

## Urban park as well as Nature 2000 area: monitoring and managing visitors and dogs

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### Introduction

Visitor management of nature reserves and parks is normally aimed at people. However, some nature reserves in an urban environment actually act as urban parks where many people walk their dogs. When an urban park is also designated as a Natura 2000 area, a management plan has to be designed to balance conservation objectives with social and economic interests (Beunen, 2010). Visit volume (people and dogs) and its spatial dispersion are corner stones in this process. We aim to show how this information was collected for "Bosjes van Poot", a 30-hectare dune area with 'multiple use' near The Hague (Jaarsma et al., 2008). The area is designated as a leash-free area for dogs, and owners are obligated to clean up after their dogs (City of The Hague, 2006).

### Research methods

Four visual counts (on a Sunday and a Tuesday in the spring and fall) and a user survey in the fall form the core of the research. The visual counts provide insight into the number of visitors and the number of dogs, differentiated by size. The survey answers the motives and origin of the visitors with and without dogs, the nature and the frequency of their visit, as well as their spatial dispersal pattern.

### Visits 2007 (Fig. 1)

On both Sundays, between 1,700 and 1,800 visitors came with around 950 dogs. The number of visitors on Tuesdays is considerably lower: roughly 1,350 in May (with 1,200 dogs) and 730 in October (with 700 dogs). From these small random samples, the annual number of visits has been indicatively calculated, assuming that Saturday takes the average position between workdays and Sunday. The annual total is estimated by multiplying the number of workdays, Saturdays and Sundays by the observed average for the type of day in question. This results in 439,000 visitors with 344,000 dogs. The theoretical amount of excrement has been calculated from the visual observation of dog size. It totals 56,000 kg, of which 21,000 kg is dry material.

Because of the random sample's uncertainty, a "bandwidth" for the visit has also been determined; this amounts to about 20%. These values have been calculated by applying the lowest and the highest workday count to all workdays.

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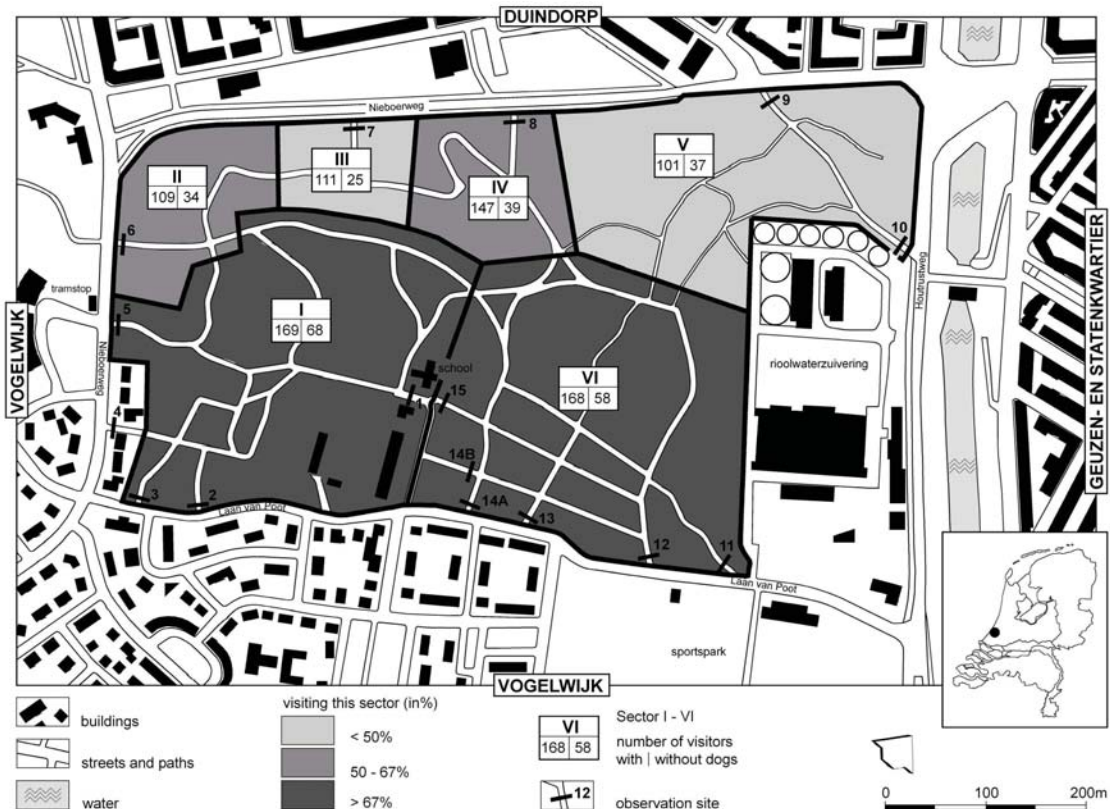


Figure 1. Natura 2000 area "Bosjes van Poot" in the urban environment of the city of The Hague (between the wards: Vogelwijk, Duindorp and Geuzenkwartier & Statenkwartier), with 15 entrances (location of the visual counts). Indicative spatial dispersal of total visit (grey-shaded area, in per cents of N=277) and volume of visits with a dog (absolute number, N=192) and without a dog (idem, N=85), per sector (I-VI).

By combining the visual counts and the survey data, a spatial dispersion of the visits has been made for the area's six sectors. The south-eastern sector is clearly the most visited, followed immediately by the north-eastern. In 88% of the cases, respondents with a dog indicate that they visit both sectors. The three sectors on the Duindorp-side are visited by approximately half of the people and dogs that visit the Bosjes van Poot area.

The survey further shows that respondents with a dog visit the area throughout the year several times a day (48%) or several times a week (46%). From this group, 61% come alone; mostly one dog is being walked (79%). Respondents without a dog visit the area less frequently in somewhat larger groups. The motives "nature, landscape, woods/birds, quiet and opportunity to take a walk" are by far the most important reasons for respondents without a dog (44%) to visit the area, while this is 20% for dog-walkers. Strikingly, when asked for suggestions to "improve your visit", "dog-related" (nuisance) points are often mentioned, even by respondents with a dog (Table 1). Because of the random sample's uncertainty, a "bandwidth" for the visit has also been determined; This amounts to about 20%. These values have been calculated by applying the lowest and the highest workday count to all workdays.

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Table 1. Ordered overview of 'dog-related' and other complaints and suggestions for improving their visit made by all 232 respondents, with separate scores for respondents with and without dog\*)

Complaint or suggestion for improvement	All respondents		Respondents with dog		Respondents without dog	
	abs.	%	abs.	%	abs.	%
<i>Related to dogs</i>						
- Compliance with mandatory clean up of dog faeces	34	14.7	26	16.7	8	11.1
- Nuisance of dog faeces	17	7.3	5	3.2	12	16.7
- Presence of dogs	11	4.7	2	1.3	9	12.5
- Odour and smell of dog faeces	8	3.4	2	1.3	5	6.9
<i>Other suggestions</i>						
- Condition of path is bad	34	14.7	22	14.1	11	15.3
- Too few rubbish bins	24	10.3	21	13.5	2	2.8
- More monitoring of vandalism, youth presence, etc.	24	10.3	22	14.1	2	2.8
- Better maintenance of overgrowth	23	9.9	17	10.9	5	6.9
- Presence of cyclists	13	5.6	12	7.7	1	1.4
- Empty rubbish bins more often	12	5.2	8	5.1	4	5.6
- Other suggestions (10 categories)	32	13.8	19	12.2	13	18.1
TOTAL	232	100.0	156	100.0	72	100.0

\*) The survey study had an 'open' question on 'points of improvement for your visit to "Bosjes van Poot"'. The respondents' answers were classified afterwards, distinguishing between 'dog-related' and other suggestions and complaints.

## Conclusion

Visit volume (people and dogs) and its spatial dispersal could be objectively estimated with visual counts and a user survey, although the small random sample produces a bandwidth of about 20%. This information in combination with other data, such as groundwater quality (Lucas et al., 2008), the state of brooding birds (Evers, 2008), vegetation development (Bakker & Ten Haaf, 2008), and oak clusters (Den Ouden et al., 2008), enables the area manager to design a management plan for this Nature 2000 area. This plan has to ensure that Bosjes van Poot continues as an internationally-valuable and protected habitat and as a highly-valued and frequently-visited urban park.

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