

Emotional, Physical/Functional and Symbolic Aspects of an Urban Forest in Denmark to Nearby Residents

JETTE HANSEN-MØLLER and LIV OUSTRUP

Forest and Landscape, The Royal Veterinary and Agricultural University, Rolighedsvej 23, 2, DK-1958 Frederiksberg C, Denmark

**Scandinavian Journal
of Forest Research**



Hansen-Møller, J. and Oustrup, L. (Forest and Landscape, The Royal Veterinary and Agricultural University, Rolighedsvej 23, 2, DK-1958 Frederiksberg C, Denmark). *Emotional, physical/functional and symbolic aspects of an urban forest in Denmark to nearby residents*. Scand. J. For. Res. 19(Suppl. 4): 56–64, 2004.

The decision by the Danish government to double the area of forestlands in a tree generation has prompted researchers to explore more thoroughly the significance of forests to people. In 2003, an exploratory, qualitative case study with in-depth interviews with 10% of the households next to an urban forest in a suburb in Denmark was conducted to investigate the emotional aspects of visiting a forested environment, the types of physical/functional activities pursued and the symbolic connotations of the forest. The research shows that the forest serves as a refuge for recharging at the emotional level, as a place for exercising more than for picnics functionally, and as nature more than a park symbolically. Afforestation is considered desirable in order to provide experiences of nature, especially for children. Based on these findings, implications for urban forest planning and management and for future research are discussed. *Key words:* Emotional, physical/functional, symbolic values, outdoor recreation, qualitative methodology, urban forestry.

Correspondence to: J. Hansen-Møller, e-mail: jhm@kvl.dk

INTRODUCTION

Today, forests cover 11% of Denmark. The Danish government has decided to double this figure within the next 80–100 years to provide sufficient areas for outdoor recreation and other natural resource values.

Research through standard, short-answer questionnaires on Danish forest visitors is extensive. Studies conducted over the past 25 years show that 90% of the adult population visits a forest at least once a year, with an average of 10 visits per year, and that the frequency of visits rose by 25% between 1976/77 and 1993/94 (Koch 1978, Jensen & Koch 1997). Other data show that approximately two-thirds of all forest visits are by parties of two in size and last for 1 h. Varied scenery inside the forest, the possibility of seeing animals, and the solitude and quietness in the forests are the qualities that these visitors value the most highly. The majority of the respondents visit forests within 5 km of their home, with an average travelling time of 15 minutes by car. It is thus urban forests that are visited most often (Jensen & Koch 1997). However, while these studies have provided valuable knowledge to profile Danish forest use and trends over time, little is known about why Danes visit forests, and the deeper meaning and significance that forests provide to them in urban settings.

In accordance with international conventions, the Danish Forest Service has changed its forest management strategy from timber production to nature-based management, with an emphasis on the improvement of sustainability and biodiversity (Skov- & Naturstyrelsen 1992; Miljø- & Energiministeriet 1994). As a result, the forests will become denser and more impenetrable. Until recently, managers believed that visitors appreciated this type of forest the most (Jensen 1993), but research using photographs (Jensen & Koch 1997, Jensen 1998) shows that most people still prefer plantation-style softwood settings, as they did 10 years ago (Koch & Jensen 1988). Thus, there seem to be conflicting preferences between foresters and visitors with respect to the management of forests.

To improve planning for afforestation and the management of new and existing forests, the goal of this study was to gain a deeper understanding of the significance of an urban forest to people living right next to it. Information was sought on three aspects of nearby residents' use and experiences: (1) the emotional aspects of visiting a forested environment; (2) the physical/functional aspects of activities pursued; and (3) the symbolic connotations of the forest.

METHODS

Case-study area

The Brøndbyskoven (the Forest of Brøndby) is located in a Copenhagen suburb (Fig. 1). It was planted by the municipality, which still owns and maintains it, in the 1950s and covers 85 ha. Around 77 ha is wooded, mainly with beech and oak, and the trees were planted in plots as for wood production even though the forest was established for recreational purposes. Today, there is no undergrowth in most of the plots, giving the forest an impression of openness. According to the chief of the parks department who is responsible for the management of the forest, the management strategy has recently become more nature friendly.

Brøndbyskoven is surrounded by 59 private homes, some institutions, a railway track, highways and fields.

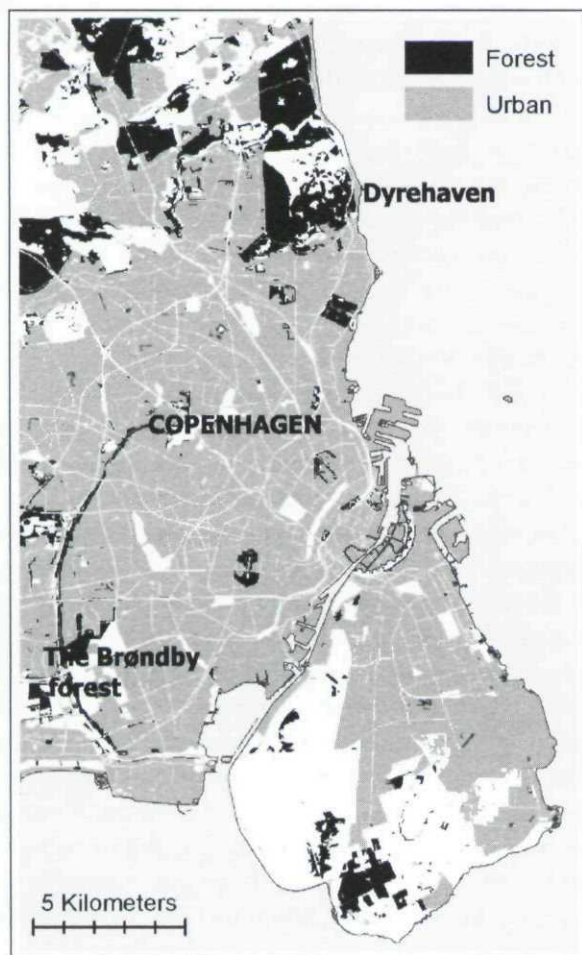


Fig. 1. The case-study area, the Brøndby Forest, and the most visited forest in Denmark, Dyrehaven, both in Copenhagen, Denmark. Source of map source: AIS – Arealanvendelseskortet 1:25 000. Miljø- og Energiministeriet, produced by Danmarks Miljøundersøgelser.

As it is the second most visited forest in Denmark, with 329 000 visitor-hours per year, i.e. 4000 hours per hectare per year (Jensen 2003), quietness in the forest is an exception.

On-site survey data collected for Brøndbyskoven in 1996/97 provide a useful profile of visitors who arrived to the forest by car (Jensen 2003). Their average time spent travelling to the forest was 14 min. The average visitor stayed in the forest for 3.5 h, but 44% of visitors spent less than 10 min there. Despite the many visitors, only 3% of the respondents felt disturbed by other people. Fifty-eight per cent indicated that they were visiting the forest to go for a walk, to experience nature, study nature or walk their dog (Fig. 2). Whereas two-thirds of people visiting Danish forests in general were on family or group outings (Jensen & Koch 1997), for car visitors to Brøndbyskoven this figure was 99% (Jensen 2003). Almost half of the visitors to the forest went as part of a group of more than four people, whereas only 13% were there by themselves (Fig. 3).

Interviews

This study is based on focused (Merton et al. 1990), qualitative research interviews (Fog 1994) with six respondents, i.e. 10% of the households living next to the forest. From a quantitative research perspective the number of respondents may seem small, but the goal of qualitative research is not to provide representative and repeatable documentation. On the contrary, focused interviews are appropriate to obtain

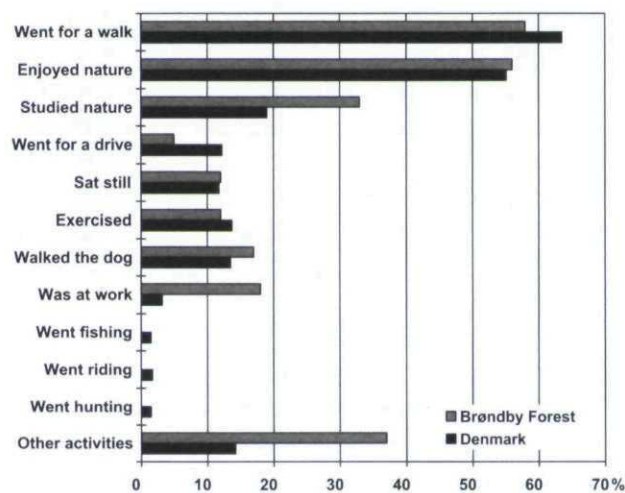


Fig. 2. Distribution of respondents according to activities pursued during the last visit to a Danish forest according to Jensen & Koch (1997), and to the Brøndby Forest in particular according to Jensen (2003).

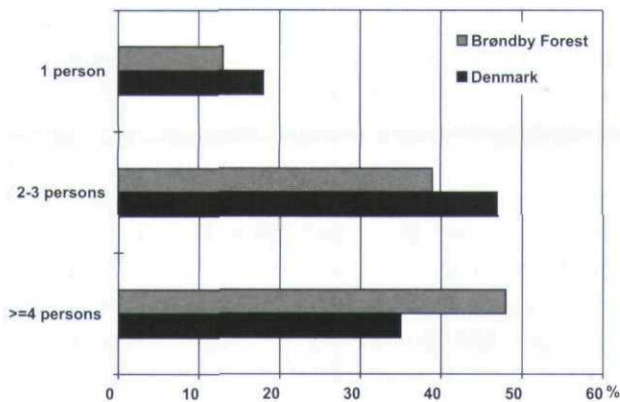


Fig. 3. Classified distribution of the respondents according to group size during the last visit to a Danish forest according to Jensen & Koch (1997), and to the Brøndby Forest according to Jensen (2003).

knowledge about specific matters on which the respondent has particular knowledge (Fog 1994). They are useful to uncover attitudes or motivations, or to obtain a more intensive study of perception (Kidde et al. 1986), and are now also becoming a more accepted way of understanding the deeper, hard-to-define values and experiences related to forests (e.g. Dwyer et al. 1991, Henwood & Pidgeon 2001) and nature in general (Burgess et al. 1988, Egoz et al. 2001, Læssøe & Iversen 2003). Through such investigation new aspects of understanding can be added to the body of knowledge important for forest management with respect to outdoor recreation.

To recruit respondents, an introductory letter was written to five randomly chosen people living right next to the forest, which was followed 2 days later with a telephone call requesting an interview. All of the initial contacts accepted. In addition, the leader of Loriania, an organization that performs mediaeval live role-plays in the forest, was contacted and interviewed. The interviews, of 1–2 h duration, were conducted in the respondents' homes in May 2003, and recorded on minidisc and transcribed by the interviewer. The park chief was also interviewed, but declined to be recorded.

Of the people interviewed, two were retired men aged just under 70 years, Erik and Finn. Both have lived next to the forest for more than 30 years, as has one of the women, Mette, a 65-year-old widow who still works. In contrast, Birte is a 30-year-old married woman with no children who has lived in the area for less than 2 years. Richard and Jeppe, 44 and 23 years old, respectively, have both been brought up in homes next to the forest, where they spent many

hours as children. Richard is married and lives 1 km from the forest, but visits his childhood home almost every day. Jeppe has moved to Copenhagen. As his mother still lives by the forest he often uses it for cycling and running and has been responsible for arranging mediaeval plays in the forest for almost 10 years. In the Results section the respondents will be referred to by their first names.

Analysis

The interview guide was based on a theoretical model developed to understand the meaning of landscape inspired by the phenomenology of the American philosopher and semiotician Charles S. Peirce (Hartshore et al. 1992, Hansen-Møller 2004, Hansen-Møller et al. 2004). Using the tape transcripts from the recorded interviews, text segments were coded through a thematic analysis procedure (e.g. Kvale 1996) with respect to the theoretical model focusing on the emotional, the physical/functional and the symbolic aspects of cognition, respectively. Subsequently, sub-themes as well as commonalities and differences among the participants were identified in order to understand the research questions more thoroughly.

The heading *emotional aspects* was used to categorize respondents' feelings, sensations and ideas related to forests as part of everyday living experiences. Such aspects can be difficult to put into words as they are often never thought about or expressed verbally. They are a critical part of the meaning or significance that underlies people's preferences and uses of forests. In Peirce's vocabulary they have iconic value.

The heading *physical/functional aspects* of forest experience was used to categorize comments referring to the causal (i.e. indexical in Peirce's vocabulary) relations between what is "out there" – the physical opportunities provided by a forest – and what is "in here" – what activities are considered acceptable within a certain culture. To track the content of this level, respondents were asked how they use the forest, what they do, how often, where, and so on. Some of this information is similar to that collected by previous quantitative surveys, but with greater emphasis on why and how respondents participate in particular activities.

Lastly, the heading *symbolic connotation* of forest experiences was used to categorize comments referring to images that make a forest a forest to people. This was inspired by Peirce's use of the term symbolic to characterize the argumentation. Physically, it has to do

with what makes a forest a forest – its size, layout and maintenance – compared with nature or parks, and arguments for afforestation.

The following sections highlight findings for each of the three aspects of forest experiences mentioned above, and include representative quotes from participants to illustrate how they expressed their experiences.

RESULTS

Emotional aspects of the forest

“I can’t figure out what it is ... it’s probably some kind of need, that while ... living in the city, was not fulfilled ... And especially if the sun shines through those pale green treetops. It is just so beautiful, and it pleases me, but it is not something I reflect on”, Birte says, describing the experience of sitting on a bench in the forest, letting her mind drift. It gives her a mental recharging, about which she says: “I really get my batteries recharged or those resource-cells that one has”. Mette characterizes something similar as a “here-and-now pleasure”. Finn reflects on what the forest meant to him while he was still working: “... You have been at work the entire day. You have had a lot of problems ... it has all accumulated ... What do you do? You put on your shoes, your clothes, regardless wind or weather. Then you go for a walk in the forest ... just one hour, and then you think it through. You relax; think about something completely different ... you get a bit of distance. When you come home again, you are mentally charged ... all the problems you have had during your day, they are diverted”. The forest serves as a refuge, allowing relaxation and thereby mental purification or even “... healing, an experience, that there is something to live for”, as expressed by Mette, who, when her husband was dying from sclerosis, was tied to home.

The forest also engages the senses more directly. Birte refers to “... all those smells from such a wet forest floor” when it has been raining, while Richard is affected by the sounds of the forest: “... There are not those strange ... unnatural sounds. Here ... are sounds, for which the human ear is adapted”.

In sum, on the emotional level the forest serves as a refuge for recharging, purification and renewal, a hideout in which experiences of light, smells and sounds play important roles for the well-being of the visitors. Even though they meet a lot of other people it

does not bother them. They know where to go to find peace and quiet.

Physical/functional aspects of the forest

Based on their daily experiences the respondents described the forest as a space for physical activities, a reserve for gathering and play, or a stage set.

Jeppe often takes the train to visit his mother and run a route that he knows in the forest, “just to keep in shape”. He finds it much nicer to run in the forest than on a road or a track, as he considers the latter monotonous and because “the eyes relax more” in the forest, where there is always something new to look at. In a fitness centre he would be distracted by the noise, whereas the forest environment gives him an inner peace and allows him to concentrate.

The forest as a place for exercise is also important to the elderly. Finn and his wife take a daily walk on the doctor’s strong advice, as his wife has been diagnosed with osteoporosis. Mette also takes a walk almost every day and the exact same tour “... it takes 50 minutes ... if I’ve been walking too fast and I am almost home after only 45 minutes I just take a small detour on some other paths ... to exercise ... Then your conscience is clear when you get home”. In contrast, Birte values the fact “... that you can visit the forest and find something new every time. Three quarters of a year had passed before I noticed the third lake ... I always try to find a new route. I don’t use the same one because I’m afraid it will become tedious out there”. Primarily, the respondents used areas of the forest within walking distance from their home and rarely or never visited other parts of the forest.

As for physical activities, the forest should also be a place where you “feel at home and feel that you are given free rein”, Jeppe claims. Similarly, Birte finds it important that a forest is a space “... where families can go for a walk and children can play, build forts and so on”. She also collects various items in the forest and when the forester cuts trees in December, she “hoards” spruce and cones for making decorations for Christmas. These activities are in accordance with the point of view of the park chief, who finds that a forest should provide room for other types of behaviour than in a city; giving people freedom to speak loudly and act foolishly. But, of course, it should also be possible to find peace and quiet, to hear leaves fall from the trees, and the song of birds.

None of the respondents (with one exception) had childhood experiences of family outings, but they

played in forests and one respondent knows about trees from living on a fruit plantation. Neither do they picnic in the forest today. Instead, they look at it from their houses and gardens, and it serves them as scenery or a stage set. "... To see the forest burst into leaves, the change of seasons, leaves falling off the trees or when the trees are covered with snow is a pleasure and gives much more variation than in an ordinary garden", Richard says. Erik is even more direct, pointing and claiming: "and here we have the forest as a view". Finn compares it to a "painting" and Birte explains that it was the view from the upstairs balcony to a little lake in the forest that they fell for when looking for a home

To Jeppe, the forest serves as literal scenery. "We need a stage set of the Middle Ages and as a lot of things then and in the fantasy world took place in forests it is a suitable stage set". The role-players transform the lake into the swamp where the monster lives and interpret the traffic noise as the sound from a waterfall in their script.

In sum, the Brøndby Forest is found to be a suitable place for exercising as one pleases, by walking, running or cycling, as well as for playing and gathering. None of the respondents has used the forest for family outings, but it has an important function as a stage set seen from houses and gardens, where it is appreciated as a painting.

Symbolic aspects of the forest

To uncover what constitutes a forest to the respondents and what their arguments are for planting new forests, they were asked to describe their images of an ideal forest. The following represent the most striking features according to scale, content and equipment.

With respect to scale, three conditions must be fulfilled for a forest to be experienced as a forest. Firstly, the planting has to have a certain volume. "Real forest is not just a little handful of trees you can overlook ... at a distance you should be able to recognize it as a forest, not just four or five trees", Mette says. Secondly, a forest has to be of a certain height. "It is not a forest when it has clearly been planted recently ... it has to be above your head before I will consider it a forest", Richard claims. Thirdly, it must have been planted in a way so that it is not possible from the inside to look out, i.e. the experience should be that there is nothing but forest in the world. Birte emphasizes that "... you should be able to stand in the middle of the forest without seeing

anything but trees ... The view out must be blocked". These comments correspond closely with the image of an ideal forest to the park chief, and the possibility of getting lost in a forest does not cause fear in any of the respondents.

Old, fairytale-like growths with crooked trees are generally admired, as they "... stimulate fantasy and seem more natural", Birte says. To Jeppe, "The most perfect forest ... is very old ... there are huge solid trees ... and you can walk 50 metres apart and have no clue that another person is nearby." The park chief is aware that Dyrehaven, an old, romantic forest planned as a hunting field for the king, in the northern part of Copenhagen, is considered an ideal forest to most Danes, but explains that the Brøndby Forest is too small and too young to provide analogous opportunities for these experiences. Nevertheless, he tries to encourage this ideal by cutting down healthy, straight trees to leave room for more interesting, crooked ones, and in order for different plots to develop with low, middle and high forest.

These management initiatives are in accordance with the respondents, who prefer a variety of tree species, especially of deciduous trees, and stages of development because they provide the possibility for following the development of the seasons and encourage a diversity of animals to live in the forest, such as "birds, a fox ... or, imagine if you came across an owl", says Mette. Thus, for these nearby residents, open spaces are also considered attractive for the birds, deer, pheasants, foxes and hares more than for Sunday outings with family or friends.

The respondents as well as the park chief agree that a forest should not be a park, as "... Parks are too trimmed", Finn explains, as "they lack nature". Mette expresses a similar opinion, saying: "A park ... is constructed and is maintained and nursed ... for us to have something beautiful to look at ... it is arranged".

In contrast to parks, forests are considered nature according to all of the respondents. Therefore, "... If a tree has fallen down on the path it does not have to be removed immediately ... as the trees should be allowed to rot and have a natural rhythm because it provides us with more insects and birds", according to Richard. In contrast, Birte finds: "there is a disorder in there, really there is. ... I wish they'd clean it up sometimes. ... It might be nice that everything is not completely straight, but it is just lying there [tree trunks] in a mess. It irritates me". Nevertheless, and even though the Brøndby Forest is

referred to as "young and trimmed", it is still not considered park-like to the satisfaction of all the respondents.

In general, pathways are considered features enhancing the use and experiences in the forest by the respondents. To Jeppe, "Pathways are okay even if they are asphalted as long as there are trees around. If I don't like them I can just chose another route ... if the consequence is that people in wheelchairs can visit the forest, or that more people can bicycle, then it is fine for me". Personally, he prefers a path covered with gravel or dirt, as does Finn. The ability to walk about without repeating one's path is appreciated by most of the respondents, and none of them complained about the paths being too straight. Artificial lighting is considered undesirable "... as it is in daytime that forests should be experienced, or at dusk", says Finn. Mette directly finds lamps "horrible and disgusting". Similarly, litter-bins are not wanted unless they are "very discreet", as they are too "civilized". Finn, however, finds them necessary to keep the forest clean. The park chief says that the public has expressed a need for toilets and lighting along the main paths in the forest. But, according to him, such equipment, as well as playgrounds, belongs in parks, not in forests. However, he finds a few well-situated benches and litter-bins acceptable.

A final question dealt with reasons for planting more urban forests. Children's future is of utmost importance to the respondents when giving reasons for afforestation, as they believe that exercising and playing in forests make one familiar with nature. Finn "supports little forested areas where people can experience nature" as "... we are obliged to make children experience more of nature". This is in accordance with Jeppe, who finds it important that children learn about nature, get fresh air and "... earth under their nails as if not, you will be very limited in your development physically as well as mentally". Richard is of the opinion that we need more forests to provide more positive experiences to people "... and because we need more animals and birds and something green to look at". Finn thinks that new forests can be justified in that more people are exercising today than in recent decades, and they desire fresh air. He even makes an economic calculation comparing the costs of not turning the Brøndby Forest into building sites with the expenses saved by the state on hospital bills because people use it for exercise.

In sum, if new forests should be planted and maintained to fulfil respondents' images of a genuine forest, they should be of a scale, density and height that provide the impression and experience of an endless forest. As old, crooked trees are highly appreciated they should be incorporated in a new forest if they are already found at the site. If these demands are fulfilled the forest may be considered nature as soon as it has grown taller than a person. The forest should also be provided with paths, preferably gravel, providing the visitors with a variety of route possibilities, whereas litter-bins and lamps must be discreet and kept to a minimum. Finally, the experiences of the children of the future are important to the respondents when asked for arguments for afforestation.

DISCUSSION

The extraction of precise conclusions from this study is challenging, as it is exploratory rather than hypothesis testing and as the respondents' answers are personal and narrative, rather than representative and quantifiable. The findings raise a lot of questions, but the following discussion will focus on three issues with implications for planning and management and for continued research.

Differences in behaviour between car visitors and neighbors to forests

The first issue concerns the differences between the present findings on the recreational behaviour of the respondents living next to the Brøndby Forest and the behaviour of car visitors to this forest and to other Danish forests, as identified by the representative surveys described earlier. While the small sample in this study prevents the drawing of any definitive comparisons between these two groups, comparing the data side-by-side can help to raise questions for future research. For those who travel by car to Danish natural areas, looking at nature is the most important aspect for more than 80%, according to Kaae & Madsen (2003: p. 43) and Jensen & Koch (1997). Visitors to forests usually go there in pairs or on outings with family or friends: 66% of all the car visitors to Danish forest and 99% of the visitors to the Brøndby Forest (Jensen & Koch 1997, Jensen 2003) (Fig. 2). In contrast, the present respondents primarily refer to solitary tours and have no experiences of group outings, although they often enjoy the forest as

scenery from their house and garden. With respect to outings, perhaps having such close proximity they feel little need to go there for a picnic, as they can sit more comfortably in their garden having dinner or coffee. Solitary use for walks or exercise is a somewhat different matter, and the particular life situations or preferences of the six people interviewed could be responsible for the differences. In this case a larger sample of nearby residents could help to discern the differences.

Another discrepancy between the behaviour of these respondents and that of car visitors has to do with gathering products from the forest. In general, hunting and gathering are quite uncommon in Danish forests. Only 20% of the car visitors do so and less than 10% did it the last time they visited a forest (Jensen & Koch 1997). Internationally, gathering is a gender-specific activity, according to Kaae & Madsen (2003). However, aspects of use and gathering were important to the present respondents. Perhaps such activities are more important to people living in proximity to forests as they go there whenever they wish to, and more or less by accident find interesting or useful things to bring home, whereas people arriving by car probably have more specific motives and choose where to go in relation to their desired experiences, be they gathering or outings.

Finally, the respondents in the present study are more attracted than the average car visitor to the possibility of being alone in a forest. This is quite uncommon, as Kaae & Madsen (2003) in their representative enquiry found that 60% indicate that they feel unsafe being alone with nature. None of the current respondents felt this way, with one female respondent even claiming that she considers it more frightening to use the subway at night than to walk in the forest. This indicates that the experience of fear in nature does not necessarily have to do with the setting but rather, as pinpointed by Læssøe & Iversen (2003), is a fear of others who you may meet or a fear of being alone. However, solitude in a strict sense is not really what Danish forests in general, or the Brøndby Forest in particular, offer.

In sum, having access to a forest from your backyard provides chances to experience and do things that people living farther away from a forest do more rarely or never. This expanded repertoire of opportunities for solitude, gathering and other uses and experiences should be recognized when planning and managing urban forests in close proximity to where people live.

Economical and practical effects of proximity to forest

A second issue raised by the research concerns the positive and negative effects of proximity between residential property and public forest.

Living right next to a forest is a rare experience in Denmark, as it has been forbidden by law since 1937 to build closer than 300 m to a forest. In that sense, the location of the homes next to the Brøndby Forest is rare. As part of the decision about doubling the acreage of forest, several new public forests are being planted immediately adjacent to residential areas. This is highly appreciated by the local population and has in some areas resulted in dramatic increases in house prices (Anthon 2003). In light of this it is thought-provoking that most of the present respondents came to live where they do more or less by chance. Today, they all find it difficult to imagine a more attractive location, and want to stay there for the rest of their lives.

However, such proximity between forest and residential areas may also have negative effects because of the forest environment. The Park Chief in Brøndby states that he receives some complaints about large trees shadowing private gardens and in some instances has been under pressure to cut them down. From what is known of people's private planting and management of trees in gardens and in areas with summerhouses, it may be supposed that the public in general cannot imagine the consequence of living next to fully grown trees. Therefore, as another part of this study, people building in a newly planted forest, Sletten in Holstebro, have also been interviewed about their images of the area in the future. The idea is to return 10 years from now and interview them again to see whether their expectations were fulfilled or let down, and to what extent they share experiences with the respondents in Brøndby. Until that knowledge is provided, the authors will advise forest planners to consider carefully how to design the edge of urban forests with consideration to the desires of the neighbours, especially for sunlight.

Uncovering visitor's preferences with a diversity of methods

A third and final issue raised by the research concerns the methodology by which preferences for forest management are identified. The intentions behind the creation of the Brøndby Forest were to provide recreational opportunities in an expanding part of Copenhagen that had very little landscape variations.

This goal has been fulfilled according to the number of visitors to the forest, even though it was designed as a plantation for wood production and was managed as such until 3 years ago. According to previous research, if this plantation style of management was continued the Brøndby Forest would in another 50 years fulfil the preferences of a representative portion of today's car visitors to Danish forests: those who find peristyle beechwood settings most attractive (Jensen & Koch 1997, Jensen 1998). However, on the contrary, the forest is now being managed closer to nature, in accordance with international conventions and to the satisfaction of the present respondents. Does this imply that the public in general is satisfied with what they receive, or has this investigation through its qualitative methodology unveiled a part of the tacit significance of urban forest: that visitors, like managers, prefer more closed settings, but for their own benefits rather than for the benefits of nature? The authors are convinced that this methodology has added new knowledge about the significance of urban forests, but to prove that there really is a difference between the desires and preferences of car visitors and people living next to a forest, future studies using multimethod, quantitative–qualitative approaches would probably provide a fuller understanding of the issues raised here. In the meantime, the authors encourage managers to share their intentions with citizens in as many ways as possible; for example, by inviting them to participate in user councils or by writing articles in the local newspaper. The benefits of such procedures could be the development of a mutual, qualitative understanding of the significance of forests. Thereby, visitors would be provided not just with physical circumstances that a representative majority prefers or with what managers find suitable, but with qualities and possibilities that correspond with their own emotional, physical/functional and symbolic experiences of the forest.

ACKNOWLEDGEMENTS

We would like to thank Friluftsrådet (the Danish Outdoor Recreation Board) for sponsoring this survey, and Frank Søndergaard Jensen of the Danish Forest and Landscape Research Center for giving us access to his data concerning the Brøndby Forest. Finally, we want to express special gratitude to Paul H. Gobster for drawing our attention to related literature and for constructive suggestions for improving this paper.

REFERENCES

- Anthon, S. 2003. The value of urban afforestation: a hedonic pricing case. In Helles, F., Strange, N., Wichmann, L., (eds). *Recent Accomplishments in Applied Forest Economic Research*, Forestry Sciences 74. Kluwer Academic, Dordrecht. ISBN 1-4020-1127-X. pp. 81–90.
- Burgess, J., Harrison, C. M. & Limb, M. 1988. People, parks and the urban green: a study of popular meanings and values for open spaces in the city. *Urban Stud.* 25: 455–473.
- Dwyer, J. F., Schroeder, H. W. & Gobster, P. H. 1991. The significance of urban trees and forests: toward a deeper understanding of values. *J. Arboricult.* 17: 276–284.
- Egoz, S., Bowering, J. & Perkins, H. C. 2001. Tastes in tension: form, function, and meaning in New Zealand's farmed landscapes. *Landsc. Urban Plan.* 57: 177–196.
- Fog, J. 1994. Med samtalen som udgangspunkt. Det kvalitative forskningsinterview. Akademisk Forlag, Copenhagen. ISBN 87-500-3237-2. (In Danish.)
- Hansen-Møller, J. 2004. Landskab: Habitat/Område/Symbol. En model til analyse af meninger med landskab. In Hansen-Møller, J. (ed.). *Mening med landskab. En antologi om natursyn*. Museum Tusulanum, Copenhagen. pp. 13–37. ISBN 87-7289-888-7. (In Danish.)
- Hansen-Møller, J., Kristensen, L. S., Jensen, A. B. & Fisker, H. J. 2004. Bondens Levested, Landmandens Bedrift, Landskabsforvalterens Showroom. Eksemplificering og perspektivering af tre natursyn. In Hansen-Møller, J. (ed.) *Mening med landskab. En antologi om natursyn*. Museum Tusulanum, Copenhagen. pp. 187–219. ISBN 87-7289-888-7. (In Danish.)
- Hartshore, C., Weiss, P. & Burks, A. W. (eds.) [1958] 1992: Peirce, C. S. 1931–1958. *Collected Papers I–VIII*. Past Masters CD-ROM Databases, Charlottesville.
- Henwood, K. & Pidgeon, N. 2001. Talk about woods and trees: threat of urbanization, stability, and biodiversity. *J. Environ. Psychol.* 21: 125–147.
- Jensen, F. S. 1993. Landscape managers' and politicians' perception of the forest and landscape preferences of the population. *For. Landsc. Res.* 1: 79–93.
- Jensen, F. S. 1998. *Forest Recreation in Denmark from the 1970s to the 1990s*. Den Kgl. Veterinær- og Landbohøjskole og Forskningscentret for Skov & Landskab, Hørsholm.
- Jensen, F. S. 2003. *Friluftsliv i 592 skove og andre naturrområder*. Skovbrugsserien nr. 32. Forskningscentret for Skov & Landskab, Hørsholm. ISBN 87-7903-157-9. (In Danish.)
- Jensen, F. S. & Koch, N. E. 1997. *Friluftsliv i skovene 1976/77–1993/94*. Forskningsserien nr. 20. Forskningscentret for Skov & Landskab, Hørsholm. ISBN 87-89822-89-7 (In Danish.)
- Kaae, B. C. & Madsen, L. M. 2003. *Holdninger og ønsker til Danmarks natur*. By- og Landsplanserien nr. 21, Forskningscentret for Skov & Landskab, Hørsholm. ISBN 87-7903-155-2. (In Danish.)
- Kidde, L. H., Judd, C. M. & Smith, E. R. 1986. *Research Methods in Social Relations*. 5th edn. Society for the

- Psychological Study of Social Issues. Rinehart and Winston, New York. ISBN 0030024730.
- Koch, N. E. 1978. Skovenes friluftsfunktion i Danmark. I. del. Befolkningens anvendelse af landets skove. Det forstlige forsøgsvæsen i Danmark. Beretning nr. 294. Bd. XXXV, h.3. ISBN 87-87742050-0. (In Danish with English summaries.)
- Koch, N. E. & Jensen, F. S. 1988. Skovenes friluftsfunktion i Danmark. IV. del. Befolkningens ønsker til skovenes og det åbne lands udformning. Det forstlige forsøgsvæsen i Danmark. Beretning nr. 351. Bd. XLI, h.3, pp. 245–516. ISBN 87-87742-53-5. (In Danish with English summaries.)
- Kvale, S. 1996. Interviews: an Introduction to Qualitative Research Interviewing. Sage, Thousand Oaks, CA. ISBN 080395820x.
- Læssøe, J. & Iversen, T.L. 2003. Naturen i hverdagsperspektiv. En kvalitativ interviewundersøgelse af forskellige danskeres forhold til naturen. Faglig rapport fra DMU nr. 437. www.dmu.dk/1viden/2Publikationer/3fagrapporter/rapporter/FR437.pdf. Danmarks Miljøundersøgelser. ISBN 87-7772-727-4. (In Danish.)
- Merton, R.K., Fiske, M. & Kendall, P.L. 1990. The Focused Interview. a Manual of Problems and Procedures. 2nd edn. Free Press, New York. ISBN 00-292-0986-2.
- Miljø- og Energiministeriet. 1994. Strategi for bæredygtig skovdrift. Betænkning nr. 1267. Skovpolitisk kontor. Skov- og Naturstyrelsen. Miljø- og Energiministeriet, Copenhagen. ISBN 87-601-4238-3. (In Danish.)
- Skov- og Naturstyrelsen. 1992. Strategi for de danske naturskove og andre bevaringsværdige skovtyper. Miljøministeriet, Copenhagen. (In Danish.)

Copyright of Scandinavian Journal of Forest Research is the property of Taylor & Francis Ltd and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.