

PREFERRED FEATURES OF URBAN PARKS AND FORESTS¹

by Herbert W. Schroeder

Abstract. To make the most efficient use of scarce recreation resources, urban forest managers need to know what features of recreation sites are the most important for creating high-quality recreation environments. In this study, observers viewed photographs of urban forest sites in the Chicago area and described the features of the sites that they liked and disliked. Natural features such as trees, grass, and water were most frequently mentioned as features they liked and man-made objects, problems with vegetation, and poor maintenance were most frequently mentioned as features they disliked. Observers who had lived in urban areas for most of their lives preferred more developed recreation areas and more often viewed urban forests as sites for particular recreation activities than those who lived in suburban or rural areas most of their lives.

Urban parks and forests provide important recreation opportunities for residents of cities and towns. In large metropolitan areas, urban forests may supply the only opportunities for city dwellers to experience nature without traveling long distances to backcountry areas. As fuel prices rise and it becomes even more difficult to travel to distant recreation sites, the importance of urban parks and forests will increase. At the same time, inflation and scarce public funds make managing urban recreation sites an increasingly difficult job.

To make the most efficient use of scarce resources, managers need to know what specific features and characteristics of urban forest recreation sites are the most important to users. That is, exactly what is it about some sites that make them attractive, desirable places to visit? And what are the major features that detract from the quality of some urban sites and make them less enjoyable for recreation? With answers to these questions urban park and forest managers can focus their efforts on the specific features that are most likely to increase the quality of the recreation opportunities they offer.

This article presents the results of an exploratory study of preferences for features of ur-

ban forest recreation sites. The purpose of the study was to discover what features make urban parks and forests attractive or unattractive places to visit. Participants were shown photographs of a wide range of actual recreation sites in the Chicago area and were then asked open-ended questions about the sites. We used photographs because they: 1) can convey more information about the features of a site than verbal descriptions or labels, and 2) can be selected to represent a wide variety of different sites to the same group of people.

Photographs have been used successfully to represent alternative timber management practices in backcountry areas (Daniel and Boster 1976, Schroeder and Daniel 1981), to depict scenic impacts of insect damage to forests (Buhyoff and Leuschner 1978), and to obtain public input about a variety of natural features in home and work environments (Kaplan 1979).

Methods

We chose 36 photographs of a wide range of recreation sites in the Chicago metropolitan area. The photos included scenes of Chicago city parks, suburban forest preserves, and other urban forests. The scenes ranged from completely natural to highly developed and contained a variety of natural and man-made features. The pictures were shown to individuals either as 5×7 inch color prints or as color slides projected on a screen. In either case, individuals were asked to imagine what it would be like to be in each place and to decide how much they would enjoy being in each place. After seeing all the pictures, individuals were asked the following three questions:

- 1) What are some characteristics or features of the places you would enjoy being in? That is, what is it about these places that makes them

¹This article was written and prepared by U.S. Government employees on official time; it is therefore in the public domain.

better than the other places?

- 2) What are some characteristics or features of the places you would not enjoy being in? That is, what is it about these places that makes them worse than the other places?
- 3) What else would you need to know about the places (that you could not tell by looking at the pictures) in order to decide which ones you would actually enjoy being in?

After responding to these questions, the participants were asked whether they had lived most of their lives in urban, suburban, or rural areas.

We classified the responses to each of the questions into several categories and then tabulated the frequency that each category occurred. We also classified respondents as either urban or nonurban according to residential background. (Respondents were classified as nonurban if their residential background was suburban or rural.)

Participants in the study included visitors and volunteer workers at a Chicago nature study center and students at two university campuses in downtown Chicago. Although this is not a representative sample of Chicago residents, the study did include individuals from a wide variety of cultural and ethnic backgrounds. A total of 96 individuals viewed the photographs and answered the questions about features and characteristics that influence the quality of recreation sites.

Results

Features of high-quality sites. The most frequently mentioned features of high-quality sites involved vegetation, particularly trees (Table 1, Fig. 1). Some people specifically stated that they preferred areas with many trees, while a much smaller number indicated that they preferred areas with not too many trees. A larger proportion of nonurban respondents cited vegetation and trees as preferred features than did urban respondents. However, vegetation is clearly very important to the urban group as well.

Water resources, especially lakes and ponds, are the next most frequently mentioned preferred features, with fields and open space forming a third category of natural features. A few people indicated that a mixture of open spaces and wooded areas was most desirable. As with

Table 1. Features mentioned as desirable for urban forest recreation sites

Feature	Percent of Sample ¹		
	Respondents		
	Urban (N=57)	Nonurban (N=39)	Total (N=96)
Vegetation	56	72	63
Trees	46	67	54
Many	12	15	14
Not too many	4	3	3
Shade	7	8	7
Grass	21	23	22
Water resources	44	54	48
Lakes and ponds	20	26	22
Fields and open space	19	33	25
With trees	4	13	7
Activities	39	21	31
Trail activities	7	10	8
Passive activities	12	8	10
Man-made characteristics	21	31	25
Paths	12	23	17
Benches	7	10	8
Nature	26	28	27
Peace and quiet	30	21	26
Few people	21	23	22
Well maintained	7	21	13
Clean	16	8	13
Solitude	11	13	11

¹The percents do not add up to 100 because most individuals gave more than one response to each question.

vegetation, nonurban individuals were more likely than urban ones to mention water and open fields as preferred features.

A different type of response concerning features of preferred sites involved the suitability of the sites as settings for particular activities. Trail activities (e.g., hiking and bicycling) and passive uses (e.g., sitting and relaxing) were mentioned most frequently. Urban people were more likely to give responses relating to the ability to engage in activities at the sites than nonurban people.

The most frequently mentioned man-made feature contributing to high site quality in this study was paths. Apparently, the ability to move through an area safely and comfortably is important to users, and paths provide this ability. The nonurban group was most sensitive to this feature. Other preferred characteristics indicate that naturalness, upkeep, and absence of crowds are important features in high-quality recreation

sites.

Features of low-quality sites. The most frequently mentioned features that detracted from site quality were man-made objects (Table 2, Fig. 2). The urban and nonurban groups were strikingly different in that the majority of the nonurban group mentioned some kind of undesirable man-made feature whereas the majority of the urban group did not. Fences were mentioned most frequently, with playgrounds and pavement also being cited as undesirable by many of the nonurban respondents.

Problems with vegetation also detracted from site quality. These problems concerned both the quantity and the condition of the vegetation. Nonurban individuals most frequently indicated that their least-liked places had too few trees,

while urban individuals were more likely to dislike places with too many trees. Poor maintenance in general was frequently mentioned as a cause of dissatisfaction with particular recreation sites, as were urban areas surrounding the parks, and crowds of people. Litter and large empty areas are further elements reducing site quality. A few people said that they disliked certain sites because they looked boring, unsafe, or too wild and overgrown.

Additional information. Photographs can effectively convey information about what features are present in a recreation site. Some important characteristics of sites, however, cannot be captured in photos and the respondents in our study mentioned a number of things they would need to know before they could decide whether the



Figure 1. Example of an attractive recreation site. This scene shows natural features such as trees, water, and open space. The area appears well maintained and the vegetation is healthy. Although no specific facilities are visible, the large open area would provide opportunities for a variety of outdoor activities.

Table 2. Features mentioned as undesirable for urban forest recreation sites

Feature	Percent of Sample ¹		
	Respondents		
	Urban (N=57)	Nonurban (N=39)	Total (N=96)
Man-made characteristics	25	67	42
Fences	12	49	27
Playgrounds	14	28	20
Pavement	7	26	15
Lamp posts	0	8	6
Vegetation problems	30	36	32
Tree problems	23	26	24
Too few	7	23	14
Too many	12	5	9
Poor condition	4	3	3
Grass problems	16	15	16
Too little	5	3	4
Needs mowing	2	5	3
Poor condition	9	8	8
Poorly maintained	33	31	32
Urban Surroundings	25	38	30
Crowded	35	23	30
Litter	18	15	17
Large open areas	11	26	17
Nothing to do, boring	9	8	6
Unsafe	12	0	7
Too wild	5	5	5

¹The percents do not add up to 100 because most individuals gave more than one response to each question.

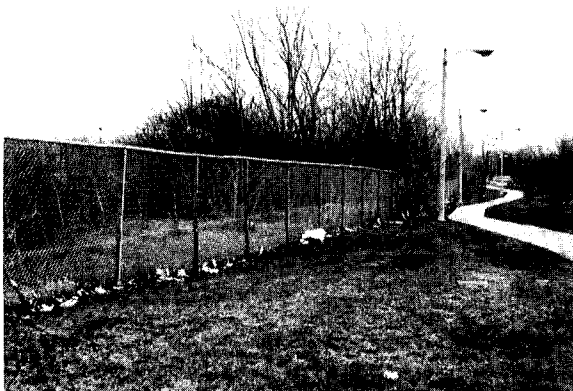


Figure 2. Example of an unattractive recreation site. The fence is an undesirable man-made feature dominating the scene, and litter is very evident. The trees have no leaves and there appears to be no large open area for recreation activities.

recreation sites would be enjoyable places to visit (Table 3). The location of the area and its surroundings figured most prominently in these responses. Individuals wanted to know where the areas were located, as well as what kinds of neighborhoods they were in. Safety was also mentioned frequently, as would be expected from residents of a large city. Several people indicated that a single photograph was insufficient to let them know how the whole area looked. Other features that could not be told from the photographs included the facilities and activities available, accessibility, the number and kinds of users, and the amount of noise at the site.

Discussion

Several prominent results emerge from examination of individuals' responses to the questions about urban recreation site quality. Vegetation, especially trees, and other natural features are important items that enhance site quality. The tendency of people to mention "nature" and "peace and quiet" as desirable attributes suggests that urban parks and forests are seen as opportunities to temporarily withdraw from built-up urban environments and enjoy contact with more natural surroundings. Consistent with this conclusion is the fact that man-made elements such as fences and pavement were the most frequently mentioned features detracting from site quality. These elements intrude on the naturalness of the site.

Problems with vegetation also detract from the enjoyment of recreation sites. Problems include an insufficient amount or, occasionally, unhealthy or unmaintained plants. Poor maintenance stands out as an important concern in those sites that were seen as undesirable places to visit. Individuals also expressed concern about safety and the kind of neighborhood surrounding the recreation site. Apparently, while seeking an escape into more natural surroundings, people do not lose sight of the fact that the forest may be affected by conflict and crime in the surrounding urban environment.

Superimposed on these general trends in preference are some interesting variations between individuals and groups. People from urban areas are less likely to mention vegetation as a desired feature of urban forests and more likely to

look at urban forest sites in terms of what opportunities are present for certain activities. Individuals from nonurban areas are much more likely to mention man-made features as contributing to poor site quality. Nonurban individuals also seem to favor larger amounts of vegetation, citing too few trees as a problem more often than urban individuals. Urban individuals were more likely to complain that there were too many trees (Fig. 3).

Although these results must be interpreted cautiously due to the limited samples of individuals and photographs employed, they do suggest some approaches for improving the quality of urban forest recreation sites. Given the importance of vegetation, it would be appropriate to focus management efforts on providing the right amount of trees and grass and on maintaining them carefully. Man-made objects should be used sparingly and should be unobtrusive so they blend into the natural surroundings. Good maintenance of urban recreation sites is crucial so efforts to prevent litter, vandalism, and deterioration from overuse will be helpful. Preference variations between urban and nonurban individuals suggest that forest sites in suburban areas should emphasize attractive natural areas with few man-made features, while urban parks should provide a variety of recreation activities.

The concern for safety and for knowledge about the areas surrounding the urban recreation site remind us that urban forests do not exist in isolation,

but are part of the larger urban context. Although managers may have no direct control over land uses and neighborhood quality in areas surrounding urban recreation sites, they should be aware of the influence these adjoining areas can have on recreation site quality.

The results of this preliminary report raise several interesting questions for further study. Safety has been identified as an important concern of urban forest recreation site users. We are now conducting a study to determine what site features contribute to the users' feelings of insecurity and fear. In future research we will investigate how people's preferences for different activities affect their preferences for environments. For example, how does the preferred setting for a jogger differ from that for a hiker? In future studies we will also explore the preferences of a wider range of urbanites, including members of different ethnic and age groups. We might also study the role of the users' residential background. Do nonurban users prefer more natural recreation sites because they have had more contact with nature, or have they chosen to live in nonurban areas because they prefer nature?

Answers to questions such as these will help urban forest managers make the most efficient use of scarce resources in providing for the recreation needs of urbanites.

Table 3. Additional information desired about urban forest recreation sites

Item	Percent of Sample ¹		
	Respondents		
	Urban (N=57)	Nonurban (N=39)	Total (N=96)
Location	35	23	30
Surroundings	25	36	29
Safety	11	26	17
Appearance of whole area	11	23	16
Facilities	12	18	15
Accessibility	14	13	14
Activities and uses	14	13	14
Number of users	9	15	11
Kind of users	12	10	11
Noise	4	21	10

¹The percents do not add up to 100 because most individuals gave more than one response to each question.



Figure 3. Recreation site preferred by nonurban but not by urban individuals. Nonurban individuals generally thought the naturalness of this forest was an attractive feature, while urban people generally thought this site was too wild and not suitable for recreation.

References

- Buhyoff, G.J. & W.A. Leuschner. 1978. *Estimating psychological disutility functions from damaged forest stands*. Forest Science 24:424-432.
- Daniel, T.C. & R.S. Boster. 1976. Measuring landscape esthetics: The scenic beauty estimation method. USDA Forest Service Research Paper RM-167, 66 pp. Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO.
- Kaplan, R. 1979. A methodology for simultaneously obtaining and sharing information. In T.C. Daniel, E.H. Zube, and B.L. Driver (eds.), *Assessing amenity resource values*. USDA Forest Service General Technical Report RM-68, 70 pp. Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO.
- Schroeder, H.W. and T.C. Daniel. 1981. *Progress in predicting the perceived scenic beauty of forest landscapes*. Forest Science 27:71-80.

North Central Forest Expt. Sta.
Chicago, Illinois

ABSTRACTS

Tattar, T.A. 1982. **Detecting and correcting chemical injury on trees**. Am. Nurseryman 156(1): 167-169.

Any chemical has the potential for tree injury if it is applied improperly. Chemical injury can be caused by a wide range of materials, and the list grows each year. However, most injury to trees occurs from deicing compounds, pesticides, herbicides, underground gas, and miscellaneous chemical spills. Sodium and chlorine reach trees by run-off from melted ice and snow and by spray splashed from passing vehicles. Melt run-off enters the root zone and makes it difficult for roots to draw water and essential nutrients from soil. Some trees take up the sodium and chlorine in toxic amounts, injuring leaves and twigs. Three major problems with pesticide use around trees commonly occur: 1) incompatibility of mixtures, 2) intolerance of materials, and 3) unfavorable environmental conditions. Herbicides are often harmful when used improperly or carelessly. Two types of damage around trees are common: 1) damage to nontarget plants, and 2) injury from mixtures of herbicides and fertilizers. Natural gas displaces oxygen in the soil and favors the growth of anaerobic bacteria, which further reduce the oxygen level. As the level drops, the roots become starved for oxygen.

Moore, R.E.B. 1982. **Four registered pesticides effective against gypsy moth**. Frontiers of Plant Science 34(2): 6.

Currently there are five readily available registered insecticides for homeowners to use against this insect. With an array to choose from, however, homeowners wishing to control these caterpillars are often in a quandary as to which insecticide to use. I have tested all five pesticides to determine their efficacy. Caterpillars caused 72% defoliation on trees sprayed only with water. Defoliation was 5% on trees sprayed with Sevin and methoxychlor, 10% on trees treated with a combination of methoxychlor and malathion, 13% on trees sprayed with Orthene, 18% on trees sprayed with Dipel, and 43% on trees sprayed with Imidan. Since most homeowners would find 20% or less defoliation an acceptable level, four of the five insecticides tested and the one combination of insecticides provided that level of protection.