

Designing a visitor monitoring concept for Harz National Park in Germany

Eick von Ruschkowski, Susanne Valdeig, Rebekka Jakob and Sandra Homann

Abstract — Germany's protected areas encounter many specific challenges in regards to visitor management. Due to a high population density, they are frequented by high visitor numbers who also enter unaccounted for from diffuse ingress points as access is free of charge. Additionally, Germany's parks are historically young. Thus, scientific monitoring is often limited to conservation issues whereas socioeconomic dimensions are not always considered a core management issue. Harz National Park with an area of 246 km², situated in the German states of Lower Saxony and Saxony-Anhalt, is a typical example. Although visitor counts have been conducted in several recreational "hot spots" within the park, no quantitative and qualitative visitor use statistics for the park as a whole exist. As a consequence, the park administration lacks information that is necessary to analyse and evaluate potential conflicts between visitor use and conservation objectives. In 2007, the Institute of Environmental Planning and the Harz National Park administration joined efforts to develop a long-term strategy to implement visitor use monitoring with the national park. Based on extensive interviews, mainly with park staff, and an evaluation of current available technologies, a first framework was developed which will address the methodological challenges outlined above. Key pillars of the framework are a concept for quantitative visitor counts by means of pyroelectric counters and a modular-structured questionnaire to collect qualitative data such as visitor preferences, and value added to the region. The framework will now further undergo scientific evaluation to be implemented from 2009 onwards.

Index Terms — Harz National Park, visitor monitoring concept, Germany.

1 INTRODUCTION

Visitor-induced impacts on a protected area's resources are a common and legitimate concern for park managers worldwide [1], [2]. Because most European large protected areas such as national parks or biosphere reserves have only been established in the last 25 to 30 years, integrated approaches to resource management and

visitor monitoring are not fully developed yet or even non-existent. While most parks manage their natural resources, management approaches to recreational use continue to be lacking. However, increasing use, changing user groups and the desire for intact resources underline the need for further implementation of tools that enable park managers to balance recreational use and resource protection [3]. Specifically, Germany's national parks have a strong history in natural resource management while even current attempts to establish quality guidelines and standards for park management [4] do not include socio-economic issues on the research and monitoring agenda. Due to high visitation numbers, but also because of increasing pressure from politics to prove their benefit to regional economic development, a number

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of protected areas have started individual approaches to address this topic.

2 HARZ NATIONAL PARK

2.1 Background

Harz National Park encompasses about 246 km² of colline and montane habitat zones

and is located in the German states of Lower Saxony and Saxony-Anhalt. From the North Sea inward, the Harz mountains are the first mountain range beyond the northern German lowlands, raising to an elevation of up to 1,142 meters above sea level. The national park only comprises a minor area of the mountain range and features forests and bogs. The forests have mainly been altered by logging and mining for at least the

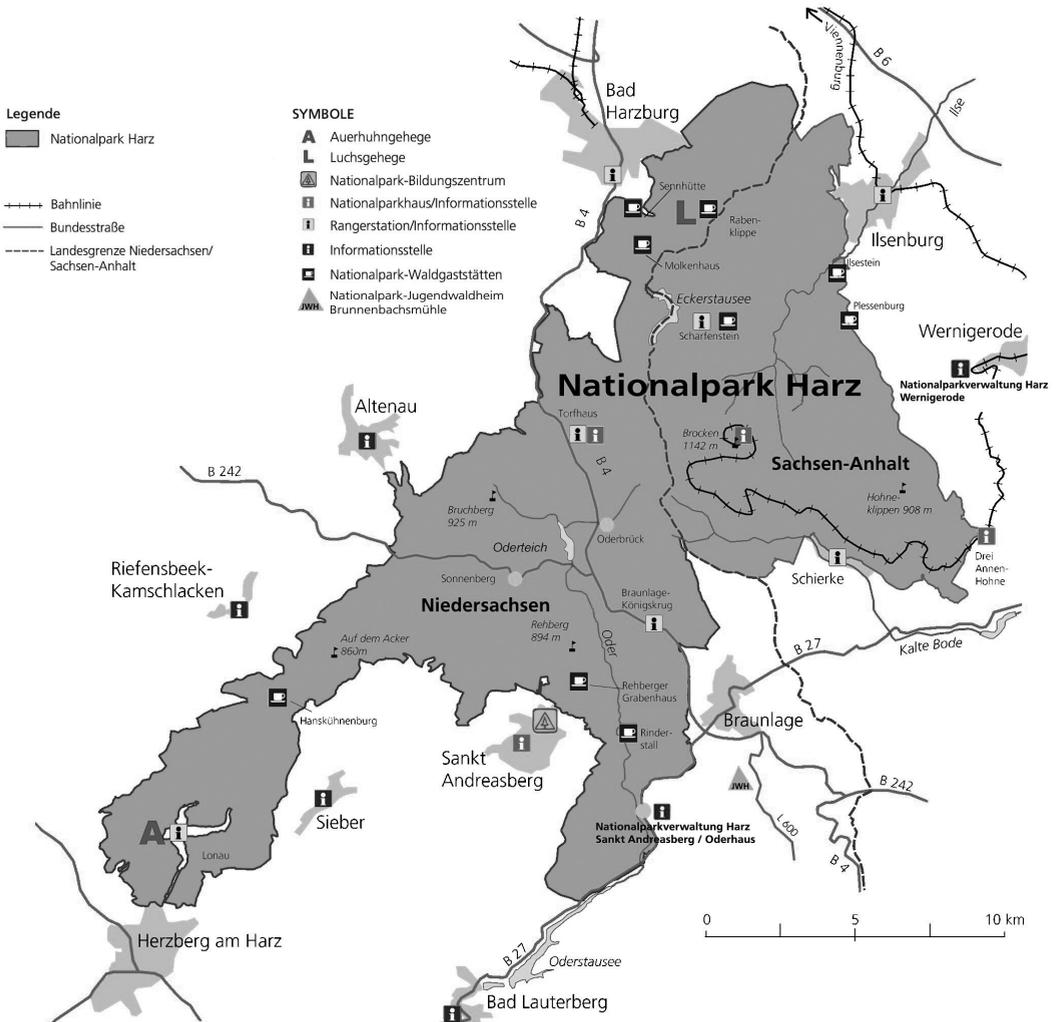


Fig. 1. Harz National Park with its surrounding communities and infrastructure. Source: Nationalpark Harz.

past 1,000 years, thus the vegetation is still far from a natural state in the elevations between 500 and 850 meters above sea level. The national park was originally founded as two separate parks along the state lines (and the former borderline between East and West Germany) of Saxony-Anhalt (1990) and Lower Saxony (1994). National park legislation is a matter to the federal states in Germany, hence two different parks. Both parks were merged into the current Harz National Park in 2006, creating Germany's first (and only) interstate national park.

The Harz region has been a strong tourism destination for more than 100 years. The number of visitors is estimated between 10 and 40 million visitors per year (including multiple visits and day visits) without sound validation of this data available. Still, the number of overnight stays indicates strong visitor use. For the year 2003, 4.2 million overnight stays were recorded by the local tourism administration Harzer Verkehrsverband [5].

2.2 Current visitor monitoring activities

Prior to the merger in 2006, the Lower Saxony portion of Harz National Park was not conducting any visitor monitoring at all. The eastern portion was running a socio-economic monitoring program (SÖM) which included visitor counts with different counter types between 2003 and 2005 [6]. Currently, these counters are not being operated and are substituted by manual counts (e.g. cars on forest roads in selected locations). A comprehensive approach to monitor visitor activities is not in place. Due to staff shortages, socio-economic research in Harz National Park mostly relies on external efforts by partner universities and research institutions.

3 PLANNED VISITOR MONITORING CONCEPT

3.1 Objectives

Based on the current status of visitor monitoring activities in Harz National Park and to

address the needs of the park's administration, a framework for visitor monitoring was developed in a two-semester term project at the Institute of Environmental Planning in 2006/2007 [7]. The need for a visitor monitoring concept is underlined by the park managers' mandate to draft a new general management plan and a trail management plan within the next three years which call for valid empirical data in regards to visitation and visitor use.

The data needed requires a multi-stage approach, using different, mainly quantitative methods to generate data that gives information about

- total visitation throughout the park,
- preferred types of visitor use,
- visitor distribution throughout the park, and
- potential conflicts between visitor use and conservation objectives.

3.2 Methods

The concept relies on automated counts ("visitor count") and surveys with standardized questionnaires ("visitor survey"). Both elements were subdivided in modules to allow maximum flexibility with the monitoring concept.

Technically, the visitor count will be based on a combination of pyro-electric counters on trails and traffic counters on the roads. This combination might also allow for establishing correlations between traffic and actual visitation as the park is crossed by several thoroughfares which are a contributor to the inaccuracy of current visitation numbers. The locations for all counters were selected on the basis of an ad hoc workshop with the park district rangers who have the field knowledge about highly and less frequented areas. The basic layout for continuous visitor counts includes 25 locations in the national park of which 21 are permanent and an additional four seasonal during the summer. All 25 locations will record hikers. Mountain bikers will be accounted for in 17 locations, skiers in 11. Add-on modules for visitor counts include additional counters for vehicle traffic, winter

seasonal use, and circular trails, with partial location overlaps. The maximum number of data collecting locations would be 35.

Visitor surveys will be used to achieve the park administration's other objectives. The survey is based on a standardized and highly structured questionnaire in order to achieve maximum comparability of data. The survey is also divided into several modules under which data could be collected separately and tailored to need. The basic modules include demographic data, visitor interests, and knowledge about the park. Additional modules include visitor satisfaction with trails, interpretive exhibits and information, and socio-economic data. All modules combined add up to 26 questions plus an additional demographic information section.

4 IMPLEMENTATION AND EXPECTED RESULTS

The concept was presented to park managers and park staff in December of 2007. Their comments were integrated into a joint proposal which is currently pending for funding. Depending on funding, the implementation of the concept is planned for the beginning of 2009.

If the program will be implemented as planned, it will be the first comprehensive approach to visitor use monitoring in a large protected area in Germany. Besides the objectives laid out by the park administration, a second step will be the blending of the results with conservation objectives in order to improve protected area management tools that allow the integration of natural resource and visitor use monitoring in protected areas. Additionally, the project aims at a close cooperation with international partners to allow testing whether existing management frameworks such as Visitor Impact Management (VIM), Visitor Experience and Resource Protection (VERP) or Limits of Acceptable Change (LAC) may be adapted to the specific needs of Harz National Park.

REFERENCES

- [1] G. Worboys, M. Lockwood, T. DeLacy (2005): Protected Area Management: Principles and Practice, 2nd edition. New York: Oxford University Press.
- [2] Y.-F. Leung, C. Monz (2006): Visitor Impact Monitoring: Old Issues, New Challenges. *George Wright Forum* 23 (2), pp. 7-10.
- [3] A. Arnberger (2007): Internationale Entwicklungen im Besuchermonitoring – Ein Überblick. *Besuchermonitoring und ökonomische Effekte in Nationalen Naturlandschaften, Biosphärenreservat Vessertal-Thüringer Wald*, pp. 8-17 (Conference Proceedings)
- [4] L. Maly-Wischhof, W. Kemkes (2008): Qualitätsmanagement in Nationalparks (Management effectiveness in German national parks). *Natur und Landschaft* 83 (3), pp. 101-104.
- [5] T. Wilken, J. Neuhaus (2005): Europäische Charta für nachhaltigen Tourismus in Schutzgebieten.. Projektplanung für die Nationalparkregion Harz. Technical report, Hamburg.
- [6] F. Steingass, R. Wendt (2007): Bausteine des sozio-ökonomischen Monitorings im Nationalpark Harz. *Besuchermonitoring und ökonomische Effekte in Nationalen Naturlandschaften, Biosphärenreservat Vessertal-Thüringer Wald*, pp. 60-65 (Conference Proceedings)
- [7] S. Valdeig, R. Jakob, S. Homann (2007): Besuchermonitoring – ein Konzept für den Nationalpark Harz. Technical report, Institute of Environmental Planning, Leibniz Universität Hannover.

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