

# Crowding in Danish Forests – a Nonexistent Problem?

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## Introduction

An overview of the research on the social dimension of carrying capacity has been compiled by e.g. Stankey & Manning (1986) from which an excerpt is cited below:

*“... It is important to distinguish the concept of crowding from the more simple concept of amount of use. Many recreational areas are used intensively, but this does not necessarily mean they are crowded.*

*... Crowding norms are a function of more than just the number of other users. A variety of use characteristics as well as situational variables affect personal judgments about crowding....*

*...Problems such as crowding can only be assessed with specific measures addressing these problems.”*

A relatively large proportion of the research on crowding is based on experiences in wilderness or other remote areas in North America. In this paper, the topic is discussed in a very different setting: Danish forests – A setting characterized with a relatively high number of inhabitants on a relatively small and intensively exploited land area (5.4 mill. inhabitants on 43,000 km<sup>2</sup> of which 11% is forest and 10% are other nature areas).

## Preferences for meeting other forest visitors

The general Danish population’s assessment of encountering different numbers of various types of forest visitors has been studied by Jensen & Koch (1997)<sup>1</sup>.

<sup>1</sup> Representing the Danish population (15-77 years old), a postal questionnaire survey accomplished in 1977-78 (n: 2826, response-percentage 89.4%) as well as in 1993-94 (n: 2916, response-percentage 83.7%).

Seven types of forest visitors were studied: families in the woods, horse-riders, joggers, bicyclists, hunters, car- and moped-riders; each type in the numbers: 1, 2, 5 and 10. It was not asserted unexpectedly that the fewer forest visitors were encountered, the higher was the perceived quality of the forest visit.

Also differences in the assessment of encountering different types of forest visitors are found. The types of forest visitors studied can be split into three groups: (1) highest ranked: families in the woods, horse-riders and joggers; (2) an intermediate group: bicyclists and hunters; and (3) lowest ranked: car drivers and moped-riders.

## Research on perceived crowding

Questions about the social dimension of outdoor recreation are included in a study of the recreational use of 592 forest and other nature areas, carried out in 1996-1997 (Jensen 2003<sup>2</sup>). This material provides the first general background for analyses of the notion crowding in a Danish context.

In the questionnaire a number of questions are included, all of which have proven their value in a number of other studies in relation to crowding (e.g. Shelby et al. 1989).

The core question is:

How did you perceive the area here today regarding the number of other visitors?  
(tick one box on the scale from 1 to 9)

1	2	3	4	5	6	7	8	9
Not crowded at all		Slightly crowded		Moderately crowded			Extremely crowded	

<sup>2</sup> A total of 592 areas took part in the survey. 20 data collections were carried out representatively over 12 months in 1996-97 (stratified sampling). The questionnaire was delivered to all parked cars at the sampling times. 85,673 questionnaires were delivered. The response-percentage was 46.7% (due to the nature of this data-collection it has not been possible to use reminders to minimize non-response).

From the responses it can be ascertained that on average, 13% of the visitors indicate the area at least as “slightly crowded”; 3% at least as “moderately crowded”; and less than 1% found the area “extremely crowded” – indicating more than 85% of the visitors do not perceive the area as crowded at all.

## **Conclusion**

Although preference studies show that the Danish general population does not prefer to see many other visitors in the forests, on-site surveys (where e.g. more than 40 of the areas have a visitation higher than 2,000 visitor hours per hectare per year) indicate that crowding and conflicts between different user groups, in general, is not a major problem in Danish outdoor recreation.

So far, the sustainability of the social dimension of the carrying capacity does not seem to be exceeded in the Danish forests. But of course, for those relatively few visitors that experience a concrete exceeding, this is not a negligible problem for the visitor as well as the manager.

## **References**

- Jensen, F.S. (2003). Friluftsliv i 592 skove og andre naturområder. In: Skovbrugsserien (32), Forskningscentret for Skov & Landskab, København.
- Jensen, F. S. & Koch, N. E. (1997). Friluftsliv i skovene 1976/77 - 1993/94. Forskningsserien (20), Forskningscentret for Skov & Landskab, København.
- Shelby, B., Vaske, J.J., & Heberlein, T.A. (1989). Comparative analysis of crowding in multiple locations: results from fifteen years of research. In: *Leisure Sciences* (11), p 269-291.