



Recreational preferences along a naturalness-development continuum: Results from surveys in two unequal urban forests in Europe



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ABSTRACT

We conducted a field survey among recreational users in Bymarka in Norway and in Arnhem forest in the Netherlands, to compare two quite different recreational situations in respect to population density, the proportion of nature areas, nature accessibility and level of facilitation for recreation. The aim of the survey was to compare user activities, attitudes and preferences, as well as to obtain insight into how the user experiences possible conflicts in the two urban woodlands. Interviews with key managers were carried out in both areas to get deeper insight into the current areas of conflicts and management practice. Despite many similarities between the users of the two areas regarding demography, activities, behavior and preferences, we observed some differences regarding motivational factors and the level of purism. The motivation for visitation in Arnhem forest was more nature oriented, and these visitors preferred more unaltered ecosystems. Visitors in Bymarka accepted to a greater degree the spectrum of different users, and also new activities in the forest. We discuss these similarities and differences in a frame of homogenous urbanization and globalization in a larger European context, but at the same time remnants of old land use traditions, cultural differences and recreational settings influence the use of urban woodlands and shape a unique situation for each urban woodland.

Management implications: Based on data from two unequal European urban forests the paper explores the differences between the visitors' use and preferences of physical, social and managerial settings. The analysis reveals that:

1. A management solution should regard the fact that the visitors often differ significantly between forests.
2. A management strategy acknowledging a broad recreational opportunity spectrum in the urban forests, is more robust in meeting the future challenges and needs in a changing world.
3. The Norwegian forest represents the whole spectrum of recreational opportunities, while the Dutch is lacking opportunities in the natural end of the scale.

1. Introduction

Local communities have always been strongly linked to their surrounding forests, yet overexploitation by expanding European cities has pushed the forest boundaries away from the cities. Forests that remained or were recreated near cities became places for outdoor recreation and essential parts of local culture. Urban forestry, and the management of urban woodlands, can therefore only be successful if it meets the multiple demands from the urban society. Konijnendijk (2008) describes urban woodlands as social and cultural constructions, and the use and meaning of urban woodlands for the urban population

will differ greatly between cities at the European scale. Availability of nature and forest areas in the fringe of the cities and access to these areas are crucial for outdoor recreation (e.g. Konijnendijk, 1999; Van Herzele, De Clerq, & Wiedemann, 2005), and hence a diversity of favorable values for the public health and well-being of the urban population (Tyrväinen, Pauleit, Seeland, & Vries, 2005). In this context, Norway and the Netherlands represent opposite ends of the population density gradient in Europe with 13.2 inhabitants per km² and 496 inhabitants per km² respectively (in 2013). Thus, it is interesting to study how urbanization, availability of forest woodlands and access to these areas in the two countries affect people's need for

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environmental quality. We define urban woodlands as a part of the concept of urban forestry including areas that consist partly of tree cover and street trees, parks and other green spaces. Scientists all over Europe (Konijnendijk, 1999; Konijnendijk, Nilsson, Randrup, & Schipperijn, 2005; Van Herzele et al., 2005) stress the importance of these urban woodlands for the urban population in different ways.

Norway has an indisputable principle of common access rights to all uncultivated land (Allemannsrett) (Outdoor Recreation Act, 1957), an access that is much more restricted to designated infrastructure and facilitation in the Netherlands (Konijnendijk, 1999). However, most people in Norway also use physical facilitation, for example, marked trails, campsites and bridges and largely this kind of facilitation attracts and concentrates visitors in the urban woodlands (Gundersen, Frivold, Myking, & Øyen, 2006, Gundersen, Tangeland & Kaltenborn, 2015; Gundersen, Mehmetoglu, Vistad and Andersen, 2015). Such facilitation can be used both as a means of protecting valuable natural resources and providing service facilities for the visitors, and accessibility is among the most important attributes for visitors to urban woodlands in both Norway and the Netherlands (Goossen & Langers, 2000; Gundersen & Frivold, 2008). Goossen and Langers (2000) identified tranquillity, accessibility, water quality and nuisance values as the most important quality indicators for recreational areas in a comprehensive survey in the Netherlands, and this corresponds to a large degree with recreational preferences in Norway (Gundersen, Frivold, Myking, & Øyen, 2006; Gundersen, Tangeland & Kaltenborn, 2015; Gundersen et al., 2015).

1.1. Recreational forests and the spectrum of users

Outdoor recreation depends significantly on the quality of the environmental settings. Reasons for visiting urban forests can be as diverse as the visitors themselves (Rydberg & Falck, 2000). Urban forests are, due to the intensity of use and diversity of users, “hot spots” for development and adaptations in forest management with the potential for enhancing benefits like quality of life, aesthetics, and opportunities for recreation (Konijnendijk, Ricard, Kenney, & Randrup, 2006). A set of different components including individual traits (e.g. personality, preferences, attitudes, lifestyle, socio-demography), environmental conditions (e.g. natural forests, parks) or managerial settings (e.g. restrictions, level of infrastructure and facilities), and social components (crowding, new activities), influence visitor participation in recreation (e.g. Manning, 2010). A common framework in outdoor recreation management is to identify physical, social, and managerial conditions for outdoor recreation (e.g. Clark & Stankey, 1979; Cervený et al., 2011), and recreation quality in a specific setting can be conceived as the degree to which environmental opportunities meet people's preferences (Manning, 2010). This diversity of opportunities is important for realizing quality experiences for people visiting the forests and even for those that participate in the same activity, since they may differ in terms of environmental preferences (Gundersen & Frivold, 2008).

A forest setting in Norway is generally very different from a forest in the Netherlands. According to FAO (2015) the forested area in the Netherlands makes up 9% of total land area, compared to 37% in Norway. In the Netherlands all forest land is classified as “planted forests” and 25% by introduced species. In Norway somewhat 86% is naturally regenerated forests. Also, the level of facilities and infrastructure differ greatly between the two countries; this may be outlined from a general comparison of recreational facilities in Norway (Vistad, Erkkonen, & Rydberg, 2010) and The Netherlands (Elands et al., 2010). If we look along a simplified continuum scale concerning “forest conditions”, including levels of human intervention and biophysical components, Norway and the Netherlands are in different ends of that continuum (Fig. 1). In a simplified presentation The Netherlands is in the developed end of the continuum where the forest is designed, planned and maintained for different purposes, including park-like

forest structures and high levels of recreational infrastructure, services and facilities, in addition to frequent visitation and use of the recreational areas. Norway, is in the natural end of the continuum, where forests are mostly semi-natural emerged from former land use practices and holds simple recreational facilities like marked or unmarked paths, as well as a low number of visitors (Gundersen et al., 2006). In addition to urban forests, Norway has a significant amount of natural forests, and even wilderness areas that can offer solitude experiences where no form of visitor facilities or services are present (Gundersen Tangeland & Kaltenborn, 2015). The most developed area, the Arnhem forests, holds quite a large amount of recreational facilities and have the best opportunities to handle intensive use and users that prefer recreational settings in the developed end of the recreation opportunity scale. Easy access, facilitation and crowding may, however, impact negatively on the experience among those who are seeking “authentic” experiences in nature, or prefer solitude, remoteness and isolation (Arnberger & Haider, 2005; Vistad & Vorkinn, 2012). Trondheim urban forest (Bymarka) covers a broader spectrum of forest types and recreational conditions; mainly closer to the natural end of the spectrum, but still with modern recreation and sport facilities in some parts of the forest.

1.1.1. Research aim

Having these two different urban forest settings in mind, new lifestyles, increased urbanization and modernization attract a spectrum of new visitors and increased use in both areas, and this challenge the traditional use and management in each of them. There is a continuous need for updated knowledge on visitation and local environmental conditions, and possibly for new planning and management strategies that incorporate the diversity of recreational opportunities, serving the visitors' preferences and use in a proper way. *We have based our study on the hypothesis that these challenges are different in urban forests in the Netherlands and in Norway, despite the fact that the two modern societies have faced similar trends and developments.*

There exist very few studies that have compared recreational situations in different countries using well-developed measurements for people's motivation and preferences for visiting urban forest areas. The purpose of our investigation was to study how two quite unequal urban forests, in terms of physical, managerial and social conditions, influence the visitor's experiences and their actual site preferences. We performed the studies according to exactly the same methodology including two surveys and the interviews in the two urban forests, and compared a set of parameters (activities, preferences, motivation, level of purism, conflict resolution etc.) representing the two settings and visitor populations.

Our main goal has been to study the two urban forests and their visitors, to reveal similarities and differences concerning demography, recreational practice, and especially environmental perceptions and preferences.

2. Methods

2.1. Trondheim and Arnhem forests

Trondheim is the third largest city in Norway with 179,692 inhabitants (Statistics Norway, 2013), with an additional temporary student population of approximately 20,000. Trondheim is a university city and features a higher general education and a younger than average population compared to the rest of Norway. Bymarka (English translation: “city forest”, Fig. 2) is a hilly area located to the west of Trondheim, immediately adjacent to primarily residentially developed land and only 3.1 km from the city's center (the Nidaros cathedral). The municipality owns a large part of Bymarka, an area that for a long time has been designated for recreational purposes. Altogether 14% of Bymarka is protected as a nature reserve under

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