

# The recreation perspective. A recreationalists typology on visitors and their behaviour by the example of Berchtesgaden National Park

Sabine Hennig

**Abstract** — To perform its tasks management needs information on visitors. They provide insight into the recreational situation of protected areas and support management decisions. Therefore, data on visitor use and visitation behaviour have to be analyzed and mapped. However, information on visitors should not be reduced on singular variables. It is important to combine these different characteristics and build up types of visitors respectively visitor behaviour. In favour of this the approach of recreation perspective is elaborated. The concept takes account of existing typologies on (nature-based) tourism and their attributes (e.g. size, age). Furthermore, visitor behaviour is integrated. Distinguished in macro and micro behaviour it is expressed by choice of activity, destination, type, location and duration of extended stops etc.. Considering these aspects visitors can be categorized into several types. The recreation perspective is worked out and applied to the German Berchtesgaden National Park.

**Index Terms** — visitor characteristics, recreational behaviour, typologies, management, statistical analysis



## 1 BACKGROUND

Today rising visitor numbers as well as changing visitor demands pose challenges for visitor management in protected areas. Due to these changes the management is confronted with the complex task to handle recreational and ecological requirements in a sustainable way. Knowledge and understanding on visitors, their behaviour, and visitation processes provide decision support to the management. However, instead of just characterizing visitors by single attributes, it can be even more helpful to classify visitors and visitations by combining attributes.

Here, typologies are a useful tool. They reflect existing situations more realistic by considering visitors and their visitations as a whole. In order to elaborate typologies for recreation and recreationalists it frequently occurs in the style of tourist characterizations. Today several tourist typologies exist. They base on variables like social-demographic factors, motivations and purposes behind visitation etc.. The attributes used in tourist typologies can be seen as important factors to describe visitors, but they neither integrated nor explain behaviour of visitors. In order to understand and classify visitors the integration of behaviour can be considered important (see O'Connor, Zerger & Itami 2003; Romeiß-Stracke 1986). The approach of recreation perspective takes this into account. The concept is elaborated and applied to Berchtesgaden National Park focusing on nature-based recreational activities on foot.

---

*S. Hennig is with the Department of Geography, Friedrich-Alexander University of Erlangen-Nürnberg, visiting researcher at Austrian Academy of Sciences/ GIScience Salzburg, E-mail: Sabine.Hennig@assoc.oewaw.ac.at.*

## 2 STUDY AREA

Berchtesgaden National Park is situated in the southeastern German part of the Alps bordering Austria. The extent of the park area comprises 21,000 hectares. Its altitude ranges from 600 m AMSL at Lake Königssee to 2,700 m AMSL at the summit of the Watzmann massif. The large protected area is accepted by IUCN as management category II. Consequently main management objectives are environmental education and recreation.

The region of Berchtesgaden is one of the oldest holiday destinations in the Alps (Job et al. 2003). Each year circa 1.3 Million visitors come to Berchtesgaden National Park. During summer (high season) main recreational activities like walking, hiking, and mountain climbing take place in the alpine environment. In the park 236 kilometers of trails, numerous alpine huts, alps, and other facilities and services like national park information centers are available. Natural and landscape attractions are viewpoints, waterfalls, lakes, alpine meadows, wildlife viewings etc. (BayStMLU 2002).

## 3 THE CONCEPT OF RECREATION PERSPECTIVE

The recreation perspective is described as the perspective of recreationalists on their individual visitation. This approach includes "personal" attributes used also in tourist typologies. Further on, behavioural characteristics are integrated. Before and during the visitation the recreation perspective is manifested in visitor decisions. They result in certain behaviour of visitors. It can be distinguished in macro and micro behaviour (Jubenville, Twight & Becker 1987). Here, purpose and motivation behind the respective visitation is important and responsible to explain behaviour. Both are variable and specific for each visitation - even of the same person. One person can visit a recreation or protected area at different days for different reasons. In consequence varying behaviour for each visitation results (Hammit & Cole 1998; Jubenville,

Twight & Becker 1987). Accordingly, the recreation perspective focuses on visitations and not just visitors. Depending on the recreational situation of a protected or recreational area the concept consists of different types of recreation perspective.

### 3.1 Recreation motivation and activity

Depending on the motivation behind visitations recreationalists select an appropriate activity. A person looking for physical challenge will select another activity than a person searching relaxation and tranquility.

Generally, recreation activities differ in mobile and stationary ones. Mobile activities are e.g. walking, biking, skiing. Stationary activities can be classified into three groups: activities according to resting (including e.g. playing and observing), getting information and orientation. Normally, stationary activities occur in combination with mobile ones. Examples are resting on a hiking tour or using information opportunities on walks (see Ammer & Pröbstl 1991; Hoisl, Nohl & Engelhardt 2000). However, the performance of hiking, walking or climbing can be different. This depends on the cultural, social, and natural environment. Naturally, hiking in north-American wilderness is characterized in another way than hiking in Central European cultural landscape. Table 1 refers to characteristics of walking and hiking in Central Europe.

### 3.2 Macro behaviour

Macro behaviour sums up frame decisions made in the run-up to visitations. It is characterized by purpose and motivation behind a visitation. Both lead to decisions concerning activity and destination, starting time, and duration of stay. The aspects are associated with each other. By selecting a summit destination the recreationalist will exercise climbing and not walking. While climbing requires to start early in the morning, walking occurs independent from daytime.

Nature-based recreation is mainly carried out by groups (family, friends etc.) and not by single persons. Due to its size and structure

TABLE 1

SELECTED CHARACTERISTICS OF RECREATIONAL ACTIVITIES: WALKING AND HIKING IN CENTRAL EUROPE

Activity	Walking	Hiking
Duration	1 – 2 hours	Primarily half-day
Target group	<i>Every one, without previous knowledge or special skills</i>	
Path length	2 – 5 km	> 5 km, up to 50 km
Travel speed	Leisurely	Speedy and perseveringly
Extended stops	Many	Few
Infra-structure	Benches, seatings	Signages, destinations like stops for refreshment/ meals
Trials	Comfortable, plane, hard surface	With sloop, natural state, challenging
Main motivation	“To go for a blow”	Nature experience, corporal challenge

(Ammler & Pröbstl 1991; LUBW 1994; Nohl 2001)

a group selects activity and destination. One single group member can be responsible for determining visitation constraints. It depends on his or her specific demands or physical abilities. For example, kids or seniors frequently have influence on choice of activity and destination. Comprehensible, a family excursion with kids will be designed in a totally different way than a trip of a sportive rambling club. Concerning seniors, it is imperative, that travel speed slows down remarkable for persons being older than 55 years. Accordingly, group structure should be considered to understand recreational behaviour.

### 3.3 Micro behaviour

Aspects of micro behaviour comprise the comportment during a visitation. It corresponds to mobile and stationary activities. In order to define micro behaviour the following factors are considered significant:

- performed types of extended stops,
- frequency of extended stops,
- duration of extended stops and
- speed of travel.

Micro behaviour reflects and depends on motivation behind a visitation. It is expressed through the chosen activity and destination: The stop behaviour during a long and exhausting hike and during a leisurely walk will be different. Especially, on walks observing nature and getting information are main aspects for a stop.

Furthermore, micro behaviour depends on existence and appearance of recreational infrastructure within an area. For example, conditions of path variables show effect on visitor behaviour. Walking speed depends not only on the physical abilities of visitors but also on material, condition and steepness of trails.

## 4 METHODS

In order to identify types of recreation perspective data on recreational behaviour was collected in Berchtesgaden National Park. As shown in Table 2 several methods of visitor monitoring were used.

Information on visitor behaviour was gained, in particular by time-lapse videos. It includes data collection on macro and micro behaviour. According to macro behaviour recreationalists were counted at entrances depending on starting time of the visitation.

TABLE 2

DATA COLLECTION METHODS ON VISITORS AND VISITATIONS IN BERCHTESGADEN NATIONAL PARK

Method	Data Type
Interviews with visitors	Group size, Age/ group structure
	Motivation & activity form
	Trip duration
	Trip destination
Interviews with experts	Usage of infrastructural elements (frequency and duration of use)
	Usage and duration of usage of infrastructural elements
Time-lapse video	Usage and duration of usage of infrastructural elements
Literature research	Characteristics for mobile activities Usage and duration of usage of infrastructural elements

Concerning micro behaviour stationary activities occurring at specific sites equipped with infrastructural elements (national park information tables, picnic areas, and natural attractions etc.) were investigated. Number of groups, their size, and duration using the infrastructure was measured. This data and data collected by visitor interviews were analyzed statistically using SPSS 12.

In order to build up types of recreation perspective the mean activities on foot in Berchtesgaden National Park were deployed. They were used to classify data on macro and micro behaviour. Furthermore, the determined types were expanded by information on visitor behaviour provided by literature.

## **5 SINGULAR CRITERIONS ON RECREATION PERSPECTIVE**

Before the types of recreation perspective are examined in detail below, first an outline of selected aspects on visitor behaviour collected on-site will be provided.

### **5.1 Group size and structure**

In Berchtesgaden National Park the majority of visitors (56%) come in groups of two, 13% in groups of three, 15% in groups of four persons, whereas 7% search recreation just by themselves. Taking into account the age three groups can be distinguished:

- family groups with kids (31%),
- adult groups with members between 18 and 55 years (40%) and
- senior groups having one member older than 55 years (29%).

### **5.2 Characteristics on extended stops**

Based on classifications of stationary activities, extended stops vary in three types: resting, getting information, and orientation.

In context of getting information and orientation about 30 to 40% of the visitors make use of the according infrastructural elements. Use on specific infrastructural elements ac-

counts for 10% of the visitors. However, visitors spend little time on these kinds of stationary activities. They use these elements for the duration of about two minutes in average. Infrastructure for resting in form of e.g. benches with tables is used by about 12% of the passing visitors. On average 10 minutes were spent at such offers. Sites with possibility for refreshment and meals (alpine huts, restaurants) play an important role for 52% of the recreationalists.

## **6 TYPES OF RECREATION PERSPECTIVE**

Concerning activities on foot five types of recreation perspective can be distinguished: Walking, hiking as family or senior group, hiking as group of adults, mountain climbing, hiking on several days duration.

They are defined based on the three main activity forms, their destination types and duration of stay as well as group structure. Further on, they are combined with the before defined types of extended stops characterized by stop frequency and duration. Here, data collected on-site is completed with data provided in literature (e.g. comportment on extended stops: Brämer 1998, O'Connor, Zerger & Itami 2003; walk speed: Roth et al. 2003). The example of hiking of several days duration shows the recreational perspective and the resulting visitor behaviour (see Table 3).

## **7 DISCUSSION, CONCLUSION AND OUTLOOK**

In Berchtesgaden National Park the recreation perspective is applied in several ways. Applying the approach measures taken by the management can be more specific. Planning of facilities and services can be better adapted to visitor demands. The knowledge gained is used for the design and choice of position of information shelters and natural trails, and the conception of information boards at alpine huts. Furthermore, the recreational types can be used in computer simulation models. By

TABLE 3

RECREATION PERSPECTIVE AND SELECTED CHARACTERISTICS IN BERCHTESGADEN NATIONAL PARK BY THE EXAMPLE OF SEVERAL-DAY HIKING

Attribut	Value
Motivation/ pupose	Nature experience, corporal challenge
Age Ø	38 years
Group size Ø	3,44 persons
Group structure/ age	16% family groups 60% adult groups 25% senior groups
Start time Ø	At alpine huts 7:00 – 9:00 a.m.
Duration Ø	3 days
Travel destination	Alpine huts, summits
Extended stops types	Situations for resting (by infrastructure including nature attractions)
Extended stops duration Ø	20 minutes

them information needed to map recreation demand and visitor use pattern is made available by them (e.g. trip distribution, model split). The recreation perspective can find its expression in an agent-oriented computer-simulation approach.

At the moment definition and characterization of the different types of recreation perspective base partly on expert knowledge. For the description of micro behaviour in contrast to macro behaviour only little data exists (Jubenville, Twight & Becker 1987; Roth, Krämer & Schäfer 2003). One reason is that data collection on micro behaviour is more complicated than on macro behaviour. Further research on adequate methods is needed to improve and extend this typology. Here, the application of GPS and handy tracking concerning micro behaviour would be an interesting aspect to include.

## REFERENCES

- [1] U. Ammer and U. Pröbstl, "Freizeit und Natur. Probleme und Lösungsmöglichkeiten einer ökologisch verträglichen Freizeitnutzung", Hamburg and Berlin, 1991
- [2] BayStMLU Bayerisches Staatsministerium für Landesentwicklung und Umweltfragen (BayStMLU), "Nationalpark Berchtesgaden. Nationalparkplan," München, 2001
- [3] R. Brämer, "Profilstudie Wandern. Gewohnheiten und Vorlieben von Wandertouristen", Studien aus Wissenschaft und Praxis, Nr. 62, Marburg, 1998
- [4] W.E. Hammit and D.N. Cole, "Wildland Recreation. Ecology and Management", New York, 1998
- [5] R. Hoisl, W. Nohl and P. Engelhardt, "Naturbezogene Erholung und Landschaftsbild. Handbuch," Darmstadt, 2000
- [6] H. Job; D. Metzler and L. Vogt, "Inwertsetzung alpiner Schutzgebiete. Eine regionalwirtschaftliche Analyse des Tourismus im Alpenpark Berchtesgaden", Münchner Studien zur Sozial- und Wirtschaftsgeographie Band 43, 2003
- [7] A. Jubenville; B.W. Twight and R.H. Becker, "Outdoor Recreation Management. Theory and Application Revised and Enlarged", Philadelphia, 1987
- [8] LUBW Landesanstalt für Umweltschutz Baden-Württemberg, "Umweltverträgliche Sport- und Freizeitanlagen/-aktivitäten. Orientierungsrahmen für Planungen und Beurteilungen. Untersuchungen zur Landschaftsplanung", Band 27, 1994
- [9] W. Nohl, "Landschaftsplanung. Ästhetische und rekreative Aspekte", Berlin and Hannover, 2001
- [10] O'Connor, A. Zerger and B. Itami, "Building better agents: Geo-temporal tracking and analysis of tourist behavior. Conference Proceedings MODSIM International Congress on Modeling and Simulation. Townsville, Australia: 1148-1154, 2003
- [11] R. Roth; A. Krämer and A. Schäfer, "Wander-Handbuch. Ein Leitfaden für Kommunen, Sportorganisationen und touristische Leistungsträger", Feldberg, 2003
- [12] F. Romeiß-Stracke, "Freizeitnachfrage-Naturbedürfnis-Siedlungsstruktur", Schriftenreihe des Bundesministeriums für Ernährung, Landwirtschaft und Forsten, Heft 332, 1986

**S. Hennig** Dipl. Geogr., Dr. Current Research interest: conceptualizations and modeling of nature-based recreation concerning its management and monitoring.