

The role of recreation demand and supply information in monitoring outdoor recreation sustainability

Joel Erkkonen and Liisa Kajala

Abstract — Metsähallitus bears major responsibility for the development of tourism in Finland's state-owned protected and recreational areas. In order to further develop the existing potential for high-quality recreation and nature tourism in these areas, Metsähallitus is implementing a set of key measures for the development of sustainable nature tourism. The measures are applied through sustainable nature tourism management plans, which are implemented in all areas in which recreation and/or nature tourism exists to a significant degree. An essential aspect of the drafting process of the sustainable nature tourism management plans is the setting of standards, i.e. limits, of acceptable change for selected sustainable recreation and nature tourism criteria by means of participatory planning.

Metsähallitus started out with an extensive range of applicable criteria. On the basis of experiences gained from pilot projects and a targeted evaluation and selection process, the number of criteria was subsequently significantly narrowed down to a set of around 20 key criteria. This was found to be a manageable and effective number once the most essential variables had been selected and their measurement standardised. For information management, Metsähallitus uses database applications for the demand and supply data, which can be used to produce reports on current figures and trends, ranging in scale from individual areas to regions and to the national level. This paper describes the development process of the approach and methods applied by Metsähallitus in monitoring the sustainability of outdoor recreation and nature tourism in Finland. In addition, a case study example from Pyhä-Luosto National Park is used to illustrate the system at the park level.

Index terms — Database applications, nature tourism, outdoor recreation, sustainability, visitor monitoring.



1 INTRODUCTION

Many of Finland's recreational and protected areas are highly attractive destinations for both recreation and tourism. Metsähallitus' responsibility for the administration of all state-owned recreational and protected areas covers a total of 35 national parks, 17 strict nature reserves, 12 wilderness areas and nearly 500 nature reserves. These areas of high conservational or

recreational value cover a total area of some 4 million hectares. Annual visits to these areas number over 1.5 million to national parks, 350,000 to national hiking areas and 798,400 to visitor centres and other Metsähallitus customer service points. Consequently, Metsähallitus has a major responsibility as regards tourism development in these areas.

In order to contribute to sustainable, high-quality outdoor recreation and nature tourism in these protected and recreational areas, Metsähallitus has developed a set of principles and measures for the evaluation of the sustainability of nature tourism [1, 2]. The measures are applied through sustainable nature tourism management plans. These plans are implemented in all areas in which recreation and/or nature tourism exists at a

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significant level. The planning framework is based on the Limits of Acceptable Change (LAC) concept [3]. Database applications have proven to be an essential aid in implementing the monitoring process at the national level.

This paper describes the development and current status of the methods applied by Metsähallitus in monitoring the sustainability of outdoor recreation and nature tourism. An example from Pyhä-Luosto National Park is used to illustrate the methodology.

2 DEVELOPMENT PROCESS FOR MEASURING SUSTAINABILITY

Metsähallitus started the process with an extensive number (appr. 70) of applicable criteria [2] which, on the basis of experiences from pilot projects in six protected areas and a targeted evaluation process, was significantly narrowed down to a set of selected key criteria.

The practical criteria for selecting the best indicators were developed based on literature [4]. The following criteria for good indicators were used:

- Indicators must be specific to the measurement target, i.e. environmental impacts of outdoor recreation and nature tourism (minimal variation due to other factors)
- Indicators must be objective and their variables clearly measurable.
- Indicators must be reliable and their measurement repeatable to the extent required.
- Indicators must be sensitive and reactive to sustainability related changes.
- Measurements must be reasonably easy to implement (minimal additional work).
- Measurements must be cost-effective, making use of existing information whenever possible.

For Metsähallitus' purposes, a set of around 20 criteria has been found to be a manageable and efficient number, once the most essential variables have been

selected and their measurement has been standardised.

3 DATA MANAGEMENT FOR RECREATIONAL DEMAND AND SUPPLY INFORMATION

Information on recreational demand and supply is essential when estimating the sustainability of outdoor recreation. For example, the number of visits is an essential variable in the calculation of many indicators.

For various purposes, Metsähallitus has developed database applications for managing demand and supply information. One important use for the applications is in monitoring, including monitoring of sustainability, at national, regional and local levels.

In order to improve the reliability, accessibility and applicability of visitor information, a database system, ASTA, was developed during 2005–2006 for the management of this information. ASTA includes visitor survey data, numeric feedback data, and information on numbers of visits to protected and recreational areas, nature centres and other customer service points managed by Metsähallitus.

At the same time as the ASTA development process, Metsähallitus guidelines and manuals for visitor monitoring were updated and personnel training in the use of the updated methods and new applications was implemented. Parallel to this development process, a Nordic and Baltic joint project on Developing Visitor Monitoring Methodology was also implemented [5]. This is a first step towards obtaining uniform visitor monitoring information from the Nordic and Baltic countries, and thus creating a common basis for statistics and databases.

The supply data for recreation services within Metsähallitus is managed by a GIS Database system, Reiska GIS, which has been in use since 2004. Reiska GIS includes data on all buildings and other man-made structures and routes managed by Metsähallitus.

From the ASTA and Reiska database applications, reports can be produced at area, regional or national level. The information

obtained from the database applications is essential in monitoring the sustainability of outdoor recreation and nature tourism.

4 CASE PYHÄ-LUOSTO NATIONAL PARK

4.1 Sustainability at the National Park Level

Pyhä-Luosto National Park is located in central Lapland. The main purpose of the national park is to protect arctic tundra, boreal forests and aapa mires. The land area of the Pyhä-Luosto National Park, which forms part of the EU's Natura 2000 network, covers 14,300 hectares. The backbone of the national park is a 35-km-long range of 12 hills and fells. Marked routes and ski trails running along the fell range connect the Pyhä and Luosto holiday resorts. There are several maintained campfire and rest sites, lean-tos, day huts and wilderness huts for overnight stays located along the routes. The estimated number of visits to the national park was around 109,000 in 2007, the majority of which were domestic visitors. Cross-country skiing and hiking are the most popular activities in the park. The General Management Plan for Pyhä-Luosto National Park was approved in 2007. A separate management plan for sustainable nature tourism was also drafted in connection with the general management plan.

A sustainable nature tourism management plan is a strategic plan aimed at promoting sustainable nature tourism both within a national park and in its surrounding area. The plan includes guidelines and recommendations for achieving Metsähallitus' strategic goals regarding nature tourism and outdoor recreation. More practically, it also presents the ways in which key indicators are used and incorporated into the overall planning process.

The sustainable nature tourism management planning process is based on the participatory planning principle. As such, the process creates common understanding between national park management and nature tourism businesses, as well as other

important stakeholders. Sustainable nature tourism management plans are typically implemented in areas where there is a common understanding of the need for and strong commitment to the promotion of sustainable nature tourism.

During the initial identification phase of sustainable nature tourism indicators, some 30 relevant indicators were identified for Pyhä-Luosto National Park [6]. From a practical point of view, this number was too high and difficult to manage. Careful re-evaluation of these indicators in 2008 on the basis of good indicator criteria reduced the number to 22 (Table 1).

4.2 Sustainability at the tourism destination level

The environmentally focused quality programme, Green DMN™, was launched at the Pyhä-Luosto tourism destination in August 2008. Developing this kind of operation mode in tourism destination will take three years and will include open training for all interested stakeholders as well as more specific training for companies more closely involved in the quality programme.

The environmentally focused quality programmes for tourism destinations, Green DQN™ and Green DMN™, have been developed jointly by Metsähallitus' Natural Heritage Services (Metsähallitus NHS), the Finnish Tourist Board and the Haaga-Perho Institute [7]. The aim at Pyhä-Luosto is to gain crucial competitive advantage within the tourism sector by focusing on quality, environmental know-how and caring for natural and cultural values. The quality programmes, Green DQN™ and Green DMN™, play a remarkable role in combining the aims of the tourism sector and of Pyhä-Luosto National Park. The Metsähallitus NHS principles of sustainable nature tourism are embedded in both the Green DQN™ and Green DMN™ quality programmes. Cooperation with the tourism sector is thus a way of achieving the goals of the national parks at the tourism destination level.

TABLE 1.
SUSTAINABLE NATURE TOURISM INDICATORS AND DATA SOURCES. EXAMPLE:
PYHÄ-LUOSTO NATIONAL PARK

General principle	a. Indicator	b. Data source	a. Indicator	b. Data source
1. Nature values are preserved and tourism activities promote nature protection	1.1a Number of occupied endangered bird of prey nesting territories	1.1b Annual nest surveys	1.2.a Hiking trail network area of impact / park area (ha)	1.2b Reiska GIS
2. Minimum loading of the environment is assured	2.1a Hiking trail depth	2.1b Wear monitoring, 5-year	2.2a Extent of littering	2.2b ASTA
	2.3a Hiking trail width	2.3b Wear monitoring, 5-year	2.4a Total firewood consumption / duration of stay	2.4b Reiska GIS and ASTA
	2.5a Terrain wear	2.5b ASTA		
3. Local culture and heritage are respected	3.1a Number of valid cooperation agreements	3.1b VUOKRA Database		
4. Customers' appreciation and knowledge of nature and culture are promoted	4.1a Importance to visitors of experiencing nature	4.1b ASTA	4.2a Number of visits to Pyhäunturi Visitor Centre	4.2b ASTA
	4.3a Importance to visitors of learning about Finnish cultural heritage	4.3b ASTA	4.4a Extent of littering	4.4b Littering monitoring, 5-year
5. Customers' opportunities for nature recreation are enhanced	5.1a Comparable visitor satisfaction index	5.1b ASTA	5.2a Customer evaluation of the quality of the recreational environment (index)	5.2b ASTA
	5.3a Customer evaluation of negative impacts (index)	5.3b ASTA	5.4a Customer evaluation of the quality of services (index)	5.4b ASTA
6. Customers' mental and physical wellbeing are reinforced	6.1a Importance to visitors of personal wellbeing	6.1b ASTA	6.2a Condition of nature infrastructure	6.2b Reiska GIS
	6.3a Importance to visitors of relaxation	6.3b ASTA		
7. Positive impacts are made on the local economy and employment	7.1a Customer monetary contribution to the local economy	7.1b ASTA and local economy impact evaluation model (under development)		
8. Communication and marketing are of a high standard and carried out with a sense of responsibility	8.1a How well do the natural environment, recreational opportunities and services correspond to visitors' expectations (index)	8.1b ASTA		
9. Activities are jointly planned and implemented	9.1a Evaluation of Metsähallitus' operations by stakeholder businesses	9.1b ASTA		

5 CONCLUSIONS

Despite progress in monitoring sustainability, Metsähallitus' Natural Heritage Services recognises that there is still lot of work to be done in years to come. Challenges remain both at the grassroots and national level in making more efficient use of gathered information. To further enhance the use of visitor supply and demand data, as well as other information related to nature conservation, the "Monitoring the Status of Protected Areas" project has been launched. Its aim is to develop an application to assist further in monitoring the status of protected areas, including the sustainability of outdoor recreation. The project application will use data from different Databases, including ASTA and Reiska, and will enable definition of the objects and limits of acceptable change. The project will thereby allow for more intensive status monitoring, e.g. by comparing objectives with current status data by means of state-of-the-art reporting.

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