 2000), to estimate the suitability of different vegetation types to hiking in summer and cross-country skiing (Tervo 2003), or the impacts of camping and wilderness huts on vegetation (Trast 2001). Besides Pallas-Ounastunturi National Park, surveys to map the condition of hiking trails and surroundings of wilderness huts have been carried out in the Finnish UKK park (Rautio et al. 2001). In Sweden, one study has been carried out recently in the southern part of the Swedish mountain range, in the county of Härjedalen, in 1999. The purpose of the study was to investigate whether the area had been exposed to a non-sustainable wear of vegetation or erosion, and to identify which parts were the most exposed (van den Brink and Vikman 2000).

Ecological changes are inevitable even after slight and short-term trampling, particularly at higher elevation with a long recovery period (see Chap. 14). The direct impact of recreation is always negative: the value of the envi-
vironment decreases as a consequence of wear and decreased visual quality. The long-term physical influence of hiking and skiing is to compact the soil and reduce the thickness of the soil humus layer, especially on slopes (Tervo 2003). On old trails there is no vegetation, and the main issue is to keep their spatial dimensions under control, i.e. prevent their further expansion. Changes in the condition of tracks may be rapid, for instance, the width and depth of a hiking trail have been found to increase at maximum 70 cm in width and 1.5 cm in depth, averages being 3.1 and 0.15 cm, respectively, during a 3-month summer period with less than 1000 hikers on dry fell heaths of Pallastunturi (Koivula 2000). In the Finnish UKK park with over 150,000 day hikers per year, the width of trails varies between 1.4 and 3.6 m, the widest points being 8 m, which can also be seen from distances of many kilometers (Rautio et al. 2001). The deepest points can be over 30 cm, which may be partially a consequence of water erosion (Rautio et al. 2001).

Slopes are most sensitive to wear due to the combined influence of trampling and water erosion, the latter occurring especially during the snowmelt period. This can easily be seen on trails on slopes, e.g. at the mountain birch tree line in Kilpisjärvi, northwestern Finland. In areas of high wear, complete closure of the trail or artificial structures, e.g. stairs, duckboards, or cover by gravel or pavement, are probably the only methods to protect the environment from further wear.

The impacts of summer hiking and cross-country skiing on soil and vegetation differ considerably (Tervo 2003). The direct influence of skiing on vegetation is not as great as that of hiking, which may considerably increase the cover of graminoids at the coniferous timberline and in mountain birch environments. On the other hand, the influence of skiing is spread over a wider area compared with hiking, since the skiing trails are broader and, especially near tourist resorts, maintained by machines, which press and compact the snow and delay the timing of snowmelt. The tolerance of vegetation to hiking and skiing is opposite between the dry and mesic vegetation types: hiking in summer has been observed to reduce the plant cover most in the dry Calluna-dominated vegetation, whereas skiing has a negative impact on the mesic Hylocomium–Myrtillus-dominated vegetation found, e.g. in the bottom layer of the mountain birch forests. The negative impact is based on a decreased cover of the dominant deciduous dwarf shrubs, which are found to be replaced by evergreen species (Tervo 2003). The great width of the modified area and the time to recover during summer may create opportunities for light-favouring species, such as lichens and evergreen plants, to increase on skiing trails (Tervo 2003). Lichens have sometimes been observed to be more common also on old trails than on new trails. Early recolonization of lichens may occur from lichen fragments surviving after large plants have been destroyed. These fragments can lead to rapid recolonization even in the middle of a track (Emanuelsson 1984), unless reindeer graze them.
Camping has an even greater impact on vegetation than hiking in mountain birch ecosystems. According to Cole (1988), the impact of one camping occasion is comparable with 75–150 passes by trampling. At Pallas-Ounastunturi National Park, the altered vegetation area around the wilderness huts varies between 50 and 1450 m² (Trast 2001), whereas at UKK park, with a higher recreation pressure, the area varies between 170 and 1530 m² (Rautio et al. 2001). At UKK park, the altered vegetation area around wilderness huts increased 2.5–19-fold in 1999 (Rautio et al. 2001) compared with the measurements carried out at the same sites 25 years earlier (Hoogesteger 1976). During this time period, summer visitor numbers increased five-fold at some huts, from 1000–5000 people (Rautio et al. 2001). Around old huts the cover of graminoids is higher compared with the surroundings of the new huts (Trast 2001), similar to the trend that has been observed between old and new hiking and skiing trails (Tervo 2003). The intensity of the disturbance apparently influences the difference in vegetation between old and new hiking trails and wilderness huts. Recreation pressure on old trails and huts has increased slowly, which has allowed time for secondary grass-dominated vegetation to form in the area. At new sites, e.g. in the mountain birch forests, where trampling has been intense since the beginning, secondary vegetation has not been able to colonize the area (see also Hoogesteger 1984).

Recreation in the form of large-scale infrastructures especially at or close to tourist resorts has remarkable environmental effects. Bäck and Jonasson (1998) have been working on long-term environmental impact assessment before, during and after road construction in the mountain birch and upper pine forests between Kiruna and Narvik in Swedish Lapland. The secondary aspects of the road construction, such as buildings, ski lifts, connection roads, and a golf course have intensive effects on the environment. Construction of road further increases the wear on nature, for example by increased use of areas close to the roads, increased use of motor vehicles over the terrain, and by new establishments for recreation. Also littering increases near resting and parking places (Bäck and Jonasson 1998).

15.4 Interaction of Recreation with Other Land-Use Activities

Nature-based tourism is a fast-growing business and will be an increasingly important source of income in mountain birch ecosystems of northern Fennoscandia. It interacts both with older, established land-use and with nature conservation activities, since a considerable amount of recreation is concentrated in conservation areas and valuable habitats. Recreation can cause conflicts between different stakeholders due to too similar interests (e.g. recreation and conservation) or contrasting interests (e.g. recreation vs. forestry).
15.4.1 Recreation vs. Nature Conservation

Those working in nature-based tourism and those working in conservation share the same interests. According to Budowski (1976), there are three categories in the relationship between tourism and nature conservation. Conflict arises when tourism has negative impacts on nature or when the two co-exist but have little contact with each other. An extreme example is the construction of downhill ski slopes in scenic parts of mountain birch forests, often combined with building of hotels, parking lots and ski lifts (see Chap. 24, Fig. 24.3). In this context, the direct negative impacts of recreation on nature are emphasised, such as vegetation and soil changes, erosion, disturbance to animals, and reduced visual and aesthetic values. On the other hand, conflict arises from a situation where tourism is a victim of an already deteriorated environment (e.g. by industry, mining, forestry) that would otherwise attract people.

Another category in Budowski's (1976) classification is co-existence, which indicates that under certain circumstances tourism and conservation may co-exist. Co-existence can be attained by dividing areas into different use in time or space. For example, in Pallas-Ounastunturi National Park in Finnish Lapland, zoning has been used to limit access to the most sensitive sites, e.g. according to special vegetation types near the tree line. Hiking in restricted

Fig. 15.2. Tourist trail in the Nordic mountain birch forest with duckboards to protect the vegetation and the people against getting wet. Note that preferably the protection of the trail should have been wider to be more effective. (Photo: L. Bäck)
zones is forbidden during summer. In the less restricted wilderness zones and the least restricted basic zones, hiking and skiing are allowed. However, official trails are only located in the basic zones, which concentrates most recreational use within these least sensitive habitats.

The third category, symbiosis, occurs when appreciation of nature and conservation increases as a consequence of tourism (Budowski 1976). Tourism is often argued to be the last possibility for protection of nature (Saastamoinen et al. 2000). A consequence may be the establishment of new conservation areas in order to increase tourism and recreation. This leads to a complex situation, since recreation has a negative impact on the nature in the new conservation areas. Special steps may then be taken to lead the majority of tourists along marked trails, maybe with a cover of, e.g. gravel or duckboards in particularly sensitive vegetation types, such as in some mountain birch forest areas (Fig. 15.2).

15.4.2 Recreation vs. Forestry

The relationship between recreation and forestry reflects the relationship between nature conservation and forestry, as recreational activities are supported by conservation. It is estimated that nature conservation reduces clear-cutting opportunities on average by 10%, the percentage being even higher (18%) in state-owned forests in Finland (Mäki et al. 1997). Hence the establishment of protected areas may violate the local economy by cutting off the productivity of forestry, a situation that has occurred, e.g. in Finnish Lapland (Saastamoinen et al. 2000). Although this is most important in coniferous forests, it also concerns the use of mountain birch forests, particularly for fuel wood. Tourism increases the need for fuel wood, but cutting may be restricted (but cf. Chap. 16). Compensations have been addressed to smooth the losses of local economies, but they have not always been well targeted to actual losers, i.e. people working in forestry (Saastamoinen et al. 2000). A significant problem may arise when an individual forest owner loses direct income from selling wood, while the benefits may go to the development of infrastructure for tourism and hence to people who are not forest owners.

15.4.3 Recreation vs. Traditional Livelihoods

Reindeer herding is an essential human activity in recreational areas and national parks of coniferous timberline and mountain birch environments in northern Fennoscandia. For example, approximately 10,000 reindeer belonging to three reindeer herding associations graze in the area of Pallas-Ounastunturi National Park. The park region is important for the reindeer due to the availability of epiphytic lichens (Alectoria spp. and Bryoria spp.) during win-
ter, during the calving period in spring, and as an escape from mosquitoes
during summer, when the reindeer are willing to climb to the high fells
(Rauhala 1994; Warenberg et al. 1997). The reindeer herders have the right to
use snowmobiles and four-wheel motor vehicles in conjunction with their
work. In very sensitive fell areas, the combined influence of reindeer and
recreation may be the strongest factor influencing the vegetation. Mobilized
and more intensive reindeer herding has increased the numbers of reindeer
(cf. Chaps. 11 and 19), which has had a negative impact on the cover of lichens,
especially fruticose forms, and even the regeneration of mountain birch
(Lehtonen and Heikkinen 1995; Chaps. 4 and 17), besides the direct negative
influence on the terrain by the vehicles. According to Emanuelsson (1984),
there are similarities in the influence of trampling and grazing on vegetation
in mountain birch forests and heaths, as vegetation resistance to both these
disturbances varies depending on the vegetation type, and fast-growing
rapidly recovering plants, such as graminoids and deciduous dwarf shrubs,
are favoured. If the pressure of both activities is too high at a site, no vegeta-
tion can survive in the area. In these areas, lichen is usually missing and the
mineral soil is exposed. Areas with most erosion are windy sites used by rein-
deer and/or for recreation (van den Brink and Vikman 2000).

Since recreation and reindeer herding compete for the same resources, a
conflict easily arises. The reindeer herders worry about tourism in the moun-
tain birch region and above (cf. Chap. 23), especially snowmobiling activities
during spring and disturbance by hikers in summer (Wall 2001). Disturbance
has increased the avoidance of tourist resorts by reindeer, leading to the
increased use and overgrazing of remaining undisturbed grazing grounds
(Nellemann et al. 2000; Vistnes and Nellemann 2001). Also visitors with dogs
disturb reindeer, especially if they hike off the marked trails (Helle and
Särkelä 1993; Rauhala 1994; Autto 1999). Reindeer cows and reindeer calves
during the calving season are easily disturbed, whereas reindeer bulls are less
likely to avoid areas with a high human impact (Wolfe et al. 2000). Distur-
bance may increase the time spent being vigilant and standing, mostly at the
expense of time spent resting and foraging (Duchesne et al. 2000).

The creation of recreational opportunities for tourists may simultaneously
result in restricted access for local people, who may feel that they have prefer-
ential rights to their home district and its natural resources (cf. Chaps. 18 and
23). In nature conservation areas, fishing and hunting are usually allowed for
local people, but only by permission. Even though the permission is easy to
get, the need to apply is considered frustrating (Mäkinen 1998; Autto 1999).
According to interviews with local people near Pallas-Ounastunturi National
Park, the rights of the visitors should be restricted, e.g. regarding hiking out-
side the marked trails, whereas the rights of the locals should be increased,
e.g. regarding fishing, hunting and the use of four-wheel motor vehicles
(Rauhala 1994; Mäkinen 1998).
15.4.4 Recreation vs. Recreation

Even different forms of recreation interact with each other. Differing opinions or even conflicts may arise, for example between people interested in traditional non-motorized activities such as hiking and cross-country skiing and those interested in modern activities such as downhill skiing and snowmobiling (Kajala 2001), which have increased strongly in the Nordic mountain birch forests over the last decades (cf. Chap. 24). Since the quietness of nature is one of the most important attractions for tourists (Järviluoma 2001), motorized vehicles, crowded trails and bad behaviour, i.e. actions that break the quietness, may cause conflicts between tourists. For example, cross-country skiers experience disturbance by snowmobiles not only on shared tracks but also on tracks where snowmobile use is restricted. The primary cause of the disturbance is noise and exhaust from snowmobiles (Lindberg et al. 2001). Opinions on the wear of nature may also differ among recreation groups. According to a survey carried out in 2002 in the mountain birch region of Lake Torne in Swedish Lapland, more than 30% of 1-day cross-country skiers and several-day hikers thought that there is a significant wear on nature, while the corresponding value is only 10% among downhill skiers and several-day cross-country skiers and 22% for 1-day hikers. Regarding wear on vegetation in the area by tourists, half of the respondents agreed partly or completely on the problem (Wall, unpubl.). To reduce interaction and conflicts between recreation activities, these activities can and often should be separated in time and space. Conflicts may also be reduced by education and participatory planning, where the opinions of different stakeholders are considered.

15.5 Sustainable Tourism

The concept of sustainable tourism is the key to seeking a more productive and harmonious relationship between the environment, visitors and the mountain birch host community. Sustainable tourism can be understood in three basic dimensions: ecological, socio-cultural and economic sustainability (cf. other chapters, this Vol.; Saarinen 1998). Ecological sustainability is concerned with ecological changes caused by recreation and their acceptability over the long term. Socio-cultural and economic sustainability refer to cultural or economical changes, respectively, and their long-term acceptability (Saarinen 1998).

The concept of carrying capacity is crucial with regard to sustainable recreation and it should be included even at the planning stage for the use of a specific area. In biology, carrying capacity has been used in models to deter-
mine the maximum population size that can be supported by a given environment (e.g. Lotka-Volterra–model on competition), while in recreation, carrying capacity is defined as the number of visitors that an area can sustain without degrading natural resources and visitor experiences (O’Reilly 1986; McCool 1994). In practice, the ecological carrying capacity can be defined as the maximum amount of recreation before biodiversity and biological functions are endangered, and, consequently, management or restoration of the environment is needed. From the social and ecological perspectives, carrying capacity in the Nordic mountain birch zone indicates that social culture and lifestyle in the zone remain, and that regional and local economical needs are fulfilled.

Carrying capacity is usually not a direct objective measurement, but it can be defined as the “limits of acceptable changes”, denoted as LAC (Saarinen 1998). It is evident that some changes occur in every ecosystem due to human activities. In the mountain birch environments, long-term changes can be caused even by slight recreation pressure. The increasing use of motorized vehicles is in places exceeding the ecological carrying capacity due to destruction of vegetation and ground and disturbance to animals. Considering LAC, the focus is on the degree of change that is acceptable in a specific area (Hendee et al. 1990; McCool 1994). LAC is a planning procedure designed to identify preferred social and environmental conditions in advance and to develop management techniques to achieve and protect those conditions (Wight 1998). Hence the purpose is to prevent conflicts caused by recreation, conservation and social interests. However, like every method, LAC has its weaknesses. It is a subjective method and depends on people’s interests and values. For example, whether environmental, social or economical aspects are prioritized in the development of a specific area influences the acceptability of the changes occurring in nature. Therefore, valid indicators, measures, standards and participatory management planning are needed for making decisions (see the next chapter).

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Human – Reindeer Interactions: Reindeer as Attraction – Hikers as Disturbance?

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INTRODUCTION

Geographers have paid little attention to animal life (Whatmore 2002). However, Whatmore states that research in social sciences is beginning to emerge that admits more agents than humans. In natural sciences and wildlife management, there has been increased interest during the past three decades in what has been described as a “human dimensions” approach (Decker et al. 2004). Human dimensions of wildlife management include understanding how people value wildlife, what benefits people desire from wildlife management, the acceptability of management practices, and how various stakeholders affect or are affected by wildlife and wildlife management decisions (Manfredo et al. 1995; Decker et al. 2004). Manfredo et al. (1995) state that it is particularly important to examine recreation-wildlife interactions, which can be used by managers to minimize conflicts between recreation activities and wildlife. At the global scale, nature-based tourism and outdoor recreation in remote areas are increasing (Eagles 2001; Saarinen 2004), with an associated rise in close encounters between humans and animals (Reimers et al. 2003). This makes demands on landscape managers to identify and understand human-animal interactions.

The mountain area in Sweden is an important arena for nature-based tourism and is used by the indigenous Sami people who herd reindeer. In Sweden, all reindeer are semi-domesticated and are herded by the Sami people. Reindeer herding has regulated by the law since 1971 and reserved only for Sami people. Reindeer herding is an essential human livelihood in the northern part of Scandinavia and to a large extent occurs in areas also designated for recreation and/or as protected areas. The Sami people have inhabit this region for a long period of time, and historically the Sami have been occupied with reindeer herding in combination with hunting and fishing. During recent decades there has been a decline in reindeer herding. In the spite of the fact that only ten percent of the Swedish Sami herd reindeer (about 1900 reindeer herders according to Lundqvist 2003), reindeer herding is regarded as fundamental to the Sami culture. Few reindeer herders can live solely from reindeer herding, and many families are obliged to seek other sources of income (Pettersson 2004). Reindeer herding contributes in general between ten to fifty percent to the family income, and the major economic output is from meat production (Lundqvist 2003).

The objective of this paper is to describe and analyse the interaction between backcountry hikers and semi-domesticated reindeer (Rangifer tarandus tarandus), and to discuss management options in relation to tourism and reindeer interaction. From the hikers perspective, the interaction can be seen as an attraction, where the reindeer are considered worth seeing and a significant part of the visitors’ experience during their visit in the mountains. The interaction may also be seen as a conflict of interest between land-users, where the hikers disturb the reindeer and therefore also the reindeer herding and the Sami people. The following research questions are analysed:
• What significance do the reindeer have for the hikers’ experience?
• How do the hikers and reindeer behave when they encounter each other?
• Is there a conflict between these two land-users, and if so, what does the conflict look like and what management options are possible?

Because of the limited amount of study of human impacts on semi-domesticated reindeer (Helle & Särkelä 1993; Vitnes & Nelleman 2001), it is necessary to seek a relevant theoretical framework and to examine earlier research findings and literature in the field of human impacts on wild animals and wild reindeer. It is therefore interesting to discuss if parallels can be drawn between wild animals and the semi-domesticated reindeer concerning human impacts and to discuss whether the reindeer in Sweden are to be seen as wild animals or not.

Interaction: Animals as attraction - human as disturbance

Tourist attractions are fundamental in tourism. Several studies have discussed the concept of attraction in tourism studies, i.e. what an attraction is and how it functions (Gunn 1972; MacCannell 1976; Lew 1987; Lieper 1990; Vittersø et al. 2000; Richards 2002). In its widest context, attraction includes things for the tourists to see and do (e.g. historic sites, amusement parks, and spectacular scenery), but also services and facilities (Lew 1987; Witt & Moutinho 1994). Vittersø et al. (2000) highlight the importance of subjective meaning, including symbolic and emotional values that tourists ascribe to attractions. Nature-based tourism in remote and rural areas is often associated with encounters between humans and wildlife. The longitudinal National Recreation Survey from the United States shows that the non consumptive wildlife-related activities are growing fast in popularity, and that more people travel to observe, photograph, or feed wildlife (Flather & Cordell 1995; Hammitt & Cole 1998; Cordell et al. 2004). From the American data, wildlife observation and photography is projected to grow by 74 percent by the year 2040. In a national survey conducted among summer visitors in the Swedish mountain region, 40 percent of the respondents engaged in nature studies (bird-watching, spotting animals and wild flowers) and photography (Heberlein et al. 2002). A tourist is almost by necessity a photographer. The ability to select particular images to photograph provides tourists with perfect evidence, memories and representations of the experience to bring back home (Markwell 1997). Markwell found that photography is a very important component of the tourism experience. The unique experience of viewing wild animals and reindeer often attracts people to approach the animals, to observe or take photographs, and tourists can go to considerable ends in the quest for the perfect photograph (Knight & Cole 1995; Markwell 1997; Colman et al. 2001; Reimers et al. 2003).

Few earlier studies have investigated the significance of reindeer for tourists’ and recreationists’ experiences (Vuorio 2003). Vuorio has studied tourism and recreation in the Swedish mountain region and he found that a majority of the visitors think that it is positive or very positive to see reindeer, and that the visitors are not disturbed by the mark of reindeer herding, e.g. overgrazing and wear. The only exception was the all-terrain vehicles, which are experienced more or less negatively.

There are many ways in which the presence of even well-meaning tourists may affect an environment and its animal life. Tourists that approach the animals may interrupt their feeding, which may even result in their flight (Reimers et al. 2003). Activities such as
backcountry hiking and cross-country skiing are extensive in nature and have the ability to disrupt wildlife in different ways, particularly by displacing animals from an area (Knight & Cole 1995). These impacts are interpreted as being direct impacts on wildlife. Direct impacts include the various responses of wildlife to disturbance by humans, e.g. displacement of animals and redistribution of animal home ranges or flight behaviour. Indirect impacts on wildlife include changes in vegetation, contamination of air, development of buildings, trail networks, roads or other environmental parameters that result from human use of the natural environment (Kuss et al. 1990; HaySmith & Hunt 1995; Vaske et al. 1995).

Knight and Cole (1995) have studied the impacts on wildlife resulting from recreation, and there are at least six factors (1-6) of recreational disturbances that influence wildlife: type of recreational activity; recreationists’ behaviour; impact predictability; impact frequency and magnitude; timing; and location. Regarding the type of activity (1), it is important to make distinctions between motorised and non-motorised activities, as well as between land-, water-, and snow-based activities; air- versus ground-based disturbances; and between activities that have localised effects (e.g. downhill skiing) and those with more widespread impacts (e.g. hiking). As regards the behaviour of the visitors (2), the context and visitors’ speed of movement can have importance. Predictability (3) is when the animals perceive a disturbance as frequent enough to be expected and non-threatening. Knight and Cole also argue that the degree of impact can depend on the frequency and magnitude of the disturbance (4). Traditionally, human disturbance has been viewed as most negative during the breeding season, but disturbance outside of the breeding season may affect the animal’s energy balance (5: timing). Concerning location (6), animals often show more response to activities from above.

Different species of wildlife have different levels of tolerance for interactions with humans, and this may vary even within a species (Hammit & Cole 1998; Colman et al. 2001). Hammitt and Cole also emphasize that if a species is already under physiological stress because of limited food resources and other environmental factors, interactions with humans may have particularly serious effects.

**Human impacts on reindeer**

Reindeer habitat selection can be affected by topography, weather and climate, vegetation types, predators and parasites, and human disturbances and competing land-use (Lundqvist 2003; Skarin et al. 2004). Competing industries and infrastructure decrease available grazing areas and quality (Lundqvist 2003). Human infrastructure such as roads and housing areas, and activities such as tourism, claim land and therefore decrease the land area for the reindeer (Helle & Särkelä 1993; Nelleman & Cameron 1996, 1998; Dyer et al. 2001; Vistnes et al. 2001; Vistnes & Nelleman 2001). Lundqvist (2003) and Nelleman et al. (2003) assert that linear structures such as roads, railroads, power lines and hiking trails and dams fragment the grazing areas into smaller units and may thereby reduce the grazing area. Exposure to recreational activities can result in vigilance, avoidance behaviour and redistribution of reindeer. When reindeer flee, their movement increases and this affects the reindeer by decreasing the energy budget over a time period, which negatively influence the accumulation of body fat reserves and winter survival for the reindeer (Colman et al. 2001). The increased movement may also increase the wear on the vegetation (Vistnes & Nelleman 2001; Skarin et al. 2004). Factors that reduce grazing time may become a constraint on productivity (Reimers et al. 2003). There is also a risk that the animals may choose areas with a higher predation risk if they tend to avoid human disturbances (Frid & Dill 2002).
However, there are research findings that suggest that reindeer can increase their level of tolerance for and become habituated to human activities. Colman et al. (2001) found that the Svalbard reindeer became habituated to human activity. They concluded that reindeer living in areas with a high to medium level of human activity (based upon the amount of summer tourists, the number of cabins and the distance to the closest settlement), showed weaker responses to human activities than reindeer living in the area which was rarely visited by humans. Reindeer in the area with the most human activity during the summer had shorter flight and running distances than reindeer in the area with little human activity. Skarin et al. (2004) suggest that even if reindeer are disturbed by human activities, they can increase their tolerance for human activities if insect harassments are severe.

A study of the distribution of semi-domesticated reindeer in the Swedish mountain region showed that vegetation type, direction of slopes, insect harassment and the time within the season were key factors affecting reindeer habitat use (Skarin et al. submitted). They also found that the reindeer were indifferent to hiking trails within their home ranges, but avoided areas with houses and mountain cabins during early summer. Wall Reinius and Skarin (unpublished) have investigated if the frequencies of hikers affect the semi-domesticated reindeer’s distance to the hiking trail. They did not find any correlation between the number of hikers and the distance of reindeer from the trail\(^1\). Another research finding that contradicts the risk-disturbance hypothesis that reindeer are disturbed or avoid human activities comes from Skarin et al. (2004) and Skarin (unpublished) who found that the number of faecal pellet-groups increased with decreased distance to the hiking trails, indicating that the reindeer and tourists prefer the same area.

**Conflict of interests**

If the land is used for several purposes in a region, the land-use has a multi-functional meaning. When the different users of the land do not confront each other, the use is not simultaneous. However, conflict may arise if two or more of the different users use the land at the same time. Different land-users may use the same area for a long period of time without creating a conflict situation, but this can change: (1) if one or both of the land-users change their behaviour; or (2) if one of the land users increase their use in time or space; or (3) if new land-users appear in the area (Abrahamsson 1984). Tourism and recreation can cause conflicts between different stakeholders due to contrasting interest (e.g. recreation vs. forestry or reindeer herding) (Tolvanen et al. 2005).

Jacob and Schreyer (1980) define conflict as “goal interference attributed to another’s behaviour” and this definition is well established in tourism literature and further developed in a theoretical model by Manning (1999). Conflicts in recreation can appear either through direct contact between persons or through indirect contact, e.g. the simple presence of undesirable groups (an overview of recreation conflict research is given in Graefe & Thapa 2004). Recreation conflict often tends to be characterised by an asymmetric or “one way” direction. That is, participants in one activity may oppose the presence or behaviour of participants in another activity, but the reverse is not true, at least not to the same degree (Manning 1999). For example, recreationists engaged in non-motorised activities can perceive

\(^1\) Digital counter have been used in order to calculate the frequencies of passing persons on the northern part of the *Padjelanta trail*, in the Vaisa area northwest of the Laponian WHS, Sweden. In a parallel study female reindeer in the same area were equipped with GPS-collars that registered the reindeer’s position. A Pearson correlation was computed between the number of hikers passing the digital counter and the reindeer distance to the hiking trail (calculated from the position of reindeer) (Wall Reinius & Skarin unpubl.).
a conflict, but those using motor vehicles do not perceive a conflict. Recreation literature classifies conflicts into four broad types of conflict, Table 1 (Schreyer 1990; Manning 1999).

<table>
<thead>
<tr>
<th>Conflict</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Inter-activity</td>
<td>Between activity groups; snowmobilers and cross-country skiers</td>
</tr>
<tr>
<td>2 Intra-activity</td>
<td>Within an activity group; experience of crowding among hikers</td>
</tr>
<tr>
<td>3 Managers</td>
<td>Management actions which do not correspond with the will of the visitor; restrictions regarding camping</td>
</tr>
<tr>
<td>4 Other resource users</td>
<td>Between visitors and e.g. forestry, reindeer herding</td>
</tr>
</tbody>
</table>


A conflict of interest between recreation and reindeer herding has been identified by Bäck (1996) in the Swedish Lapland Mountains. Until about 1950, the limited number of tourists and their impact on nature did not interfere with reindeer herding. When tourism gradually expanded, with increasing number of tourists and extension in space, Bäck asserts that tourism began to disturb the reindeer herding, e.g. tourist facilities eliminated reindeer pasture land, and snowmobiles disturbed the reindeer, dispersed the herds, and compacted the snow. According to Wall (2001), the most serious conflicts or threats for the reindeer herding in the Lake Torne Area in northern Lapland were snowmobiling and backcountry hiking. Sometimes the reindeer stay in the mountains even during wintertime and because of snowmobiling, the reindeer were pressed toward areas where they were not supposed to graze. The study by Wall also showed that the reindeer herders believed that hikers disturbed the grazing reindeer herd, which then moved southwards to other reindeer herding districts. This meant extra work for the reindeer herders in finding and collecting the reindeer herd.

**Study context and methods**

This study was carried out in the Swedish Lapland Mountains, with a focus on the mountainous part of the Laponian World Heritage Site (WHS), which is located in the southern part of the Lapland Mountains. In 1996, several national parks and nature reserves were designated as a World Heritage Site by UNESCO. The motivation was based on the area’s natural and cultural values. The cultural values are the Sami culture with the reindeer herding along with its pastures. In this international context, reindeer herding is identified as something unique and worth saving for future generations. It is of interest to study the interaction between reindeer herding and hikers, since additional attention is given to reindeer herding through the World Heritage designation.

Laponia is characterised by an alpine landscape and flat highlands. The climate is humid and cold. The dominating vegetation types are heaths, meadows, bare rock and sparsely vegetated areas. In terms of infrastructure, the Lapland Mountains are partly covered by a network of overnight cabins and marked trails for backcountry hiking and cross-country skiing, and are in part strictly regulated against any form of recreation facilities (in Sarek National park).

The results presented here come from two different investigations. The primary source for this paper is a quantitative visitor survey (referred to in the paper as ‘survey’ or ‘survey respondents’). Results also come from qualitative interviews with visitors (in the paper, referred to as ‘interviews’ or ‘the interviewees’). Interviews with reindeer herders have not yet been carried out, but will be included in the final version of this paper. The reindeer herders’ experiences and opinions regarding the interaction between hikers and reindeer as well as management actions in relation to this, will later be added to and analysed in the paper.
The visitor survey was conducted in 2003 in the mountains of Swedish Lapland, and Laponia covers about half of this area. During the period from July to September, registration cards were distributed by the staff at thirteen mountain cabins to visitors older than fifteen years. The number of completed registration cards was 2,335. Of these, 1,182 were from the Laponian WHS. After the visit, all Swedish and German visitors were selected (nine out of ten addresses were from these two countries) and received a mailed questionnaire with questions about their visit in the mountains. In the Lapland Mountains as a whole, a total number of 1,469 questionnaires were completed, 750 questionnaires were from Laponian visitors (76 percent response rate). Approximately 80 percent of the completed questionnaires were from Swedish visitors and 20 percent from German visitors. Tourists’ travel motives and activities were investigated as well as experience of reindeer, and the behaviour and reaction of hikers and reindeer when meeting or seeing each other. The behaviour and responses of reindeer to human activities were measured and described by the respondents of the questionnaire (see Furguson & Keith 1981). The respondents were asked if they had experienced any problems regarding the fact that both hikers and reindeer are present in the area. The respondents were also asked to evaluate a set of management actions in order to mitigate harm to reindeer and reindeer herding (this set of questions can also be compared to the methodology used by Furguson & Keith 1981). The survey included more questions than are presented in this paper.

The statistical descriptive and analyses (One-way ANOVA and Pearson Chi-Square Test, Significance level p <0,05) have been carried out in the Statistical Package of Social Sciences (SPSS). The analyses have been performed regarding the respondents’ nationality (Swedish, n=595, or German, n= 155), place of residence in Sweden (southern or northern part of the country) and experience of the area (first-time visitors, n=158, or return visitors, n=574). Residents from northern Sweden designates people from the counties of Dalarna, Västernorrland, Jämtland, Västerbotten and Norrbotten (n=88). Residents not from these counties are referred to as people living in the southern part of Sweden (n=502). This division coincides with the reindeer winter pastureland area (www.sapmi.se), and it is expected that people from the northern part are more familiar with, or more used to, seeing reindeer than is the case among people from southern Sweden.

On site semi-structured interviews were carried out with 26 persons (17 different interview situations) during two weeks in the summer of 2005. The interviewees were hikers in the Laponian WHS. The interviews took place at four different mountain cabins (Saltoluokta, Ritsem, Kisuris and Kutjaure). These four places were selected because of their geographical and strategic locations in relation to popular hiking trails. These places were also accessible within one-day hike from the road and therefore it was possible carry out interviews at different places within the relatively short period of fieldwork. In the smaller mountain cabins of Kisuris and Kutjaure, all present visitors were approached and requested to participate in the interview. In the larger Saltoluokta and Ritsem tourist stations, persons who were not obviously occupied with something (cooking, putting up the tent, on their way to the sauna etc.) were requested to participate. One person objected to be interviewed due to lack of time. Each interview took about 40 minutes. The interviewees were both male and female, Swedish and German, and they were between 14 and 64 years of age. Depending on whether the persons were hiking in company or alone, the interviews were carried out as either group or individual interviews. Six interview situations were carried out with two or more persons at the same time, while eleven persons were interviewed alone (ten of those were also hiking alone). Except for questions regarding the encounter with and attitudes towards the reindeer,
they were asked about their motives for their visit and their experiences of hiking. The interviews also contained questions regarding nature protection, wilderness and Sami culture. These latter sets of questions are not yet presented in this paper.

RESULTS

**Hikers’ attitudes and valuation of viewing the reindeer**

A relatively large share of visitors to the Lapland Mountains is foreign (29 percent), and the largest foreign group is from Germany, followed by Denmark. In the Laponian WHS, sixteen percent of the visitors come from Germany. A high share (63 percent) has studied at university and many of the visitors are return visitors (72 percent) with an average number of visits of 8.87 per person. According to the visitor survey, people come to the Lapland Mountains to experience nature, peace and quiet and wilderness, and because of the hiking possibilities.

A majority (81 percent) of the visitors in the Lapland Mountains saw or passed reindeer during their visit. The respondents were asked about the respective importance of 21 different factors for the decision to make a visit to the Laponian WHS. Each factor was evaluated on a five-point scale from ‘least important’ to ‘most important’. The factor concerning the possibility to see reindeer had an average score of 2.7. The factor of “experiencing nature” was given the highest score among all factors (4.9), and the factor “accessibility for cars” had the lowest score (1.7). The results showed that one out of five visitors to the Laponian WHS regarded “the possibility to see reindeer” to be important or very important as a factor among others when deciding to visit the area.

For the first-time visitors, seeing reindeer was more important (32 percent) than it was for those who had been in the area before (23 percent). A statistically significant difference was evident between the two groups. There were also significant differences between the Swedish and the German visitors. Almost half of the respondents from Germany state that the possibility of seeing reindeer affected the decision to visit the Laponian WHS, while the corresponding share for the Swedish visitors was only about 20 percent. There was also a large difference between the residents of southern and northern Sweden. In Table 2, the mean value for each visitor group is presented.

<table>
<thead>
<tr>
<th>Visitor group</th>
<th>Mean value</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-time visitors</td>
<td>3.98</td>
</tr>
<tr>
<td>Return visitors</td>
<td>2.61</td>
</tr>
<tr>
<td>German visitors</td>
<td>3.40</td>
</tr>
<tr>
<td>Swedish visitors</td>
<td>2.50</td>
</tr>
<tr>
<td>Residents from southern Sweden</td>
<td>2.60</td>
</tr>
<tr>
<td>Residents from northern Sweden</td>
<td>1.92</td>
</tr>
</tbody>
</table>

The survey respondents were asked to indicate which activities they were engaged in during their visit to the Laponian WHS. Not surprisingly, the primary activity was hiking, but interestingly, every fifth visitor noted the activity of studying or observing reindeer. The Germans (40 percent) stated to a higher extent than the Swedes (19 percent), that they studied/observed reindeer during their visit. This question demonstrated large distinctions between the Swedish residents from northern and southern Sweden respectively. People from
southern Sweden indicated “studying/observing reindeer” as one activity among other activities to a higher extent (21 percent) than people from northern Sweden (11 percent). The first-time visitors (27 percent) noted to a higher degree than the return visitors (22 percent), that they studied/observed reindeer during their visit.

The survey showed that the respondents found it very positive to experience reindeer during their hike (Table 3). Among the respondents, the existence of reindeer affected the visit either partly positively (31 percent) or very positively (53 percent) to more than 80 percent of the respondents. No significant differences were found between Swedish and German visitors, or between first-time and return visitors. Nevertheless, people from the southern part of Sweden stated to a higher extent than those from the northern part of the country that the existence of reindeer affected the stay either partly positively or very positively.

<table>
<thead>
<tr>
<th>Table 3. The attitudes towards the existence of reindeer</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do you feel the existence of reindeer affect your stay?</td>
</tr>
<tr>
<td>---------------------------------------------------------</td>
</tr>
<tr>
<td>All respondents</td>
</tr>
<tr>
<td>Residents from northern Sweden</td>
</tr>
<tr>
<td>Residents from southern Sweden</td>
</tr>
</tbody>
</table>

Statements from the qualitative interviews follow the same pattern in terms of attitudes towards the existence of reindeer, although none viewed the presence of reindeer negatively. A variety of answers were given to the question: “What does it mean for you that there are reindeer in this area?” A man called Stefan, who enjoyed taking photographs of animals and scenic views, expressed his opinion in this way: “The reindeer are part of the whole experience..., to see a living landscape. It is positive with animals, they are part of nature”. According to Ingamaj, who is an experienced hiker, reindeer are positive and she cannot imagine the mountains without them. A visitor from Germany called Waltraut said, “The reindeer make me calm”. Judith, from Sweden, who was visiting the area for the first time, stated: “The reindeer belong to nature, but they don’t mean anything special to me”. The interviews show that the reindeer are seen as part of nature, the reindeer contribute to strengthen the whole experience of the visit, and the reindeer belong to the image of the Swedish mountains. Several of the interviewees expected to see reindeer during their visit.

Characteristics of the visitors’ behaviour when they encounter reindeer

It was exiting, absolutely fascinating. I was also scared, what happens if I stand alone and they run around me...a hundred, two, three, or four hundred? I don’t know. It was all kinds of feelings...I didn’t want to disturb them, I didn’t move, but that was the first time that I got into such a large group of reindeer. But I have seen, though, not this time because there were no reindeer, however, how they [visitors] have climbed up or walked very closely with their cameras to the reindeer, without being aware of how much work it is to keep the reindeer herd together.” (Interview with Sabine)

According the questionnaire result, the behaviour of Sabine from German is far from common. About 70 percent of the survey respondents stopped and watched the reindeer. The other alternative for the hikers when they encountered reindeer, seemed to be to just continue the hike and not reflect much about the fact that reindeer are present. Table 4 illustrates that a
minor share of the Laponian visitors either avoided the reindeer or followed the reindeer to get closer to them.

Table 4. The hiker’s behaviour/reaction when they saw reindeer in Laponia WHS (it was only possible to mark one alternative)

<table>
<thead>
<tr>
<th>Laponia (%)</th>
<th>n=573</th>
</tr>
</thead>
<tbody>
<tr>
<td>I stopped to watch the reindeer.</td>
<td>67</td>
</tr>
<tr>
<td>I followed the reindeer to get closer to them.</td>
<td>0,3</td>
</tr>
<tr>
<td>I noticed the reindeer, but did not reflect much about it and continued to hike.</td>
<td>24</td>
</tr>
<tr>
<td>I avoided the reindeer by stopping or diverging from the trail.</td>
<td>4</td>
</tr>
<tr>
<td>I got frightened and left the reindeer.</td>
<td>0</td>
</tr>
<tr>
<td>Other reaction (e.g. “I photographed them”, “Spotted reindeer from the bus”).</td>
<td>4</td>
</tr>
</tbody>
</table>

A man called Inge, who liked to watch wild flowers and birds, was interviewed in Saltoluokta in Laponia. He stated that he tries to avoid the reindeer because he does not want to stress the reindeer, and therefore he walks another way. Stefan represents another behaviour. Stefan said: “I usually whistle at them [the reindeer], and then the reindeer become curious and look up”. Stefan explained that he wants to come closer to the reindeer to be able to take photographs. Stefan also added that the reindeer ran away when he approaches. To stop and take photographs of the reindeer seem to be something that is enjoyed by hikers. During one of the interviews, the photographer Magnus said that he looks at the reindeer and when he is close he photographs them.

Characteristics of the reindeer’s reaction when they discover hikers

The respondents to the questionnaire have marked one statement that describes how the reindeer in general reacted when the hiker was discovered. The behaviour of the reindeer exhibits more variation than the visitors’ behaviour (Table 5). A majority (51 percent) of the reindeer walked away, either calmly or more anxiously, upon discovering the hikers. The other main behaviour among the reindeer is that they continued with what they were doing (37 percent).

Table 5. The reindeer’s behaviour/reaction when discovered the hiker in Laponia WHS

<table>
<thead>
<tr>
<th>Laponia (%)</th>
<th>n=556</th>
</tr>
</thead>
<tbody>
<tr>
<td>The reindeer ran away.</td>
<td>16</td>
</tr>
<tr>
<td>The reindeer strolled calmly away.</td>
<td>36</td>
</tr>
<tr>
<td>The reindeer ignored me and continue what they were doing.</td>
<td>37</td>
</tr>
<tr>
<td>The reindeer were curious and approached me.</td>
<td>1</td>
</tr>
<tr>
<td>Other reaction (e.g. “Came to the tent”, “The reindeer saw us at a distance of 500 m and escaped”)</td>
<td>2</td>
</tr>
<tr>
<td>The reindeer never discovered me.</td>
<td>8</td>
</tr>
</tbody>
</table>

Tolerance and disturbance to human activities can be estimated with the distance at which animals become noticeably alert to humans and with the distance they flee (Reimers et al. 2003). This study investigated the distance between the hikers and the reindeer among those reindeer that ran away after becoming aware of the hikers (16 percent of the observed reindeer, n=86). The respondents’ estimations show that they were about 90 metres from the
reindeer (alert or fright distance) before the animal ran away. The reindeer ran approximately 200 metres away (flight distance).

The interviewed hikers in the Laponia WHS also described the reindeer behaviour. In general, the reindeer were said to run away as they discovered the hikers. Waltraut from Germany, who has come to the area to watch the calf marking, has the experience that if you walk too fast or if you do not care about the reindeer, the reindeer easily become disturbed and anxious. However, Staffan, who was visiting the area for the first time, explained that “some reindeer come closer, while others stand still and do not move”.

**The opinions among hikers regarding interaction as a conflict**

The hikers were asked both in the survey and in the interviews about perceived problems or conflicts between hikers and reindeer and reindeer herding. In the survey, 24 percent answered that they think there is a conflict or problem between the hikers and the reindeer herding. The results showed large differences between the Swedes (18 percent) and the Germans (45 percent) in terms of the question concerning perceived conflicts. However, the majority of those consider the conflicts to be of minor significance. 76 percent of all respondents thought there were no conflicts or problems associated with the fact that both hikers and reindeer herding are present in the same area.

In an open-ended question in the questionnaire, the respondents wrote down what they thought may have caused the conflicts or problems. The answers have been classified into three main categories:

1. The hikers disturb the reindeer by walking closer.
2. There is a lack of information about reindeer herding.
3. The reindeer herders disturb the hikers by using motor vehicles and the reindeer wear off the vegetation.

The first category contains the largest share of the answers. One person wrote: “Some hikers disturb the reindeer because they want to come close to them”. Several respondents noted that the cause was a lack of information regarding reindeer and reindeer herding. One respondent wrote down “Hikers don’t have enough information about the reindeer and therefore they can not understand their [reindeer] behaviour”. These problems can be interpreted as being one-way in direction, meaning that the conflicts are caused by the hikers and negatively affect the reindeer and/or the reindeer herding. In the third category, it is the hikers that are negatively affected by the reindeer herders and the reindeer themselves. A number of respondents argued that the reindeer herders caused the conflicts. These respondents do not like the use of motor vehicles, which the reindeer herders use in their work with the reindeer, because the motor vehicles have a disturbing noise and also harm the vegetation. One person wrote: "I seek wilderness and tranquillity, but the reindeer herders use motor vehicles”.

The interviewed hikers were asked if they have experienced that hikers may cause problems for the reindeer, and if so, in what way. Sabine believed that too many tourists could disturb the reindeer, because they approach the animals, are too loud or leave garbage in the terrain. The interviewed hikers do not think of themselves as problems for the reindeer and most of them have not experienced any problems. However, several of them believe that problems exist, e.g. caused by hikers that approach the reindeer. Stefan, who often tries to attract the attention of the reindeer, states that the hikers are not causing any problems and “that the
reindeer is moving so easily in the mountains...and if one would disturb them, they would only move...no, I don't think they get very disturbed”. On the other hand, other tourist activities than hiking, such as snowmobiling, are considered as disturbances to the reindeer. Several of the hikers also find the presence of helicopters disturbing, not only for themselves, but also for the reindeer.

**Attitudes toward management actions for coexistence**

There exist a number of management actions that could be of interest in terms of handling conflict situations between hikers and reindeer. The respondents in the visitor survey were asked to evaluate eight different alternatives on a five-point scale from “very negative”, “negative”, “neutral”, “positive” to “very positive” (Figure 1).

![Figure 1. Attitudes toward different management actions to handle conflict situations between hikers and reindeer herding](image)

Almost nine out of ten persons think that information is positive or very positive as a measure against the problems between hikers and reindeer. Among the management actions, information is the one that restricts the hikers the least. The more restrictions, the more negative the respondents get. Among the suggestions given, only one management action was related to restrictions to reindeer herding, and that was to decrease the number of reindeer in attractive hiking areas. Eight percent of the respondents considered this to be a positive or very positive management action. The results can imply that the respondents either feel that the conflict is mainly caused by the hiker and not the reindeer, or that it is of great importance to experience reindeer during the hike. A decrease in the number of reindeer would actually diminish the total experience of the stay in the mountains. A third possible interpretation could be the respondents’ consideration for the Sami people and the importance of the reindeer for them.

The result of this inquiry showed that there was a pattern between the respondents who perceived a conflict between hikers and reindeer herding and those who did not perceive a conflict. The former were more positive towards some of the management actions (limiting the number of visitors during sensitive times for the reindeer; temporarily closing certain hiking trails out of consideration for reindeer herding; prohibiting large groups of hikers; and
prohibiting hikers from accessing very sensitive areas for the reindeer) than the ones who did not believe that there were conflicts between hikers and reindeer herding. Statistically significant differences were also found between Swedes and Germans in terms of different management actions. The Germans were more positive towards following management actions than the Swedes: directing hikers to marked trails; introducing prohibition against large groups of hikers; and prohibiting hikers from accessing very sensitive areas for the reindeer. Both Swedes and Germans were negative about only allowing guided hiking, and the Swedes were very negative to this alternative. The results also showed that the Germans were more negative than Swedes were concerning a decrease in the number of reindeer in attractive hiking areas.

It is also apparent from the interviews that information is regarded as the best way of dealing with situations where reindeer can be disturbed. The interviewed hikers suggested that information should be placed at the ‘entrances’ to the area, in cabins, or on the tour boats. It is highlighted in the interviews that the information must be in both English and German. Even though a poster with information regarding reindeer herding has actually been put up in a number of cabins, none of the interviewees had taken part of such information.

This final quotation is from one of the interviews with a couple that concerns the question of how to reduce human disturbances on reindeer. The wife Märta declared, “there are such vast expanses...do they really have to have the reindeer exactly here by the trails? Can’t it be the responsibility of the Sami to keep the reindeer... “, whereupon her husband argued that she could also see it the other way around. He explained that the Sami were here before the trails and that it is now a matter of finding a way for the two to coexist.

DISCUSSION AND CONCLUDING REMARKS

Results from this study show that the hikers have positive attitudes regarding encountering reindeer when hiking. It is concluded that the reindeer make up a significant part of the visitors’ experience, particularly for the visitors who are not used to reindeer (first-time visitors, Germans and residents from southern Sweden). The experience of viewing reindeer may be considered to be an attraction or at least to strengthen the attraction. The attraction is interpreted as having a subjective meaning, which includes emotional values of the visitors (cf. Vittersø et al. 2000). A feeling of interest is the typical reaction when the tourists encounter reindeer, feelings of pleasure and relaxation also exist among the hikers. During the visit, the hikers may experience the landscape as a whole entity, where the reindeer are regarded as being part of nature and contributing to an essential part of the total hiking experience. This leads to the reasoning about whether reindeer are wild or not and no easy answer can be given. The reindeer are seen by the interviewed hikers as part of the natural fauna like all other animals and as belonging to the Swedish mountain landscape. The hikers were all aware that the Sami people own the reindeer, but this seemed to be of secondary importance. Even though the hikers stated that “the reindeer are half wild and half owned”, or “relatively free”, the dominating and primary thoughts were that they belong to nature. The Swedish reindeer are called semi-domesticated, thus indicating that they are to be found in the borderland between the wild, nature and culture.

The results of this study support the argument that it is important to defend the existence of reindeer and reindeer herding, not only because they are part of the Swedish cultural heritage and important for the Sami culture and livelihood, but also because the reindeer contribute in
strengthening the whole experience of the visit for the temporary visitors in the Swedish mountains.

If fairly little interest among researchers has been paid to human-animal interaction with a focus on the attraction of the encounter, more research has been carried out regarding the interaction as a problem. Negative impacts of humans to animal life have been central in several studies (Helle & Särkelä 1993; Knight & Cole 1995; Vaske et al. 1995; Nellemann & Cameron 1996, 1998; Dyer et al. 2001; Vistnes et al. 2001; Vistnes & Nellemann 2001; Reimers et al. 2003). I believe that the long-standing and well-cited hypothesis that humans disturb animals may derive from the lack of studies about animals’ habituation to humans, but also from the separation between the human and non-human world that characterises modern and industrialised countries. With the emergence of the environmentalist movement in the decades following the Second World War, the concern about protecting the environment from harm caused by human actions has grown (Cronon 1995). One of the main perceptions that characterises the contemporary view of artic and sub-artic environments is the idea that these areas are fragile and sensitive ecosystems, thereby encouraging a protective attitude towards the environment (Sugden 1989; Johnston 1995). In the light of the environmental movement, Johnston underlines that literature about artic and sub-artic places tends to emphasise the fragility of these environments, and the need for humans, especially visitors, to act responsibly. In the dominating discourse, which separates ‘nature’ and ‘culture’, humans are regarded as outsiders in nature and that they have negative impacts on the environment and e.g. disturb animals. The hypothesis can partly be confirmed in this study. According to the survey results, it is found that a notable share (16 percent) of the reindeer ran some hundred meters away after discovering the hiker. The hikers also think that they disturb the reindeer by approaching the animals, e.g. to take photographs. The interviewed hikers also spoke of reindeer running away in a manner suggesting anxiousness.

However, the results are contradictory. This study also found that over one third of the respondents stated that the reindeer continued with what they were doing even though the reindeer had discovered the hiker. This must be interpreted in terms of the reindeer not caring about the humans or at least that they do not feel threatened. Earlier research (Colman et al. 2001; Skarin et al. 2004; Skarin unpublished) can confirm that the reindeer can increase their level of tolerance and become habituated to humans, especially in areas that are frequently visited by humans, e.g. hiking areas. Both reindeer and hikers are attracted to the same area, probably because they prefer the same terrain and the same vegetation.

In the research area, the summer pastureland (June to September) for the reindeer herding coincides with the hiking season, so the use of the land for the two groups; the reindeer and the hikers, is simultaneous, both in space and time (cf. Abrahamsson 1984). To be able to understand a conflict, the conflict analysis should be based on longitudinal experiences and more research is needed. Potential as well as existing land-use conflicts, or conflicts of interest, can be handled by management actions. The most desired management action for handling conflict situations between hikers and reindeer was the dissemination of information to the hikers about reindeer herding and how to behave in areas with reindeer. Other Scandinavian studies have also shown that information is the most popular action (e.g. Vistad 2002; Vuorio 2003). Information is seen as the most effective way to affect visitors’ attitudes because it does not entail the costs associated with enforcement of rules and regulations (Manning 1999; Vuorio 2003), such as closing certain hiking trails or only allowing guided hiking. In this study, the German visitors were more positive towards various management actions than the Swedes. One possible explanation is that the experience of reindeer is more
important for the Germans than for the Swedes and that the Germans to a higher extent perceived conflicts or problems in the hiker-reindeer interaction. Out of consideration for continued reindeer herding, not at least for their own experience of reindeer, the Germans are more willing to make sacrifices to their freedom to hike when and where they want to. Another explanation regarding the diverse attitudes between the German and Swedish visitors may be the Swedes’ tradition of ‘public right of access’ (allemansrätten). In the Scandinavian context, it is important to note the ‘public right of access’ that grants extensive freedom of movement to the general public even on private property (Kaltenborn et al. 2001; Sandell 2005).

This paper has only briefly touched on the complex interaction, with its positive and negative elements. Interviews with reindeer herders regarding their view of human-reindeer interaction, including potential and existing problems, conflicts and management options, have to be carried out to be able to analyse the interaction completely. Furthermore, in the final version of this paper it will be interesting to compare the perceptions of hikers and the reindeer herders toward conflicts and problems concerning the interaction, and attitudes towards different management actions.

Potential and existing conflicts of interest and management actions must continuously be discussed in relation to the public right of access, as well as in relation to laws and policies, and the contemporary view of culture and nature in the landscape. A growing awareness among resource managers and policy-makers that conflict over resource values and uses are fundamentally social in nature and a function of the meanings ascribed to landscapes, resources and ecosystems, should contribute to managing, mitigating and solving conflicts.
REFERENCES


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Paper III

Exploring Protected Areas as Tourist Attractions

Sandra Wall Reinius and Peter Fredman

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EXPLORING PROTECTED AREAS AS TOURIST ATTRACTIONS

Sandra Wall Reinius and Peter Fredman

Abstract: This study explores protected areas as tourist attractions and their influence on tourists' travel behaviour. The importance of different protection status (national parks, world heritage sites and biosphere reserves) is discussed. Data comes from visitor surveys conducted in protected areas in the Swedish mountains. The results show that protection status matters to tourists, and it affects the decision to visit the area, but to a variable degree between the study sites. It is concluded that different protected areas labels function as touristic markers but that the name national park has a stronger effect on visitors, than the labels of world heritage site and biosphere reserve.

Keywords: protected areas, travel behaviour, markers, tourist attraction system

INTRODUCTION

The meaning and value of nature alters over time in accordance with change in needs and attitudes of society. Since the ideas of nature preservation emerged for over a century ago, national parks and other protected areas have been marked off, interpreted, museumised and labelled for the purposes of visitors and society (MacCannell 1992; Saarinen 2004; Sandell 2005). In many places, protected areas have become tourist products that the tourism industry promotes and sells as tourist attractions. The touristification of protected areas can be exemplified by Boyd (2004) and Shackley (1998):

"National parks have become tourist icons with many countries promoting some of their parks as ‘must-see attractions’. In some cases the attraction to visit individual parks is as much a product of marketing as it is of accessibility. In other cases, the uniqueness of places is often the sole reason why tourists visit them.” (Boyd 2004:473)

“World Heritage Sites have the highest visibility of any cultural attractions in the world, and possess a symbolic value which may be disproportionate to their size or beauty. They are symbols of our history, cultural icons whose importance transcends their current political status. Visitors to such sites deserve to receive an experience that is something special, something unique, an order of magnitude better than anything they have visited before.” (Shackley 1998:205)

The concept of national park is only one type of area protection, other form of internationally protected areas exist e.g. World Heritage sites, Wilderness areas, Biosphere Reserves, Marine Reserves and Nature 2000 Reserves. Most nations use multiple categories of protection, including different management objectives and permitting a variety of human uses. The national park and World Heritage label have become important in tourism promotion, and the labels are frequently seen in marketing (Palmer 1999). Eagles (2001) suggests that the names “national park” and “World Heritage Site” have a significant brand identity and therefore more attractive than less known names like “conservation area”. Nolte (2004) concludes from her study about tourism in biosphere reserves, that national parks and World Heritage sites are well-known labels to many people and that they have a strong brand mark, compared to biosphere reserve, which is hardly noticed. Nolte argues that this depends...
on the fact that the concept of national park is better known in the public, “because everybody can associate something with a national park, while the term biosphere reserve remains mysterious” (Nolte 2004:355). According to Eagles (2001), the name national park is closely associated with nature-based tourism, and being a symbol of high quality natural environment with well-designed tourist infrastructure. Designations may announce information about the area as being pristine and with recreational opportunities without the risk of encounters e.g. motor vehicles, and that the area is managed to provide solitude (Loomis 1999). Weiler and Seidl (2004:248) state that, “designations themselves are assumed to convey information to an information-constrained set of potential visitors”.

Positive associations of names and information about a site can be identified as touristic markers and analysed in a tourism attraction system (MacCannell 1976; Lew 1987; Leiper 1990; Richards 2002). As a tourist attraction, area protection can be expressed in different manners (e.g. label of quality, marker or brand). Earlier studies have discussed the importance of protected areas and labels in tourism, but the extent to which designations in fact influence visitation have not been extensively empirically examined. In this study, we examine protected areas and their importance as tourist attractions as well as which roles of markers protected areas can take i.e. being a trip motivator, affect destination selection, etc. (Leiper 1990). The objective is to study the significance of area protection on tourists’ travel behaviour and inclination to visit specific sites. The importance of different protection status (national parks, biosphere reserves and World Heritage sites) and their function as touristic markers is also discussed. Questions asked are: 1) what are the reasons to visit protected areas; 2) to what extent do protected areas have an influence on travel behaviour; 3) what factors do explain if that is the case; and 4) what are the visitors’ opinions about different utilities of protected areas? Empirical data comes from visitor surveys conducted in protected areas in the Swedish mountain region.

**Impacts of protected area designation**

Since the first national park was established in the United States in 1872, a great number of national parks, and other areas set aside for nature protection and recreation, have been established world-wide. During the twentieth century, the world’s protected areas increased from five to 200 million hectares, and today represent thirteen percent of the total land area (UNEP-WCMC 2005). The International Union for the Conservation of Nature (IUCN) defines a protected area as “an area dedicated primarily to the protection and enjoyment of natural or cultural heritage, to maintenance of biodiversity, and/or to maintenance of ecological life-support services” (Ceballos-Lascuráin 1996:29).

In addition to national parks, biosphere reserves and world heritage sites are also studied in this paper. While national parks have as their main purpose to protect nature and provide recreation possibilities, biosphere reserves are designated and managed with the objective of promoting and combining biodiversity conservation with sustainable development based on community participation and science. These areas are internationally recognised and administrated under UNESCO since the 1960s, but nominated by national governments. Another UN initiative is the Convention concerning the protection of the World Cultural and Natural Heritage, which is an international agreement, and adopted by the general Conference of UNESCO in 1972. World Heritages are identified as sites of outstanding global values that should be preserved for all humanity. Sites will then be preserved for future generations and become a responsibility shared by the international community as a whole.
Hall (forthcoming) states concerning the implementation of the World Heritage Convention, that: “World Heritage listing usually carries with it enormous expectations. At first glance these expectations often focus on the extent to which listing is meant to bring in extra tourists to the site or attract more government and agency support for the maintenance of the sites values.” When human use in the form of tourism and recreation is encouraged or supported in protected areas, it is often done with the argument of economic benefits to the local communities (Marsh 2000). The positive economic impacts that can follow from the establishment of a national park are, beyond new employment for managing the area, associated with development of transportation, accommodation, recreational facilities and tourism businesses (Marsh 2000; Weiler and Seidl 2004; Hall in press). While some protected areas may produce economic benefits, it should be emphasised that others have few facilities, services or products to offer and visitors need to be very self-sufficient (Marsh 2000).

Several previous articles discuss the impacts of protected areas in relationship to recreational use and changes in visitor numbers (e.g. McCool 1985; Shackley 1998; Loomis 1999; Hall and Piggin 2001; Buckley 2004; Weiler and Seidl 2004; Fredman et al. 2005, Hall in press). McCool (1985) writes that it is a common belief that designation of protected areas inevitably results in rapid increase in recreational use, but his study gave little support to that. Shackley (1998) argues in an anthology about visitor management in World Heritage sites that the visitor numbers will increase as a consequence of designation. An actual increase in visitor numbers was found by Weiler and Seidl (2004) in a study of newly designated national parks at eight sites in the United States. Fredman et al. (2005) did a ‘before and after’ study of visitors in a Swedish national park and found, based on data from on-site visitor counters that visitation increased by almost 40 percent following park designation. In a survey about tourism and World Heritage sites in OECD countries in 1998, over two-thirds of the sites reported an increase in visitation at an average of one to five percent per annum since designation (Hall and Piggin 2001). The causal link between World Heritage listing and increased visitor numbers is, however, rather tenuous as the increase of visitation was not significantly different from that of the average rate of tourism growth in the surveyed countries (Hall forthcoming). Buckley (2004) investigated whether the visitor numbers increased as a consequence when six Australian national parks became World Heritage sites. He found that the World Heritage listing had a positive effect on measures of tourism expenditure by increasing proportion of international visitors. However, he also found that data are inadequate to determine whether growth of visitor numbers had to do with the World Heritage listing as such, or with other factors.

**The tourist attraction system**

Tourist attractions are fundamental to the tourism production process as they often are the reason to visit specific destinations or places. Research on tourist attractions has been undertaken from different approaches and with different definitions of what an attraction is and how it function (e.g. Lew 1987). Some of the pioneering work in the field of tourist attractions was done by Gunn (1972, 1979), who discusses tourist attractions as being magnetic and that natural and historical features have an intrinsic attracting power. MacCannell (1976) systematised the concept of attraction system into a tourist, a sight (a site to be viewed) and a marker. A marker can be information about a sight, a name, a concept or a mental image or an idea. MacCannell argues that sights have markers, since the first contact the traveller has with a sight is not the sight itself but with some representation of it.
Leiper (1990) talks about phenomenas’ creation of images in the observers’ minds and the importance of needs and motivation. He states that the tourists are pushed by their own motivation towards the places where they expect their needs to be satisfied. The motivation depends on information, received from at least one detached marker, matching the individual’s perception of need, the individual’s felt wants. The model proposed by Leiper got empirical support by Richards (2002), who concludes that there must be a strong relationship between motivation and attraction visits and use of markers (Figure 1).

However, instead of sights, Leiper (1990) refers to Gunn (1972) and talks about a nucleus, which is a central element that might be any feature or characteristic of a place that a tourist considers visiting or actually visits. Nucleus refers to a sight and an object, a person or an event, which gives nucleus a broader meaning than sight (cf. MacCannell 1976). In Figure 1, markers are categorised as generating markers, transit markers and contiguous markers. A generating marker refers to information received before setting off to a nucleus, a transit marker is encountered along the route, and a contiguous marker is at the nucleus to which it relates. The former two types are referred to as detached markers, which means that the information is separated from the sight.

By combing the three elements of a person with touristic needs (a human element); a nucleus (a central element) and at least one marker (an informative element), Leiper asserts that the components become connected in an attraction system. The tourists are motivated to experience a nucleus when a marker reacts positively with needs and wants. The motivation depends on information received from at least one detached marker.

Figure 1. Model of the tourist attraction system (after Leiper 1990:381)

Leiper (1990) also identifies nine roles or functions of markers, including trip motivation, destination selection, itinerary planning, activity selection, nucleus identification, name connotation, finding the nucleus, souvenirs and the meanings of tourism. A marker as a trip
motivator includes information about a place and what can be experienced there. He argues
that at least one generating marker is necessary before a person can become motivated to set
off on a touristic trip. At least one marker referring to a specific nucleus is also necessary
before the person makes the decision about where to go (destination selection). Several
detached markers are needed for planning the route (itinerary planning). Markers can also
influence the tourists’ activity selection, e.g. information about activities offered at a tourist
site.

As mentioned above, a marker can be a name and most markers name the nucleus to which
they refer. The name allows the nucleus to be identified and distinguished from other similar
phenomena. That is what Leiper (1990:379) calls nucleus identification; “certain names of
nuclei have connotations that affect tourists’ perceptions of the experiences in prospect.
Positive connotation can contribute to the motivation and satisfaction” of the tourist. Markers
have a role in locating the nucleus. Maps and road signposts help the tourist to find what he or
she is seeking (finding the nucleus). Souvenirs (e.g. photos) act like markers as they help
people to remember the experience. Markers also give meanings to the touristic experience.
That is, certain nucleus only interest the tourists as they get information from the markers
perceived there. Without the marker, some sights would not mean anything special to the
visitor.

Study areas and data collection
In Sweden, about eleven percent of the land area is protected by means of 28 national parks,
2,600 nature reserves, and thirteen World Heritage sites and two Biosphere Reserves. A large
share (about 80 percent) of the total protected area in Sweden is located in the mountain
region. Although the mountains are sparsely populated, almost a quarter of all adult Swedes
visit the mountains in a single year (Heberlein et al. 2002). Over 85 percent of these visits are
for recreation and leisure. Recent changes in mountain tourism in Sweden show significant
increases in downhill skiing and snowmobiling, while participation in backpacking has been
stable (Fredman and Heberlein 2003).

For the purpose of this study, data from visitor surveys in three different protected areas in the
Swedish mountain region have been analysed (Figure 2; Table 1). Fulufjället National Park
(NP) is located in the county of Dalarna in the southern part of the mountain region. This low
alpine national park of 380 km² was established in 2002. Since Fulufjället is not utilized for
reindeer grazing, it has large areas of thick lichen covering the ground, which is unique for
the Swedish mountain region. Fulufjället NP features the highest waterfall in Sweden –
Njupeskär, which also is the major tourist attraction in the park. A network of small cabins
and marked trails throughout the park provides good opportunities for backpacking. In
designating Fulufjället NP complimentary infrastructure was also developed. This included a
visitor centre, new trails, and improved signposts within and outside the park. The park was
zoned in four zones using ROS (Recreation Opportunity Spectrum). Zones 1–3 make up the
majority of the park and offer opportunities for a tranquil experience of nature. The smallest
zone, Zone 4, is a high use zone around the waterfall. This was the first time zoning was used
and communicated to the users in a Swedish national park. Parallel to the national park
designation process, a tourism development project was also implemented and the park
managers now work closely with these tourism operators to market the park. In the summer of
2003, the number of visitors was estimated at 53,000 (Fredman et al. 2005).
The *Laponian World Heritage Site (WHS)* is located in the north of Sweden, in the county of Norrbotten, and consists of four national parks, two nature reserves and two wetlands listed on the International Convention of Wetlands. The first Swedish national parks were established in 1909 as the first parks in Europe. Today, two of these early parks are included in the Laponian WHS; Sarek and Stora Sjöfallet. The Laponian WHS (9,400 km$^2$ large) was inscribed on the list in 1996, both as a Natural and a Cultural Heritage. The natural environment in Laponia is varied, extensive forests, alpine mountains and highlands as well as marsh areas. The cultural heritage of Sami peoples and reindeer herding were vital for the designation. Laponia is partly covered by a network of overnight cabins and marked trails for backpacking and cross-country skiing, and partly strictly regulated against any form of recreation facilities. According to overnight statistics, about 20,000 to 27,000 guest nights have been registered per annum during the period 1989 to 2003 (Wall 2004).

The *Lake Torne Biosphere Reserve (BR)* is also located in the northernmost county of Sweden, and includes a large lake, two national parks (Abisko national park was also one of the first parks, established in 1909) and two nature reserves. In 1986, this 965 km$^2$ large area was designated as a biosphere reserve. The area consists of mountains, meadows and heaths and the area is regarded as an important locale for reindeer herding. On the south shore of the lake Torne, the railway, the highway and several touristic establishments are located. During the year 2002 the number of guest nights was approximately 100,000 (Wall 2003). The tourism activities are to a higher extent than in Fulufjället and Laponia hotel based, with e.g. ski lifts, but a large system of marked trails and overnight cabins has its starting point in the Lake Torne Area as well.

In Fulufjället, a visitor survey was undertaken in the summer of 2003 (June –September) using a self-registration methodology. A sample of the visitors (older than 15 years, residents in Sweden and Germany) that registered at the self-registration boxes received a follow-up mailed questionnaire sent to their home address a few months after the visit to Fulufjället (Table 1). Two remainders were sent out including a new questionnaire in the second one. The final response rate was 83 percent.
In Laponia, a visitor survey was conducted in the summer of 2003 in the mountainous part of Laponia. During the period of July to September, the staff in six mountain cabins handed out registration cards to all visitors 15 years of age and older. The staff collected the completed cards and all Swedish and German visitors (nine out of ten addresses were from these two countries) received a follow-up mailed questionnaire sent to their home address a few months after their visit. Two remainders were sent out including a new questionnaire in the second one and the final response rate was 76 percent.

In the Lake Torne Area, a visitor survey was conducted in 2002-2003 among people visiting the Lake Torne Area during the year of 2002. The survey thus included both summer and winter visitors. The respondents were selected at random from four different hotel registration books. A questionnaire was sent to a sample of Swedish, Norwegian, Finnish, British, and German visitors. Also in this survey, two reminders were sent out and the last one included a new questionnaire. The response rate was 67 percent.

**Table 1. Data collection statistics**

<table>
<thead>
<tr>
<th></th>
<th>Fulufjäll NP</th>
<th>Laponian WHS*</th>
<th>Lake Torne BR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed registration cards</td>
<td>6,151</td>
<td>2,335</td>
<td>---</td>
</tr>
<tr>
<td>Mail survey:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed questionnaires</td>
<td>1,245</td>
<td>1,469</td>
<td>544</td>
</tr>
<tr>
<td>Response rate</td>
<td>83%</td>
<td>76%</td>
<td>67%</td>
</tr>
</tbody>
</table>

* Laponian WHS is part of a larger study, the data collection statistics refers to that study, and 750 visitors who visited Laponia have been selected for this article.

**RESULTS**

*Why visit protected areas?*

Our first inquiry concerns the reasons tourists have to visit protected areas. Visitors to both Fulufjället NP and Laponia WHS were in the follow-up mailed questionnaire asked to rank a set of 20 and 21 items, respectively. Each item was evaluated on a scale from 1 (not important) to 5 (very important), concerning their importance for the decision to make a visit to the area. In the Lake Torne questionnaire, this question was formulated slightly different and therefore the Lake Torne BR is not included in this first analysis.

Table 2 shows the average score for each item in the two areas. Evidently, nature experiences in different forms, peacefulness, silence and wilderness are key motivators to visit these places. In Fulufjället, “no litter” is considered second most important, while in Laponia “hiking possibilities” is given the equivalent rank. To visit a national park and a world heritage site as such has a lower ranking in both areas. In Fulufjället, the average score for the item “the area is a national park” is 3.7, while the same item in Laponia has an average score of 3.3. To “visit a world heritage site” has an average score below three.
Table 2. Reasons to visit Fulufjället NP and Laponian WHS respectively. Average score at a scale 1 (not at all important) to 5 (very important). The letters A-F indicates which items that belong to the same category as a result of the factor analysis.

<table>
<thead>
<tr>
<th>Fulufjället NP</th>
<th>Average score</th>
<th>Laponian WHS</th>
<th>Average score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience beautiful nature</td>
<td>4.5</td>
<td>Experiences of nature</td>
<td>4.9</td>
</tr>
<tr>
<td>No litter</td>
<td>4.4</td>
<td>Hiking possibilities (A)</td>
<td>4.8</td>
</tr>
<tr>
<td>Experience unspoiled nature (A)</td>
<td>4.3</td>
<td>Tranquility (A)</td>
<td>4.6</td>
</tr>
<tr>
<td>Peaceful and quiet (B)</td>
<td>4.3</td>
<td>Silence and peacefulness (A)</td>
<td>4.6</td>
</tr>
<tr>
<td>Experience wilderness (A)</td>
<td>4.3</td>
<td>Experience wilderness (C)</td>
<td>4.4</td>
</tr>
<tr>
<td>Marked trails</td>
<td>3.9</td>
<td>Marked trails (B)</td>
<td>3.8</td>
</tr>
<tr>
<td>The area is unique (A)</td>
<td>3.8</td>
<td>Bus services (D)</td>
<td>3.5</td>
</tr>
<tr>
<td>The area is a national park (A)</td>
<td>3.7</td>
<td>Lodging and service availability (B)</td>
<td>3.4</td>
</tr>
<tr>
<td>Lakes and water</td>
<td>3.6</td>
<td>Challenges and adventures (C)</td>
<td>3.3</td>
</tr>
<tr>
<td>No crowding (B)</td>
<td>3.6</td>
<td>Visit national park (E)</td>
<td>3.3</td>
</tr>
<tr>
<td>Family friendly (C)</td>
<td>3.1</td>
<td>Train services (D)</td>
<td>3.2</td>
</tr>
<tr>
<td>Good weather (C)</td>
<td>2.9</td>
<td>Visit nature reserve (E)</td>
<td>3.2</td>
</tr>
<tr>
<td>Cabins (D)</td>
<td>2.6</td>
<td>Experiences of culture (F)</td>
<td>3.0</td>
</tr>
<tr>
<td>Good transportation (E)</td>
<td>2.1</td>
<td>Learn about Sami culture (F)</td>
<td>2.9</td>
</tr>
<tr>
<td>Good restaurants (C)</td>
<td>2.0</td>
<td>Meet fewer other backpackers (C)</td>
<td>2.9</td>
</tr>
<tr>
<td>Good accommodation (D)</td>
<td>2.0</td>
<td>Visit world heritage site (E)</td>
<td>2.8</td>
</tr>
<tr>
<td>Fishing opportunities (D)</td>
<td>1.8</td>
<td>Experience reindeers (F)</td>
<td>2.7</td>
</tr>
<tr>
<td>Area is close to residence (E)</td>
<td>1.5</td>
<td>Visit biosphere reserve (E)</td>
<td>2.3</td>
</tr>
<tr>
<td>Encounter interesting people</td>
<td>1.5</td>
<td>Flight services</td>
<td>2.1</td>
</tr>
<tr>
<td>Friends close to Fulufjället (F)</td>
<td>1.4</td>
<td>Meet many other backpackers (C)</td>
<td>1.8</td>
</tr>
<tr>
<td>Accessibility for car. RV etc. (D)</td>
<td>1.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In order to better understand the structure of these motivators, a factor analysis (principal component analysis with varimax rotation) was done including all items for each area respectively. For both areas, this analysis produced a six-category solution (Table 3, categories A-F), and each category has been named according to included items (Table 2). The scores shown in Table 3 are the mean values of the items included in each category.

In Fulufjället, two categories get a score close to four on the five-point scale. The most important category is “Protected, unspoiled wilderness” (category A) including the items “Experience unspoiled nature”, “Experience wilderness”, “The area is unique” and “The area is a national park”. Second most important category is “Peace and quiet” (category B) including the items “Peaceful and quiet” and “No crowding”. Additional categories identified in Fulufjället are “Family and sunshine” (category C), “Comfortable fishing” (category D), “Accessibility” (category E) and “Friends” (category F), with the two latter scoring below two.

In Laponia, what is identified as “Peaceful hiking” (category A) emerges as the most important category for visiting the area. This category gets a score of 4.65 and includes the items “Hiking possibilities”, “Tranquillity” and “Silence and peacefulness”. The second most important category is “Lodging, service and trails” (category B) followed by “Wilderness adventure” (category C). The former includes the items “Marked trails” and “Lodging and
service availability”. Of less importance are “Transport and accessibility” (category D), “Visit protected areas” (category E) and “Cultural experiences” (category F).

Table 3. Structure of motivators in protected area tourism

<table>
<thead>
<tr>
<th>Category Score Variance explained</th>
<th>Fulufjället NP</th>
<th>Laponian WHS</th>
<th>Category Score Variance explained</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: “Protected, unspoiled wilderness” 4.00 12.4</td>
<td>A: “Peaceful hiking” 4.65 11.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: “Piece and quiet” 3.95 10.2</td>
<td>B: “Lodging, service and trails” 3.72 9.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: “Family and sunshine” 2.68 10.8</td>
<td>C: “Wilderness adventure” 3.54 7.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: “Comfortable fishing” 2.09 10.6</td>
<td>D: “Transport and accessibility” 2.75 8.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E: “Accessibility” 1.78 8.1</td>
<td>E: “Visit protected area” 2.74 14.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: “Friends” 1.40 5.7</td>
<td>F: “Cultural experiences” 2.74 10.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a) Total variance explained 57.8%
b) Total variance explained 61.3%

Does protection status matter?

Our second analysis concerns the awareness of protection status among the visitors and whether such information has any effect on the travel behaviour. In all three questionnaires, respondents were asked if they knew that Fulufjället is a National Park, that Laponia is a World Heritage Site, and that Lake Torne is a Biosphere Reserve, respectively, before they came to the area. The proportion of the visitors who had knowledge about the protection status varies greatly between the three study areas and so does the influence of protection status on the travel decision. While the recently established national park in Fulufjället was known to most respondents prior to their visit (76 percent), only thirteen percent of the Lake Torne visitors had knowledge about the biosphere reserve. In Laponia, almost 60 percent of the visitors had prior knowledge of the protection status (Table 4).

Table 4. Knowledge of protection status, effect on travel decision and attractiveness

<table>
<thead>
<tr>
<th>Knowledge of protection status before visit</th>
<th>Fulufjället NP 75.7%</th>
<th>Laponian WHS 57.6%</th>
<th>Lake Torne BR 13.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection status had an effect on the travel decision</td>
<td>44.2%</td>
<td>5.0%</td>
<td>1.5%</td>
</tr>
<tr>
<td>The area was more attractive to visit because of protection status</td>
<td>28.7%</td>
<td>---</td>
<td>30.0%</td>
</tr>
</tbody>
</table>

Table 4 also shows the share of the respondents in each area that states that the protection status had an effect on the travel decision. Considerably more visitors in Fulufjället (44 percent) are affected by the protection status (as a national park) in their travel decision compared to the other two areas. Only five percent of the Laponian visitors are affected by the protection status (as a world heritage site) and in the Lake Torne area just 1.5 percent said the protection status (biosphere reserve) had an effect on their decision to visit the area.

In the Fulufjället and Lake Torne questionnaires, respondents were also asked if the protection status made it more or less attractive to visit the area (Table 4). While less than one percent thought it became less attractive, almost every third respondent said the protection
status made the area more attractive to visit. Those in Lake Torne who think the area has become more attractive believe that a focus on a sustainable development and protection of the area against mass tourism is positive. It is also considerate important to avoid further exploitation and to preserve the character and the unique qualities of the area, both naturally and culturally. “It feels good to visit an area where a sustainable development is prioritised”, declares one respondent in the follow-up open-ended question.

In the Laponian WHS study, two open ended questions were included regarding in what way the World Heritage listing affected the decision to visit the area, and in what way Laponia has become more (or less) attractive to visit because of the World Heritage listing. The analysis of these answers yields a number of statements (here translated by the authors). One of the visitors, who says the area has become more attractive to visit, declares: “A World Heritage Site is like a confirmation that the area is beautiful and worth seeing”. Another person states: “I assumed that the area was beautiful and with untouched nature and wild animals; that was attractive”. The uniqueness of the area can be seen in quotations like: “A World Heritage Site signifies something unique”; and “Not all places are World Heritage Sites, therefore it must be special”. One respondent says that; “World Heritage is a quality label”, and another respondent says; “A World Heritage designation gives the area higher status”. Some of the respondents collect visits at World Heritage sites, and some are interested in the World Heritage site and its role for the Sami people. One respondent explains that “the World Heritage listing was not a determining factor but it was a bonus”, and another states that “the listing did not affect the decision that much because the area also consists of national parks, which I for a long time have wanted to visit, but the world heritage designation made it a little bit more attractive”.

To whom does protection matter?

Our third inquiry concerns visitor characteristics regarding the role of protection status in the travel decision. Because of the low number of Laponian and Lake Torne visitors who said protection status had an effect on their travel decision (5 and 1.5 percent respectively, Table 4), this analysis is only performed for the Fulufjället visitors. A logistic regression is used to predict which visitor characteristics that had an influence on the travel decision (Table 5). The dependent variable is the dichotomous judgment whether the presence of the national park affected the decision to visit the area or not. While the over all model fit is quite low, several of the independent variables tested provide some further insights.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-1.210</td>
<td>0.000</td>
<td>0.298</td>
</tr>
<tr>
<td>Nationality a</td>
<td>0.589</td>
<td>0.000</td>
<td>1.802</td>
</tr>
<tr>
<td>Low income b</td>
<td>0.414</td>
<td>0.008</td>
<td>1.513</td>
</tr>
<tr>
<td>High income c</td>
<td>0.467</td>
<td>0.014</td>
<td>1.595</td>
</tr>
<tr>
<td>Previous visits d</td>
<td>-0.471</td>
<td>0.001</td>
<td>0.624</td>
</tr>
<tr>
<td>Nature studies e</td>
<td>0.653</td>
<td>0.000</td>
<td>1.922</td>
</tr>
<tr>
<td>Newspaper f</td>
<td>0.810</td>
<td>0.000</td>
<td>2.248</td>
</tr>
</tbody>
</table>

Nagelkerke $R^2 = 0.087$

a) 1 if German visitor, 0 if Swedish visitor
b) 1 if Income <200,000 SEK / 20,000 EUR, 0 otherwise
c) 1 if Income >500,000 SEK / 50,000 EUR, 0 otherwise
d) 1 if previous visits, 0 otherwise
e) 1 if participation in nature studies, 0 otherwise
The result shows that German visitors are more likely to visit Fulufjället because of the national park status than the Swedish visitors (Nationality). Among German visitors, the odds in favour of the national park status affecting the decision to visit Fulufjället increase by a factor of 1.8 compared to Swedish visitors. The regression model also shows that both low and high income visitors, first time visitors, visitors participating in nature studies (such as bird-watching and studies of plants, animals etc.) and visitors obtaining information about the area from newspapers, are more likely to visit Fulufjället because of the national park status. Additional variables (age, gender, education, place of residence and degree of wilderness purism) were tested, but excluded from the model since they were not statistical significant.

**Utilities of protected areas**

Our last analysis has to do with the visitors’ opinions of different utilities of protected areas. Both the Fulufjället and Laponia questionnaires included a set of questions regarding the utility of the protected area with respect to the visitors, the surrounding region and biodiversity, or if the protection is regarded to restrict human use of the area. Table 6 shows the share of the respondents who agreed in part or completely with the four statements for each study area (note that the Fulufjället respondents answered this set of questions with respect to a “National Park”, while the Laponian respondents answered them with respect to a “World Heritage” listing).

<table>
<thead>
<tr>
<th>Statements</th>
<th>Fulufjället NP</th>
<th>Laponian WHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A NP / WH increases the value of the area for visitors</td>
<td>80.6%</td>
<td>51.9%</td>
</tr>
<tr>
<td>A NP / WH increases the value of the area for the region</td>
<td>86.0 %</td>
<td>67.1%</td>
</tr>
<tr>
<td>A NP / WH restricts human use of the area</td>
<td>23.2 %</td>
<td>30.0%</td>
</tr>
<tr>
<td>A NP / WH will preserve biodiversity in the area</td>
<td>94.7%</td>
<td>74.0%</td>
</tr>
</tbody>
</table>

In general, visitors to Fulufjället have more positive attitudes to the area protection than the Laponian visitors. A clear majority (81 percent) of the Fulufjället respondents agrees with the statement that a national park increases the value for the visitors, while the equivalent figure for Laponia is 52 percent. Visitors to Fulufjället also agree to a larger extent than the Laponian visitors with the statement that protection increases the value for the region. Just about one quarter of the respondents agrees in part or completely with the statement that the national park in Fulufjället restricts human use of the area. The corresponding share in Laponia is 30 percent. Finally, while almost all visitors to Fulufjället agree to the statement “a national park will preserve biodiversity”, the equivalent figure for Laponia is about three quarter of the visitors.
DISCUSSION

This study explores protected areas in order to learn more about their function as tourist attractions and their influence on tourists’ travel behaviour. The study analyses how protected areas can take on roles of markers (i.e. being a trip motivator, affect destination selection, etc.). Through the designation of e.g. a national park, the sight gets a name (label). The name is a marker, and this name makes a distinction between similar phenomena and in this case a distinction between nature and nature. This means that protected nature includes or excludes something, which distinguishes from other nature (protected nature can include unique sights, peacefulness, touristic infrastructure etc. and exclude e.g. extensive use of motor vehicles). The name of the natural site (the marker) affect the visitors’ perception of the area and gives certain connotations, and this can act as a generating marker for the person to set off to the specific place (cf. Leiper 1990). Earlier studies have analysed and discussed the importance of protected areas for nature tourism. However, the extent to which designations in fact influences visitation have not been extensively empirically examined. This is where this study makes a contribution.

The first analysis concerning the reasons to visit the surveyed areas clearly shows that tourists come to experience nature, peacefulness and silence, and to hike (backpack). These are all typical elements of natural environments that often are inherent in area protection. From the second analysis, it is concluded that the protection status matters to tourists, but that there are differences between the three study areas. Fulufjället National Park is known to most visitors, while the biosphere reserve in Lake Torne is hardly known to anyone. This result confirms the studies by Eagles (2001) and Nolte (2004), who states that the national park label is well-known, while the biosphere reserve is less known. Considerably more visitors in Fulufjället are also affected by the protection status in the decision to visit the area. In the case of Fulufjället, the label national park acts as a generating marker, and the name itself includes information of the site and tells a person what can be experienced there (cf. Loomis 1999; Eagles 2001). The function of the protected area gets most visible when the marker takes the role as “nucleus identification” (the name identifies the site) and “name connotation” (the name includes associations). Information about the nucleus from e.g. mass media reacts on the tourist’s needs and that is what can be found in Fulufjället (cf. Leiper 1990).

In the case of Laponia, where national parks have existed for a long time, the effects of additional protection (i.e. World Heritage designation) are marginal. The national parks are still perhaps more known to people than the World Heritage label. In the Lake Torne Biosphere Reserve, the protection status basically had no effect at all on the travel decision. Like the Laponian WHS, the Lake Torne BR includes one of the oldest national parks and most likely the visitors are more aware of and effected by the park, than by the biosphere reserve. However, from the open ended inquires it is shown that the World Heritage label announce to some visitors important information, and at the same time it gives expectations and the designation seems to be a guarantee that the area is special. Quotations from the respondents indicate that the World Heritage designation adds an icon value to the already existing national parks. For the visitors who were affected by the area protection in the study areas, the protection itself represents something, which has positive connotations that affect the visitor’s perception of the experience (cf. Leiper 1990; Loomis 1999).

Since the national park in Fulufjället affected as many as 44 percent in their decision to visit the area, the third analysis focuses on the characteristics of the persons to whom the protection is a marker. The German visitors are more likely to visit the park because of the
national park status than the Swedish visitors. This result is supported by Weiler and Seidl (2004), who discuss that foreign visitors are potentially more likely to come because of a national park status, than local visitors, who are less likely to care about the status of the protected area to motivate visitation. Richard’s (2002) study found that those who live further away tend to concentrate on must-see sights since the travel is most likely to have been planned in advance as a long trip demands a higher investment in time and money. National parks are often promoted as such must-see attraction in mass media and guidebooks. The newly established national park in Fulufjället got much publicity in regional and national media, and the result of the third analysis demonstrates that the visitors who received information about the area from newspaper were more likely to visit the area because of the designation. Compared to repeat visitors, first time visitors also tend to come because of the national park status. With the relatively new designation in Fulufjället, it may be short-term effects due to publicity in media, and it is reasonable to believe that the effects will decrease in a couple of years.

The final analysis shows how visitors to the Laponian WHS and Fulufjället NP have different opinions regarding utilities of protected areas. In general, visitors to Fulufjället have stronger beliefs than Laponian visitors that protection increases the value of the area for visitors as well as for the region and that it will preserve biodiversity. One explanation for this could possibly be an “information effect” caused by the visitor centre and interpretive trail signs that were put in place as part of the national park designation in Fulufjället. Telling people about the benefits of a national park should have an effect on their opinions. In contrast to Laponia and Lake Torne, the implementation of a zoning system in Fulufjället may also have an effect on the results. The underlying principle behind such a planning framework is to provide more recreation opportunities for different user groups, while at the same time minimize user conflicts.

In conclusion, our results show that there is a complex effect on tourist behaviour from protected areas. Through a designation, a protected area gets a label that functions as a marker (MacCannell 1976) or a generating marker (Leiper 1990). The label shapes the visitors’ perception of the area, and can consequently act as a marker for the person to set off to the specific place. Based on this study, this is most visible in Fulufjället NP, while the labels of the Laponian WHS and Lake Torne BR do not seem to have such strong effects. Markers may act with different strength in its roles of functions depending on our mental associations and external impacts, such as information. The conclusion is that differences between different labels of area protection are to a great degree a matter of marketing, information and media coverage, and what we find here is probably much a short-term designation effect in Fulufjället. The name national park has a stronger effect on the visitors than the newer labels of world heritage site and biosphere reserve. It will take time for these additional and newer concepts to be filled with associations like the more famous concept of national park has done for a long time.

Finally, it may also be emphasised that protected areas in Sweden are probably not as important for the overall supply of outdoor recreation opportunities as is the case in other countries where access to private land is more restricted (Kaltenborn et al. 2001). In countries where public access to nature is limited to protected areas, the establishment of a national park can have a large influence on the possibilities to participate in outdoor recreation. In addition, one important limitation of the study is that only people who have visited the protected areas are included. Thus, we do not have any information about the non-visitors.
Further research in this field could probably benefit from including this group in order to better understand the mechanisms behind travel behaviour.
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Lew, A.

Loomis, J. B.

MacCannell, D.

Marsh, J.

McCool, S.

Nolte, B.

Palmer, C.

Richards, G.

Saarinen, J.

Sandell, K.

Shackley, M.

UNEP-WCMC

Wall, S.


Weiler, S. and Seidl, A.
## Appendices

<table>
<thead>
<tr>
<th>Appendix 1</th>
<th>Map over the study area – The Lapland Mountains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix 2</td>
<td>Questionnaire to the visitors in the Lake Torne Area in 2002</td>
</tr>
<tr>
<td>Appendix 3</td>
<td>Registration card</td>
</tr>
<tr>
<td>Appendix 4</td>
<td>Questionnaire to the visitors in the Lapland Mountains in 2003</td>
</tr>
<tr>
<td>Appendix 5</td>
<td>On-site interviews in Laponia in 2005 (in Swedish)</td>
</tr>
</tbody>
</table>
QUESTIONNAIRE 2002

Questions about your visit to the Torneträsk area in 2002

1. In what month did you visit the Torneträsk area? .............

2. See the map of the Torneträsk area. Mark on the map with a coloured pencil what part of the Torneträsk area you liked best during your visit.

3. Why did you appreciate the area you marked on the map best of all? ..............
   ..............................................................................................................................................
   ..............................................................................................................................................

4. Were you accompanied by family, relations, friends or a travel group during your stay in the Torneträsk area in 2002?
   □ Yes    □ No
   If yes, how many people? .................

5. What means of transportation did you use to get to the Torneträsk area from your home? If more than one, write a 1 by the means of transport from your home, 2 for the next and so on. - See spec. document
   □ Own car
   □ Rental car
   □ Car with caravan
   □ Motor home
   □ Bus
   □ Train
   □ Plane
   □ Other means; what? ... ..................................................
6. Where did you spend the night in the Torneträsk area?

- at a hotel/mountain station ...........nights Where?
- in an STF mountain cabin ...........nights Where?
- in a rented cabin ...........nights Where?
- at a youth hostel ...........nights Where?
- in a private home/summer home ...........nights Where?
- in a caravan ...........nights Where?
- in a mobile home ...........nights Where?
- in a tent ...........nights Where?
- other; what? ....................... ...........nights Where?
- I didn’t spend any nights in the area.

7. What factors were least/most important when you decided to visit the Torneträsk area? Circle the most applicable number, 1–5, for each statement.

<table>
<thead>
<tr>
<th>Least important</th>
<th>Most important</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Nature experiences</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>b. National parks</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>c. Cultural experiences</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>d. Downhill skiing</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>e. Cross-country skiing</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>f. Hiking</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>g. Sport fishing</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>h. Hunting</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>i. Berry picking</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>j. Transport to and from</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>k. Availability of hotels and service</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>l. Other factors; what? .......................</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

8. What activities did you pursue during your stay in Torneträsk in 2002?

- Downhill skiing, if so where? .................................................................
- Day trips on cross-country skis, from where, to where? ............................
- Several-day trips on skis, from where, to where? ......................................
- Snowmobiling, from where, to where? ....................................................
- Dog sledding, from where, to where? .......................................................
- One-day hikes, from where, to where? ....................................................
- Several-day hikes, from where, to where? ...............................................
Fishing
Hunting
Berry or mushroom picking
Arranged theme week, what and where?
Visit to Kiruna
Visit to Narvik
Other activities, what and where?

Follow-up question. In the previous question, underline the activity you felt was most important of the things you did during your visit to the Torneträsk region.

Follow-up question. How extensive is your experience with the activity you just underlined?

□ Beginner
□ Some experience
□ Experienced
□ Very experienced

9. Did you find any significant wear on the natural surroundings in the Torneträsk area in 2002?

□ Yes ☐ No ☐ Don’t know

If yes, where and what kind?

10. Did you find any significant amounts of litter in the natural surroundings in the Torneträsk area in 2002?

□ Yes ☐ No ☐ Don’t know

If yes, where and what kind?

11. Did you experience any disturbing noise in the Torneträsk area in 2002?

□ Yes ☐ No ☐ Don’t know

If yes, where and what kind?

12. Please try to estimate the total cost of your own and your family members’ trips from your home to the Torneträsk area in 2002 – tickets, petrol, rental cars, etc

□ less than GBP 69
□ GBP 350-699
□ GBP 210-349
□ GBP 700-1 049
□ more than GBP 1 400

13. Please try to estimate the total cost of your own and your family members’ expenses for overnight stays, food, lift cards, equipment rentals, souvenir

□ GBP 70-209
□ GBP 210-349
□ GBP 700-1 049
□ GBP 1 050-1 399
□ more than GBP 1 400
14. Have you been to the Torneträsk area before in:

a. 2000–2001? □ Yes □ No □ Don’t remember
b. 1995–1999? □ Yes □ No □ Don’t remember
c. 1990–1994? □ Yes □ No □ Don’t remember
d. 1985–1989? □ Yes □ No □ Don’t remember
e. 1984 or earlier? □ Yes □ No □ Don’t remember

Follow-up question if you have been in the Torneträsk area previously. **Do you think the area has changed to become more or less attractive to you this year than previously?**

□ Yes □ No □ Don’t know

If yes, how has the area’s attractiveness changed? .................................................................
...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................

15. In 1986, Torneträsk was named a biosphere reserve in hopes of creating a model of ecological, financial and cultural sustainable development. **Did you know before coming to the Torneträsk area that parts of it are part of a biosphere reserve?**

□ Yes □ No

If yes, did that affect your decision to visit the Torneträsk area?

□ Yes □ No

16. Is the area more or less attractive for you to visit because of it’s being named a biosphere reserve?

□ The area is more attractive to visit
□ The area is less attractive to visit
□ It is of no importance to me that the area is a biosphere reserve.

Follow-up question. **In what way has the area become more/less attractive to visit?**
...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................

17. Take a position on the following statements about your relationship to the
Torneträsk area and to the Swedish mountains as a whole. Circle the alternative that best corresponds to your opinion: YES or NO.

What happens to this place is important to me. YES NO YES NO

I have emotional ties to this place; it means something to me. YES NO YES NO

I identify with the lifestyle and the people I encounter here. YES NO YES NO

I feel relaxed when I visit this place. YES NO YES NO

Sometimes I feel like a stranger when I visit this place. YES NO YES NO

---

Some general questions about the Swedish mountains

18. How well do you think the mountains and their facilities are cared for? Circle the alternative that best describes your feelings. Circle one for each description.

<table>
<thead>
<tr>
<th>How do you feel about...</th>
<th>Very negative</th>
<th>Negative</th>
<th>Neutral</th>
<th>Positive</th>
<th>Very positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having camp sites with a WC, dustbins, campfire spot etc</td>
<td>–2</td>
<td>–1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Having mountain stations</td>
<td>–2</td>
<td>–1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Having marked hiking trails</td>
<td>–2</td>
<td>–1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Being able to drive into attractive areas for day trips</td>
<td>–2</td>
<td>–1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Seeing traces (cold campfires, wear) of other visitors</td>
<td>–2</td>
<td>–1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Seeing traces of terrain-going vehicles</td>
<td>–2</td>
<td>–1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Experiencing untouched countryside</td>
<td>–2</td>
<td>–1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Being able to go for days without seeing houses, roads etc</td>
<td>–2</td>
<td>–1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Only seeing a handful of other visitors</td>
<td>–2</td>
<td>–1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Meeting tourists from other countries</td>
<td>–2</td>
<td>–1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Being able to hike off the trails</td>
<td>–2</td>
<td>–1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Being able to camp wherever you want</td>
<td>–2</td>
<td>–1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
The fact that airplanes and helicopters can land here

Being able to ride a mountain bike

The area having rare flora and fauna

Knowing that our four biggest predators (wolf, bear, lynx and wolverine) may be in the area

Being able to make campfires anywhere

Being 5 km from the nearest house, road, cleared area, dam, telephone mast etc at the centre of the area

19. The following are statements about the environment in the mountains. Circle the alternative that best corresponds to the statement. Circle one for each statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Disagree completely</th>
<th>Disagree in part</th>
<th>Neutral</th>
<th>Agree in part</th>
<th>Agree completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>It’s important that there are areas of the mountains with no trace of human interference</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>There should be more nature preserves and national parks in the mountains</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>There should be fewer nature preserves and national parks in the mountains</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Tourists put too much wear on the foliage</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The reindeer put too much wear on the foliage</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Questions about your background. The survey results never indicate in any way how individual people responded.

20. What was your home city and country when you visited the Torneträsk area in 2002? ................................................................................................................................

21. What year were you born? 19____ Sex: □ Female □ Male

22. What is your level of education? Select only one.

□ Elementary school
□ Upper secondary/high school
□ Folk high school/community college
□ University/college bachelor’s degree
□ University/college beyond bachelor’s degree
□ Other ........................................................................................................

23. What was the approximate combined income in your household in 2001, after taxes?

□ up to GBP 6 999
□ GBP 7 000-13 999
□ GBP 14 000-20 999
□ GBP 21 000-27 999
□ GBP 28 000-34 999
□ Over GBP 35 000

Many thanks for your time!

Please use the reply envelope and return the form as soon as possible.
Registration card

Fjällbesökare 2003/Mountain visitors 2003/ Fjellbesucher 2003

Fyll i ett kort per person. Om ni är flera i gruppen ber vi alla över 15 år att fylla i ett kort./One card per person, please./Eine Karte pro Person, bitte.

Stugplats/fjällstation
/Mountain lodge/station/
Berghütte/stationen

Ifyllt/Filled in/
Ausgefüllt am:

Dag/Day/Tag
Månad/Month/Monat

Namn/Name/Name____________________________

Adress/Address/Strasse u. Hausnr.
Postal code/Postleitzahl

Hemort/Town/Wohnort________________________
Land/Country/Land________________________

Födelseår/Date of birth/Geburtsdatum___________
Man/Male/Männlich □
Kvinna/Female/Weiblich □

1. Vilken är din startpunkt och planerade slutpunkt för vandringen?/Where and when is your starting point and terminal point for the hike?/Wo beginnen Sie Ihre Wanderung und wo beabsichtigen Sie, die Wanderung zu beenden?

Dag/Day/Tag

Mån./Month/Monat
Start/Starting point/Ausgangspunkt:__________________________
Startdatum/Date ________

Slut/Terminal point/Endziel:__________________________
Slutdatum/Date ________

2. Har du gått eller tänker du gå en eller flera dagstapper utanför markerade leder?/Have you walked or are you going to walk off the marked trails for one day or more?/Sind Sie eine oder mehrere Tagesetappen abseits markierter Wege gewandert oder beabsichtigen Sie, dies zu tun?
Ja/Yes/Ja □
Nej/No/Nein □

3. Hur många nätter har du bott eller planerar du att bo i fjällstugor/stationer respektive i tält?/How many nigths have you stayed or will stay in mountain lodges/stations and in a tent?/Wie viele nachte haben Sie oder werden Sie in Fjällstugas, Fjällstationen, bzw. im Zelt übernachtet/übernachten?

Fjällstugor/stationer/ mountain lodges/stations/ Fjällstugas/Fjällstationen ______ nätter/Nächte, Tält/Tent/Zelt ______ nätter/Nächte

Jag önskar frågeformuläret via e-post/Send the questionnaire by mail/Bitte senden Sie den Fragebogen via Email.

E-post/e-mail:_______________________________________

Tack för hjälp!/Thank you for your help!/Vielen Dank für Ihre Mithilfe!

Sandra Wall            Staffan Forssell            Fältenheten, Länstyrelsens
Projektledare      Svenska Turistföreningen          Världsurvet Laponia
Jane Axelsson            Badjelánn da Laponia            Turism ek. förening
Appendix 4

QUESTIONS ABOUT YOUR VISIT TO
THE LAPLAND MOUNTAINS 2003

A. Questions about your visit to the northern Lapland Mountains in 2003.

A 1. On the previous page, look at the map and consider your visit to the northern Lapland Mountains in 2003. Please draw a line on the map (with a coloured pencil) to show where you were hiking last summer.

Also mark where you made your overnight stops, mark with an S where you stayed in a mountain lodge or station and T where you slept in a tent.

A 2. How many days did you spend in the northern Lapland Mountains in 2003? ……days

A 3. How did you get to know about the northern Lapland Mountains?

☐ Own experiences from earlier visits
☐ Friends and relatives
☐ TV and radio
☐ Newspaper and magazines
☐ Travel guides and brochures
☐ Internet

☐ Other……………………………………………………………………………………………………………………………………

A 4. Who were your company during the visit in the northern Lapland Mountains in 2003?  

Do not include yourself:

☐ Family and relatives: number of adults……
  number of children under 12 years…. Age of the children………………

☐ Friends:
  number of adults……
  number of children under 12 years…. Age of the children………………

☐ Colleagues from work: number of persons……

☐ Other persons: number of persons……

☐ No company; I travelled alone.

A 5. Which means of transportation did you use to get the Lapland Mountains from your home? 

Please select only one alternative.

☐ Car  ☐ Train
☐ Car with caravan/motor home  ☐ Bus
☐ Plane
☐ Other means, what kind?………………………………………………………………………………………………………………
A 6. What kind of trip was your visit to the northern Lapland Mountains?
☐ The northern Lapland Mountains was the destination of my trip
☐ The northern Lapland was part of a tour
☐ I visited the northern Lapland mountains on my way to another destination (passing through)
Please state the destination of your trip.................................................................

A 7. Where did you sleep the night before and after your visit in the northern Lapland Mountains?

The night before, I slept:
☐ at home
☐ in another city/place:....................................................

The night after, I slept:
☐ at home
☐ in another city/place:....................................................

A 8. Which means of transportation did you use within the Lapland Mountains?

Please mark one or several alternative.

☐ Helicopter/plane
☐ Car with caravan/mobile home
☐ Car
☐ Tour boat
☐ Bus
☐ Private/rented boat
☐ Other ways, namely?.................................................................

A 9. Which factors were the least/most important when you decided to visit the northern Lapland Mountains?

Please circle the most applicable number, 1–5, for each statement.

<table>
<thead>
<tr>
<th>Least important</th>
<th>Most important</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Nature experiences</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>b. Nature reserves</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>c. National parks</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>d. World Heritage Site</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>e. Biosphere Reserve</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>f. Cultural experiences</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>g. Hiking</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>h. Peace and quite</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>i. Silence and calmness</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>j. To see reindeers</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>k. To learn about the Sami culture</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>l. Experience hardships and adventures</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>m. Wilderness</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>n. To meet few other hikers in the area</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>o. To meet many other hikers in the area</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>p. Train service (connection)</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>q. Plane service (connection)</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>r. Bus service (connection)</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>s. Possibilities to go by car/caravan/mobile home to and from the area</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>t. Availability of hotels and service</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>u. Marked hiking trails</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
Other factors of great importance:

A 10. In the previous question, underline the factor you felt was the most important motive for visiting the northern Lapland Mountains.

A 11. Where did you spend the night in the Lapland Mountains? Please include number of nights.

☐ Hotel/ STF mountain station  ........
☐ Youth hostel  ........
☐ Rented cabin/house  ........
☐ Own house/summer house  ........
☐ STF mountain cabin  ........
☐ Other mountain cabin  ........
☐ Tent, close to a cabin/station  ........
☐ Tent, not close to a cabin/station  ........
☐ Shelter  ........
☐ Caravan/mobile home  ........
☐ Other; where?

..............................  ........

☐ I did not spend any nights in the area

A 12. What kind of activities did you pursue during your stay in the northern Lapland Mountains?

☐ One-day hiking without accommodation  ☐ Nature photographing
☐ Several-day hiking with accommodation  ☐ Painting
☐ Fishing  ☐ Bird-watching
☐ Hunting  ☐ Study/look at reindeer
☐ Berry and mushroom picking  ☐ Study/look at other animals
☐ Mountain climbing  ☐ Study/look at plants
☐ Sami activities as ..........................................................
☐ Guided tour, arranged by ..........................................................
☐ Arranged theme week, ..........................................................
☐ Other activities, namely ..........................................................

A 13. In the previous question, underline the activity you felt was the most important of the things you did during your visit.
A 14. Did you miss any activity in the area?

☐ Yes, ……………………………………………………………………………………………………………………………..
☐ No

A 15. Please try to value on a scale from 1 to 5, the nature and culture places that you visited during the summer 2003. Consider the places and how important they were for your stay. The least attractive places (little importance) = 1, and the most attractive places (of greatest importance) = 5. Do not mark anything on the places that you did not visit in 2003.

<table>
<thead>
<tr>
<th>Points</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Jokkmokk-Kvikkjokk</td>
<td>……..</td>
</tr>
<tr>
<td>Aktse</td>
<td>……..</td>
</tr>
<tr>
<td>Skarja</td>
<td>……..</td>
</tr>
<tr>
<td>Rapadalen</td>
<td>……..</td>
</tr>
<tr>
<td>Pärtefjällen</td>
<td>……..</td>
</tr>
<tr>
<td>Sarektjäkka</td>
<td>……..</td>
</tr>
<tr>
<td>Sarvesvagge</td>
<td>……..</td>
</tr>
<tr>
<td>Njoatovagge</td>
<td>……..</td>
</tr>
<tr>
<td>Padjelantaleden Kvikkjokk-Staloluokta</td>
<td>……..</td>
</tr>
<tr>
<td>Padjelantaleden Stolol.-Vaisa/Akka</td>
<td>……..</td>
</tr>
<tr>
<td>Kungsleden Kvikkjokk-Saltoluokta</td>
<td>……..</td>
</tr>
<tr>
<td>Vägen västerut (Porjus-Ritsem)</td>
<td>……..</td>
</tr>
<tr>
<td>Kungsleden Vakkotavara-Singi</td>
<td>……..</td>
</tr>
<tr>
<td>Leden Nikkaluokta-Singi</td>
<td>……..</td>
</tr>
<tr>
<td>Ladtjovagge</td>
<td>……..</td>
</tr>
<tr>
<td>Kungsleden Singi-Abisko</td>
<td>……..</td>
</tr>
<tr>
<td>Sälka</td>
<td>……..</td>
</tr>
<tr>
<td>Alesjaure</td>
<td>……..</td>
</tr>
<tr>
<td>Tornetrask</td>
<td>……..</td>
</tr>
<tr>
<td>Road E 10 Kiruna-Riksgränsen</td>
<td>……..</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A 16. When did you visit the northern Lapland Mountains for the first time?

☐ Year 2003 Go to question A 20.
☐ Year ……………

A 17. How many times have you been to the northern Lapland Mountains? ……………

A 18. Do you think the area has changed to become more or less attractive to you this year (2003) compared to your first visit?

☐ More attractive
☐ Less attractive
☐ No difference Go to question A 20.
A 19. How has the attractiveness of the area changed?

.................................................................................................................................
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................

A 20. Do you think it is a problem with wear, litter and disturbing noise in the northern Lapland Mountains? Please mark the most applicable alternative.

<table>
<thead>
<tr>
<th>No, not at all</th>
<th>No, not much</th>
<th>Yes, some</th>
<th>Yes, a lot</th>
<th>No opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Litter</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Disturbing noise</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

A 21. If 'yes some' or 'yes a lot' in previous question, where did you find this?

Wear: .................................................................................................................................

Litter: .................................................................................................................................

Disturbing noise: ................................................................................................................

A 22. What kind of changes would you like to propose to make the area more attractive to you?

.................................................................................................................................
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................

A 23. Which of these circumstances, do you think characterizes the northern Lapland Mountains? Please circle the most applicable number, 1-5, for each statement.

<table>
<thead>
<tr>
<th>Strong exploitation</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable use of the nature</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Sustainable use of the culture</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Wilderness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

A 24. To you, what characterizes a wilderness area? Please state the three most important words
that describe a wilderness area.

1. 

2. 

3. 

A 25. From your point of view, how large share of your visit in the Lapland Mountains was wilderness? Please mark with a cross on the line.

• ------- 0 50% 100% ------- •

A 26. How likely is it that you will return to this area at some point the next five years? Please mark with a cross on the scale.

Not at all likely 

Probably 

Very sure

0 1 2 3 4 5 6 7 8 9 10

The following questions deal with mountain hiking. If you did not hike during your stay in the northern Lapland Mountains, move on to question B1.

A 27. What was your starting point and destination for the hike? 

Starting point: ……………………………… Date:……… ……….

Destination: ……………………………….. Date:……… ……….

A 28. How far did you hike along marked trails and off marked trails, respectively? 

How many kilometres did you hike on marked trails? ……………..km

How many kilometres did you hike off marked trails? ……………..km

A 29. Along which marked trails did you hike? 

Please mark the routes you hiked a considerable part of.

☐ Padjelanta trail: Kvikkjokk-Staloluokta ☐ Kungsleden: Kvikkjokk-Saltoluokta

☐ Padjelanta trail: Staloluokta-Vaisaluokta ☐ Kungsleden: Vakkotavara-Singi

☐ Padjelanta trail: Staloluokta-Akka/Änonjalme ☐ Kungsleden: Singi-Abisko

☐ Nikkaluokta-Singi ☐ Riksgränsen-Unna Allakas-Allesjaure

☐ Nikkaluokta-Vistas-Nallo-Kungsleden ☐ Riksgränsen-Unna Allakas-Abiskojaure

☐ Nikkaluokta-Vistas-Alesjaure

☐ I hiked along other marked trails, namely……………………………………………………………..

……………………………………………………………………………………………………….

☐ I did not hike along marked trails
A 30. Did you hike off marked trails? In that case, which routes or valleys did you hike?

In Sarek National Park:  
☐ Njoatsovagge  ☐ Rapadalen  ☐ Bastavagge
☐ Rouhtesvagge  Alggavagge
☐ Annan dalgång/sträcka……………………………………………………………………

☐ In Padjelanta National Park: Route/valley…………………………………………………

☐ In Stora Sjöfallet National Park: Route/valley……………………………………………

☐ Other route/valley, namely……………………………………………………………………

………………………………………………………………………………………………………….

☐ No, I did not hike off marked trails

A 31. Approximately how many hikers did you observe per day during your hike?

☐ I did not observe any hikers
☐ 1-10 persons/day
☐ 11-50 persons/day
☐ 51-100 persons/day
☐ 101-150 persons/day
☐ More than 150 persons/day

A 32. What is your opinion on the number of other hikers?

☐ Far too many
☐ Too many
☐ Just right
☐ Too few
☐ Far too few

A 33. How many hikes with at least one night have you done the last three years in the following areas? Please mark one alternative per area. Include your hike this summer in the northern Lapland Mountains.

<table>
<thead>
<tr>
<th>Areas</th>
<th>None</th>
<th>Once</th>
<th>2-5 times</th>
<th>6-10 times</th>
<th>More than 10 times</th>
</tr>
</thead>
<tbody>
<tr>
<td>The northern Lapland mountains</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other mountains in Sweden</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Sweden, but not in the mountains</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Mountains in Norway</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The Alps</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Ireland, Scotland, Wales</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>North America</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other area, namely: __________________</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
**B. Some questions about your expenses.**

**B 1.** Please try to estimate your (and you family’s) total travel costs from your home to the northern Lapland Mountains in 2003, including tickets, petrol, rental cars, etc.

- □ less than 1 000 SEK
- □ 1 000-2 999 SEK
- □ 3 000-4 999 SEK
- □ 5 000-9 999 SEK
- □ more than 20 000 SEK
- □ 10 000-14 999 SEK
- □ 15 000-19 999 SEK

**B 2.** Please try to estimate the total cost for your and your family’s expenses for overnight stays, food, equipment rentals, souvenir purchases, travels and so on within the area in 2003.

- □ less than 1 000 SEK
- □ 1 000 - 2 999 SEK
- □ 3 000 - 4 999 SEK
- □ 5 000 - 9 999 SEK
- □ 10 000 - 14 999 SEK
- □ 15 000 - 19 999 SEK
- □ 20 000 - 24 999 SEK
- □ 30 000 - 34 999 SEK
- □ more than 35 000 SEK

**B 3.** Please try to estimate the total cost of your and your family’s expenses for Sami handicraft?

- □ Neither my family nor I bought Sami handicraft.

Sami handicraft (wooden drinking-vessel, knife, jewellerys): Total……………SEK

**C. Reindeer herding is being kept in the whole Lapland Mountains. Below follow some questions about reindeer and reindeer herding in relation to your stay in the northern Lapland Mountains.**

**C 1.** At what times during the day did you spend time doing outdoor activities during your stay in the northern Lapland Mountains summer of 2003?

*Please mark with a cross for every applicable time interval.*

- 8-12: □ never □ sometimes □ often/always
- 12-16: □ never □ sometimes □ often/always
- 16-20: □ never □ sometimes □ often/always
- 20-24: □ never □ sometimes □ often/always
- 24-08: □ never □ sometimes □ often/always

**C 2.** During your stay in the northern Lapland Mountains summer of 2003, did you see or pass reindeers?

- □ Yes
- □ No

*Go to question C 7.*
C 3. During your stay in the northern Lapland Mountains, how often did you see or pass reindeers? Please mark every applicable alternative

- Stray reindeers (1-7 reindeers) occasionally (1-3 occasions)
- Stray reindeers (1-7 reindeers) on many occasions (more than 3 occasions)
- Herds (at least 8 reindeers that followed each other) of reindeers occasionally (1-3 occasions)
- Herds (at least 8 reindeers that followed each other) of reindeers on many occasions (more than 3 occasions)

C 4. At what time during the day did you see reindeers? Please mark with a cross for every applicable time interval.

<table>
<thead>
<tr>
<th>Time Interval</th>
<th>Never</th>
<th>Sometimes</th>
<th>Often/Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24-08</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C 5. Which of the following statements fit your reaction the most when you saw reindeers during your stay in the northern Lapland Mountains summer of 2003? Please mark only one alternative.

- I stopped to watch the reindeers.
- I followed the reindeers to get closer to them.
- I noticed the reindeers, but did not reflect much about it and continued to hike.
- I avoided the reindeers by stopping or diverging from the trail.
- I got frightened and left the reindeers.
- Other reaction, please specify: …………………………………………………………………

C 6. If the reindeers discovered you, which of the following statements describes the best how the reindeers in general reacted? Please mark only one alternative.

- The reindeers ran away
  - a. Approximately how close to the reindeers did you get before they ran away? …………..metres.
  - b. Approximately how far from you did the reindeers run? …………..metres
- The reindeers strolled calmly away
- The reindeers ignored me and continued what they were doing.
- The reindeers were curious and approached me.
- Other reaction, please specify: …………………………………………………………………

- The reindeers never discovered me.
C 7. How do you feel the existence of reindeers affect your stay in the mountains?

<table>
<thead>
<tr>
<th></th>
<th>Very negatively</th>
<th>Partly negatively</th>
<th>Neutral</th>
<th>Partly positively</th>
<th>Very positively</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

C 8. Consider the hike you did this summer and imagine the following scenario:

You are hiking in the mountains and discover that parts of the route you were planning to walk is temporarily closed out of consideration for reindeer breeding. Consequently, you have to choose an alternative route that is 5 kilometres longer, but in other respects comparable with the original route. How do you react to this situation? Please mark only one alternative.

☐ Very positively ☐ Positively ☐ Neutral ☐ Negatively ☐ Very negatively

Please motivate your answer:

………………………………………………………………………………………………………………
………………………………………………………………………………………………………………
………………………………………………………………………………………………………………
………………………………………………………………………………………………………………

C 9. Hikers might in different ways disturb reindeers. Different methods to handle or avoid these situations are stated below. Please take a stand to every statement by marking the most applicable alternative.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very negative</th>
<th>Negative</th>
<th>Neutral</th>
<th>Positive</th>
<th>Very positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inform hikers more explicitly about reindeer breeding and how to behave</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Direct hikers to marked trails</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Limit the number of visitors to important breeding areas during sensitive times for the reindeers</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Decrease the number of reindeers in attractive hiking areas</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Temporarily close certain hiking trails out of consideration for reindeer herding</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Allow hiking with a guide only</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Introduce prohibition against large groups of hikers</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Prohibit hikers to access very sensitive areas</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
C 10. Do you find the presence of both hiking and reindeer herding in the northern Lapland Mountains as a conflict/problem?

☐ Yes, big conflict  ☐ Yes, small conflict  ☐ No, no conflict  ➔ Go to part D.

If yes, what in your opinion causes the conflict/-s?  .................................................................
........................................................................................................................................................................
........................................................................................................................................................................
........................................................................................................................................................................
........................................................................................................................................................................
........................................................................................................................................................................
........................................................................................................................................................................

D. Now some questions about your experiences from the World Heritage Site Laponia. The area was chosen as a UNESCO World Heritage Site in 1996 because of its magnificent nature and the long history of the living Sami culture. These values are so unique that they are considered important for all humanity to protect and preserve for future generations. In this study, the national parks of Padjelanta, Sarek and Stora Sjöfallet are included in Laponia (look at the map).

D 1. Did you stay in Laponia during your visit in the northern Lapland Mountains in 2003?

☐ Yes  ☐ No  ➔ Go to question D 6.

D 2. Did you know before coming to the area that the marked area on the map (Laponia) was a World Heritage Site?

☐ Yes  ☐ No

D 3 a. To you who visited Laponia in 2003, did the fact that the area is a World Heritage Site affect your decision to visit the area?

☐ Yes  ☐ No  ➔ Go to question D 6.

b. If yes, in what way did this affect your decision?
........................................................................................................................................................................
........................................................................................................................................................................
........................................................................................................................................................................
........................................................................................................................................................................
........................................................................................................................................................................
........................................................................................................................................................................
........................................................................................................................................................................

D 4 a. Is the area more or less attractive for you to visit because of it being named a World Heritage Site?

☐ The area is more attractive to visit
☐ The area is less attractive to visit
☐ It is of no importance to me that the area is a World Heritage Site  ➔ Go to question D 6.
b. In what way has the area become more/less attractive to visit?

D 5. Suppose that Laponia was not a World Heritage Site, would that affected your trip?

☐ No
☐ Yes, the trip had been cancelled
☐ Yes, the trip had been different  ➔ In what way?

D 6. What do you think about the Laponian World Heritage Site? For each statement, please mark the alternative that best corresponds to your opinion with a cross.

<table>
<thead>
<tr>
<th>The World Heritage Site increases the value for the visitors.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree completely</td>
</tr>
<tr>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>More people will come to the area because of the designation to a world heritage site.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree completely</td>
</tr>
<tr>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The World Heritage Site increases the value for the surroundings.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree completely</td>
</tr>
<tr>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The World Heritage Site restricts the human use of the area.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree completely</td>
</tr>
<tr>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The World Heritage Site preserves the biological diversity.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree completely</td>
</tr>
<tr>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The World Heritage Site makes the Sami heritage more visible.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree completely</td>
</tr>
<tr>
<td>☐</td>
</tr>
</tbody>
</table>

D 7. In what way would you like to be given information about nature, reindeer herding, Sami heritage and tourism in the Laponia?

<table>
<thead>
<tr>
<th>Info. about nature</th>
<th>Info. about reindeer herding</th>
<th>Info. about Sami heritage</th>
<th>Info. about tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written information before leaving home</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information on the Internet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signs and written information in Laponia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Written and verbal information in a visitor’s centre in Laponia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information from a local guide in Laponia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other way:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

☐ I do not require information at all.
D 8. What do you think about developing tourism within the World Heritage Site?

☐ Very negative  ☐ Negative  ☐ Neutral  ☐ Positive  ☐ Very positive

D 9. What do you think should be done in Laponia to improve the tourist experience?

*Please mark only one cross for each statement.*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not important</th>
<th>Quite important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase the number of activities</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Increase the number of accommodation</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Raise the standard level on accommodation</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>More shelters and rest hostels</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>More activities suited for children</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Accommodation and activities adjusted for the environment</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Offer guiding to nature attractions</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Offer guiding to culture attractions</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>More contact with the Sami peoples</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Increase the number of Sami activities</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Increase the offering of local food/dishes</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Improve the quality of the roads</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Improve train connections</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Improve plane connections</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Improve bus connections</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Increase the number of camping grounds</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>More sign-posts along marked routes</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>More information boards about Laponia</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Establish a “Naturum”/visitor centre</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Decrease the human effect on nature</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

D 10. Imagine the following scenario. Suppose you were offered a guided all-day trip to Aktse and Rapadalen from Jokkmokk. The following is included in the price: transfer from Jokkmokk to Aktse, guide, lunch and snack. Would you be interested in participating?

☐ Yes  ☐ No  → Go to question D 11.

If yes, what is the maximum price you would be willing to pay for the trip? ……………. SEK
D 11. Imagine that a visitor’s centre is going to be built - a centre where you would get information and knowledge about the nature and culture of the World Heritage Site. Where would you prefer this centre to be built?
☐ Gällivare  ☐ Porjus
☐ Jokkmokk  ☐ Stora Sjöfallet
☐ Kvikkjokk  ☐ Ritsem
☐ Other, state place: ..........................................................................
☐ I am not interested in a visitor’s centre being built.

D 12. Have you ever visited any other World Heritage Site in Sweden or the rest of the world?
☐ Yes  ☐ No  Go to question E 1.
If yes, please name: ..........................................................................
.................................................................................................

D 13. Did you visit the World Heritage sites in Sweden or the rest of the world because they are World Heritage?
☐ Yes  ☐ No

E. Some general questions about the Swedish mountains

E 1. The following are statements about protected areas (World Heritage Sites, national parks and nature reserves) in the mountains. Please mark the most applicable alternative. Mark with one cross for each statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Disagree totally</th>
<th>Disagree in part</th>
<th>Neutral</th>
<th>Agree in part</th>
<th>Agree totally</th>
</tr>
</thead>
<tbody>
<tr>
<td>There should be more protected areas in the mountains</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>There should be less protected areas in the mountains</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

E 2 a. When you go on vacation, how important is it for you that the area is protected as a World Heritage Site?
☐ Not at all important  ☐ Little important  ☐ Important  ☐ Very important  ☐ Extremely important

b. When you go on vacation, how important is it for you that the area is protected as a national park?
☐ Not at all important  ☐ Little important  ☐ Important  ☐ Very important  ☐ Extremely important
E 3. When you visit the Swedish mountains, how do you feel about the following things? Please circle one for each description.

<table>
<thead>
<tr>
<th></th>
<th>Very negative</th>
<th>negative</th>
<th>Neutral</th>
<th>Positive</th>
<th>Very positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having camp sites with a WC, dustbins, campfire spot etc.</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Having mountain stations with service, warm water, bed linen etc.</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Having marked hiking trails</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Having good signs in the beginning of hiking trails</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Having footbridges over wetlands</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Being able to drive into attractive areas for day trips</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Seeing traces (cold campfires, wear) of other visitors</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Seeing traces of terrain-going vehicles</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Experiencing untouched countryside</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Being able to go for days without seeing houses, roads, etc.</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Only seeing a handful of other visitors</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Being able to hike off the trails</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Being able to tent without seeing or hearing other people</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Being able to be transported by plane/helicopter to a place</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>The area having rare flora and fauna</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Being able to make campfires anywhere</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Being 5 km from the nearest house, road, cleared area, dam, telephone mast etc at the centre of the area</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Being able to walk wherever you want in the area</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

F. Questions about your background. In the result of the survey, no individual answers will be presented.

F 1. What was your home country when you visited the Lapland Mountains in 2003?

F 2. How many people live in your household (yourself included)?

...........children 0-6 years  ..........children 13-18 years

...........children 7-12 years  ..........adults

F 3. What is your level of education? Select only one.
Elementary school
☐ Upper secondary/high school
☐ Folk high school/community college
☐ University/college bachelor’s degree
☐ University/college beyond bachelor’s degree
☐ Other

F 4. What is your occupation? Please select only one alternative.
☐ Working  Your profession: ..........................................................
☐ Student
☐ Retired
☐ Unemployed
☐ On the sick-list
☐ On parental leave
☐ Other: ..............................................................

F 5. You live in:
☐ A single-family house
☐ An apartment
☐ Other: .............................................................

F 6. The tenure status of the accommodation is that your household:
☐ owns the house
☐ owns the apartment
☐ rents the accommodation
☐ Other ..............................................................

F 7. Do you have access to/own a secondary home?
☐ Yes  ☐ No

If yes, how many days did you use the secondary home in 2003? ......... days

F 8. What was the approximate combined income after taxes of your household in 2002?
☐ Up to 99 999 SEK
☐ 100 000-199 999 SEK
☐ 200 000-299 999 SEK
☐ 300 000-399 999 SEK
☐ 400 000-499 999 SEK
☐ 500 000-599 999 SEK
☐ 600 000-699 999 SEK
☐ Over 700 000 SEK

Thank you very much for your time!

Please use the reply envelope and return the questionnaire as soon as possible.
Intervjufrågor/samtalsområden

1. Namn (kön)
2. Var växte du upp (del av landet, stad/landsbygd)
3. Var bor du nu?
4. Ålder, yrke, högsta utbildning
5. Har du varit i fjällen (svenska eller utländska bergsområden) tidigare (fjällvana)? Har du varit i den här delen av fjällen tidigare?
6. Viken sorts semester brukar du ha? (Övernattningar i naturen?)
7. Vilka aktiviteter har du ägnat dig åt under den här vistelsen? (ge exempel, se checklistan)
9. Var du med något sällskap?
10. Vad är det som gör att du främst har kommit hit? (motiv för att besöka området)
11. Vilken är din helhetsupplevelse hittills av vistelsen?
12. Vilken är din helhetsupplevelse hittills av vistelsen?
13. Enskilda händelser som har varit extra minnesvärda? Varför då? Har det hänt förr?
14. Vilket är din helhetsupplevelse hittills av vistelsen?
15. Vad betyder det för dig att det finns renar i området? Hur påverkar renarna dig och din helhetsupplevelse för vistelsen?
16. Hur reagerade renarna när de såg dig?
17. Om de sprang/flydde – kan du beskriva hur renarna betedde sig?
18. Finns det något positivt med renar på fjället? Vad?
19. Ser du att det finns några problem med att det finns renar i fjällen? Vilka?
21. Hur upplever du den här typen av information om renar? (visa info.affisch)
22. Har du läst en sådan skylt eller tagit del av information om renar på annat sätt? (Internet….)
23. Om fjällvandrare stör renar och deras betesro på ett eller annat sätt, vad tycker du att man ska göra av det? Vilka åtgärder kan man använda för att hantera sådana situationer ( minska störningar på renen)?
24. Hur ser du på att renskötsel bedrivs här?
25. Är det viktigt med renskötsel? – Varför?
27. Har du sett några konkreta effekter av renbetet i landskapet? (ev markslitage, syns på vegetationen…)

Tema 1 – "Renar" (upplevelser, reaktioner och beteenden)
17. Vilka tankar och känslor fick när du mötte/såg renarna? (Blev du nervös/rädd/glad… - utveckla!)
18. Vad betyder det för dig att det finns renar i området? Hur påverkar renarna dig och din helhetsupplevelse för vistelsen?
19. Hur reagerade renarna när de såg dig?
20. Om de sprang/flydde – kan du beskriva hur renarna betedde sig?
21. Finns det något positivt med renar på fjället? Vad?
22. Ser du att det finns några problem med att det finns renar i fjällen? Vilka?
24. Hur upplever du den här typen av information om renar? (visa info.affisch)
25. Har du läst en sådan skylt eller tagit del av information om renar på annat sätt? (Internet….)
26. Om fjällvandrare stör renar och deras betesro på ett eller annat sätt, vad tycker du att man ska göra av det? Vilka åtgärder kan man använda för att hantera sådana situationer ( minska störningar på renen)?
27. Hur ser du på att renskötsel bedrivs här?
28. Är det viktigt med renskötsel? – Varför?
29. Ser du att det finns några problem med renskötsel? – Vilka?
30. Har du sett några konkreta effekter av renbetet i landskapet? (ev markslitage, syns på vegetationen…)

Tema 2 – "Kultur och naturvärden i världsarvet"
31. Tycker du att området är vildmark, natur- eller kulturområde? Hur tänker du då?
32. Vad är vildmark för dig?
33. Vad är natur för dig?
34. Vad är kultur för dig?
35. Vad känner du till världsarvet Laponia? Vilka områden? Vad vet du om det som är utsett till världsarv?
36. (Om inte, berättar jag att det båda är pga natur- och kulturvärden) – hur ser du på det?
37. Vad betyder det för dig att området är utnämnt till världsarv?
43. Har världarvsutnämningen påverkat dig att komma hit? På vilket sätt?
44. Har området blivit mer eller mindre attraktivt att besöka? På vilket sätt?
45. Har du sett något från den samiska kulturen under vistelsen? Vilken betydelse har det för dig?

Checklista Exempel på aktiviteter:
- Endagsvandring: stannat/sovit på ett ställe och gjort (dags-)utflykter därifrån.
- Flerdagsvandring: Vandrar från en plats till en annan och övernattar.
- Bergsklättning/toppbestigning
- Fiske
- Åkt båt
- Fotograferat natur, landskap, djur, sällskapet, eller annat
- Målat
- Skrivit poesi, upplevelser, dagbok
- Läst
- Sociala umgången med (o)bekanta
- Lekar och sällkapsspel
- Fågelskådning
- Studerat/tittat på djur
- Studerat/tittat på växter
- Studerat/tittat på stenar
- Studerat/tittat geologiska formationer
- Deltagit i en guidad tur/arrangemang, eller temavecka
- Besökt sameviste, kyrkkåta, handlat samisk slöjd
- Samiska aktiviteter: berättarstund, renraid, kalvmärkning…
- (Jakt)
- (Plocka bär och svamp)