Visitor Surveys and Visitor Impact Monitoring in Recreational Areas in State Forests of Estonia

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Introduction

The State Forest Management Centre (SFMC) is the agency responsible for the management of about a half (1. 08 million hectares) of the total forested area in Estonia (2.2 million hectares). In addition to forest regeneration, silvicultural activities and timber production SFMC is also charged with the development, organization and provision of recreation opportunities in state forests. Since 1997 SFMC has been developing diverse opportunities for outdoor activities in 10 recreational areas.

In order to identify the development needs and provide tools for the optimum funding decisions SFMC has since 2002 conducted visitor surveys and monitored recreational areas.

In 2002 the visitor survey was carried out on all 10 recreational areas of SFMC to establish the motivation, preferences and needs of visitors in recreational areas and to determine whether the developed facilities meet the expectations of the users. The visitor survey was repeated in 2003 using the revised method.

Since 2002 SFMC has conducted itself and placed orders with other agencies for the ecological impact monitoring in recreational areas. The primary objective is to identify the carrying capacity of different landscapes and to develop easy-to-apply monitoring methodology.

Visitor surveys in recreational areas in state forests

In 2002 the first visitor survey on recreational areas was carried out in cooperation with Tallinn Pedagogical University. It was planned to conduct the survey during the period from May to September on all 10 recreational areas of SFMC during two days each month. Some survey dates were changed or cancelled due to the weather conditions. The respondents were not less than 15-year-old visitors, all persons visiting the recreational area alone or in couples were interviewed. One male and one female respondent were selected from minor groups (3–5 persons). The group leader and one member were selected from organized groups and 3 – 5 members from groups exceeding 10 persons. Self-administered questionnaires compiled in the Estonian and Russian languages were used. A member of the survey team translated and filled in the questionnaires for foreign visitors.

The total of 3,433 questionnaires were obtained during the period from May 22 to September 3. It proved impossible to ensure the random samples due to the weather conditions and various organizational issues. The structure of the questionnaire did not enable to identify the site preferences of the respondents.

In 2003 visitor survey the major group of respondents were not less than 15-year-old persons visiting 9 recreational areas of SFMC during the period from June to September. The sampling principles and the data collection plan were designed previously indicating the total number of questionnaires, the target group and the distribution of questionnaires between the survey locations. The schedule (weekday, part of day) for conducting the survey was predetermined by drawing lots after the survey locations were selected. Due to the unfavourable weather conditions some dates were replaced by reserve dates determined also by drawing lots.

The random sample method was used. One person with the birthday closest to the survey date was selected as respondent in groups of 2 – 4. 2 persons having birthdays closest to the survey date were interviewed from a group of 5 – 10. 4 persons – 2 female and 2 male with the birthdays closest to the survey date were selected from groups travelling by coach. One person per each tenth party using the camping sites or public picnic areas was selected as respondent. Self-administered questionnaires were compiled in the Estonian language, however each member of the survey team had at his disposal also the Russian translation of the questionnaire.

The total of 2,324 questionnaires were obtained during the period from June 15 to September 15, 2003. The survey period covers the peak of the recreational use season. The total number of survey dates was 614 and they were determined by drawing lots.

The survey of visitors in SFMC recreational areas conducted in 2002 indicated that most of the visitors stay in these areas for a short period. 40% of the visitors are residents of Tallinn and Tartu, two largest towns of Estonia. 80% of the respondents travel by car in the company of their family or friends. The findings indicate that the highest need was for fire areas and camping sites. The attitude of the majority of respondents concerning the arrangements and maintenance level of the recreation areas was positive.

However, the results of the visitor survey also indicated that the public is not aware of the opportunities offered for outdoor recreation in state forests and actually does not use the public information channels. The visitors also stressed the scarceness of on-site information – drawbacks in signage and maps of recreational areas. Upon carrying out the analysis of the shortcomings different measures were introduced to improve the provision of information and guidance to the public: information desks were established in recreational areas, the website was updated, leaflets and maps of the recreational areas were issued and events were organised to increase the awareness of the public of the present outdoor recreation opportunities. The development of the principles for the uniform guidance and signage system was undertaken.

The analysis of the visitor survey of 2003 has not yet been completed. The difference with the 2002 survey is that it is possible to identify the most often visited recreational sites. The aforementioned findings will be used to specify the locations for the installation of electronic counter units for visitor volume studies.

The results of the visitor survey of 2003 also indicate that the non-beach-holiday areas are not the primary destination of the visitors and the number of short-duration visits to these areas is higher. The optimisation of the territories of recreational areas and the linking of separate sites into the trail network was commenced in order to increase the attractiveness of the recreational areas of SFMC and to prolong the duration of the visits.

Monitoring of ecological impact of outdoor recreation

Outdoor recreation in forests is an inseparable part of the Estonian way of life. The most popular recreational activities include walking, hiking, cycling, swimming and sunbathing, picnicking in the summer season, cross-country skiing in winter and also wildlife viewing and photography.All people have in Estonia the “everyman´s right”, a legal right of access to state-owned and private forests, in case no limitations have been established.

The primary objective of the ecological impact monitoring was to determine the situation, direction and amount of changes in the ground vegetation, conditions of trees, natural regeneration and forest soils, which may vary in extent and causes, including different recreational uses of forests.

The recreational impacts are concentrated at and around recreational sites, usually developed for visitor use – visitor centers, trails, campsites, boat launching ramps, different picnic areas on the coastal strip of lakes and the Baltic Sea.

In 2002 Estonian Centre of Forest Protection and Silviculture, upon the request by the State Forest Management Centre, embarked on a case study in Kiidjärve-Taevaskoja recreational area and 3 different case studies were undertaken in 2003 on coastal areas of lake Peipsi and the Baltic Sea - Kabli-Ikla in the SW and Nõva-Peraküla in the NW of Estonia to measure and evaluate the ecological impact of outdoor recreation on the forest ground vegetation, trees, natural regeneration and forest soils.

Trails monitoring method

The situation and changes in trail conditions were monitored by field measurements in Kiidjärve-Taevaskoja recreational area in summer of 2002 and in some coastal areas adjacent to lake Peipsi in summer 2003. Measurements of the zones of the trails with different level of vegetation and soil damages, share of bare ground and vertical distance between the horizontal level and the ground surface of trails were conducted.

Recreational injuries and biotic damages to trees and natural regeneration of trees were also assessed.

Campsite monitoring method

The situation and changes in campsite conditions were monitored by field measurements on the coastal areas of lake Peipsi and the Baltic Sea - Kabli-Ikla in the SW and Nõva in the NW of Estonia in summer and autumn of 2003.

The network of permanent transects with the distance of 30 m between the transects was established in the typical areas.

The small sample plots with the area of 1 m^2 were established systematically on transect lines.

Share of bare ground and vegetation cover, plant species composition, distribution and abundance were estimated within the quadrate.

Recreational injuries and biotic damages to trees and regeneration were also assessed.

Trampling study to assess the vegetation response to disturbance

Small sample area to evaluate the forest vegetation cover, species composition and diversity response to trampling in pine stands of Vaccinium myrtillus site type was established.

The results from our trampling experiments indicate, that the forest ground vegetation shows significant increase of plant damages with 250 passes. The share of dead plants increased dramatically at the 350 pass level. Lower levels, up to 100 passes, had only little effect on ground flora.

Forest management and visitor management in recreational forests

The application of the results of the assessments can result in future in the development of better minimum-impact recommendations and land use planning in recreational areas.

Based on the ecological impact assessment of the recreational use of forest, measures for the further development of the monitoring program, training, education and guidance of visitors, better site planning, increase of the recreational carrying capacity of the site, maintenance and repairing are planned.

Considering the high level of recreational damages and needs for sustainable use of recreational areas, temporary measures to avoid traveling by cars and camping on Raadna recreational area on the coast of lake Peipsi are planned.

For effective visitor management also enforcement of new aspects of the environmental legislation is prepared.

Nationwide recreation surveys

In addition to the visitor surveys and ecological impact monitoring in recreational areas also surveys carried out to assess the attitudes of the local residents are significant. In 2003 SFMC requested two survey research agencies to conduct two omnibus surveys. The omnibus is a multi-customer survey conducted regularly (in accordance with a preset timetable) and whose overall sample is made up by the 17 to 74 year-old permanent residents of the Republic of Estonia, a total of 1 047 818 persons (Statistical Office of Estonia, January 1, 2003). The planned number of respondents is 1,000. The respondents are found from the proportional model of the overall sample by regions and types of settlement (urban/rural) and by multi-stage probability random choice. The socio-demographic structure of the sample is compared with the respective indicators of the total sample. A weighting is conducted, if necessary to increase the accuracy of the opinions.

The survey of the environmental awareness

The objective of the survey was to learn the opinion of the residents of Estonia of the state of the natural environment and to analyse the significance of forest to the public. The survey was conducted by TNS Emor in the spring of 2003. The sample is made up by 1,011 17 to 74 year-old permanent residents of Estonia. The survey indicated that about a half of the total population of Estonia visit forests at least once a month, about 2/3 are aware of or have heard of the everyman´s right and the most favoured outdoor activities include picking of forest products, spending of leisure time and various leisure sports activities. Forest is valued as an important element of the environment and in particular the younger urban people appreciate forest as an environment suitable for recreational activities.

Study of outdoor recreation

The primary objective of the study was to find out the level of awareness of the residents of Estonia concerning the opportunities developed by SFMC for the outdoor recreation activities and the level of the demand for and use of offered opportunities. The study conducted by the Survey Research Centre Faktum in the autumn of 2003 was structured as a face-to-face interview of 969 residents of Estonia aged from 15 to 74. The results of the interview indicate that 82% of the 17-74 year-old population of Estonia are aware of the opportunities for outdoor recreation developed by SFMC, 94% consider them essential and 55% use them.

Based on the results of previous research and recognising the need for cooperation in order to further develop opportunities for outdoor recreation, SFMC has organised events aimed at the provision of information to local authorities and planned the linking of locally developed recreation opportunities and the SFMC system.

The previous research forms an efficient basis for the further development of SFMC recreational areas, taking account of the user needs and serves as a tool for the supporting funding plans concurrently ensuring the preservation of the recreational values of landscapes. The cooperation between various interest groups in the development of opportunities for outdoor recreation is increasing in importance. The key words here include the clear distribution of roles, the specification of tasks and accomplishment of them. In addition to the constantly increasing ecological impact also social tolerance, support and interest by local residents and the ways to achieve it are increasing in significance.