Stakeholder's monitoring and involvement: management option for Sumava National Park (Czech Republic)

Martin Cihar, Viktor Trebicky and Jindriska Stankova

Abstract — The paper presents the results of long-term monitoring and surveys of three major stakeholder's groups in Sumava National Park (SNP) – visitors, local people and public administration (mayors). SNP is the largest Czech national park situated in the southeast part of the country. In 1990s and 2000s the park became a popular nature tourism destination, mainly for domestic visitors. Views and attitudes of stakeholder groups to conservation and environmental management activities were analysed and compared. Primary data was statistically treated using the χ^2 test for evaluation of homogeneity of results from different years of monitoring and different stakeholder groups. The results show that management, development and nature tourism in SNP went through significant changes over the last ten years. Monitoring of stakeholder's opinions and attitudes and their involvement in a local decision making process is crucial for development of a new management plan of SNP.

Index Terms — Local people, management, monitoring, nature tourism, public administration, visitors.

1 Introduction

Over the last two decades, Sumava National Park (SNP) in the southwest corner of the Czech Republic has become one the primary destinations of nature tourism in Central Europe. It was closed to tourists and any other form of development in the second half of the 20th century due to military use and the "Iron Curtain" stretching across the region. Paradoxically, Sumava's nature flourished, with vast areas of land exposed to minimum human pressure.

Everything changed after the collapse of the communist regime in 1989. The Iron Curtain was torn down in a similar way to the Berlin wall. Sumava was discovered and literally conquered by tourists. Nowadays, the number of visitor nights is estimated to be around 1.1 – 1.3 million per year, which ranks SNP as the second most visited national park in the Czech Republic.

Considering its position in the middle of Europe ("Green Roof of Europe"), natural beauty of its landscape and presence of unique ecosystems – such as glacial lakes, peat bog sources and the remains of primeval mountain forests – the area was declared the Sumava National Park by the Czech government in 1991. National park, along with its buffer zone – Protected Landscape Area Sumava – takes up an area of 167,000 ha, with elevations between 600 – 1378 m above the sea level. Sumava is also part of UNECSO's Man and Biosphere reserves network and its peat bogs are protected under Ramsar Convention.

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Park administration and management, however, has been struggling with three main problems, more or less continually since the beginning of national park's existence. Equally important is the deteriorating quality of its main ecosystem – forests ("beetle calamity"), increasing pressure from tourism development and flawed relationships with local people and municipalities. The research presented in this paper aims to address the later two. The main research question is: have behaviour patterns, attitudes and views of visitors, local people and mayors of local municipalities evolved in a similar way? What are their relations to the nature protection and management of the national park?

2 METHODS

The paper presents results of a long-term monitoring and surveys of three major stakeholder's groups in Sumava National Park (SNP) – visitors, local people and public administration (mayors). These groups and their interactions were identified as crucial for a successful and proactive management of the national park.

The Institute for Environmental Studies, Charles University, has been monitoring tourism use of SNP annually since 1997 as part of a broader research program. Visitor surveys are carried out in the high summer season during a nine-day period at four monitoring points in the central part of the national park. The survey's methods include interviewing a random sample of visitors by using an extensive questionnaire and counting of tourists. Results from 1997 – 2006 period are presented in this paper.

Surveys of local people and representatives of local public administration were carried out in 1998 and 2003. Their views and attitudes to conservation and environmental management activities were analysed and compared. Primary data were statistically treated using the χ^2 test for evaluation of homogeneity of results from different years of monitoring and different stakeholder's groups. For comparison of local inhabitants' and mayors' views, a method of testing of expected frequency attributes was used.

The following number of questionnaires was collected from visitors:
N_{1997} = 1,274, N_{1998} = 1,020, N_{1999} = 1,126, N_{2000} = 665, N_{2001} = 959, N_{2002} = 648, N_{2003} = 900, N_{2004} = 911, N_{2005} = 648, N_{2006} = 877.

For local people the number of questionnaires amounted to:
N_{1998} = 181, N_{2003} = 200.

Return rate of questionnaires was high in both groups and all monitoring years, within the range 70 % - 90 %.

Finally, 7 mayors from local Sumava's communities were interviewed in 1998 and 2003.

3. RESULTS AND DISCUSSION

3.1 Visitors numbers

How many tourists visit core areas of Sumava National Park in a high summer season? Fig. 1 summarizes development of number of hiking visitors and cyclists over 10 years of monitoring (1997 – 2006).

The number of hiking visitors peaked in 1997 with an average 2,930 recorded persons per day. That match approximately to

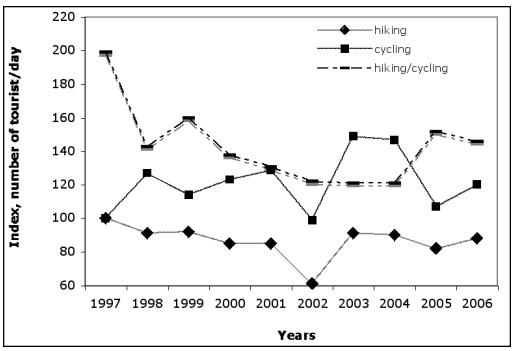

Fig. 1. Index: number of hikers and cyclist and their ratio. Indicator is based on an average number of tourists (hikers and cyclist) per monitoring day. It sums records from four monitoring points – crossing of hiking trails in central parts of the park. Beginning of monitoring, year 1997, corresponds to 100. Hiking/cycling ratio is expressed as 1 hiker/100 cyclists.

181,000 people passing through four monitored crossings in summer season (62 days) and roughly 270,000 people per year (conservative estimate of off-season tourist traffic being 10 % of a busy summer period value). Since 1997, the number of visits slightly dropped, with a much deeper fall (by 39 %) in 2002. Year 2002 was abnormal, however, affected by extreme floods in the whole country during the monitoring period.

The number of cyclists reveals a different picture. Cycling, even on hiking trails, is increasingly popular and exceeded every other year (bar 2002) the initial value of 1,475 recorded cyclists per day in 1997. Even the exceptional year 2002, when the floods occurred, counts for 99 % of 1997 value. So far, cycling peaked in 2003, with 49 % surge.

Hiking/cycling Index continually decreased in favour of cycling from 1997 to 2004 – from 199 hikes/100 cyclists in 1997 to 121 in 2004. In 2005, this trend was disrupted and index jumped back to 152 value. If the year 2006 stands for a renewed advent of cycling in SNP will remain to be seen.

3.2 Visitors description and attitudes

What kinds of people visit SNP? Did their main characteristics remain homogenous over the 10-years monitoring, or did they vary? For nature tourism analyses, *tourist type* is crucial [1]. It is related to the type of recreational activity and level of tourist development in the given area [2].

Some important characteristics of visitors remain identical over the monitoring period. Tourists are mostly Czech (foreigners, predominantly Germans, constitute on average only 7 % of visitors), more often male then female, in middle and upper middle age group, better educated and with a higher social status than the nation's average. Czech tourists come to SNP mainly from the capital – Prague - and from Sumava's neighbouring districts.

The rate of first time visit to return visit remained the same over the 10 years – 1:4 and it is similar to e.g. North York Moors NP [3]. Family with children prevails in terms of group composition – almost every second visitor comes with a family. Share of foreign visitors in "first-class" world national parks is higher (e.g. 41 % in Kruger NP – [4], 93 % in Komodo NP [5], 57 % in Sagarmatha NP [5]. The Situation in "country" national parks is similar to SNP (2 % in Lake District NP and 5 % in Dartmoor of Great Britain [6]).

TABLE 1

VISITORS/VISITS ATTRIBUTES IN THE SNP

Increasing	Decreasing	Neutral
1-week stay	2-weeks or longer stay	Socio-demographical composition
Stay in hotel	Stay in campsite	Rate of first time/ return visit
Stay in guest-house	Use of bus/ train to/from NP	Geographical and national composition
Use of car - to/from SNP	Hiking/cycling entirely	Travel distance to/from the NP
Use of car - in SNP	Direct contact with nature (berries and mushrooms picking)	Dominance of family with children group
Sport as the main reason for visit	Stay only in destination centres and around	Size of hiking groups
Cycling in SNP, ratio cycling/hiking	Impose fees for visit	Recreational costs (in constant prices)
Positive assessment of state of environment in NP	Not enough tourists (social capacity)	
Knowledge of "ecological problem" in the NP		
Positive feeling about new tourism development projects in SNP		
Tourists not permitted the most sensitive parts of the SNP		
Using border crossing in SNP		

Changes or trends in visits and visitors attributes have been identified as well. Concerning the length of stay, number of 7-day visit is the most popular (50 % of visitors stay for a week). Foreigners increasingly come for a 1-day visit (21 % in 2006), which corresponds with other aspects of their visits (e.g. use of car). Car is the predominant mean of transport to/from the national park (it increased from 78 % in 1997 to 85 % in 2006) for both native and foreigner tourists.

The main trends in visitors/visits characteristics are summarized in table 1. Some of them illustrate the previously published [7] fact of increasing preference of more consumption forms of tourism. It is manifested by car dependency, need for more "adrenalin" while in the park there are more relaxed views on conservation measures and acceptance of the new buildings and tourism development projects in the park.

3.3 Visitors, local people and mayors – comparison

Visitors, local people and representatives of local administration (mayors of local communities) have been identified as three major stakeholder's groups in SNP. Interaction among these groups has been studied in many natural areas of the world [8] and host – visitor relation is often double-edged: economic dependence on one side and distrust or even open hostility on the other side [9].

Within two years of monitoring, 1998 and 2003, sample of all three groups was asked identical questions. Results of surveys are summarized in Table 2. Important and statistically significant differences between groups have been identified in social and educational status: local people, comparing to visitors and mayors, have more frequently elementary education. Correspondingly, visitors and mayors have more often professional occupation. Both groups have strong ties with their region – most of them "would not move out of Sumava even if he/she could". Such a supportive relationship is important for local community development [10].

Mayors tend to be stricter when evaluating conservation measures in NP and the influence of the park on their everyday life. Mayors and visitor, contrary to local people, thought that the state of environment in the park has improved in recent years. Both local groups – local inhabitants and mayors expressed negative assessment of national park influence on the local price levels and offer of jobs. Local people, contrary to mayors, in both years of monitoring fretted about lack of benefits from tourism. It seems that representatives of local authorities are directly or indirectly involved in the tourism business in SNP, therefore more positive in this issue than "ordinary"local people.

Questions concerning economic and social value of tourism were not put to visitors. Its negative assessment from both local groups is consistent with similar findings in Komodo NP [11] and Arrowtown in New Zealand [12]. The problem was also discussed by [Elcom and Baines [13], who pointed out the lack of stakeholder's involvement since the beginning of new development planning in protected areas, which can lead to future tensions and conflicts.

Both local groups approve of the opening of a new border crossing to neighbouring Germany. From 1998 to 2003, favourable evaluation of national park and its management have exceeded negative assessment.

TABLE 2

COMPARISON OF STAKEHOLDER'S GROUPS

Attitude/ Characteristics	Visitors	Local people	Mayors
Education - basic		XX	
Occupation - professional	X		X
State of environment in SNP improved	X		X
Conservation measures in SNP too strict			X
Influence to everyday life from SNP existence	-		X
Not enough local jobs	-	00	X
Permit tourists access to the most sensitive parts of SNP			X
Tourism increases local prices	-	00	X
Not moving to other region, even if I could	-	00	00
Positive views on NP	-	00	0
Knowledge of "ecological problem" in NP	00	00	00
New border crossings - no harm to nature		00	00
Positive evaluation of NP's management		0	0
No benefits from tourism	-	00	

XX – statistical difference in both years (1998 and 2003)
X – statistical difference in one year
00 – statistical homogeneity in both years (1998 and 2003)
0 - statis

4. CONCLUSION

Long term monitoring of visitors numbers, their attitudes and attributes and relations to other stakeholder's groups is crucial for a successful management of national parks. Several concrete recommendations, based on the research outcomes, have been proposed to relevant authorities (Ministry of Environment, Administration of SNP). They exceed the scope of this paper, a few more general conclusions can be mentioned nevertheless.

The Number of tourists visiting SNP in the summer season has been stagnant in recent years, yet other indicators show that social carrying capacity of core areas of the park was reached. All efforts aiming at tourism growth in the area should therefore address its sustainability – i.e. qualitative, not quantitative development.

Stakeholder's surveys and interviews reveal sceptical attitudes of local people and mayors towards benefits that stem from inhabiting a unique area of NP. Both groups like the place where they live, but they have to be involved more strongly in the design of a new management plan. So far, lack of stakeholder's involvement encouraged unnecessary hassles.

REFERENCES

[1] D. A. Duffus and P. Dearden, „Non-Consumptive Wildlife-Oriented Recreation: A Conceptual Framework," *Biological Conservation*, vol. 53, no. 3, pp. 213-231, 1990.

[2] D. Roe, N. Leader-Williams and B. Dalal-Clayton. „Take Only Photographs, Leave Only Footprints: The Environmental Impacts of Wildlife Tourism," Wildlife and Development Series No.10, International Institute for Environment and Development, London, 1997.

[3] P.C.L. White and J.C. Lovett, „Public preference and willingness-to-pay for nature conservation in the North Moors National Park, UK," *Journal of Environmental Management*, vol. 55, no. 1, pp. 1 – 13, 1999.

[4] J. Turpie and A. Joubert, „Estimating potential impacts of a change in river quality on the tourism value of Kruger National Park: An application of travel cost, contingent and conjoint valuation methods", *Water SA*, vol. 27, no. 3, pp. 387 – 398, 2001.

[5] M. J. Walpole, H.J. Goodwin and K.G.R. Ward, „Pricing Policy for tourism in protected areas: Lessons from Komodo National Park, Indonesia," *Conservation Biology*, vol. 15, no. 1, pp. 218 – 228, 2001.

[6] S. Cullinane, and K. Cullinane, „Attitudes towards traffic problems and public transport in the Dartmoor and Lake District National Parks," *Journal of Transport Geography*, vol. 7, no. 1, pp. 79 – 87, 1999.

[7] M. Cihar, M and V. Trebicky, „Analysis of the sustainability of nature-based tourism in the Sumava National Park, Czech Republic: 1997-2004," *Series of the Institute for Landscape and Open Space*, HSR, University of Applied Sciences

Rapperswil, pp. 25-32, 2008.
[8] J.D. Johnson, D.J. Snepenger and S. Akis, „Residents' perceptions of tourism development," *Annals of Tourism Research*, vol. 21, no. 3, pp. 629 – 642, 1994.
[9] H. Ceballos-Lascuráin, „*Tourism, ecotourism and protected areas: The state of nature-based tourism around the world and guidelines for its development*," Gland, Switzerland and Cambridge, UK: IUCN, pp. 51 – 54, 1996.
[10] D. Gursoy and D.G. Rutherford, „*Host attitudes toward tourism*," Annals of Tourism Research, vol. 31, no. 3, pp. 495-516, 2004.
[11] See [5]
[12] M. Švehla, „Arrowtown: The perceived impacts of tourism by residents", PhD dissertation, University of Otago, New Zealand, 1996.
[13] D. Elcome and J. Baines, „Steps to Success - Working with residents & neighbours to develop and implement plans for protected areas," Switzerland: IUCN, Commission on Education and Communication, European Committee for EE, 1999.

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