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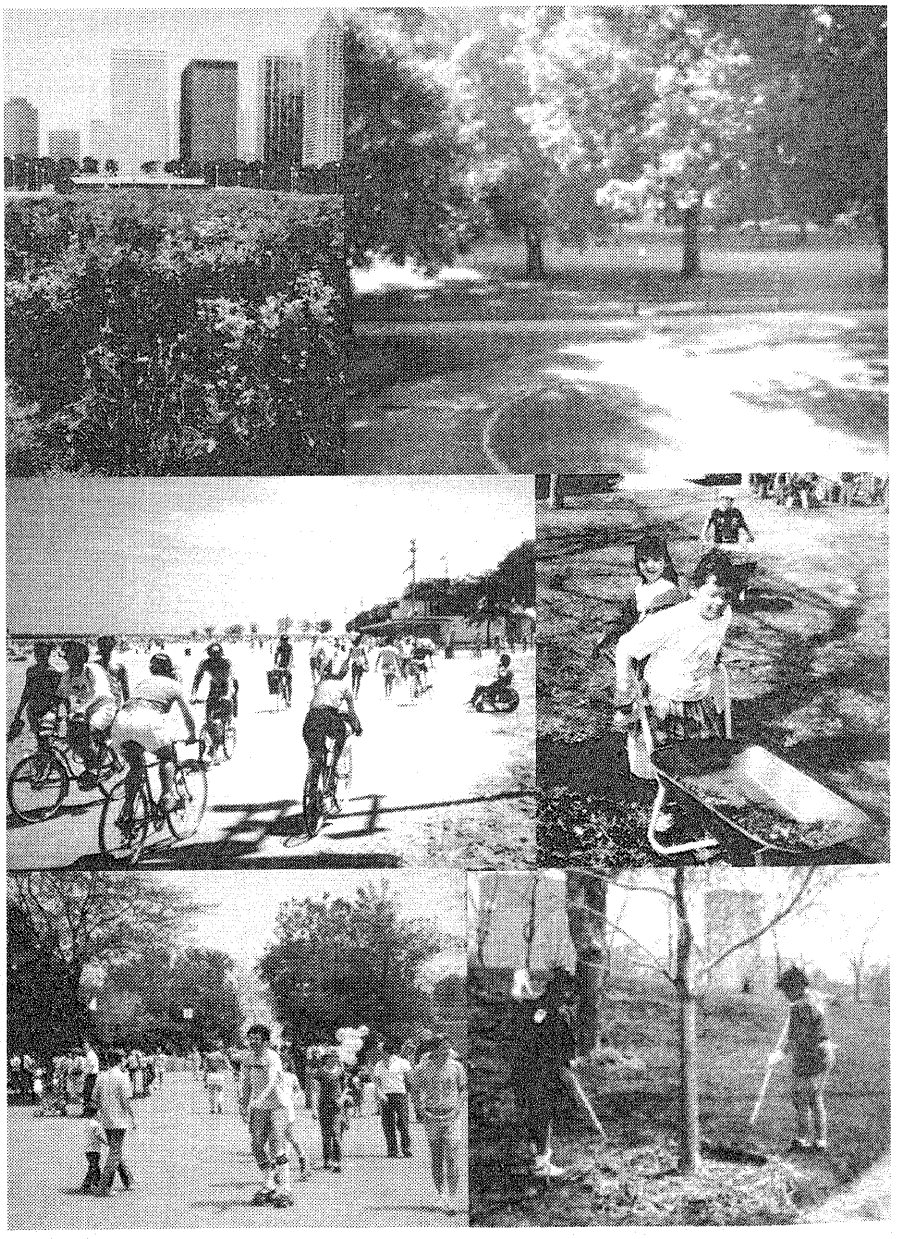

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MANAGING URBAN AND HIGH-USE RECREATION SETTINGS

Selected Papers from the Urban Forestry and Ethnic Minorities and the Environment Paper Sessions

4th North American Symposium on Society and Resource Management

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FOREWORD

This General Technical Report contains selected papers from the "Urban Forestry" and "Ethnic Minorities and the Environment" Paper Sessions of the 4th North American Symposium on Society and Resource Management, held at the University of Wisconsin-Madison May 17-20, 1992. Nine paper sessions organized by the North Central Forest Experiment Station-Chicago brought together 51 authors in 34 talks, 23 papers of which are included here. The full list of speakers and session chairs is contained in the Appendix, along with information on how to contact authors or obtain abstracts for all of the symposium talks.

"Managing Urban and High-Use Recreation Settings" is the title of these proceedings, and is also the title of our Chicago research work unit. Over the last 15 years our mission has been to help build a body of social science research that appreciates the diversity of urban people and urban forest landscapes, but particularly one that recognizes the mutual interactions of people and places in the urban milieu. The papers in these proceedings reflect the current scope of people-place interactions in two important focus areas that our project, together with our research cooperators and associates, have helped define: In urban forestry, these issues include theoretical and applied perspectives in urban park and open space perception, choice, and use; ideas and experiences in public involvement and urban forestry leadership; and the integration of ecological considerations in urban forest planning and design. Racial and ethnic minority populations form a second focus area, one which encompasses issues centering on particular racial and ethnic groups; age, gender, and social group variations; the use of important recreation settings such as the wildland-urban interface; and expansion of the recreation research agenda into areas of environmental equity, concern, and action. Papers in these proceedings communicate the most recent advances in our knowledge of these complex issues, and chart directions for future progress in research and application.

In encouraging and facilitating the development of the paper sessions, many thanks go to Dr. Donald Field, Associate Dean of the School of Natural Resources and Program Chair of the Symposium, and Ms. Mary Miron of the School of Natural Resources and Symposium Coordinator. Sessions chairs provided valuable assistance in the success of these well-attended talks: Linda Langner, Luz Parris, and Deborah Carr of the Forest Service Washington Office; Pam Jakes, Earl Leatherberry and Irene Tatum of the North Central Forest Experiment Station; Linda Kruger of the Pacific Northwest Station; Deborah Chavez of the Pacific Southwest Forest and Range Experiment Station; and Dorceta Taylor of the School of Natural Resources at the University of Michigan. John Dwyer, Lynne Westphal, and Herb Schroeder of the Chicago Unit helped with all phases of the sessions and the proceedings, and Don Boelter and Mary Peterson of North Central in St. Paul saw the proceedings through to its publication. Thank all of you and all of the authors for your contributions, and for waiting patiently for these proceedings to come out.

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MODELING CHOICE OF URBAN FOREST RESOURCES

AFFECTIVE CHOICE IN RECREATION WITH PARTICULAR EMPHASIS ON THE URBAN SETTING: A FIRST APPROXIMATION

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If one goes back to original questions about the mechanisms and dynamics of recreation decision making, a sense of indeterminacy emerges which will lead to consideration of alternative models to test against the rational decision model. At this stage of development, it might be more productive to test models against each other rather than validate models based on untested assumptions.

Introduction

At least ten years ago, researchers began to study in earnest how people choose recreation sites (Knopp and Leatherberry, 1982). The original goal underlying this inquiry was to broadly seek answers to the question: "What are the 'mechanisms and dynamics' of the decision making process"?

Studies attempting to answer this question now comprise a large proportion of the recreation research literature (e.g., Fesenmaier, 1988; Louviére & Timmermans, 1990). However, the meaning of the original question has been interpreted to assume in most cases, either explicitly or implicitly, that recreation decision making is a rational process based on a hypothesized "utility function." In other words, a recreationist chooses a park based on the utility contributed by factors that can be observed and measured such as supply factors.

Research using utility functions has been characterized as "mopping up" (Horgan, 1991). The task in this kind of research is to verify and extend our knowledge of supply factors important in a rational choice process. Scientists in this tradition solve what Kuhn (1970) has called "puzzles": problems whose solutions reinforce and extend the scope of the paradigm rather than challenge it. The impetus to recreation choice research, however, was to *determine* the mechanisms and dynamics of choice behavior, not to assume them via some model.

It can be argued in part that the spirit of the original question has been lost as researchers concentrate on solving the puzzles of utility functions. Adherence to the rational choice paradigm at the expense of this broader question has resulted in certain anomalies not being investigated, or being dismissed as "error" in specification of the model.

In this paper I maintain that in order to truly attempt to determine the mechanisms and dynamics of recreation decision making, we need to consider alternatives to the rational choice model. Findings from a study are presented that support my contention that at least some types of recreation choices are decidedly nonrational in nature, and it would be inappropriate to explain them by way of a utility function. Affective models of behavior offer a promising alternative for explaining nonrational choice, and work by Zajonc (1980) and others argues for the primacy of affect and its independence from cognition in behavior. Although few such formulations have been applied in the recreation choice literature, hints of such a model are just now being published.

To suggest a nonrational alternative, it is not necessary to show that the rational choice model is inadequate in an absolute sense. Adequacy is a relative term. The adequate description of the dynamics and mechanisms of recreation choice requires comparative analysis; the question cannot be answered by analyses using one model (Caswell, 1989). A *test* of one model against another, however, must wait the collection of data designed for that purpose. Superiority of the proposed model, therefore, is not claimed on the basis of empirical support as much as on theoretical grounds supported by past research.

Anomalies In The Rational Decision Model

If the rational decision model is in fact valid, there should be consistency between parts of the model. In another context, Converse (1964) calls this consistency "constraint." The elements of the model, in other words, should be bound together by some form of functional interdependence.

As applied to recreation choice, one such constraint should be evident in the relationship between people's knowledge of facilities present at a park site and their visitation of that site. A rational model would imply more visitation by recreationists with prior knowledge than without it. Yet in a study I conducted to test this relationship, I found no significant differences between the number of recreationists aware of facilities and those individuals unaware of facilities prior to an urban park visit (Christensen, 1989).

It could be argued that this relationship as modeled was too general to indicate how rational decision making takes place. In this context, Fesenmaier (1988) argues that ". . . specific recreation activities determine to a large degree park selection" (p. 175). Instead, asking recreationists about facilities relevant to the activities in which they intended to participate might more validly indicate rational decision making.

But when I further examined how participation in specific activities by first-time park visitors was affected by their knowledge of the presence of facilities relevant to those activities, this lack of a significant relationship persisted (Christensen, 1989). In the study, five activities in which participants engaged were cross classified with whether or not they were aware of the presence of relevant park facilities. Facilities included picnic, sports, playground, and swimming facilities, and nature trails. No significant relationships were found between any of the five activity-facility pairs. For example, engaging in picnic activities did not lead to greater

likelihood of knowing about picnic facilities at a park than if one did not participate in picnic activities. Yet despite the lack of significant relationships, 76 percent of the respondents indicated that familiarity with a park was either "very important" or "somewhat important" to their urban park choice.

Various explanations might be offered for these results. One is that choice, based on a rational process, does not occur most of the time (e.g., Granbois, 1977; Simon, 1991). Responses, it might be stated, are not so much an indicator of actual choice behavior as much as they are a reflection of what the recreationists think the process *ought* to have been. Attribution for behavior, in other words, follows behavior (Harris, 1982). People attribute the cause of their choice behavior to factors which seem to be plausible explanations after the behavior has occurred (Leavitt et al., 1980). A reason for a choice will be deemed a representative cause of a choice if the reason and choice are linked via a rule, an implicit theory, or a presumed empirical covariation. Thus while recreationists in my study stated that many valuative criteria like distance, staff, cleanliness, and so forth were important factors in deciding which urban park to attend, it is quite possible that these answers reflected an "implicit theory" that *should* explain their urban park choice.

Another potential explanation for this discrepancy is that if a rational choice process does take place, recreationists are not able to recall the actual procedure (Mészáros, 1990). This lack of recall thus causes them to respond erroneously to questions about their decision making (e.g., Nisbett & DeCamp Wilson, 1977).

Whatever the explanation, constraint in the rational model is missing. This lack of constraint goes unaddressed as long as only the rational model is considered. If for this reason alone, alternative models deserve consideration as applied to recreation choice. One such model, an affective model of behavior, offers a potential explanation for the observed inconsistencies between knowledge and choice.

An Affective Behavior Model

Zajonc (1980) advanced arguments concerning the relationship between the two systems of cognition and affect in behavior, including choice behavior. His goal was to redirect thinking about the role of affect in determining how people behave.

Zajonc makes two major arguments regarding the role of affect in behavior. First, affect and cognition are related yet independent. While affect may eventually enter 'cold cognitions' and make the 'hot cognitions,' ". . . cognitions are not necessarily components of affect" (Zajonc, 1980: 154). Studies (e.g., Zajonc, 1980; Wilson, 1979; Kunst-Wilson, 1980) have shown that feelings about an object exist despite little recognition of the object. Yet, affect is always a part of cognition. One does not think of this paper coldly as a paper; one thinks of it as an interesting or boring paper. Often this affective assessment is made *before* reading the paper based on a title. These kinds of thoughts are not 'cold' cognitions but 'hot' cognitions (Abelson, 1963; Zajonc, 1980), or cognition may not be involved at all as much as are feelings.

The second major argument is that affect precedes cognition. Zajonc (1980) provided the following example:

> It is unlikely that calculations based on discriminable component features and their affective values will reliably predict our overall affective reactions to objects and events. These reactions do not seem to be composites of such elements. An affective reaction to a person we meet emerges long before any of these features can be identified let alone evaluated (p. 159).

Implications for Modeling Recreation Choice

What are the implications of an affective model for understanding recreation choice behavior? Zajonc's arguments offer guidance in two areas:

> **1) Affect Appears Before Cognition:** If one is committed to the rational choice model, the arguments of this paper provide at least some guide as to when rationality does play a part in urban park choice: that is, only when affect enters the picture. Enough emotion must be aroused for one to become informed. Selin and Howard (1988) refer to the presence of affect as "ego-involvement." Just what factors are catalysts for ego-involvement (i.e., affective response) in an urban setting need to be identified; for the usual ones like cost (Newman & Staelin, 1972; Howard, 1985), significant differences in parks (Heywood & Mullins, 1985) would not seem to apply.
>
> **2) Affect Is Independent Of Cognition:** Perhaps Propst and Lime (1982) were the earliest to suggest that a set of "mechanisms" other than rational ones were appropriate for study in choice research. They stated that park choice was a result of vague, global notions about park attributes rather than well defined and evaluated dimensions attributed to each park. Brown (1989) subsequently presented a similar view. A good argument can be made for considering affect as synonymous with ". . . vague, global notions about park attributes . . . ."

It is interesting to note, with respect to these points, the direction of some recent research concerning recreation behavior. Williams, Patterson, Roggenbuck, and Watson (1992), for example, attempt to get "Beyond the Commodity Metaphor" by examining the "Emotional and Symbolic Attachment to Place." A sense of place, in their scheme, is associated with an emotional or affective bond between an individual and a particular place as opposed to some cold calculation of site attributes.

The research related to "Experience Use History" (Schreyer, 1982; Schreyer et al., 1984) is relevant. Several earlier studies (e.g., Harrison, 1970; Zajonc, 1968; Matlin, 1971) have shown that ". . . increasing preference for objects . . . can be induced by virtue of mere repeated exposure." Recognition of important dimensions had little effect on liking. It is encouraging to see research directions like those taken by

McIntyre and Pigram (1992) in this area. These authors have introduced an affective component to the research related to experience use history. Affective response to a camping area may be the primary result of experience use history.

"Ego involvement" (Selin & Howard, 1988) research points to the importance of affect in leisure decision making. "Many studies have reported that ego involvement is closely linked to the affective domain . . ." (Selin & Howard, 1988: 23). Central to this theory is the distinction between thinking and feeling or between situations or objects that serve utilitarian goals versus expressive goals. Individuals seeking utilitarian goals respond more from the thinking or cognitive domain. Enjoyment and thus ego involvement are enhanced when an individual expects and then realizes expressive rewards from a situation or an object. Expressive goals seem more consistent with the intent of leisure participation than do utilitarian goals (Selin & Howard, 1988).

Conclusion

Perhaps the words of Zajonc (1980) best summarize a major point of this paper:

> People do not get married or divorced, commit murder or suicide, or lay down their lives for freedom upon a detailed cognitive analysis of the pros and cons of their actions. If we stop to consider just how much variance in the course of our lives is controlled by cognitive processes and how much by affect, and how much the one and the other influence the important outcomes in our lives, we cannot but agree that affective phenomena deserve far more attention than they have received . . . . (p. 172)

The second major point of the paper is that recreation choice research needs alternative models for comparative research. Comparative research is the most appropriate way to answer questions about how urban parks are chosen by recreationists. Wrong (1961) stated over 30 years ago that:

> If we forget the questions, even while remembering the answers, our knowledge of them (i.e., the questions) will subtly deteriorate, becoming rigid, formal, and catechistic as the sense of indeterminacy, or rival possibilities, implied by the very putting of a question is lost.

His position needs to considered in recreation choice research.

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DAILY CYCLES OF URBAN PARK USE:

AN OBSERVATIONAL APPROACH

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Most studies of leisure and recreation have focused on the behavior of individuals and households, and have viewed recreation activities as discrete episodes which take place in a non-specific spatial context. The observation of leisure and recreation activity in an urban park setting shifts the focus of inquiry from individuals and households to (a) the interaction of various social groups competing with one another for the use of public space, and (b) the influence of characteristics of the recreation site itself on the behavior and activity of participants. Questions as to the allocation of sites and facilities to social groups across time and space are of first importance. Because most urban recreation activity occurs in park settings close to home and involves "routinized" activities performed on a regular schedule -- where decision-making has been taken out of the daily cycle of leisure and recreation -- the salient characteristics of urban recreation behavior are not likely to be captured by commonly used research methodologies and models.

Introduction

Studies of leisure and outdoor recreation have in large part focused on the behavior of individuals and households, and view recreation activities as discrete episodes in a non-specific spatial context. Survey research methodology delineates specific assumptions and expectations about leisure and recreation in contemporary society: individual respondents are asked to estimate the extent of activity for other household members across an array of leisure and recreation activity. Each activity is presented as a discrete event involving the individual or nuclear family. This research methodology is both culture- and site-specific; originally developed to measure the outdoor recreation activities of the general (and therefore predominantly White) population, it may be of only limited usefulness for in understanding the activity of other ethnic/racial groups in urban settings.

Observational studies of leisure and recreation in urban park settings have shifted the focus of inquiry away from individuals and nuclear family households to naturally occurring "activity groups" (Hutchison and Fidel, 1984), and away from the "activity lists" drawn up to measure participation in outdoor recreation. An observational approach requires the researcher to examine more closely (a) the social composition of activity groups, (b) the interaction of various social groups competing with one another for the use of public space, and (c) the influence of characteristics of the recreation site itself on the behavior and activity of participants.

Many studies of outdoor recreation focus on rates of participation in a selected group of activities while neglecting the more significant questions about how people chose to pursue their leisure and recreation opportunities. Likewise, rational choice models ask respondents to make hypothetical choices among various recreation sites, the attributes of which may or may not be important to any given individual. Neither approach is appropriate for the study of leisure and recreation activity among ethnic/racially diverse populations in urban areas.

An observation approach requires that we abandon the accepted orthodox research paradigms for largely uncharted territory. Urban recreation activity typically occurs in public parks closest to one's home, making questions as to choices among various recreation sites largely irrelevant. Common recreation activities within urban settings are not included in checklists of outdoor recreation activity. Indeed, questions as to the specific activities in which various ethnic/racial/social class groups participate may have little relevance in understanding the significant features of urban recreation (since the overwhelming majority of activities are the same across ethnic/racial/ social class groups, it makes little sense to focus our attention here). Instead, questions as to the allocation of social groups across time and space are of first importance.

In this paper, I review findings from the Urban Parks and Recreation Study (Hutchison, 1987) which described (a) the daily cycle of leisure and recreation activity in neighborhood, regional, and lakefront parks, and (b) variations in the use of designated recreation spaces and other areas within public parks. Thirteen neighborhood, regional, and lakefront parks in the City of Chicago were selected to represent the variety of park settings available in Black, Hispanic, and White neighborhoods of the city. Research staff trained by the Principal Investigators made hourly observations in each of the parks for both weekdays and weekends. This observational data recorded detailed information concerning the age, gender, and social composition of activity groups within each park. The research design is described in greater detail in Hutchison and Fidel (1984) and Hutchison (1987); these earlier articles focus on comparisons of the recreation activities and social composition of White, Black, and Hispanic user populations.

Daily Cycles of Activity in Urban Parks

One goal of the original research project was to delineate differences in the activity patterns of Black, White, and Hispanic groups across neighborhood, regional, and lakefront parks. At this level, the study produced ambiguous results: while we observed some differences between the activity of White and Hispanic activity groups, there were few differences between the activities of White and Black groups. The most consistent finding that emerged from the results was that Hispanic groups were more likely to be involved in stationary rather than mobile activities: compared to Whites and Blacks, Hispanics were more likely to be observed in stationary activities (picnics, sitting on benches), and were less likely to be observed in physical exercise (jogging and bicycling). While these results might correspond to other

studies which report that Hispanics are less likely to choose physical exercise, the differences are more likely explained by demographic characteristics of the Hispanic (and especially the Mexican) population -- including especially the large number of young families and the larger number of children within families -- and to cultural patterns which emphasize family and group activities rather than individual activities.

Even where participation in activities was similar--as between White and Black groups--qualitative aspects of the leisure episode may be very different. While we discovered similarities between White and Black activities and between White and Black social groupings, Hispanics were found to differ from both Whites and Blacks in the social composition of activity groups. The most common activities for Hispanic groups reflected the importance of the family unit and the segregation of gender roles within Hispanic community. Stationary activities such as picnics and the use of playground areas by young families were more common among Hispanic groups, resulting in larger average group sizes. Black and White activities, on the other hand, involved smaller groups (most often individuals) involved in mobile activities (see Hutchison, 1987).

As noted above, observations were made hourly on both weekday and weekend days in each of the research sites. The schedule of observations was designed to allow us to compare the changing distribution of recreation activities and social groupings across the daytime hours. For all of the parks observed, there was a clear pattern of changes in both activities and groups over the course of the day. Individual activities predominated during the morning hours, while family activities peaked in the afternoon. During the evening hours, families and individuals were replaced by peer groups.

The changing distribution of gender groups during the daytime hours followed a more general pattern of recreation activity: males (involved in mobile activities such as jogging and bicycling) predominated during the morning hours, while mixed-gender and female groups (engaged in a variety of family activities) were more common in the afternoon and evening hours. As these examples indicate, the observational data allow us to more closely chart activity patterns of specific gender and social groups than is possible with surveys of (a) the general population, or (b) users of outdoor recreation sites.

The use of observation techniques also leads to unexpected discoveries as one enters the field site for the research and later when one analyzes data collected during the fieldwork. Three general principles of urban recreation that we recognized during the course of the study include:

(1) Because larger-sized groups are more difficult to organize, they are more likely to take place in the late afternoon or early evening, and during weekends. While this appears in hindsight to be a fairly obvious result, earlier studies which focus on individuals and household units prevent the researcher from examining particular activities as they relate to other individual activities and to the more general interaction of activities within specific recreation sites. While it is obvious that sports teams must schedule their activities in the evenings and on weekends so that team members who work during the day are free to participate, a similar restriction on activity is found for more informal groups as well: family picnics can occur only when household members are not working, and thus are scheduled in the late afternoon and on the weekend.

(2) On any given day, many different groups compete for the use of limited space within urban parks. Because a variety of inefficiencies and perhaps outright conflict would occur if this competition were decided on a day-to-day basis, a pattern of spatial and temporal "ordered competition" develops among the different user groups in any particular urban recreation setting. In our observations, this was most noticeable in the accommodations between different age groups, and between the original residents and new immigrants within particular parks. In many parks, interaction among the different age groups has in time resulted in space has been reserved for particular groups; for example, elderly park users may occupy the benches in one area of a park in the morning and then retire in the afternoon when teenagers enter the park. In other instances, the original residents of the local neighborhood may make use of park facilities during the morning hours, and then leave the park when young families from new immigrant groups come to the park during lunchtime and in the afternoon. By the evening, when the parks are used by teens and young adults, the older, original residents have left the park entirely.

(3) Our observations in neighborhood, regional and lakefront parks across many different Black and Hispanic neighborhoods revealed a strong pattern of routinized park use. By this we mean that the same groups of persons (sometimes individuals, more usually extended households) are observed in the same areas of particular parks at specific times of the day. In one of the northside lakefront parks in our study we observed a group of Hispanic households which arrived at the same location each weekend in the late morning, laid claim to a group of tables, and engaged in a variety of activities which precluded the use of the surrounding space by other groups; we named this group "the great picnic party." At another park on the southwest side of the city, we observed a group of elderly persons who arrived in one of the parks every afternoon, set up card tables in the same location, and were involved in a variety of activities (talking, socializing, playing table games) for several hours. This area of the park was clearly reserved by other groups for the activity of this elderly population.

Conclusions

Deciding upon the appropriate methodology for any particular study is determined to a large extent by the subject or topic of investigation. Modeling the choice of specific recreation sites may well require multivariate statistical methods and econometric models. Research which addresses questions as to the types of recreation activities and leisure patterns among ethnic subcultures may require something very different.

While most studies focus on one group of activities, it should be clear that the full range of leisure and recreation activities of any particular group--White, Black, or Hispanic; urban or rural--involves several distinct spheres of activity. These include (but are probably not limited to) activity spheres which I would like to refer to as: *outdoor recreation activities*, such as hunting, fishing, and boating, which typically occur at sites some distance from home and involves a variety of travel costs; *leisure activities*, such as watching television and gardening, which occur in and around the home; *commercial recreation and leisure*, including concerts, bowling, and other activities outside of the home environment; and *urban recreation activities*, such as bicycling, jogging, and picnicking, which occur in public sites close to the home.

It is interesting to note that studies of *outdoor recreation activities* (such as that presented in Dwyer and Hutchison, 1990) and *leisure activities* (such as that reported by McMillen, 1983) have generally been consistent in discovering differences among the activities of Whites, Blacks, and Hispanics, while studies of *urban recreation activities* have produced less consistent results (see Hutchison, 1987).

Leisure activity in the home consists of at least two elements: first, there is the pervasive influence of mass culture: watching television is the most common leisure activity regardless of the ethnic/racial background. But home leisure activity also includes the influence of ethnic subcultures among those groups with ethnic backgrounds different from that of the mainstream culture. Recent immigrants read newspapers and magazines in their home languages and play board games common in their home country; although the same activities may be reported with comparable frequency in the general population, the purpose and meaning of the activity is very different.

In the study of the leisure and recreation activity of urban ethnic/racial groups, *leisure activity* and *urban recreation* are especially important, and probably more relevant than the study of *outdoor recreation*. We already know from a variety of sources that urban ethnic/racial groups are less likely to participate in outdoor recreation activities removed from urban centers (c.f., Dwyer & Hutchison, 1990). Because many ethnic/racial groups have larger family sizes, lower levels of discretionary income, and less flexible work schedules, the activity of these groups is likely to be centered in the local neighborhood and in public recreation sites within the urban area. Survey research that asks respondents to indicate their level of participation in specific groups of activities is not likely to capture the important dimensions of recreation within the urban arena.

Development of a more comprehensive research agenda that addresses the activity of ethnic/racial groups in American society requires new research methodologies which are capable of incorporating the important features of leisure activity in the home environment and urban recreation in the local community. Because some ethnic groups may have definitions of leisure and recreation that vary widely from the general population, the use of open-ended survey is essential in order to fully understand leisure and recreation activity. For example, Hutchison's (1993) study of a Hmong refugee population in northeast Wisconsin showed that respondents included activities such as housework, shopping, and helping children with homework in their listing of leisure activities.

Because most of the recreation activity of ethnic/racial groups such as African-Americans and Hispanic-Americans is focused in and around the local neighborhood, the continued study of *urban recreation* requires wider application of observation methods. This methodology was used by Gobster (1991) in a study of activity patterns in a neighborhood park in Chicago. The value of an observational approach in the study of urban recreation goes far beyond the initial task of identifying particular activities and even the social organization of activity groups among various user populations. As noted above, leisure and recreation activity in the urban setting frequently requires interaction among and accommodation between many different ethnic and racial groups with competing interests and purposes. Observations within neighborhood and regional park settings (for example) allow the researcher to note regular cycles of park use which would otherwise remain hidden.

My argument for increased study of what I have labelled *urban recreation*, and the use of an observational approach in this research, is based upon recognition that rational choice models have only limited relevance to the study of urban recreation (and, by extension, to the study of leisure and recreation activities of ethnic/racial groups). Urban parks are remarkably uniform in the provision of recreation opportunities (all parks have playgrounds and benches and open spaces; all larger parks include tennis courts and softball diamonds). This means that the range of supply factors is generally flat, and can not be used to explain variations in activity from one group to another. Because most activities require little or no expenditure of discretionary income (once again, the provision of playgrounds, benches, tennis courts, and softball diamonds is uniform, and there is no monetary cost for using these facilities), economic variables cannot explain variations in urban recreation activity among groups in the general population.

Most importantly, observational studies of recreation behavior reveal that most recreation activity is patterned and routinized. In the Urban Parks and Recreation Study, we observed the same groups of persons involved in identical activities on a weekly and even daily schedule. Indeed, it is not surprising that the various behaviors of individuals within the public recreation setting would organize themselves into regular and even predictable patterns of activity. Two essential points stem from this simple observation:

(1) When patterns of recreation activity have become crystallized in daily routines within the local neighborhood, rational choice models will lend little information to our understanding of the activity (in essence, the element of "decision making" and "choice" has been removed from the model);

(2) The essential features of urban recreation, including the interaction, conflict, and accommodation of various age, gender, and ethnic/racial groups, cannot be captured in survey data where respondents simply list the extent of participation in various activities.

Regardless of what the decade of the 1990s' holds for our urban neighborhoods, the study of leisure activities and urban recreation among ethnic/racial groups emerges as one of the most important issues in leisure studies. While rational choice models and survey research provides important baseline data, particularly in the study of outdoor recreation, future work requires a focus on the provision of urban recreation opportunities and new research methodologies such as the observational approach discussed here.

Acknowledgments

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PUBLIC PARTICIPATION IN URBAN FOREST PLANNING

PUBLIC PARTICIPATION IN RAIL-TRAIL PLANNING: TWO CASE STUDIES

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Public preference studies were conducted focusing on design issues related to the development of two rail-trail parks. Both studies involved asking for preference ratings of landscape scenes. The results highlight the general preference for natural appearing settings, and illustrate the importance of sampling both from local residents and from potential regional users in rail-trail park planning.

Introduction

This paper presents findings from two studies of public preferences relating to the development of linear parks along abandoned railroad lines in predominantly rural areas of Southern Michigan. The cases are similar in focusing on early public involvement and in asking for preference ratings of landscape scenes, but they differ in the nature of the participating groups as well as in the specific methods used.

These studies offer an opportunity to examine preferences for linear parks, or rail-trail systems, at a general level. Comparisons between the findings of the two studies also suggest the different concerns and desires that may be expressed by local residents and by potential regional users of such areas.

Methods

For the first study (Talbot, 1990), computer visual simulations were used to prepare a videotape showing how different design treatments might affect views along a proposed 26-mile state park. The simulations were based on preliminary plans which had been developed by the state transportation department for the railbed and the 100-foot wide public right-of-way. A system encompassing three parallel trails had been proposed, with the railroad path used for bicyclists and narrower side trails developed for hiking and horseback riding. Many of the simulations showed variations in widths and surfaces of the main trail, both with and without side trails at varying distances.

The videotape, including both simulations and the unmodified version of each setting, was then shown to state planners and to regional representatives of different user groups, and at meetings of bicycling clubs, hikers and horseback riders. A total of 160 viewers completed survey forms, indicating how much they liked each setting on a five-point scale (where 1=not at all and 5=very much). They also completed items asking how frequently they pursued different recreational activities, and added general comments about the scenes and the park plans.

In the second study a photoquestionnaire was used to obtain public input regarding a 26-mile abandoned railroad line that was being developed as a park by the county recreation department (Talbot, 1991). The survey included photographs showing local views as well as views of developed trails and adjacent areas elsewhere. The participants rated each setting for preference, as described above. They also completed items asking about their preferred recreational activities, and their reactions to potential trail features and to potential changes that might occur in the area around the park as a result of its development.

The photoquestionnaire was developed in collaboration with a citizens' advisory group and with the landscape planning firm which was developing a master plan for the park. Copies of the survey were mailed to adjacent property owners, to representatives of local governing boards and special interest groups, to a random sample of local residents, and to anyone responding to public notices about the survey. The response rate from these groups was 36 percent. The survey was also completed by students in civics classes at public high schools in the four communities along the proposed park. In total, 259 surveys were completed for the second study.

The first study was conducted as part of a larger research effort exploring the usefulness of computer visual simulations in public planning and landscape preference research (Talbot 1992a; 1992b). The goal of the second study was to obtain public feedback which the landscape planning firm could implement immediately, in developing the master plan for the park.

Results

The majority of the participants in both studies indicated, in their numerous comments as well as by their survey ratings, that they were eagerly anticipating the development of these rail-trail parks. They commented that such settings would offer opportunities to enjoy "natural beauty," to "hike, picnic, walk slowly, (and) enjoy the colors," and to "get away from all the unnatural things of city life." While endorsing the general plans for these parks, the responses to specific design issues were more varied. These are described below in further detail.

Visual simulation study

The data from the first study, using visual simulations, were analyzed by comparing ratings of existing settings with ratings for the simulations that showed how each setting might look after development (paired-t tests were used for these analyses, at the .05 significance level). Average ratings were also examined for each of the images separately.

Figure 1 illustrates the major findings from this study. The top row includes two images with highly preferred features. The side trails in the left-hand scene were curved; this simulation was rated more positively than a version showing three straight trails. The right-hand scene shows a narrow side trail in a heavily-wooded setting. The participants generally

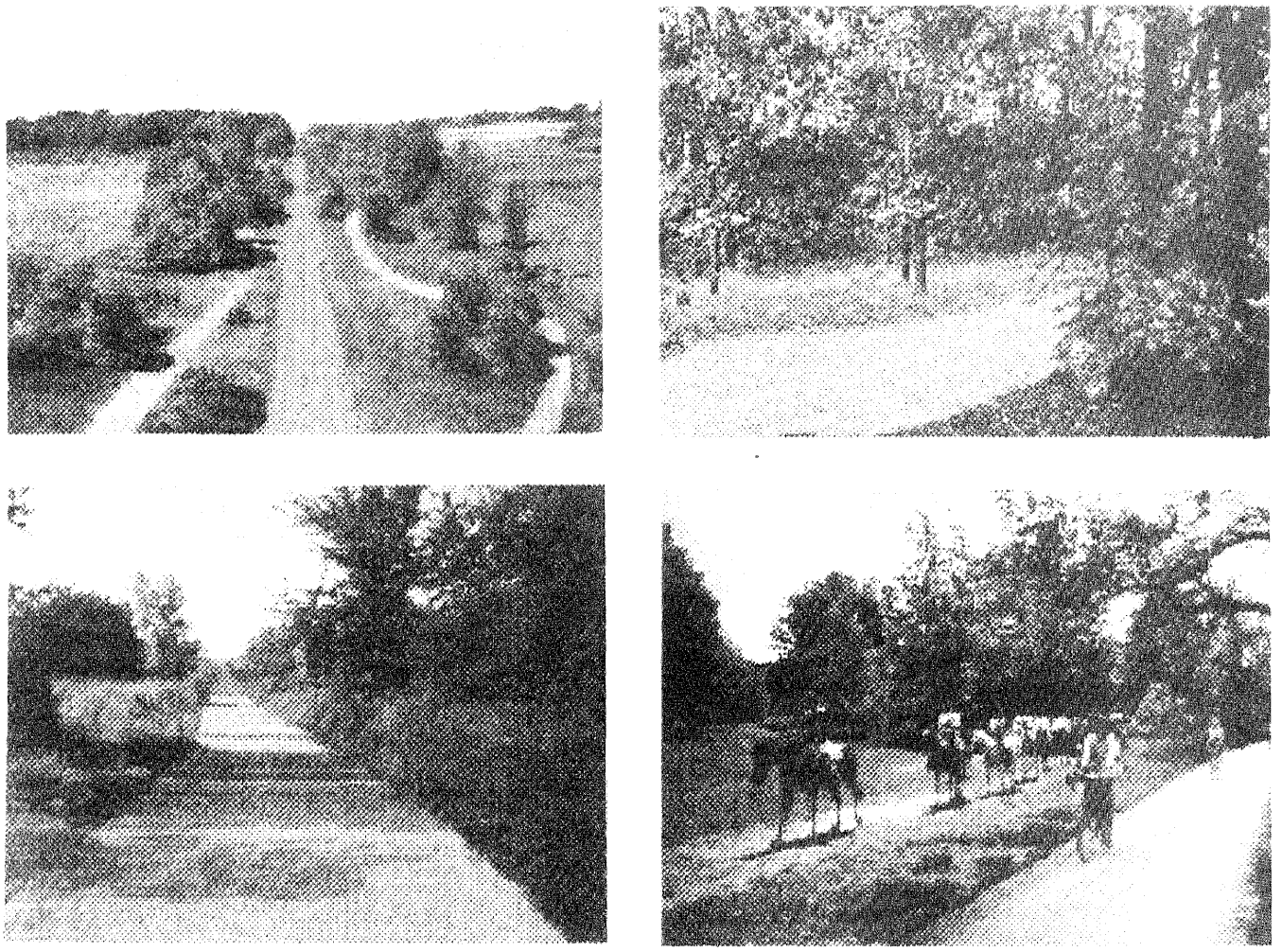

Figure 1. Scenes from the visual simulation study showing preferred and non-preferred trail design alternatives. The top row shows settings with preferred features: curved trails and narrow side trails going through wooded settings. The bottom row illustrates features that were less-preferred: wide, straight trails and adjacent trails placed close together, with no visual screening between the trails.

responded very favorably to such scenes, preferring scenes with many trees, with an unmanicured appearance, and with the suggestion of visual separation between the trails. The bottom row of Figure 1 shows design alternatives that were relatively non-preferred. In the left-hand scene, the main path is wider, at approximately 12 feet, than the 8-foot-wide trails shown in other simulations of the same setting; this scene was less preferred than the versions showing the narrower path. In the right-hand scene, bicyclists and horseback riders are shown using parallel trails which are very close together.

While the participants responded favorably to overhead views showing three parallel trails, their ratings for simulations showing different users in close proximity, with little visual screening between the trails, were less positive.

Photoquestionnaire study

Three analysis procedures were employed with the data from the photoquestionnaire study. Factor analysis procedures (or "category-identifying methodologies," Kaplan and Kaplan, 1989) were used to collapse the photographs into groups to which the study participants had responded similarly. Average preference ratings were also computed for individual scenes, in order to highlight the most-favored and least-favored settings. And Student *t*-tests and analyses of variance (with a significance level of .05) were used to examine group differences in response.

Four groups of photographs resulted from the factor analysis: Natural Trails, Paved Trails, Farms, and Developed Areas. The photographs in each of these groups are shown in Figure 2.

The Natural Trails group, shown in the top row of Figure 2, includes all of the individual scenes which received the highest preference ratings (means of 4.4 and 4.3, respectively,

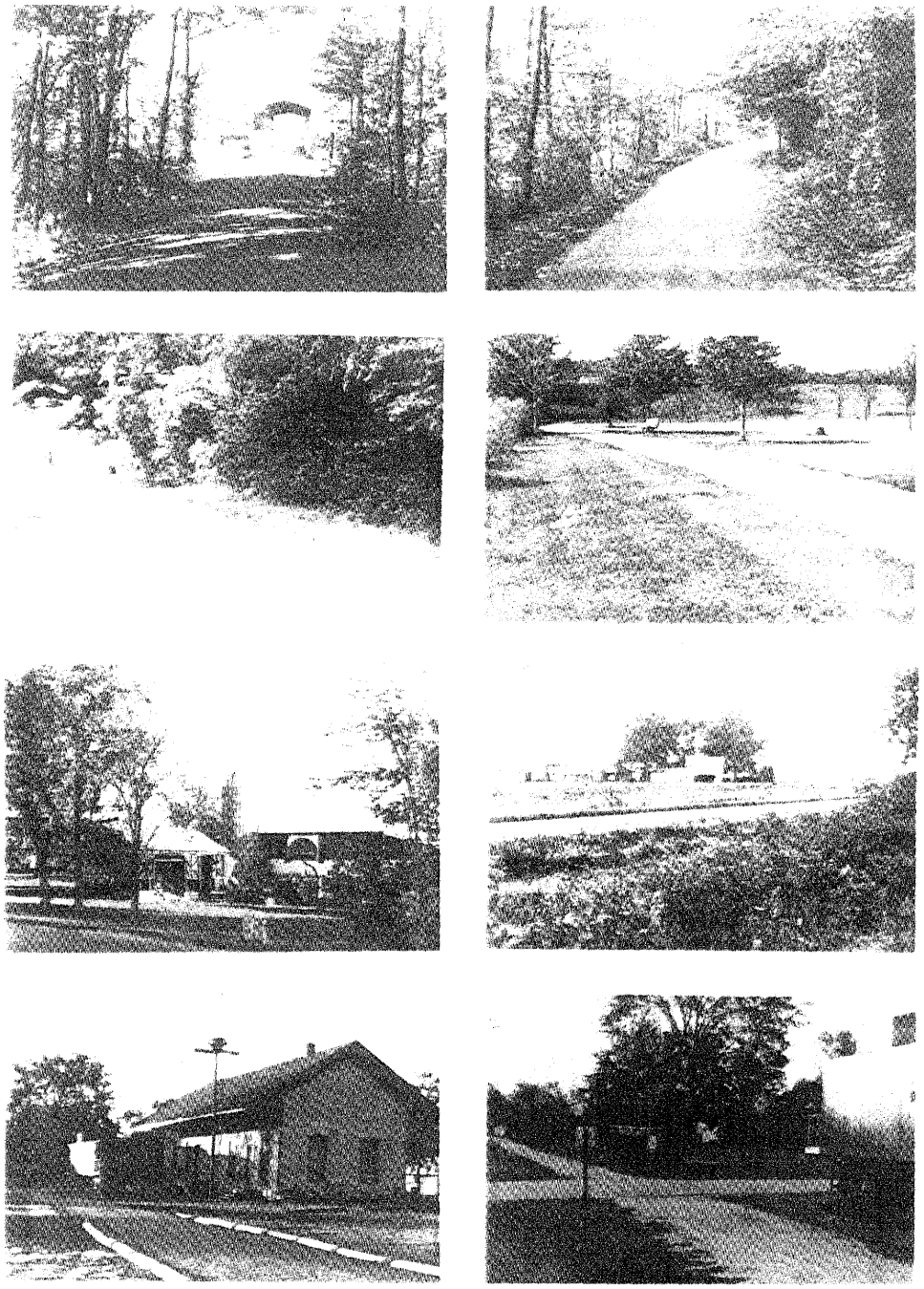

Figure 2. Scenes from the photoquestionnaire study showing the four photograph groupings: Natural Trails (top row, average preference rating 3.7); Paved Trails (second row, average preference rating 3.7); Farms (third row, average preference rating 3.0); and Developed Areas (bottom row, average preference rating 2.6).

for the scenes in the Figure). Most of these scenes are heavily wooded, and all have a natural or unmanicured appearance, with dirt or other "soft" trail surfaces. This photograph grouping includes scenes with bridges over river crossings, scenes showing small information signs along the trail, and benches.

Photographs in the Paved Trails group (second row of Figure 2) have a more manicured appearance, with hard surfaces and mowed edges along the trail. Although none of these scenes were especially preferred, as a group the Paved Trails were as well-liked as the Natural Trails: both photograph groupings received average ratings of 3.7. The least liked of the Paved

Trails shows the widest trail, with a paving stripe down the center of the trail.

Both of these photograph groups, which feature trails going through natural areas, received higher preference ratings than the two remaining photograph groups, which show trails in more developed settings. The Farms grouping (row three in Figure 2) received moderate preference ratings from the participants (average preference of 3.0).

Developed Areas (bottom row) were the least preferred, and received an average preference rating of 2.6. This grouping included two images showing restored railroad structures, along with more typical commercial views showing parked cars, convenience stores, and road intersections. Comments by participants who said they did not want to see "commercial development too close, too often" illustrate the general dislike for seeing buildings and cars from the trail. Although some of these scenes were clearly disliked (a scene showing trucks next to a garage received a 2.0 preference rating), the two scenes showing restored railroad elements were rated more positively (3.2 and 2.8, respectively, for the left- and right-hand scenes in Figure 2).

Finally, two groups of participants in the photo-questionnaire study had distinctly different response patterns: people who lived, worked and/or owned property along the rail-trail property; and people from a small town that had been originally founded as a depot station at the point where this railroad line intersected with a North-South line.

The adjacent residents were less enthusiastic about the proposed park than were the other participants. It should be noted that these participants differed only in the degree of their positive response to the survey: even among this group, the ratings were moderately positive. However, a few comments were strongly negative, expressing concerns about privacy and safety, and about "loud rowdy teenagers" who might use the park.

And people from the former "Depot Town" rated the photographs of Developed Areas higher than did the rest of the respondents, viewing the proposed trail as an integral part of their downtown rather than as only offering settings for nature enjoyment. These participants also responded favorably to survey items addressing the possibility of widespread development in the area, while the other study participants did not favor general changes in the area.

Discussion

The results of these studies indicate many similarities in preferences for views of a linear park, or rail-trail park. The best-liked visual images in both studies showed narrow, curving trails with "soft" trail surfaces, in settings that were primarily natural and unmanicured. At the other extreme, views showing wider trails, or showing trails with little visual screening (either from adjacent trails or from nearby developed areas), were generally not preferred by the participants. Both local residents and other potential trail users described the park as offering opportunities to get away from the "hustle and bustle" and to find "nice quiet places." These findings agree with the results of numerous other landscape preference studies involving responses to a greater variety of natural areas (Kaplan and Kaplan, 1989).

Additional results from the second study illustrate the value of sampling from local residents as well as probable park users in obtaining a full range of public response to design alternatives. The concerns for safety and privacy that were expressed by some of the residents living next to the park property should be directly addressed in the planning process, in order to increase their acceptance of the park. Furthermore, planners can vary the design treatments that are implemented along different portions of a trail, building on differences in the preferences expressed by residents of the separate communities. In this way a more distinctive and identifiable character will be incorporated into different portions of the trail, building on local residents' knowledge of the role that the former railroad line may have played in the history of each community.

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NEW URBAN FORESTRY LEADERSHIP

WHY TREES? URBAN FORESTRY

VOLUNTEERS VALUES AND MOTIVATIONS

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The first two classes of a volunteer urban forestry program were studied to better understand participants' values and their motivations for volunteering. Results from one portion of a pre-class survey indicated that emotional, aesthetic, and psychological values of trees were most important to participants, and that these values motivated the individuals to volunteer.

Introduction

Volunteer tree planting and tree care programs are playing an increasingly important role in maintaining urban forests across the country. These volunteer efforts include urban forestry councils and tree boards; regional groups like TreePeople, Trees Atlanta, and the New York Street Tree Consortium; plus a multitude of smaller, local tree care groups. But getting individuals to volunteer is not an easy task, and efforts will be successful only if volunteers are motivated to learn about trees and are willing to spend their time outdoors in all kinds of weather, spreading compost, digging in mud, and risking their backs hauling mulch. Why are certain people interested in doing these things? Why trees? Why not volunteer at a hospital, or with the scouts, the symphony, or many of the other worthwhile causes where volunteers are also in high demand?

To start to answer these questions, I studied the first two classes of TreeKeepers. Openlands Project, a regional non-profit organization for open space planning, started TreeKeepers in 1991 to develop a trained cadre of tree care volunteers in Chicago. TreeKeepers graduated 129 volunteers from the first two classes. The six-week course, offered every spring and fall, covers a variety of tree care issues, including planting, pruning, mulching, identification, choices of trees for specific urban situations, and an introduction to the people and organizations responsible for Chicago's public trees.

The TreeKeepers' values and motivations were studied through a pre- and post-class written survey, in-depth personal interviews, and participant observation. The goal was to discover what motivates people to volunteer for urban forestry programs: What are their values and perceptions of trees in their cities and towns? Are there underlying similarities among individuals that can help program managers find and work more effectively with volunteers? What can be learned to help managers understand more clearly the meaning of the urban forest to their fellow citizens?

This paper will focus on the results of one segment of the surveys: A ranking exercise of values and annoyances of urban trees (that is, likes and dislikes about trees) from the pre-class survey. The responses to this exercise give clues to why people are interested in trees, and why they are willing to give their time to help the urban forest.

Methodology

A survey administered at the TreeKeepers orientation sessions gathered information about participation in gardening and related activities (e.g., community gardening, tree care, garden clubs), including how participants became involved in those activities; what the volunteers liked and disliked about trees (asked in both open- and closed- ended questions); why they signed up for the program, and what they anticipated doing with the information they would learn; what environmental organizations they belonged to; what their favorite outdoor activities were and why they liked those activities; and basic demographics, including where they grew up and how long they had lived in their current home. Responses from the first two classes resulted in a total of 99 usable surveys (a 77% response rate). A post-class survey was given at the final session; it was split into two sections. One part asked for feedback on the TreeKeepers course; the other was paired with the pre-class survey to look for changes in values about trees and plans for volunteer work. In addition, 10 participants from the first group were interviewed in depth. These interviews took place in the participant's neighborhood where they were able to present first hand their projects and plans. The author also participated in all classes during the first course--learning with the group about tree care in the city.

The Ranking Exercise

The values and annoyances ranking exercise was a variation of a research tool first developed by Robert Sommer at the University of California-Davis (Sommer and Sommer, 1989; Sommer et al., 1990) and modified by Herbert Schroeder of the North Central Forest Experiment Station and Stephen Ruffolo, Municipal Forester of Downers Grove, Illinois (Schroeder & Ruffolo, this volume). The exercise consisted of a list of values ranging from the more utilitarian to the aesthetic or deeply emotional, and a list of annoyances covering a wide range of issues from safety, to litter, to clogged sewers (see Tables 1 and 2). Respondents were asked to select five items from each list to complete the sentences *"I value urban trees because they...."* and *"I think some urban trees are annoying or create problems because they..."* They were then asked to rank in importance each set of their choices (e.g., "1" for the most important, through "5" for the fifth most important). Respondents were allowed to add their own items to the lists before ranking.

Table 1. Value scores, summed across respondents.

Value	Scores (n=99) unweighted	weighted
Brings nature closer	54	197
Pleasing to eye	53	164
Good for the environment	44	162
Provides shade	47	137
Provides spiritual values	35	136
Wildlife habitat	37	113
There for future generations	27	70
Increase sense of community	22	67
Indicate changing seasons	23	52
Cools home in summer	17	47
Enhances look of yard	14	36
Fall color	15	32
Blooms	15	32
Screens views	12	32
Increases privacy	14	28
Slows wind	9	24
I planted it/nurtured it	9	23
Reduces noise	8	22
Increases sense of family	9	21
New spring leaves	6	9
Calms people down*	2	9
Provides food for people	3	7
Increases property value	2	7
Balance of nature*	1	5
Here at settlement times*	1	2

* added by respondents

Table 2. Annoyance scores summed across respondents.

Annoyances	Scores (n=99) unweighted	weighted
Clog sewers	31	123
Drip sap	34	117
Drop sticks, nuts or pods	22	79
Causes allergies	21	74
There are no annoyances*	14	69
Damage the sidewalks	22	66
Get tree diseases	21	61
Roots are too close to the surface	17	58
Attract annoying insects	19	52
Blocks the sun so plants won't grow	17	49
Reduce safety by limiting visibility	15	47
Drop leaves in the fall	13	40
Drop branches/limbs	15	40
Make the street or yard dark	9	30
Suckers growing from base	8	24
Block views	10	24
Have to pay to remove waste	7	19
Smells bad	4	14
Low hanging branches*	3	14
Attracts wildlife	3	9
Drop leaves all summer	3	8
Drop flower parts	1	4
Lack of care*	2	3

* added by respondents

The responses were analyzed in two ways. First, the values and annoyances were coded "1" or "0" depending on whether a respondent chose or did not choose each value or annoyance as one of their top five. This was an unweighted score. Second, a weighted score was given to each value and annoyance on the basis of its ranking by a person, with five points given to items ranked as most important, four points if it was the second most important, and so forth.

Results

Tables 1 and 2 summarize the unweighted and weighted scores for the values and annoyances from the pre-class survey, in order of the total weighted scores. "Brings nature closer," "pleasing to the eye," "good for the environment," "provides shade," and "provides spiritual values" were the top five values. "Clog sewers with their roots," "drip sap," "drop sticks, nuts or pods," "cause allergies," and "there are no annoyances" were the top five annoyances. Unlike the other responses, "there are no annoyances" was not in the given list and had to be written in by the respondent.

Several other values and annoyances were added to the list by respondents. The added values were: "balance with nature," "calms people down," and "were here at pre-settlement times." The added annoyances were: "lack of care," and "low hanging branches," and, "there are no annoyances."

When ranking the values, respondents often continued ranking past the top five values--it was hard to limit the choice to only five good things about trees. Annoyances were another matter. Almost half of the respondents selected fewer than five annoyances in the pre-class survey, and 14 percent wrote in "none."

The values list drew a few comments like "this is a difficult choice!" or "of course, all of these are important." The annoyance list drew more comments. Typical statements included:

> They [trees] don't annoy me. It's all part of nature. Well, willows are not the greatest.
>
> I don't find trees annoying and can deal with any problems they might cause.
>
> Do I have to [rank annoyances]? I don't think of trees as causing me annoyance.
>
> I'm sorry, this is ridiculous. I disagree with this list completely!

People bother trees, trees don't bother people.

Yet the TreeKeepers were not unaware of the possible problems with urban trees. Their answers to the open-ended question "What do you like *least* about the trees in your community?" showed them to be very knowledgeable about potential drawbacks. Their answers had an interesting twist, however. While acknowledging that trees may clog sewers, block traffic signals, damage sidewalks, and cause other commonly identified problems, they saw the main culprit as human beings. If humans cared for urban trees better, thought more clearly about where and what to plant, pruned carefully, and planned in other ways for trees, many of these problems would not occur.

More evidence of this deep level of caring for trees came from TreeKeepers' answers to the pre-class survey question "Why did you sign up for the TreeKeepers program?" Representative answers included:

> I feel that our trees are a valuable endangered resource, particularly in urban areas, and I would like to do what I can to help prevent their extermination.
>
> [I am] interested in gardening with a special love for trees.
>
> Too may trees are dying from neglect. I wanna help.
>
> I think that the presence of trees--especially mature ones--enhances the quality of life in any neighborhood. Since I have always appreciated them (climbed them, sat under them, drawn them, watched their inhabitants) I think it's great to have an opportunity to learn more about how to care for them and maintain that presence.

Patterns in the Value/Annoyance Ratings

Cross tabulation and a principal components factor analysis of the unweighted value and annoyance scores yielded several clear patterns. There were distinct groups of values and annoyances that were ranked similarly; likewise several patterns emerged when the value and annoyance scores were related to the demographic variables.

Cross tabulations. Cross tabulations of the values and annoyances with demographics revealed two striking patterns. First, renters were more likely than home owners to select "brings nature closer" as an important value (p <.001). One comment from a TreeKeeper particularly articulated this important role the urban forest plays for renters: "...I live on the 3rd floor and I love how high and close to my window the branches can reach, surrounding my apartment with greenery."

Second, there was a strong association between age of the respondent and "provides spiritual values" (p <.001), with younger people more likely to choose this value. In fact, the number who indicated spiritual benefits as a value steadily declined through the age groups. No respondents 50 years or older selected it as one of their top five values.

Factor analysis. Factor analysis was used to bring the values, annoyances and demographics together into a single analysis. It was hoped the factor analysis would reveal a general pattern underlying the findings from the cross tabulation analysis.

From this analysis, one clear factor emerged, with an eigenvalue of 3.92. This factor can be thought of as "spiritual vs. pragmatic values." Table 3 lists the variables that had loadings with an absolute value greater than .4. Values and annoyances that loaded negatively were "provides spiritual values," "brings nature closer," and "there are no annoyances." Positive loadings were found for "enhance the look of my yard," "surface roots," "clog sewers," and "damage sidewalks." When demographics were included, age of the respondent and home ownership loaded strongly onto the factor--this was consistent with the cross tabulations. Younger people and renters tended to choose the spiritual and nature values and to say there were no annoyances. Home owners and older people were more likely to focus on pragmatic concerns.

Table 3. Factor loadings of values, annoyances and demographics.

Spiritual		Pragmatic	
spiritual benefits	-.636	damage sidewalks	.415
bring nature closer	-.437	clog sewers	.421
no annoyances	-.464	surface roots	.429
renter	-.526	look of yard	.498
		older adult	.610

Discussion

Often, urban forestry programs are defended in terms of trees' benefits of cooling, cleaning the air, increasing property values, and other pragmatic benefits. However, for many people (TreeKeepers and others), these do not seem to be the most important benefits of the urban forests. Other research has shown the deep values people have for the urban forest (Dwyer et al., 1991), and the TreeKeeper findings support the importance of these deep values. The most important values to TreeKeepers are primarily aesthetic, emotional, or spiritual. Not only are these the top values, but the more utilitarian benefits (e.g., increased property value, reduced noise) are generally at the bottom of the list. While the TreeKeepers group is certainly self-selected and can not be considered representative of the society at large, the depth of their passion should not be ignored. Similar studies of the population at large (Schroeder & Ruffolo, this volume) have also found greater importance placed on the emotional, aesthetic, and spiritual values than managers generally acknowledge.

Schroeder and Ruffolo's (this volume) recent study of residents in Downers Grove, Illinois asked residents about trees in their neighborhood. This study produced similar, though not identical, results to the TreeKeepers ranking. Although the more utilitarian benefits did rank higher with the Downers Grove group, they by no means overshadowed the values most important to the TreeKeepers (one possible explanation for the higher rankings of utilitarian values was the likely higher percentage of homeowners in the Downers Grove sample). Both groups valued the less tangible benefits of "pleasing to the eye," "increase sense of community," and "bringing nature closer."

TreeKeepers' passion for trees is clear from their responses on the values list. It is, however, equally clear from their answers to the annoyance list. The fact that half chose not to complete the task is itself indicative of their feelings. These people instead wrote in "there are no annoyances" often enough to put it in the top five responses under "annoyances," or they acknowledge only one or two annoyances from trees instead of the five requested. The comments like "people bother trees, trees don't bother people," further show their passion.

Age and home ownership were the demographic variables associated with different values and annoyances. Gender, education level, ethnicity, location of childhood home (city, suburb, rural), income, etc. did not show any meaningful relationship with the values and annoyances. Compared to other respondent's, older home owners were less likely to rank the spiritual values group highly, but these deeper values were, nonetheless, some of the most important overall.

Why was age so strongly associated with "provides spiritual values"? Perhaps there is a generational difference in the understanding of the word "spiritual"; younger people and baby boomers may look at "spiritual" in a broad way while older people see it as only "religion." Another possibility was offered by one of the TreeKeepers interviewed. She did not select "spiritual values" in her pre-class survey, yet indicated in the interview that this was very important to her and that "brings nature closer" meant much the same thing. When asked why she did not select spiritual values when it was so important to her, she replied "I didn't know these people; I wasn't about to bare my soul." This necessary trust is an important element, and again points to a need to broaden our public discussion of the benefits of the urban forest. If people are nervous about presenting their views, we as managers do not necessarily know the needs of the citizens we serve. If we don't know these needs, we can't plan for them. Creating an environment where *all* of the important aspects of trees are valued may help us plan more fully for our urban forests.

The values in the lists may be important for many reasons, or mean different things to different respondents. The TreeKeeper who kept her feelings about the spiritual benefits of trees to herself, while feeling that "brings nature closer" spoke to many of the same aspects of trees, is a case in point. Shade is another example--it seems to be a catch-all, valued for a range of reasons from energy efficiency to refuge. Similarly, "provide environmental benefits" appears pragmatic, but comments in the survey indicate a broader meaning. One participant wrote "planting and maintaining trees is a powerful way to heal the earth." This participant and others felt tree planting provided them control and a way to have a positive impact on the environment--a way to "act locally while thinking globally." This is a powerful motivator, and more complex than can be explained by a purely pragmatic view of the environmental benefits trees offer.

A clearer understanding of the meanings associated with these values is an important next step to a full comprehension of the range of benefits (and annoyances) of urban trees. The in-depth interviews from this study were a beginning in this process. A useful next step would be focus group sessions to explore these multiple meanings.

A weakness in the survey tool was the lack of the rating scale used in Sommer's original version. In that version, respondents were asked to rate each value and annoyance on a scale from major benefit/annoyance to no benefit/annoyance. Due to the overall length of the TreeKeepers survey, this scale was removed and the one through five ranking added. The ranking exercise was very illuminating, but reinstating Sommer's rating scale would strengthen analysis. The top-five ranking system could also be retained because it might help deal with people who select everything as a major (or minor) benefit/annoyance.

So, TreeKeepers care deeply for the trees in their community. But what impact might this passion for trees have on managing our urban forests? First, this passion is one of the motivations for volunteering--the TreeKeeper who spoke of saving trees from "extermination" perhaps put it strongly, but the desire to help the urban forest because trees are an "important presence" was a common feeling. This depth of caring also supports the concept of the use of volunteers, whether to support a funding-strapped forestry program or one that is financially sound. This enthusiasm and commitment to trees are valuable resources that can and should be tapped.

Second, we need to learn to take seriously the benefits that TreeKeepers and others value most about the urban forest. They are often difficult values to talk about, certainly difficult to quantify. As such, it is easier to dismiss them, or write them off with "well, sure, people love trees; we all do." But the level of caring for trees exhibited by TreeKeepers signifies the pivotal role of trees in creating *community* (Ames, 1980; Lewis, 1978, 1986; Carney, 1989). Interaction with trees helps to provide a sense of place in the cycle of nature and life,

and helps to form bonds between people and place. This is crucial and potent, and should not be written off as simply "liking trees."

Conclusions

TreeKeepers identified deep values of trees as most important to them, and did not weigh heavily the possible annoyances of urban trees. What does the predominance of the deeper values mean for urban forestry management? As managers, we do not readily acknowledge these deep values. Rather, we talk about the benefits of the urban forest in terms of energy savings, air purification, and property values. Bringing these deep values into the discussion will allow us to better understand and plan for the needs and wishes of our publics.

It is this caring that motivates volunteers to withstand freezing January winds to mulch park trees. This passion is a powerful motivator, and can be tapped in our efforts to preserve the urban forest. Volunteering for urban forestry projects also produces tangible results towards helping the environment--"Planting and maintaining trees is a powerful way to heal the earth." Volunteer programs, too, are a powerful way to strengthen our forestry programs--and our communities.

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THE URBAN RESOURCES INITIATIVE:

COMMUNITY BENEFITS FROM FORESTRY

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The aim of social forestry is to work with people in a community to develop tree-based systems that meet their needs and interests. Traditionally, social foresters have worked in developing nations to design projects that increase access to firewood and fodder, prevent soil erosion, improve soils, and provide other benefits associated with trees. However, social forestry principles have seldom been applied in the United States or in an urban setting. Today's cities are plagued with problems including housing decay, falling property values and a declining tax base, rising crime rates, illegal dumping of solid and toxic waste, and other environmental problems such as toxin discharges and air and water pollution. Reclaiming vacant lots and other unused land in urban areas and improving urban natural resource management and planning are steps in addressing these problems.

In Baltimore, New Haven, and Detroit, the Urban Resources Initiative project is working in partnership with community residents to develop projects that reclaim vacant lands while addressing local economic and environmental concerns. These projects also improve mutual understanding of the community ecosystem. Incorporating local knowledge into regional planning and interagency networking efforts enhances natural resource planning in the target cities and increases agency effectiveness in addressing cultural and social concerns.

Traditional Forestry and Urban Forestry

Many people believe that forestry primarily involves the growing and harvesting of trees for commercial wood utilization. This relatively narrow definition has been perpetuated by many foresters. Yet forestry includes a much broader set of activities, and "the forestry community--including practicing foresters, forestry educators, and researchers-- must expand its concern to understand and articulate the multiple functions of forests" (Lee, Field & Burch, 1990). A broader view of the functions, values, and challenges of forestry are most apparent in urban and metropolitan areas:

> The urban forester seldom knows which problem is going to hit next and works in an environment that is full of them. ... This means that urban forestry ought to be one of the best fields for foresters who are, in the long run, esteemed most for the problems they solve and not for how well the trees grow. Physicians do not necessarily thrive in healthy communities, and it is worth noting that the urban forest is full of patients needing cures. The urban forest has opportunities as well as maddening problems. Foresters should not be put off by those who know only what cannot be done (Smith, 1984, p. 101).

Many people confuse urban forestry with aboriculture (the planting and maintenance of individual trees). But as Smith (1984) indicates, forestry in urban areas provides foresters with a number of challenges that extend beyond either the production of pulpwood and sawlogs or the maintenance and care of trees. Urban forestry activities can occur at several scales and include a variety of goods, benefits, and services such as local tree nurseries, conservation areas, and agroforestry projects that reclaim vacant lots while addressing a range of community needs (Table 1).

Social Forestry

Social forestry projects are small scale activities that address local needs and provide benefits to local residents. The concept of *society* in social forestry signifies a broader agenda than growing trees. The goals of social forestry also include group formation and collective action, institutional development, and the establishment of sustainable social structures and value systems to mobilize and organize individuals (Cernea, 1991). An underlying assumption of the social forestry approach is that forestry can be more effective in meeting existing needs if communities are integrally involved in the planning, decision making, and implementation of forest initiatives. Therefore, social forestry projects are highly participatory. The increased sense of ownership, personal and group investment, and sense of project relevance through community-based participation leads to an improved success rate in contrast to projects that are directed with a top-down approach. Both international and local development practitioners are beginning to recognize that economic and social benefits increase and development is more sustainable when the needs and interests of local people are given priority and when residents participate actively in all phases of the project.

This approach to forestry and rural development has been evolving over the past 15 years. However, social forestry provides an unique conceptual framework for foresters to adapt to the challenges of urban areas. Existing studies suggest that trees in community sponsored tree plantings have

Table 1. Goods, benefits and services from trees, forests and tree planting activities in urban settings.

Goods	Benefits	Services
Wood Products	Social	Educational
-fruits	-improved community organization	-technical support and training
-nuts	-empowerment for collective action	-tree planting and maintenance skills
-craft materials	-social bonding within and across generations, cultures, etc.	-expansion of traditional educational skills (improvements in reading, writing, math, science, and history skills)
-poles	-improved community identity and pride	-job training and career development
-timber	-immigration vs. emigration from urban areas	Organizational
-Christmas trees	-safety (reduced crime)	-leadership skills
-firewood	-improved continuity and neighborhood stability	-community organization
Materials for community projects	Environmental	-community cohesion
-tree seedlings	-improved air quality	-collective action
-saplings and small diameter trees	-reduced air temperatures	
-mulch	-improved water quality	
-woodchips	-neighborhood beautification	
Infrastructure	-increased wildlife habitat	
-community land		
-irrigation systems		
-fencing		

better survival rates than trees planted without community participation. This may be due, in part, to increased feelings of ownership and responsibility for public trees by nearby residents (Sklar and Ames, 1985). In some cases, tree planting activities can be important first steps in neighborhood improvement campaigns in that they can quickly improve the appearance of the neighborhood and provide a simple avenue for collective action (Arnstein, 1969). These studies are similar to better documented participatory rural development projects in other countries (Carroll and Baitenmann, 1987; Fals Borda, 1987). Applying social forestry concepts to American urban problems represents an important transfer of technology from non-industrialized countries such as India, Nepal, and Costa Rica to the inner cities of the United States.

Urban Challenges for Social Forestry

Urbanization, second only to world population growth, is the major demographic trend of this century. Between 1950 and 1990 the number of people living in urban areas worldwide increased from 600 million to more than 2.7 billion. This trend is well evidenced in the United States, and today nearly 79 percent of all Americans live in urban areas.

An important characteristic of the U.S. rural-to-urban population shift is the pattern of metropolitan growth. Between 1950-1990 the number of people living in suburbs increased from 35 million to 120 million, while the geographic extent of urban/suburban regions (metropolitan areas) expanded to an area 10 to 20 times larger than the sum of all industrial cities before World War II (Zero Population Growth, 1991). The consequences of urban sprawl can be readily seen in Baltimore, Maryland, where in a 12 year period from the late 1970s through the '80s nearly 180,000 acres were cleared in the five-county region for houses, roads, and shopping malls. These changes produced the most significant deforestation in the northeastern United States during this time. Forest cover over the whole of Maryland has been reduced from near 100 percent (when the colonists first arrived) to about 40 percent today (Horton, 1987).

But while metropolitan areas have grown in area and population, many inner cities of these areas have been abandoned. In Baltimore the population of the city proper has declined to its 1920s level (736,014) and approximately 6,000 lots have been abandoned.

Similarly, Detroit experienced a decline in population of 600,000 people between 1965 and 1990. In the decade between 1980 and 1990 alone, over 45,000 families moved out of Detroit. This led to a large number of vacant homes in the city; the problem became so severe that in 1989 the city instituted a widespread demolition project to remove "dangerous and abandoned" buildings. Consequently, Detroit lost 60,385 housing units resulting in 65,000 vacant lots.

Although the program was successful in reducing the number of derelict buildings, restricted funding has prevented Detroit's Department of Public Works from adequately maintaining the vacant lots. Many of the neglected lots have become sites for illegal and toxic waste dumping. Others have simply become overgrown with weeds or have become breeding grounds for rats and insects. Despite these serious problems, with the high level of youth gang activity in city parks these unmaintained lots are often seen by parents as safer substitutes for their small children to play.

The regional links between depopulation and deforestation of surrounding metropolitan areas nationwide are illustrated by trends in Baltimore and Detroit. However, the search for

solutions to these problems has created an unusual opportunity for improving social, economic, and environmental conditions through the implementation of social forestry projects. In order to be effective, however, these projects must use approaches that integrate social issues and cultural diversity as well as address the economic and environmental problems that are unique to urban settings.

Environmental Values and Priorities

Traditionally it has been urban populations who have provided the political pressure to shape environmental policy in the United States. This can be seen clearly in conservation movements over the past 200 years through the works of Cooper, Emerson, Thoreau, and Marsh, as well as the Hudson River Valley painters such as Cole, Church, and Bierstadt in the mid 1800s. The U.S. Forest Service (1905) and the National Park Service (1916) developed from an urban mandate, while Carson's *Silent Spring* (1962), The Wilderness Act (1964), the Endangered Species Act (1973), the National Environmental Policy Act (1970), and the Environmental Protection Agency (1970) were based primarily on an urban constituency (Nash, 1973).

However, the urban consitituency represented by mainstream environmentalists more often than not are white, middle class professionals (Taylor, 1990). A recent survey of 600 members of one of the largest national mainstream environmental organizations indicated that, in Michigan, the mean income of members was well above the national average and that less than 1 percent of the membership were people of color (Vachta, 1993).

Thus, the issues voiced by these organizations may not address the needs and interests of urban populations who are increasingly diverse socially, culturally, and demographically. A survey conducted by the Environmental Leadership Project of the University of Maryland asked representatives of the Maryland environmental community and a general sample of the Maryland population to identify the most significant environmental issues facing the state and the country (Fraites, 1991). Table 2 summarizes their responses. Note that in contrast to the mainstream environmental community, the responses from the citizen's poll identified local issues and focused on toxins and other immediate health hazards.

These data imply the priorities of the mainstream environmental community may not be in synch with those of the larger urban population. With respect to addressing constituent concerns in the development of environmental policy, Adair and Howell (1990) suggest that:

> We need to ask ourselves why the defense of Big Mountain, the boycott of table grapes, the neighborhood organizing against toxins and the efforts of mothers to stop gang violence and killings of children are not considered ecological struggles. Why don't those struggles identify as environmental issues? Why don't "environmentalists" consider these struggles worth their concentrated efforts? (p. 43)

Table 2. Most important environmental issues cited by Maryland environmentalists and residents, by percent.

Issues	Env. Comm. (N=82)	Gen. Pop. (N=250)
Growth Issues		
Growth Management	54	--
Control Growth	--	11
Waste Issues		
Waste Reduction	25	--
Cleanup Toxic Waste	--	14
Air Issues		
Air Pollution	20	--
Air Quality	--	14
Land Issues		
Forest Preservation	17	--
Land Preservation	15	--
Open Space Preservation	--	7
Agricultural Preservation	--	6
Water Issues		
Bay Restoration	43	--
Water Quality	--	43
-pollution by factories		31
-polluted drinking H_2O		20
-don't know/no problem		17
-urban/rural runoff		16
-pollution from sewage		16
Wetlands habitat	16	--
Other	--	5

Although people of color have not been involved in the mainstream national environmental movement, it would be a mistake to conclude, however, that the black community is unconcerned about or inactive in environmental issues. Low income communities and communities of color are disproportionately affected by environmental hazards. These groups are directly and immediately concerned with hazardous and solid waste dumping, lead poisoning, air and water quality, and environmental hazards in the workplace, and are overwhelmingly affected by prejudicial siting of hazardous waste facilities such as incinerators and toxic waste storage facilities (Page, 1991; Bullard, 1990). Working outside the mainstream environmental movement, the majority of the black community has focused its efforts on the environmental justice movement which operates on a grassroots level and incorporates more of a civil rights agenda than an environmental one (Page, 1991).

In order for forestry to gain a community mandate and to be relevant to urban areas, social forestry projects need to recognize and incorporate a more diverse set of issues, groups, and forms of participation than either the mainstream

environmental movement or the field of forestry has in the past. Forestry professionals must incorporate the ideals of the environmental equity movement by adopting a proactive, community-based approach similar to recent innovations among human service professions such as police (e.g., community policing) and health care services (e.g., mobile outreach and community nutrition programs). In particular, community forestry projects need to develop strategies for working with local communities to identify local issues and appropriate solutions through community development and collective action. Rather than focusing on "technical" solutions such as improved tree species or pruning prescriptions, foresters in urban settings need to promote community involvement programs and strategies for creating multiple-use, tree-based systems that will contribute to building healthy forests and strong communities.

The Urban Resources Initiative

The Urban Resources Initiative (URI) is a cooperative effort between Yale University's School of Forestry and Environmental Studies and Michigan State University's Department of Forestry. The program seeks to apply social forestry principles to urban settings in the United States. URI projects involve cooperative planning, problem solving and educational efforts with community residents, city and regional officials, and URI staff. Projects include research, professional training, educational and extension programs, and demonstration projects. Yale and Michigan State Universities have made long term commitments to the cities and the communities with whom they work, and these commitments facilitate a participatory research program and long-term projects.

The Urban Resources Initiative adapts and combines social forestry principles with an ecosystem approach to provide social, environmental, and economic benefits identified through a multi-level assessment of needs and conditions in the impacted communities. This occurs through five program levels including regional analysis, educational systems, organizational networks, organizational change, and community development.

Regional Analysis

URI has begun a computer mapping project with the City of Baltimore, the Maryland Department of the Environment, and the U.S. Geologic Survey that integrates a Geographic Information System (GIS) with a watershed computer modeling program (HSPF: Hydrologic Simulation Program FORTRAN) in order to estimate non-point source pollution from urban areas and to model strategies for reducing water pollution into the Chesapeake Bay.

The URI/Baltimore database also includes social information from the U.S. Census and Baltimore's Department of Housing and Community Development that enables researchers to identify key variables (e.g., patterns of home ownership, duration of residence, education, income, abandoned lots, land use) that may affect community motivation and participation in social forestry projects. The information is summarized in map form and is used with key informants and group surveys in order to gain a more holistic understanding of community needs and resources. Similar information from the U.S. Census Bureau and Michigan Population Survey has been compiled for the Detroit metropolitan area.

In Detroit, regional planning beyond demographic assessment has included participation from the Office of the Mayor, the Detroit Office of Public Works, Office of Parks and Recreation, Department of Forestry, Project Pride, Wayne County Cooperative Extension and the Cooperative Extension's 4-H Urban Gardening Project, The Greening of Detroit, and other city- and county- wide agencies. Representatives of these offices have provided vital information regarding ongoing projects, city regulations, community organizations, and other opportunities and constraints for natural resource projects in the city. They have also aided URI staff in selecting appropriate neighborhoods for initial target areas for social forestry projects.

Educational Systems

URI/Baltimore's training programs work within schools and communities. For the past two years, the community forestry program has worked with Project RAISE (Raising Ambitions Instills Self-Esteem). The Project RAISE program works with students to synthesize individual skills, group building, work experiences, job skills, and conservation education in a way that enables the students to act as advocates and mentors for themselves, their community, and their environment (Chalkley, 1992).

A pilot project in New Haven, "Learning Ecology through Natural Resource Management" (Bennett-Gates & Milton, 1992), began in 1991 in an elementary school, a middle school, and a high school in the public school system. This program combines both indoor and outdoor classroom activities to engage the students in both their education and their environment.

Preliminary results from the elementary school program indicate that most of the students became more interested in science and demonstrated an improved understanding of information in their science class. Students also became more willing to voluntarily repeat classroom activities outside the classroom on their own such as identifying trees, using the nature trail that the class constructed, or picking up litter voluntarily (Bennett-Gates & Milton, 1992).

Organizational Networks

Similar to community forestry practices in non-industrialized nations, the URI program plays an important role as a facilitator, connecting a variety of individuals and institutions who have common interests but little coordination in their efforts. In order to help forge these linkages, URI works to build networks between formal social structures (within and between local, state, and federal public agencies) and to integrate formal structures with informal social structures (neighborhoods, non-profits, civic organizations, and community associations.) As these networks are knit

together, projects become more sustainable and forestry activities become more linked to each participant's needs. This enables participants to act upon the connections between themselves, their communities, and their environment.

Over the past year, URI/Baltimore has worked with Baltimore's Forestry Division to establish a community forestry association. The 31 community groups comprising the association meet four times a year to exchange ideas and develop new projects in partnership with one another and the Forestry Division. In addition, URI/Baltimore has developed its own advisory board through the Parks and People Foundation (a local, not-for-profit foundation), which includes members from the private sector, civic organizations, and public agencies, in order to provide guidance to URI/Baltimore staff and to coordinate URI/Baltimore projects with other programs in the city.

The Baltimore Department of Recreation and Parks has also begun to work with local and national non-profit organizations as well. Recently, the Mayor of Baltimore announced a city task force for the development of a greenway along the Gwynns Falls stream valley. In this case, URI staff have begun to work with the Trust for Public Land and communities along the greenway to develop recreational and conservation areas. Some of these activities are linked to community nurseries and street tree plantings. However, the primary focus continues to be providing local residents with recreational opportunities in natural areas while working to reduce the amount of pollution that flows into the Chesapeake Bay.

Detroit agencies and other organizations have also begun to develop cooperative networks aimed at increasing community involvement in the development of natural resource projects. For example, a Cooperative Extension urban gardening fair included the development and implementation of a demonstration garden that simulated a URI project at the Michigan State Fairgrounds. This agroforestry project was developed and implemented in cooperation between URI/MSU, Wayne County Cooperative Extension Service, the 4-H Urban Gardening Program, and Greening of Detroit.

Organizational Change

In many forestry projects, governmental and non-governmental agencies have tried to change or reform communities to conform to the goals of the planning organization. This pattern of community development has begun to change, and in many cases social forestry projects have recognized the importance of working to change the goals and methods of the governmental agencies to be more responsive to the needs and interests of the communities themselves (Whyte, 1991).

In Baltimore, URI staff have begun this process with the city's Departments of Recreation and Parks, Public Works, and Planning to improve the effectiveness, efficiency, and responsiveness of city government to local communities. Last year, URI staff worked with Recreation and Parks staff to write a *Strategic Plan for Action* (Hite and Porter, 1991) which outlines a community based approach for the Department. Adoption and implementation of this plan enabled the Department to identify problems such as an unclear mission, poor communication within the Department and with communities, limited staff training, and declining budgets. The Department of Recreation and Parks is developing and implementing training programs to address these issues. URI staff are contributing to this effort by developing training manuals and field guides for Parks staff. As Park staff work more closely with community groups, they have begun to realize that communities can be part of the solution.

Community Development

URI staff work in partnership with community residents to determine the type of project most appropriate for each individual community. This is necessary, since a number of diverse communities exist within an urban area, including geographically-based communities and affiliation-based communities (e.g., Save Our Streams, Maryland Ornithological Society, Trust for Public Land). Furthermore, none of these communities are homogenous and many may contain discrete interest groups.

Various types of social units exist within communities that may be predisposed to participate in forestry activities. These include:

- ***Natural (existing) social units*** such as individual, family, household, or tightly-knit ethnic or kinship groups or subgroups;
- ***Groups organized specifically to plant, protect, and cultivate trees*** (such as Global ReLeaf and Greening of Detroit) or other environmentally oriented organizations such as local and national land trusts (Trust for Public Land), community gardens, and stream restoration groups (Save Our Streams);
- ***Groups established for purposes other than forestry***, but which are able to undertake forestry-related activities as well (Cernea, 1991). These may include religious organizations, block clubs, neighborhood associations, business associations, and parent/teacher associations.

In Baltimore, URI staff work with community groups from each type of social organization. For instance, the development of the Community Forestry Tree Steward Program has increased community interaction with the natural environment while allowing more active tree planting and maintenance programs than city agencies could otherwise provide. Resources such as the Community Forestry Stewardship Handbook give residents information that enables them to independently care for trees in their communities. URI staff also work in the Upton neighborhood with the Upton Youth Task Force. The Upton project focuses on reclaiming abandoned lots and cleaning up trash in the area. Activities include a community vegetable garden and tree nursery. In the fall, children collect produce from the garden, prepare food, and host elderly residents for

the annual Harvest Celebration banquet. In addition, trees from the community nursery are planted throughout the community during the fall season.

Church organizations play an important role in many social forestry initiatives in Baltimore. For example, St. Benedict's Church in the Mill Hill neighborhood learned about URI through a community group that belonged to the community forestry association. Mill Hill was preparing a grant proposal to Housing and Urban Development (HUD) and they approached URI for support in developing a community forestry program to be part of that proposal. Representatives from the community established goals to plant street trees, reclaim abandoned lots with tree nurseries, reduce the amount of trash in the community, and others. Based upon these goals, URI staff and the Forestry Division have begun to work with the community to develop a community reforestation and management plan.

A primary focus of the Detroit URI project is to build community participation in social forestry projects. Working with Project Pride, URI/MSU has selected the McKenzie neighborhood near the center of Detroit as the focus of its initial efforts. URI/MSU has worked with several neighborhood associations in the area to identify block clubs and organizations interested in participating in social forestry projects. These projects reclaim vacant lots and improve the urban environment while meeting other community-identified needs.

The first step in a URI/MSU project is a needs assessment involving residents from each block that is considering participating in URI. The assessments result in a highly individualized profile of the issues and concerns of each block. If residents and URI staff then agree that a social forestry project is an appropriate solution to community-identified needs, a partnership is formed to develop a project for the site. Cooperative efforts between residents and URI/MSU are undertaken to design the project, select appropriate species and procure plant materials, and implement the social forestry project. Projects currently under development include agroforestry systems, community and youth gardens, and community parks that incorporate "working trees and shrubs" to improve soil fertility, attract birds and butterflies, and provide fruit and other forest products, as well as improve aesthetic and environmental conditions.

In keeping with the project's emphasis on community-driven processes, the evaluation of these projects will go beyond the traditional goals of satisfactory implementation and tree survival rates to include successful achievement of community-defined goals. These may include satisfactory production of products such as fruits, vegetables, and timber, but also utilization of the site by neighborhood children and families, and increased community participation and cohesion.

Conclusion

The Urban Resources Initiative returns forestry to its traditional role as an interdisciplinary approach to providing people with the goods, benefits, and services available from forest resources. In order to develop a truly ecological approach, URI has sought to meet a wide range of community-identified needs and interests to improve the participatory planning strategies of impacted areas. This approach requires the direct and continued participation of the local human populations that are part of the urban ecosystem.

In order to achieve these goals, the Urban Resources Initiative has worked actively within the cities of Baltimore, New Haven, and Detroit to bring the principles of social forestry to urban areas of the United States. Addressing criticism against the "social irrelevance" of the mainstream environmental movement as well as current urban resource planning agencies, URI develops programs based on the needs of individual communities with the full participation of residents and representatives from agencies responsible for developing and maintaining natural resource systems. Moving beyond current urban forestry practices, URI works to improve interagency networking to increase sensitivity to community issues. Further, individualized projects are developed within neighborhoods to meet specific goals ranging from basic sustenance and economic benefits to increased long-term community cohesion and collective action. Recognition of these goals within our cities and the potential for forestry to help meet these goals is vital to our field's continued contribution to sustaining the quality of both individual communities and society.

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MANAGING VISUAL QUALITY IN BIG, DIVERSE URBAN PARKS: A CASE STUDY OF CHICAGO'S LINCOLN PARK

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Visual quality assessment methods have been developed for many rural and wildland areas, but the makeup of urban open space limits the transferability of these methods to parks, forests, greenways, and other urban land resources. This paper presents a framework for visual quality assessment suited particularly to urban open space needs. Chicago's 1,200 Lincoln Park illustrates a test application of the framework. Results yield a variety of written, statistical, and graphic information, and demonstrate how elements of the framework can be used selectively to answer particular management questions. As the framework was applied in Lincoln Park, public participation formed an essential ingredient, and the paper shows how visual quality research can be used to involve diverse user and interest groups in park master planning.

Over the last two decades we have seen much progress in the development of techniques for assessing the visual quality of large scale rural and wildland open space (e.g., Zube et al., 1982; Chenoweth & Gobster, 1986). These techniques, based on expert and public preference methods, help identify major landscape units such as character types (USDA Forest Service, 1974) and content categories (S. Kaplan, 1979); evaluate the visual importance of positive and negative attributes through inventories (e.g., USDI Bureau of Land Management, 1980) and multivariate statistical models (e.g. Hull et al., 1987); and present results graphically through computer mapping (e.g., Gimblett et al., 1987) and video simulation (e.g. Chenoweth, 1991) so that visual resources and management alternatives can be better understood and included along with other resource considerations.

Although many of these techniques have been used to address visual quality problems in urban areas (e.g., Schroeder, 1988; Lien & Buhyoff, 1986), few studies have looked systematically at urban open space using frameworks commonly applied in rural and wildland areas. Problems in transferring such frameworks are many, and include:

- **Diverse visual character-** Urban open spaces include forested and open vegetative communities, natural and formal planting designs, diverse cultural artifacts, and many different types of adjacent land uses. Models or inventory methods developed for rural and wildland areas often assume the landcape is homogeneous in character (e.g., Daniel & Boster, 1976). Thus, such models and methods may not transfer well to the urban landscape.

- **Diverse perceptions and values-** Groups who have an aesthetic interest in urban open space may also be more diverse than in rural and wildland areas. In large central city parks, for example, frequent users can often include a large proportion of young children and older adults, many different recreational user groups, and an increasingly diverse clientele of racial and ethnic groups (More, 1985). Past studies have shown that these groups may have differing landscape preferences (e.g., Kaplan & Talbot, 1988). This brings to question how and for whom should the visual quality of urban open space be managed. Moreover, local interest groups often have high degrees of familiarity with and attachment to urban open space, making visual quality only one of several important dimensions of what these landscapes mean to people.

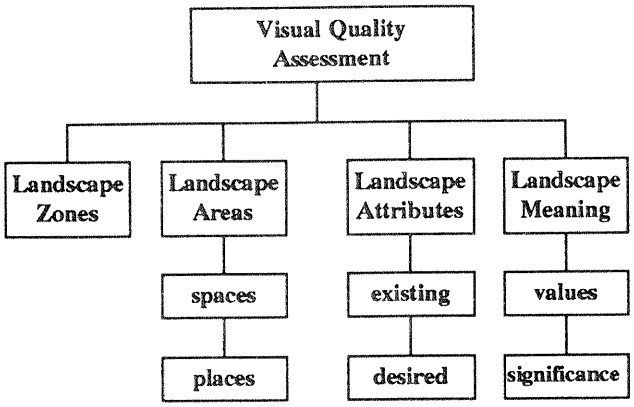
- **Complex ownership patterns -** Urban open spaces often exist in small parcels and are managed as discrete entities, often by many different agencies. This lessens the chances that visual quality will be studied in a comprehensive assessment, except for large land areas such as large parks and forest preserves. However, as greenways and other efforts that link urban open spaces become more common, methods to assess and manage the visual quality of open space networks will be increasingly needed. Furthermore, certain questions about visual quality might be pertinent to urban open space managers, regardless of parcel size. Graphic techniques including computer aided design (CAD) and geographic information systems (GIS) can be especially valuable in urban areas for recognizing landscape patterns and for identifying opportunities to enhance visual quality.

Many of the issues described above can be addressed with existing procedures and research methods. What is missing, however, is a framework that ties these informational needs together, focusing on urban open space. This paper attempts to outline such a framework, and illustrates its utility in a case study application to Lincoln Park, a large Chicago park.

A Framework for Assessing the Visual Quality of Urban Open Space

A framework for visual quality assessment of urban open space is outlined in Figure 1. The framework is "generic" in that visual quality can be assessed at many different levels. These levels range from a broad definition of visual character, to identification of salient landscape attributes, to exposition of the spectrum of values and significance the landscape holds for individuals and groups. As applied in this case study, information and judgments used to determine visual quality are solicited from user and interest groups, using public perception and preference methods. However, the methods by which information is supplied to various framework elements can be decided by the investigator, who may want to base part or all of the analysis on "expert" or professional judgment.

Figure 1. A framework for the visual quality assessment of urban open space.



Landscape Zones

At the broadest level of analysis, the landscape is divided into visually homogeneous landscape zones. These zones define primary visual landscape types within a study area. If delineated spatially, they might appear similar to a land use zoning map. Indeed, the basic idea behind such a classification system is that the visual characteristics or problems experienced within one zone may be fundamentally different from those of other zones, thus requiring different visual management strategies or policies.

Landscape zone classification is common to many wildland visual assessment methodologies. In expert assessments, the "character type" analysis of the USDA Forest Service's Visual Management System (1974) is a good example. Here, broad physiographic regions delineate a character type, and help specify the bounds for which judgments of visual variety are made. Other expert-based visual zoning classifications usually hinge on some combination of broad landform and land use characteristics (e.g., Litton & Tetlow, 1978).

Public perception methods have also been used to define landscape zones. Many of these methods attempt to analyze how people perceptually categorize or "make sense" of the landscape (S. Kaplan, 1979). Statistical methods like factor analysis, cluster analysis, and multidimensional scaling are often used for this purpose to group together landscape scenes that people find perceptually similar. A good example of such an application in a wildland setting is Palmer's work on the Appalachian Trail (1983). The Kaplans (e.g., S. Kaplan, 1979) and Herzog (e.g., 1989) have applied "content identifying methodologies" to a variety of settings, including urban areas.

Defining landscape zones would be most helpful if the landscape under study is heterogeneous. For example, a varied study area might be divided into developed, wooded, and water zones, recognizing that different visual management strategies might be required for each. For small, homogeneous parcels such a procedure may be unnecessary.

Landscape Areas

Landscape zones can help urban open space managers understand the basic visual characteristics of their land, but zones by themselves do not provide information on *how* that land is valued for scenic or other qualities. To find this, value judgments are needed that identify areas of high and low quality. To be most helpful, these landscape areas should be spatially referenced, either through a mapping procedure or other means (e.g., place names).

Visual quality mapping is one fairly common application for identifying areas of landscape value. Whether assessed by experts or through a public preference approach, some type of systematic on-site, remote (e.g., maps and aerial photos), or photographic sampling of the study area is required, where visual quality judgments are tied to spatial locations. Examples of expert mapping applications include the USDA Forest Service's (1974) "variety class" determination and Linton's (1968) inventory grid approach. For these expert approaches, an inventory rating system is usually used to derive visual quality values. This is usually not the case with public preference approaches, where visual quality values are mapped directly from people's subjective judgments. Examples of public preference applications include those by Daniel et al. (1977), Schroeder and Daniel (1980), and Wiberg-Carlson and Schroeder (1992).

Visual quality mapping can be a valuable tool for urban open space managers. Used alone, it can point out areas of scenic importance as well as areas thst need improvements. Used within a planning framework, this kind of analysis allows a "subjective" phenomenon like visual quality to be included along with other resources for a more balanced and comprehensive assessment.

In public preference assessments that include users and interest groups, visual quality may be only one of several important values that have spatial meaning. Another of these is place value. By using and experiencing open space, people form attachments to the landscape, and "spaces" are transformed to "places" that can be deeply valued (Evernden, 1981). Areas valued for their place qualities may not always conform to spaces that are considered scenically valuable. This might be especially true for urban open space, where many people tend to be frequent, repeat visitors, and thus likely to establish a "relationship" with the landscape. Thus, while identifying areas of place value is not common in wildland assessments, it may be important to do for urban open space.

Landscape Attributes

Information about *how* areas are valued can help managers get a picture of the current status of the landscape. But to understand how to better manage the landscape, we also need information about *why* spaces and places are liked or disliked. To this end, many investigators have proposed methods for assessing landscape attributes thought to be related to scenic beauty. Expert approaches to this kind of assessment, sometimes called descriptive inventories, itemize and in some cases differentially weigh selected attributes to derive values for comparing landscape areas. A good example of this type

of approach is the Bureau of Land Management's Visual Resource Management (1980) program.

Public preference approaches to defining valued landscape attributes are also quite varied. A basic and direct approach that can often be quite useful is simply to ask user or interest groups what they like and don't like about the landscape under study. This can be done on-site or through photographs. Schroeder (1982) provides a good example of this approach as applied to urban parks.

More sophisticated public approaches aim at developing predictive or theoretical models to describe or explain people's landscape preferences. In these models, people's judgments of landscape quality (e.g., scenic beauty) are correlated with independent measures of various landscape attributes. The array of attributes thus far identified is vast, and include physical, artistic, and psychological landscape dimensions (see Gobster & Chenoweth, 1989, for a review). Descriptive models generated from such an approach can be very helpful to managers in identifying what attributes can affect landscape quality, and thus provide some clues on how to maintain high quality and improve low quality landscapes. For example, Schroeder's (1986) work on urban parks specifies optimal tree densities for maximizing scenic beauty.

One potential problem with descriptive models is that they are most often based on the existing landscapes under study. This limits the prescription for change to the best examples that currently exist. In many cases this is sufficient; but when the range of good examples is limited, the next logical step is to attempt to identify desired future changes that could improve landscape quality. Again, a basic approach might be to simply ask people how they would improve the landscape if given a chance. At more sophisticated levels, graphic simulations can be used to portray alternatives that do not currently exist (e.g., Zube et al., 1987). Design alternatives are usually composed out of a range thought to be likely and practical by the investigator, with public participation limited to responding to alternatives. Computer-based visualization techniques such as video imaging and computer aided design have increased the ease with which alternatives can be generated, and thus have helped to expand the range of alternatives that can be evaluated (Chenoweth, 1991). More importantly, the rapid turnaround time in which alternatives can be produced is opening up a new realm in participatory design, where user and interest groups can work interactively with designers or researchers to develop their own alternatives. One recent application of this was in a study of residential hillside development, where with the help of researchers, lay participants used video imaging software to create their own "ideal hillside composition" (Hillside Trust, 1991).

Landscape Meaning

The final element of the framework as presented in Figure 1 is the least definable, but in many ways the most important. Visual quality is a primary concern in managing park scenery, but like the difference between space and place discussed earlier, urban open spaces mean more to people than just areas to look at. When people experience places like urban parks and forests, especially over time, they form attachments that are expressed in a multitude of values in addition to visual. For the individual, these values might include restorative, health, sensory, symbolic, and spiritual values (for further discussion, see Dwyer et al., 1991). The significance of these values can be profound, and include short-term benefits such as reductions in stress (Ulrich et al., 1991) and elevations in mood (Hull, 1990), and long term benefits such as improvement in attentional functioning and learning to cope with change (see S. Kaplan, this volume).

Urban open spaces can provide social benefits as well as personal ones. Activities centered around certain facilities such as a jogging path or a basketball court may help establish friendships and build ties between individuals, while other facilities and places can help maintain identity and strengthen ties between already established recreational or cultural groups. At still higher levels of social aggregation, urban open spaces have value and significance for the neighborhood, the city, the region, and beyond.

Methods for assessing the values and significance of a place vary considerably for individuals as well as for groups and communities. At the individual level, approaches include structured surveys and experiments, as well as open-ended interviews, focus groups, and self-report diaries (e.g., Gobster & Chenoweth, 1990). Assessments of community meaning are less common in the literature, but might involve interviews with representatives of groups that are of interest to open space managers, as well as interviews with community leaders.

Choice of Assessment

The framework outlined above is wide ranging and comprehensive, and it may not be possible or desirable to implement each element in a single study. Instead, the framework can help urban open space managers decide how different framework elements might address specific management questions, if expert or public preference approaches are needed, and what level of sophistication is most appropriate. Studies might also be conducted in phases, with basic elements implemented to meet immediate needs and others done as resources and interest allow. The Lincoln Park case study illustrates one version of the framework's application. The remainder of this paper describes that application, progress to date, and plans for future work and improvements.

Case Study Application

A master planning effort recently undertaken by the Chicago Park District presented a unique opportunity to examine visual resource management issues in a big, diverse urban park. Over 1200 acres in size, Lincoln Park is the largest Chicago park, and its central lakefront location and variety of natural and developed settings attract an estimated 20 million users annually from throughout the metropolitan region. Concerns by a master plan task force group about the visual quality of the park environment led to the present study, the objectives of which were to (a) examine public perceptions of park visual quality in terms of positive and negative attributes; (b identify valued areas in the park; and (c) better understand the

meaning and significance the park has for its users. The overall goal of the study was to provide information about the public's perspective that could be used in identifying and evaluating options for park design and management.

Methods

A method for systematically photographing park landscapes was designed so that public judgments of visual quality could be tied to spatial locations within the park. Modifying procedures by Wiberg-Carlson and Schroeder (1992), we photosampled along three parallel pathways that ran the length of the five-mile-long park. Photopoints were established at two-tenth mile intervals, and at each we took four photographs at 45-degree angles from the pathway. Seasonality, lighting conditions, and other extraneous factors were held constant as far as possible, and no pictures contained people visible in the foreground. This procedure resulted in 75 photopoints and 297 photographs; to this we added another 35 photopoints and 76 photos to capture important, representative views that the task force felt were not included in the random sample. All photopoint locations were mapped on 1:200 scale maps for accurate geographic identification.

The final slide set of 373 photos (110 photopoints) was randomized and split into seven slide trays consisting of 50 unique photos and a common baseline set of 25. These subsets were presented to 40 community, environmental, recreational, and school groups, as well as groups of professional landscape designers and advanced landscape architecture students (total N= 814). Each group viewed the slide sample, and rated the slides on a 1 to 10 scale of "attractiveness." Study participants also filled out a short questionnaire about their likes and dislikes for park features seen in the slides, their use of the park, favored recreational activities, and selected demographic questions. The questionnaire for the designers also solicited information about what they would do, from a designer's perspective, to improve park visual quality.

Results and Discussion

Because of substantial differences in their ratings, primary and secondary school groups were excluded from the data reported below. Results are based on a final sample of 507 adults, with each slide (except for the baseline 25) rated by an average of 72 adults. A future report will discuss intergroup preference differences in detail.

Landscape Zones

To understand how the park landscape was conceptualized, photo ratings were examined through factor analysis (for an explanation of procedures, see S. Kaplan, 1979). This procedure grouped together similarly rated scenes. From these groupings, we identified five different scene types:

- **developed areas**- scenes of adjacent buildings, highways, and roads; parked cars and parking lots, and most in-park buildings. From a scenic standpoint, these were the lowest rated of the five landscape types.

- **treed areas**- interior vegetated areas (away from roads, shore, and parking lots), ranging from densely wooded areas to areas of mixed trees and meadows. Attractiveness ratings ranged from moderate to moderately high.

- **sparsely treed open areas**- large open grassy areas; geographically most of them were at the north and mid sections of the park. Attractiveness ratings ranged from moderately low to moderate.

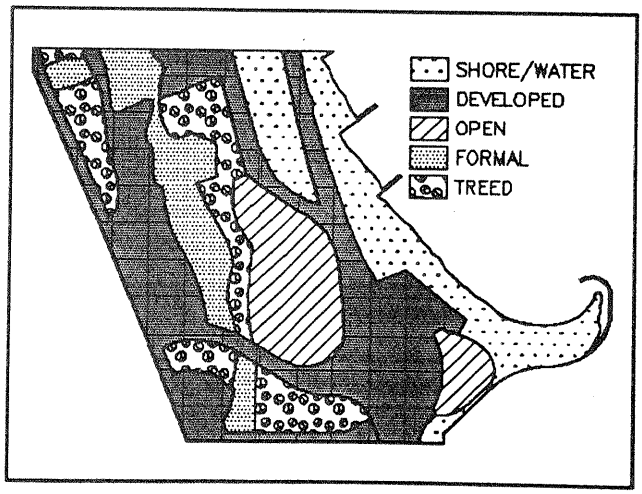
- **shoreline and water areas**- expansive scenes of the lake (including skyline views), and some pond and lagoon scenes. Ratings ranged from moderately high to high.

- **formal garden and built areas**- various places and features in the park, both "natural" and "human-made." One common feature was that most seemed to have formal design elements associated with them. Examples included a formal pond and cafe, the golf course, formal gardens, the mall, prominent statuary, and a fountain. Ratings for these scenes were among the highest.

The way these scenes grouped together permitted a relatively straightforward spatial translation. Individual slides were located on a map of the park, and with the help of park designers we drew boundary lines identifying park landscape zones. A portion of this map is shown in Figure 2. It is noteworthy that these perceptually derived landscape zones in many cases corresponded to zones identified in other studies conducted for the master plan (e.g., wildlife habitat zones).

Potential uses for the landscape zone map are many, including documentation of acreage within each zone type and development of specific zone policies (e.g., "no net increase of developed areas"). The map may also be used in conjunction with maps of landscape value areas.

Figure 2. Landscape zones for a portion of Lincoln Park.

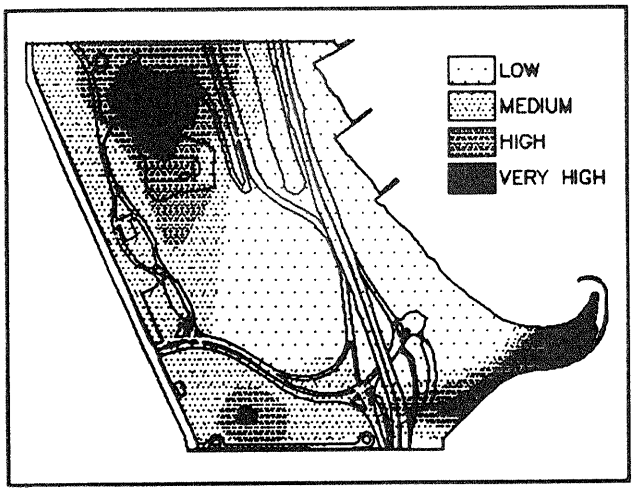


Landscape Areas

Scenic areas. Ratings for each slide were averaged over all participants to obtain landscape attractiveness values for the park scenes. To map these values, we averaged all slides

for each of the 110 photopoints. The values were then input into a topographic modeling routine available in LandCadd to draw isolines of common scenic value in the park. The final range in values was then grouped to portray four levels of high and low scenic value. An example of a portion of this map is shown in Figure 3. This method worked well for most photopoints, but tended to produce "muddy" averages for photopoints where there were both high and low rated slides. We are now experimenting with alternative ways to represent these scenic values, including separating scenes within photopoints with high standard deviations, mapping individual scenes, and using viewshed mapping of polygons instead of an isoline approach.

Figure 3. Scenic beauty values for a portion of Lincoln Park.



Landscape area maps can benefit open space planning in various ways. They can identify locations of scenic value as well as pinpoint areas for improvement. When overlaid with a landscape zone map, these data may also suggest visual management policies for specific zones. In Lincoln Park these policies might include visual mitigation in developed zones; enhancement of shoreline, tree, and open zones; and retention of visual quality in formal areas. In multi-resource assessments such as the Lincoln Park master plan, landscape zone and area maps can also help put visual quality on-par with other resources (e.g., historic, wildlife, recreation).

Favorite places. Information on people's favorite places was obtained in an open-ended survey question. The places mentioned most often mentioned places appear in Table 1. In all of the open-ended questions, respondents could mention as many things as they wanted, and up to 10 per person were coded for analysis. Thus, frequencies in this and other tables of open-ended responses do not add to zero.

Two findings should be noted from this analysis. First, although many of the most favored places had correspondingly high attractiveness ratings attributed to scenes of those places, some did not. For example, the zoo was rated far and away the most favorite place in the park, but scenes of its perimeter (no photos were taken from inside the zoo) garnered only moderate ratings. Second, favorite place rankings were sensitive to group differences. In Table 1, the many mentions of the "Bird Sanctuary" were largely due to birding and environmental groups who participated in the survey.

Table 1. Top-ranked favorite places.

Place	% Mention
Lincoln Park Zoo (in general)	25.4
Lincoln Park Conservatory	9.7
Bird Sanctuary	6.1
Ponds in general	6.1
Pathways in general	5.5
Lakeshore in general	5.3
Diversey Harbor and Yacht Club	4.7
Conservatory Garden/Formal Garden	4.5
Gardens and landscapes in general	4.3
Cafe Brauer	4.1
Belmont Harbor and point	3.9
South Pond	3.5
Harbors and marinas in general	3.4
Beaches in general	3.4
North Pond/Casting Pond	3.2
North Ave./Fullerton Beach	3.2

Landscape Attributes

Existing visual quality. Two methods were used to identify landscape attributes indicative of visual quality. The first involved a simple ranking of positive and negative features derived from open-ended responses. Frequently mentioned features are shown in Tables 2 and 3.

Table 2. Top-ranked positive park attributes.

Specific Feature	% Mention
Flowers and gardens	37.8
General references about trees	33.9
General references about water	21.9
Lake Michigan, lakefront, shore (not beach)	19.9
Skyline views, skyscrapers	15.9
Groves of trees, wooded areas & dense trees	13.2
General refs about lawn, grass & meadows	10.4
Ponds and lagoons	9.7
Shrubs	9.5
Big trees, large trees, mature trees, old trees	9.1
Beaches	7.1
Good maintenance	6.3
References to particular buildings	6.1
Open, green space, lack of bldgs & cars	5.7
Statuary, fountain	5.5

As can be seen in the tables, many positive attributes referred to natural aspects of the park environment such as flowers,

Table 3. Top-ranked negative park attributes.

Specific Feature	% Mention
Cars; parked cars	27.6
Parking lots; parking on the grass	26.4
Fences; bollards	24.6
Eroded areas; bare soil	16.5
Litter and glass	15.4
Too much pavement; too many roads	14.6
Garbage cans	12.8
Unmaintained pavement; cracks	11.4
Roads; park roads	9.7
Poor maintenance; unkept areas	8.5
Weeds	7.3
Signage; poles; lights	6.7
Courts/facilities-- incl. lack of plantings	6.3
Buildings-- generally and outside of the park	6.3
Lack of screening vegetation	4.7

trees, and water. Exceptions to this were views of the city skyline and skyscrapers. Many negative attributes referred to aspects of the built environment like cars, pavement, and fences. When people referred to natural attributes negatively, they most often mentioned a lack of maintenance, a degraded natural environment, or simply that there was not enough nature in the park landscape.

To understand more fully the basis of participants' visual quality evaluations, we developed a slide feature classification system to identify important indicators of perceived visual quality. Features were coded in terms of their number, presence/absence, or percent-of-scene visible in each slide. These measures were then correlated with the attractiveness ratings of the participants. Table 4 summarizes the results of one regression model for the entire slide set. Corroborating the open-ended responses, the model shows that features like trees, flowers, and water generally increase scenic quality, while features like cars, roads, and buildings have a negative impact. The adjusted R^2 for the model is .39, indicating that a moderate proportion of variance in scenic ratings is accounted for by the 10-variable equation.

One reason the regression model may not predict better is that the scenes included such a diverse range of physical attributes that it was difficult to separate out what was responsible for changes in participant ratings. This is reflected both by the large number of significant attributes included in the equation and by their relatively low standardized coefficients. More general physical measures such as "degree of naturalness" or "level of complexity" might improve prediction, as might alternative artistic (e.g., unity, balance, enclosure) or psychological (mystery, coherence, harmony) measures (Gobster & Chenoweth, 1989).

These alternative models might lead to a better theoretical understanding of the attributes underlying judgments of visual quality, but they may be less helpful in telling open space

Table 4. Physical features model, all landscape scenes.

Attribute	Beta	sig.
constant	.000	.000
% scene woody vegetation	.256	.000
% scene eroded areas	-.176	.000
% scene paving (roads, parking lots)	-.242	.000
% scene water	.227	.000
% scene signs, poles, electrical boxes	-.079	.062
% scene fences	-.150	.001
% scene cars	-.200	.000
% scene non-park buildings, near zone	-.101	.039
% scene fountains and monuments	.082	.060
% scene flowers and gardens	.170	.000

adj. R^2= .39; equation F (10,362)= 24.59 p= .000

managers how to maintain or enhance the landscape. For this reason Hull et al. (1986) and others advocate the use of physical attributes in predictive models because these attributes may be more directly manipulable by managers. Using this rationale, we are currently working on using predictive models to answer management specific questions about landscape zones. For example, the "treed areas" identified in the landscape zone analysis covers about a third of the park, and computer-mapped tree inventory data compiled for the master planning effort provide the physical data to tie to ratings of landscape attractiveness. Preliminary results look encouraging. With the tree inventory in mapped form, we will be able to assess the visual effects of tree density, species and age mix, tree placement, and other important attributes related to the management of park trees.

Desired future conditions. Recommendations for enhancing the park's visual quality were solicited from design groups who participated. Additionally, in their answers about the detracting features of the park, many other respondents suggested how to improve the park's visual quality. Comments from both groups were categorized by thematic area and are summarized below. No attempt was made to quantify their frequency of mention; rather, it was deemed important to document the range of ideas offered to help gain insights useful to the master plan.

- **Reduce parking, cars, and roads or their visual impacts:** From a purely visual standpoint, these features detract greatly from the park landscape. From a use standpoint, however, many respondents felt at least some were necessary and belonged in the park. Suggestions often mentioned vegetative screening to soften impacts.

- **Improve grounds maintenance:** Litter pickup, building repair, and related maintenance activities were suggested to improve the shabby appearance of some park views.

- **Improve landscape maintenance:** Recommendations here related mainly to tree care-- pruning, pickup of tree branches, and a more aggressive planting program.

- **Plant more and a greater variety of trees, shrubs, and tree masses; reduce "barren areas":** Many felt the park looked underplanted, with large spaces of sparse, randomly planted trees. Several designers and laypersons suggested naturalistic planting designs emphasizing tree and shrub massing, and use of a variety of native vegetation to provide different colors and textures.

- **Plant more flowers and understory vegetation:** Flower beds and gardens were frequently mentioned as positive park attributes, and additional plantings could be located elsewhere in the park.

- **Upgrade and unify park furniture:** Garbage cans, fences, and other development artifacts often detracted from park views. Visual quality could be improved with better designed and more unified park "furniture."

- **Soften harsh edges and create transitions with vegetation:** Many of the developed areas of the park--buildings, roadways, parking lots, ballcourts --have harsh visual edges that could be softened with plantings. Plantings could also help create transitions between or unify disparate spaces.

- **Delineate edges, frame views, and create enclosures:** In other cases large homogeneous spaces could be broken up to create enclosure and definition. The edge between two use areas is a critical defining element, and vegetation and/or gentle berms could help define large spaces and edges such as along beaches.

Landscape Meaning

As of this writing, we have not begun to research questions about the value and significance that Lincoln park has for individuals, groups, and the city at large. We have, however, begun discussing how such a project might be conducted and how it would most benefit the planning efforts for the park.

A current project of the master plan Documentation Task Force has provided the impetus for such an investigation. This project involves preparation of a video to describe the planning effort-- to gain support for the plan and to bring additional public groups and individuals into the implementation phase. In the planning for the video, the value and significance of Lincoln Park surfaced as one of four topics to convey to viewers; that the park means so much to so many underlies the whole planning effort. Videotaped interviews with master plan participants and park users illustrate some of the values and significance, and sparked the idea of developing a research project that would use video as the primary medium for data collection. Video would be a particularly rich medium for understanding the interactions between people and the park; and interviews with users in a variety of activities, locations, and seasons could yield important insights into how people value Lincoln Park and what significance it holds in their lives.

One such insight is illustrated in the following quote from a newspaper essay written about people who use Lincoln Park's Cricket Hill area, a small 40-foot hill constructed in the park during the 1940's out of landfill left by a construction project:

> "Saturdays and Sundays the Hispanics do their soccer, and it becomes alive," says Max Eisenberg, a 69-year-old retired businessman. "The hill is somehow a guardian. It projects to the Hispanic people that they have somewhere to go to be together."
>
> For five years, Cricket Hill has been a place for Eisenberg to go to-- ever since his heart surgery. "It only became a meaningful little slope when I was aware that my health would benefit from it," he explains. "I used to do my calisthenics up here, and I suddenly realized how beautiful it is up here, listening to the birds, watching the city skyline change," he says.
>
> "Sunrise up here, it's beautiful. Then you have to come after dark and see some of the homeless make their beds up here. Then you have to come in the winter and see the children with their sleds. It suddenly becomes, for the children, the Switzerland Alps" (Reardon, 1989:5).

Conclusion

Together, the visual assessment techniques applied in Lincoln Park help give a full picture of the public's perceptions of visual quality, and also give managers solid information upon which to base master planning decisions. The framework applied in Lincoln Park can be adapted to other urban open space planning efforts, but specific results from this study may not generalize to other places. The process as applied here was also a good way to involve public groups in the planning effort, especially groups who would not normally participate in more traditional forums.

Acknowledgements

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URBAN FORESTRY AND THE WORKPLACE

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The role of the urban forest in the context of the workplace has been largely neglected in the empirical literature. Yet the majority of daytime hours for many people are spent at work. Two studies reported here show that nearby nature, even when only viewed from the window, has a substantial beneficial effect in the work setting, affecting job satisfaction and well-being.

The importance of the urban forest to people's well-being has been shown in a variety of contexts, generally related to leisure pursuits. That the natural setting plays a significant role in recreational activities has been consistently documented for people of diverse ages, ethnicities, backgrounds, and recreational preferences.

By contrast, the role of the urban forest in the context of the work environment has received little, if any, empirical attention. That is not to say, however, that issues of well-being, in terms of both physical and mental health, have been ignored in the work setting. Quite on the contrary, employers have increasingly acknowledged that productivity is not simply a function of pay rate. Although many factors are recognized among the intangibles that foster well-being, the role of the natural environment seems to be largely ignored.

The purpose of this paper is to bring these two themes together: the role that the nearby natural environment can play in the context of the work setting. In particular, the emphasis here is on the opportunities to see nature, without necessarily being in it. Two studies related to the view from the window constitute initial efforts to explore the potential importance of contact with nature.

Background

Three domains are germane as context for the present studies, though none will receive extensive discussion. The first, a brief review of factors that enhance the well-being of the workforce, shows that considerable cost and effort is expended on employee health. The second involves a brief summary of the literature on the view from the window. Lastly, an overview of why the availability of views of nature might play such an important role is discussed in the section on attentional fatigue.

Enhancing Workplace Well-being

Wellness programs have become commonplace, especially among employers with a relatively large work force. The nature of such health-promoting programs varies widely. They generally emphasize lifestyle changes related to nutrition, weight loss and control, smoking cessation, and fitness, as well as educational approaches to reduce hypertension, cholesterol, substance abuse, and stress (Adams, 1988; Smith, Haight & Everly, 1986). It is no longer unusual for larger companies to have on-site fitness facilities for use of employees and their families.

Illness-related costs incurred by American industry have been of such magnitude that the expenditure of corporate dollars on efforts to increase wellness have been justified as cost-effective (e.g., Aberth, 1986; Adams, 1988; Caldwell, 1992; Cooper, 1990; Whitmer, 1992). At the same time, however, others express doubt about such claims, arguing that it is difficult to get the evidence, that participation rates are low, and that the promoters of such programs may have an entrepreneurial interest in their success (e.g., Chenoweth, 1990; Chovil & Altekruse, 1986; Shepard, 1989; Sloan & Gruman, 1988).

Whether or not the programs lead to financial savings, a broad range of benefits are attributed to them. These include corporate morale, confidence in the organization, recruiting and retention of personnel, and substantial improvements in the health and well-being of the workforce (Shepard, 1989; Sloan & Gruman, 1988; Smith, 1990; Sperry, 1984).

In addition to wellness programs, numerous other approaches to enhancing working conditions have been receiving considerable attention. The computerization of the office has led to numerous new health-related issues and these, in turn, have led to increased attention to furniture ergonomics. Issues of air quality, noise, and lighting are also among the environmental factors that receive considerable attention in the workplace context (Sperry, 1984).

The costs of employee health and satisfaction thus go far beyond salary and traditional fringe benefits. Competition for employees includes many factors other than pay scale, fringe benefit packages, and availability of fitness facilities. Yet despite the proliferation of the range of intangibles considered in the job context, the domain of the natural environment remains a striking omission.

Windows and Well-being

Consider the choice between two jobs that are basically equivalent. They are of equal and good pay, both provide excellent fitness facilities at the workplace, are generous in access to stress management workshops, and the furnishings are the best available. At one of the jobs the workstation is in a windowless cubicle. The workstation at the other job is in front of a window with trees outside. Would that relatively minor difference between the jobs matter?

The research literature has documented the importance of windows, or the view out, in a variety of settings. Two studies in the prison context (Moore, 1981; West, 1986) have shown that the use of health services is significantly lower on the part of prisoners with views of the larger natural world. In the hospital setting, patients recovering from surgery (Ulrich, 1984) and those in long-term rehabilitation (Verderber, 1986) have been shown to do better if they have a

window and a view.

Studies in the residential setting (Kaplan, 1985; Talbot & Kaplan, 1991) have found greater satisfaction with the neighborhood when people can look out onto more natural, rather than more built, settings.

Comparable research in the work setting seems to be grossly lacking. Farrenkopf and Roth (1980) reported that half their sample of 150 faculty members at two universities had windowed offices and that those with higher academic rank had significantly more windows. Male faculty also had substantially more windows than females (means of 1.4 and .5, respectively). Finnegan and Solomon (1981) found job satisfaction and work attitudes were significantly related to the presence of windows for their sample of 123 office workers and health care providers. Whether the view from the window is of nature or other buildings is not discussed in either study. Clearly there is need for more work in this area. Wouldn't it be interesting to determine whether the offices of executives are more often on higher floors with more distant and encompassing views? Does a workout during the lunch hour make up for the lack of a view from the workstation?

Attentional Fatigue

Some jobs are boring, some are stressful, some are demanding, some are even enjoyable. In all cases, however, there is the likelihood of sustained effort, of focusing attention on the tasks that constitute one's work. For many individuals whose jobs are largely sedentary, the fatigue that mounts in the course of the workday is the result of such continuous demands on their attention. It is a *mental* fatigue. It expresses itself in a variety of ways ranging from making small errors to major mistakes, from being annoyed with fellow workers to being irritable and socially irresponsible. In other words, the decline of attentional capacity reduces both one's competence and one's cooperativeness.

The need for longer breaks, the welcome of the end of the workday or shift, the TGIF greetings, all reflect the anticipated contrast between the demands of the work setting and the different conditions outside of work. In addition to these more substantial units of time that permit longer restorative opportunities, much shorter respites may also offset the mental fatigue. Thus the immediate setting of one's work can be a source "microrestorative" opportunities.

Based on our previous work and the restorative framework we have proposed (Kaplan & Kaplan, 1989), it seemed reasonable to expect that contact with nature at the workplace would have beneficial consequences. "Nature" in this context might involve the availability of a view of trees and shrubs, or even grass; it might involve indoor plants, one's own or those provided by the employer; it might even involve nature imagery, photos, posters, or craft objects. The focus of the studies discussed here is on the opportunities to see the natural world from one's work site and how these might express themselves with respect to employees' reported well-being.

Study One

Our initial effort (Kaplan, Talbot & Kaplan, 1988) involved one large corporation and two public agencies, including a total of 168 employees. The majority of the participants were desk workers, with 55 having no view to the outside or views which included no natural elements and 60 who could see natural elements from their work place. There were 48 participants whose jobs were mostly outdoors in natural settings (e.g., parks and recreation maintenance). Participation in the study was voluntary and anonymous with survey forms available to those who wished to respond. There is thus no way to determine a response rate nor can we assume a random sample.

The cover page of the six-page survey instrument, titled "Job Pressures Research Project," explained that the study is "an attempt to understand both the pressures people face and how they deal with them." Most of the questions entailed five-point rating scales (not at all ... a great deal). The survey asked about perceived job stresses, perceived effectiveness of various restorative opportunities, life satisfaction, physical health, and about some job setting characteristics.

Results

The participants whose work was mostly outdoors had clearly different responses from those with desk jobs. They indicated that their job was significantly less demanding, and they felt less pressured, less frustrated, and less harried. Since the nature of their jobs is distinctly different, it is impossible to determine whether these reported differences are directly attributable to being outdoors, in the natural environment, or a function of other job characteristics.

The comparison between the participants with relatively similar jobs (i.e., desk jobs), but whose access to nature in their view differed, is perhaps more useful. Here the results indicated fewer reported ailments for the individuals whose view included nature [$t(100)=1.99$, $p<.05$]. Those with nature in the view checked an average of 2.45 ailments (from a list of 11) as ones they have had in the last six months. For the employees without access to nature in their view the mean was 3.02.

The survey for the two public agencies included, at their request, a single item related to overall job satisfaction. The comparison based on availability of nature in the view for individuals with desk jobs at these two agencies showed a significant difference on this item [$t(34)=2.07$, $p<.05$], with satisfaction higher for those who could see nature elements.

Study Two

The 615 participants in the second study all had relatively sedentary jobs, though these represented a wide spectrum in terms of job classification and pay grade. The sample consisted mostly of women (92%) and ranged widely in terms of age and how long they had worked for the current employer.

The survey was sent to a random sample of 1,000, using the organization's internal mailing system. As a result no return address could be used on the envelopes and undeliverable surveys could not be returned. Given the normal turnover of employees, it is reasonable to estimate that as many as 10% of the surveys did not reach the addressed person. Thus the exact return rate cannot be calculated.

The cover letter began with "Hassles are a part of life." It indicated that the project is about "daily hassles and their costs, as well as exploring ways that help people recover from their effects. In particular, the study involves seeing whether plants and nature can be helpful in this process." Participants were assured of anonymity and complete confidentiality. Return envelopes were provided so that no one in the organization had access to responses, although the Personnel Department had approved of the study and cooperated in providing access to employees.

The five-page survey included questions on health, psychological functioning, life satisfaction, job environment, satisfaction with job and its setting, recreational activities and home setting, as well as demographic questions.

With respect to the central question here, the view from work, participants were asked about the difficulty of seeing outside and their likelihood of doing so. In addition, a checklist was provided of potential features that could be seen out the window. These were categorized subsequently as "built" (street, parking lot, other buildings) or "natural" (trees/bushes, grass, flowers). There were also questions on the satisfaction with the view from the workplace and satisfaction with the opportunity to look out and on whether the view was restorative.

Results

Not surprisingly, the ratings of satisfaction with the view and the opportunity to look out were strongly related to the ease of doing so. But what could be seen out the window made a big difference. There was no difference in "Satisfaction with View" (a scale comprised of 3 items) between respondents who could see more or fewer built elements. Nor did seeing other buildings, streets, or parking lots contribute to the restorativeness of the view. The availability of nature in the view, however, strongly affected these satisfaction and restorative ratings. For example, the mean for the rating of Satisfaction with View for those with no opportunity to see nature was 2.22, while for those with even a minimum amount of nature in their view the mean was 2.91. If the view included two or three of the listed natural elements, the respective means were substantially greater, 3.40 and 3.58, [$F(3,525)=29.07$, $p<.001$].

The availability of a view and having natural elements in the viewshed similarly influenced other aspects of satisfaction with the work setting, even with respect to conditions that are not directly impacted by having a window nearby. For example, satisfaction with visual privacy from co-workers, having control over the privacy, and a sufficiently quiet setting (a scale named "Privacy") was strongly affected by the likelihood of looking out. Satisfaction with opportunities to personalize one's work area showed a similar pattern of responses.

The degree to which participants were satisfied with the opportunity to see out, to personalize their work area, and to have privacy were, in turn, important predictors of several aspects of their work and life satisfaction. Focusing on the Satisfaction with view, in particular, Table 1 itemizes some of these significant relationships and provides a few sample items for the multi-item scales. These results point to the range of impacts that a view of nature can affect. Those with a view of nature felt less frustrated and more patient, found their job more challenging, expressed greater enthusiasm for it, and reported higher life satisfaction as well as overall health. Even though the data are all based on self-report, the employee's perception of her own enthusiasm about the job is, after all, a vital aspect of well-being.

Table 1. Relation of Satisfaction with View to outcome measures (including sample items for scales).

Variable (items)	# items	*F*	*df*	*p*
Job Challenge (e.g., amount of work you have to do, how interesting job is, how hard work is, how busy you are usually)	8	20.12	2,607	.001
Frustrated (How frustrated you feel)	1	5.27	2,598	.01
Task Enthusiasm (e.g., enjoy getting really involved in a task, feel invigorated and excited about what you're doing)	7	12.82	2,605	.001
Patient (Being patient with others)	1	7.69	2,605	.001
Life Satisfaction (e.g., my life is interesting and challenging, happy with my daily activities, have lots of opportunities)	5	6.86	2,605	.001
General Health (e.g., +rate health in general, -bad headaches, -feel that you are ill)	9	3.74	2,605	.05

Clearly many other environmental factors can affect people's job satisfaction and work attitudes. The data, however, did not yield equivalently strong outcomes for many other potential sources of satisfaction. Satisfaction with indoor plants, for example, had a far weaker relationship to these outcome variables. By contrast, it is worth noting that the perceived adequacy of the immediate natural environment in the home context was a more powerful predictor, especially of health measures.

While the survey relied heavily on rating scales, many participants added comments. The most common theme for these comments was windows. The lack of windows received much complaint (e.g., "A window would improve all aspects of work and my work situation") and the presence of windows was often noted enthusiastically (e.g., "My window is one of the greatest advantages of the position").

Conclusions and Implications

The results corroborate previous work on the importance of windows. Windows are a source of light, of sunshine, of information about the weather, and about other happenings in the world outside. They provide a suggestion of the extension of where one is in time and space.

The results of both studies, however, suggest that given the availability of a window, it also matters what can be seen. If all that can be seen are built elements, even if they do not obstruct the natural light or reduce access to the world beyond, the psychological benefits are not fostered. On the other hand, the nearby nature that seems to make such a strong difference, need not involve more than a few trees, some landscaping, some signs of vegetation. In fact, the presence of other buildings or parking lots does not seem to be a problem, as long as the natural world is there too. Given these results, it is not surprising that Heerwagen and Orians (1986) found that individuals in windowless offices resorted to decorating their walls with visual materials dominated by nature themes.

Whether one can place a dollar value on the view from work in terms of work productivity is an unanswered question. The same can be said about many other factors that employers have become willing to support. Stress management workshops, good fringe benefit packages, access to fitness facilities, education about nutrition, and programs that address substance abuse all play important roles in the work context without a clear and direct link to productivity.

While these may all contribute to job satisfaction and improve the employees' outlook, there are important differences between the opportunity to view nature and many of the other factors. The immediate setting where one works confronts one continuously. One's ability to maintain a train of thought, to remain composed and civilized in the face of constant interruption and annoyances, may be much more at the mercy of the microenvironment of one's workstation. Opportunities to exercise and to take breaks from one's desk or workstation are doubtless of great importance. It is likely, however, that microrestorative opportunities play a particularly important role in reducing attentional fatigue.

To be able to glance up from one's work and experience bits of nature is likely to be helpful. The results suggest, however, that the nature seen out the window may be even more effective than the nature represented by pictures on the wall or by indoor plants. Why this should be the case cannot be determined from these studies. The implications, however, are relatively straightforward.

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THE ROLE OF NATURAL ENVIRONMENT AESTHETICS IN THE RESTORATIVE EXPERIENCE

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Early research on restorative experiences pointed to the potential importance of reflection in this context. A theoretical analysis of affect and cognition points both to the functional importance of reflection and to its special link to aesthetic natural environments.

There is widespread agreement that trees, shrubs, and other natural elements play an important role in the restorative experience. It is far less clear whether aesthetic natural settings play any special role, or even whether there is any theoretical reason to expect such a relationship. The purpose of this paper is to argue that there is indeed an important link between aesthetics on the one hand and restorative experiences on the other. Before proceeding with this argument, however, several points of clarification seem called for.

First, my thesis does not concern the relationship between aesthetics and the restorative experience as a whole. Rather, the relationship I shall discuss concerns a specific component of the spectrum of restorative experience benefits. This component, reflection, originally emerged in an empirical, as opposed to theoretical context. Some of our early work on restorative experiences was carried out in the context of a Forest Service sponsored wilderness program (Kaplan & Talbot, 1983; Talbot & Kaplan, 1986). One aspect of that research involved asking the participants to keep diaries during their wilderness outing. Certainly the most surprising discovery of that research effort was the reflective character of those diaries. This was particularly surprising given that a major component of the sample was made up of teen aged males!

The other clarification involves the significance of the reflection process. It might seem that reflection is a relatively minor, and hence quite optional, restorative benefit. On both theoretical and empirical grounds, however, I shall argue that reflection can play a useful and at times essential role in the ecology of mind, with far reaching implications that impact both cognition and affect.

With these clarifications behind us, it is possible to state the thesis of this paper more crisply: There is good reason to believe that reflection is a potential restorative benefit, that it has important functional properties, and that one of the most likely contexts for it to occur is an aesthetic natural environment.

Why the mind needs focus

Stored in the experienced human mind is a vast quantity of information. The very vastness of this information, useful as it someday may be, itself presents a serious functional problem. Out of all this stored knowledge only a small portion is pertinent to understanding and responding to a given situation. There must be some way to utilize this pertinent portion without becoming swamped by the remainder. One must somehow be able to distinguish, to set apart, the pertinent portion.

In our version of the connectionist framework for understanding the mind (Kaplan, Weaver & French, 1990; Kaplan, Sonntag & Chown, 1991), the small portion of stored knowledge being used in a given situation is distinguished from the remainder by becoming active. In other words, the neurons making up the pertinent knowledge structures are actively firing. One might think of this intuitively as certain portions of one's knowledge structure "turning on" or "lighting up."

One can, however, turn on only a small portion of one's total knowledge structure at any one time. Translated into experiential terms, this means that one can only think about a small portion of one's total knowledge at once. This limitation in the amount of activity possible at any one time is technically known as the "limited capacity" of the system. There is, in other words, a limit to how much activity the cognitive system can support at a time.

Thus activity in the system tends not to exceed a certain amount. The same mechanism that prevents its rise above that value turns out to limit its dropping much below that value as well (Milner, 1957). Thus, for all intents and purposes, the amount of activity (while an individual is awake) is essentially fixed. The distribution of this activity, however, is not. The activity can be focused in a relatively small number of cognitive units, in which case each of them will be strongly active. Alternatively, it can be distributed across a large number of units, so that each will have a relatively low level of activity.

While both of these extremes are possible within a limited capacity system, their implications are quite different. Having a small number of strongly active cognitive units is characteristic of a decisive state of mind. One is clear on what is going on and on what action is necessary. A large number of weakly active units has just the opposite implication. Many things are possible and which of them is appropriate is far from clear. The situation is, in other words, confusing, and the individual perceiving it is confused. This latter state does not lead to quick analysis and prompt action. An individual spending much time in this confused state of mind would have a severe functional disadvantage.

Therefore, although many different patterns of distribution are possible, they are by no means equally desirable. The more focused, or clearer, state of mind is far more likely to lead to competent behavior, and in the long run, to survival. One would thus expect there to be a bias toward favoring such clarity. In humans this occurs in a relatively straightforward and efficient fashion. Clarity is experienced as pleasurable; confusion, by contrast, leads to pain.

Achieving Clarity through the Use of Directed Attention

One way to achieve clarity is through the use of directed attention. Directed attention is the kind of attention one calls on regularly as one struggles to comprehend, to interpret, to focus despite distraction. It is flexible and exceedingly useful. It does, however, have certain drawbacks. It requires effort and it is susceptible to fatigue. While mild directed attention fatigue (DAF) is a pervasive and tolerable state, in its more severe forms, such fatigue can take a heavy toll. People high in DAF may be impatient, or irritable, or distractible. They may be inclined to risky behavior. They also tend to be less competent at basic mental activities such as learning and problem solving.

These are serious deficits. They undermine one's competence and make one far more susceptible to accident or other dangers. It seems quite unlikely that an individual could experience a serious case of DAF without feeling uncomfortable and concerned. It may well be that when people complain of being mentally exhausted, worn thin, tired of it all, needy of a vacation, and so on, DAF is a significant factor in their malaise. From this perspective, a major goal of a restorative opportunity would necessarily be to provide rest for directed attention, to give this important mechanism an opportunity to recover from fatigue (Kaplan & Kaplan, 1989).

The Place of Involuntary Attention in Mental Dynamics

Another way to achieve focus is through involuntary attention (James, 1892) or, in other words, through fascination with what one is perceiving. Perhaps the most vivid example of fascination involves those special stimuli, such as snakes, fires, and caves, that have such a powerful hold on us, and perhaps have done so ever since the species evolved. It is important to realize, however, that there are other kinds of fascination, perhaps less dramatic, but equally useful in achieving focus.

Fascination can also be obtained through process. There are certain processes, essential to the survival of an information-based species, that have this special property. These processes include recognizing, exploring, predicting, evaluating and acting (Kaplan, 1973). Interestingly enough, the fascination in these processes depends upon their being carried out under reasonably difficult circumstances, in other words, when there is uncertainty as to the outcome. Perhaps enjoying carrying out these basic processes when they are a challenge hones the skill and increases the knowledge of the individual, and hence is adaptive. Bird watchers enjoy recognizing birds, but especially when some uncertainty is involved. Recognizing an obvious robin as a robin offers little fascination. Comparably, prediction when there is uncertainty is captivating both to listeners of stories and to gamblers. Evaluating under uncertainty is a special property of county and state agricultural fairs.

Even this, however, is not the whole story. There is yet another source of fascination. As James (1892) has pointed out, involuntary attention can also be learned. Research on expertise indicates that medical students looking at X-rays are attracted by areas of light and dark. Expert radiologists, by contrast, find their gaze inexorably pulled to those regions that differ from normal, clearly a result of specialized learning (Kundel & Nodine, 1978). When one is competent in a language, a mispronounced word stands out like the proverbial sore thumb; it is very difficult to ignore. It is even difficult at times to keep track of what the individual is saying given the powerful distraction (i.e., attention holding power) of this deviation from what one has learned to be correct. Expertise in general seems to bring with it fascinations invisible to the novice. Experienced observers of a given sport find much to fascinate them when the untutored observer thinks that nothing is happening.

There are thus multiple sources of fascination, and many cases where this means of achieving focus has considerable power. Despite its effectiveness, however, fascination has disadvantages as well as advantages. The most obvious advantage, of course, is that it works. It does indeed help one to achieve focus. Since fascination works, it also has the advantage that it feels good. Because it works, it also is involved in that most basic component of restorative activities, namely that it rests directed attention. And finally, it is low in cost in the sense that fascination does not tend to fatigue. It is not effortful and does not wear out; it can be called upon repeatedly without diminishing its effectiveness.

Achieving Clarity through Fascination

These advantages are indeed substantial; it is hardly surprising that people who feel "drained," and "worn out," who fear "losing it," often opt for settings strong in involuntary attention-producing stimuli, such as horror movies, auto races, and football games. Nonetheless, this power does not come free. There is a serious disadvantage here, a fly in the ointment, as it were. To understand the nature of the disadvantage, it is necessary to recall the prior discussion of how one uses one's cognitive system.

As we have seen, human cognition functions as a limited capacity system. Because of this, the capacity it does have is precious. Involuntary attention has the great drawback that it is greedy of that limited capacity. Fascination sufficiently strong to produce focus in the cognitive system is generally strong enough to use up much or all of one's limited capacity. Whether this is an important drawback depends upon what one's needs are. If one is simply in need of resting directed attention, a restorative experience based solely on fascination may be quite satisfactory. But if there were anything one

needed to be thinking about, there would not be sufficient room.

In practical terms, when one has much on one's mind that needs thinking about, it requires considerable directed attention simply to get through the day. Focusing on what has to be done when there are powerful sources of internal distraction tends to be effortful and fatiguing. Thus, while someone suffering from DAF might not be experiencing internal distraction, someone struggling with internal distraction is likely to be suffering from DAF as well.

On the other hand, someone suffering from both internal distraction and DAF might be particularly attracted to a fascination-based restorative experience. This is as understandable as it is unfortunate. Such an experience would allow directed attention to rest; at the same time it would effectively prevent reflection. It would, in other words, make it possible to stop thinking about the very problems that need to be addressed. Admittedly, such an escape can be a helpful respite from time to time. It does, however, offer an all too addictive alternative. It can put off indefinitely the reflective activity necessary to get one's mental affairs back in order. In this way one can obliterate pain -- at least for while -- without dealing with its source.

Internal Noise

To understand the functional role of reflection in the ecology of mental processes, it is necessary to become acquainted with a peculiar property of mind first studied by Zeigarnik in 1927. What she found was that when one finishes a task, one tends to stop thinking about it. But if for some reason the task was not finished, the neural activity related to that task continues to persist in one's mind. In Zeigarnik's research, certain tasks were not completed because she stopped the participants in the experiment and asked them to go on to the next task. While interruptions often occur outside of the laboratory too, in many cases cognitive tasks remain incomplete for other reasons as well. In particular, tasks that are large and difficult are likely to require considerable time and effort to bring to any kind of satisfying, or even acceptable, resolution.

Continuing to work, often unconsciously, on an incomplete task, can be a most efficient way to utilize the power of the mind. Many individuals have reported, often to their surprise, that a solution to a problem they put aside some time ago suddenly came to mind. They were apparently able to go about their daily affairs, quite unaware of this extra processing that had been going on. "Incubation" is the term used to describe this fascinating phenomenon (Posner, 1973).

But sometimes the problems the mind continues to work on are too large or too disruptive, and the persisting processing intrudes on the individual's limited capacity. "Internal noise" is a useful expression to refer to any mental activity not under the individual's control that usurps some portion of that individual's processing capacity. When internal noise prevents an individual from giving full attention to the problem at hand, that individual's functioning has become impaired.

Internal noise can arise in a number of different ways. Sometimes the onset is sudden and dramatic. For example, someone just diagnosed with a life-threatening illness is likely to experience intense mental activity that makes it difficult to carry out any other cognitive tasks. In such cases, the internal noise is likely to interfere not only with carrying out everyday activities, but also with adaptive activities related to coping with the illness.

In contrast to instances of sudden internal noise from a readily identified source are individuals for whom internal noise represents a long standing condition. Pierre Janet (1924), the eminent French psychiatrist, once described a neurotic as someone who has failed to transform past events into history. Instead, the individual treats these events as current and ongoing problems. Here again internal noise can divert precious mental capacity from the real demands of the present. Whatever its source, internal noise limits the proportion of one's processing capacity that is available for adaptive functioning.

Reflection and Room in One's Head to Think

One neither needs to be seriously ill nor neurotic to be preoccupied with incomplete or unresolved concerns. Sometimes a solution can be found through thoughtful analysis. At other times finding a way to explain or interpret something that cannot be resolved is a way to achieve closure (Kaplan & Kaplan, 1982). In either case, time for serious thought is called for. In this sense reflection can be seen as a kind of essential mental housekeeping.

Clearly reflection is not compatible with a restorative experience that depends on fascination. By consuming a large portion of one's processing capacity, fascination prevents the very thoughtful consideration required by reflection. Since reflection has in fact been an observed feature of restorative experiences in certain settings, there must be some other way to achieve this state that does not depend so heavily on fascination.

Recall that with less fascination, there will be less clarity, and hence, more pain. If one is to get by with a lower emphasis on fascination, the pain level must be reduced in some other way. There is an interesting property of the vertebrate nervous system that points to a possible solution. Pleasure mechanisms and pain mechanisms in the brain tend to inhibit one another. Thus by introducing a source of pleasure, it is possible to inhibit, and hence, to reduce, pain.

The challenge, then, becomes that of finding the right sort of pleasure for the circumstances. While there are in principle many sources of pleasure, many of these are characteristically transitory or of limited duration. Some, like sex and eating, may also be rather distracting in their own right. The one striking exception, the one source of pleasure that can endure and that need not distract, is aesthetics. Thus a landscape that provides both aesthetics and a modicum of fascination should provide an excellent setting for reflection. This combination of aesthetics and moderate fascination has been called "soft fascination" (Kaplan & Kaplan, 1989.)

There is yet another reason why an aesthetic natural environment might be expected to support reflection. Many of the topics that run around in an individual's head awaiting reflective analysis have their painful components. Even the process of making a choice between two delightful alternatives can be fraught with indecision and pain. A great advantage of an aesthetics-based restorative experience is that it brings with it pleasure that may, at least to some degree, offset the pain that otherwise would accompany thinking about these often difficult topics.

Research in a Reflective Context

There are many settings in which reflection is likely to be called for. Circumstances of loss, of threatened loss, and of uncertainty all take a heavy cognitive toll. Grief, life threatening illnesses, and life's turmoils in general tend to call for reflection to keep one's mental apparatus functioning reasonably well. Individuals who function as caregivers for the frail, the impaired, and the seriously ill also belong in this category. A most interesting study in this context looked at the activities and functioning of caregivers of AIDS patients.

This study of AIDS caregivers was Lisa Canin's (1991) doctoral dissertation research in clinical psychology. Her focus was on how some of the individuals carrying out this extremely taxing task manage to avoid both mental fatigue, and the distinct but related threat of burnout. What she found to be particularly helpful were nature activities and quiet activities, both quite compatible with reflection. By contrast, such high involuntary attention activities as watching television, shopping, and organized sports (both as spectator and as participant) did not fare as well. One would certainly expect these individuals to be better served by restorative settings that facilitate reflection. The results of this study are remarkably consistent with this expectation.

Conclusion

Sometimes the quiet and the beautiful play an essential role in restorative experiences. This is especially likely to be true when reflection is needed to bring internal noise under control. While fascinating non-nature and dramatic nature undoubtedly each have their place in the spectrum of restorative experiences, the quietly beautiful natural setting may have a unique potential that too often goes unrecognized and unappreciated.

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STRESS RESTORATION THROUGH RECREATION EXPERIENCES AT A LOCAL PARK

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Visits to a local park may mitigate or relieve stress. We found that visitors' self-reported moods change in ways predicted by Restoration Theory (Ulrich et al. 1991). The largest observed change in mood is characterized by a decrease in tiredness.

Introduction

Daily hassles, because of their high frequency or chronic nature, may be among the most serious causes of stress related health effects (Evans & Cohen, 1987). Most of these annoyances tend not to get noticed, but take their toll by requiring repeated coping or adaptive efforts. In fact, cumulatively, these daily hassles are more strongly correlated with poor health than are major life stressors such as loss of home, loved one, or job. (Burks & Martin, 1985).

For example, Stone et al. (1987) documented that when people experienced daily hassles, frustrations, or anxieties, they also experienced a dampening of their "secretory immune systems ...[which is]... the body's first line of defense against invading organisms" (p. 988). The stress related consequences attributable to commuting provide additional sobering evidence of the effect of daily hassles. These effects include: increases in blood pressure, decreases in performance on cognitive tasks such as proof reading, self-reports of aggressive tendencies while commuting (12% of men, 18% of females reported that at times they could gladly kill another driver), increased reports of chest pain and heart arrhythmia, and increased requests for sick leave for those with longer commutes (Evans & Cohen, 1987; Stokols & Novaco, 1981). As yet another example, Cohen et al. (1986) found that children living in homes near an airport, subjected to regular interruptions from the roar of jet takeoffs and landings, performed worse than their counterparts on reading and other tasks requiring attention, and, among other things, evidenced chronically elevated blood pressure.

Even with a limited review of the stress literature, it becomes clear that life's daily hassles and annoyances have substantial and tangible impacts on human health and well-being. Research evidence is beginning to suggest that leisure may be quite important in reducing stress and promoting well-being. It seems that "restorative" benefits may occur during leisure experiences, especially leisure that brings people in close contact with nature.

Ulrich et al. (1991) review current theories about how stress might be relieved by encounters with natural environments (such as visits to a park). Their central tenet is "restoration," which they define as involving any one of several processes: "recovery from states characterized by excessive psychological and physiological arousal," "recharge of energy expended in ... responding to a stressor," "recuperation ... from understimulation or excessively low arousal," "positive changes in emotional states," and "reduced levels of negatively toned feelings" (Ulrich et al. 1991: 202).

This study examines stress restoration through recreation experiences at a local park. For the purposes of this report, restoration theory will be operationalized as a change in mood characterized by feelings of increased energy and by feelings of decreased tiredness. It is further predicted that subjects who have experienced higher levels of stress preceding the park experience should be more likely to achieve a restorative experience (i.e., increased energy, decreased tiredness). Hence, a measure of a subject's stress preceding the park experience should correlate with the magnitude of a restorative change in mood.

Methods

Site

The 20-acre park contains six interconnecting ponds, rolling hills, paved walkways, numerous treed areas, open fields, and five office buildings. The park, well used by students and non-students alike, lies at the edge of Texas A&M University, within one mile of many University-housed students and within four miles of many residents in the surrounding town. Most visitors arrive by car through a single entrance, park along one of several roads, and walk from five to several hundred feet to where they base their stay at the park (or continue to walk along one of the many paved paths).

Subjects

The convenience sample of subjects was drawn on-site at the park throughout April 1992, typically between mid-morning and nightfall. With a bicycle, a male interviewer followed vehicles as they entered the park, and approached potential subjects as they emerged from their vehicles. If the subject agreed to participate, they were asked to complete the "initial" questionnaire. Their location (or direction of walking) was noted so they could be approached approximately 30 minutes later to complete the "during" questionnaire. A "departing" questionnaire was placed under the windshield wiper of the car with instructions to complete it before leaving and to deposit it in a well-marked container located near the exit of the park. Several pieces of candy were stuffed into the departing questionnaire envelope in an attempt to build good will and increase compliance. In total, 186 people were approached and 35 (17 males) declined to participate. Of the 147 who agreed to participate, 39 did not finish one or more phases and four made mistakes serious enough to invalidate their answers. Total number of usable subjects was 108, 48 of whom were male.

Instrument

The initial (Time 1) questionnaire had the most items. It started by asking subjects to describe their current moods using an adaptation of Thayer's Activation Checklist (Thayer, 1989). Thayer's model of mood has four factors: energetic (energetic, lively, vigorous, full-of-pep), tired (sleepy, tired, drowsy, sluggish), calm (placid, calm, at rest, quiet), and anxious (jittery, clutched-up, fearful, tense). Subjects responded using Thayer's four-point scale (definitely not, can't decide, feel slightly, definitely feel). Several other questions were asked but are not used in this analysis. It took an average of six minutes to complete this questionnaire (from the initial contact to return of the completed questionnaire).

The during (Time 2) questionnaire was one page and asked subjects to describe their current moods using the same scale described above. Several other questions, not used in this analysis, were also asked. It took an average of two minutes to complete this questionnaire.

The departing (Time 3) questionnaire started with the same items, again asking subjects to describe how they were feeling "at this moment." Ten stressful events (i.e., concern with deadlines, arguments with someone, death or illness, personal health problems, money problems) were listed and subjects were asked to rate the extent to which they had experienced each event during the past three days. The stress related items were abstracted from a list of salient daily hassles identified by Clark and Watson (1985). These items were rated on the same four-point scale as the mood items. Other items, not used here, were also asked. It took an average of three minutes to complete this questionnaire.

Analyses

The restorative hypothesis is interpreted to suggest that subjects' moods will change from feeling tired to feeling energized; hence feelings of tiredness should decrease and feelings of energy increase. This pattern was operationalized by subtracting tiredness at Time 3 from tiredness at Time 1 (which should be positive if tiredness decreases) and adding the result to the difference between energy at Time 3 and energy at Time 1 (which should be positive if energy increases). If this change in mood exists, then the sum of this calculation should be positive and significantly different from zero. In addition, the magnitude of this change should correlate positively with the stress index: people experiencing more stress should achieve more restoration.

The pattern of change from tiredness to energy was calculated for each subject for each time period (i.e., between Times 1 and 2, 2 and 3, and 1 and 3). We had no a priori reason to suggest when the maximum change should occur. Hence, the maximum change, regardless of when it occurred, was calculated for each subject and used to test the hypotheses.

Discussion of Results

The average length of stay at the park was 90 minutes and ranged from 45 minutes to 3 hours. The second questionnaire was administered, on average, 38 minutes after initial contact. The number of people accompanying the subject varied: 38 (35%) subjects were alone, 57 (53%) were with one other, and 13 (12%) were accompanied by 2 or more. Subjects varied in what they described to be their primary activity: 2.1 percent played a group game (such as volleyball); 15.5 percent threw a Frisbee, jogged, or bicycled; 16.5 percent walked; 34 percent sat and read, worked, thought, watched or conversed with others; and 30 percent sunbathed or slept.

The average change (over any time period) in mood from tired to energized was 0.93, which is small but significantly greater than zero ($t = 8.1$; $p < .0001$; $df = 107$). On average, feelings of tiredness started low and decreased further (1.98, 1.74, 1.76 respectively for time periods 1, 2, 3). Feelings of energy started slightly higher and also decreased, but to a lesser extent than did tiredness (2.44, 2.39, 2.26 respectively for time periods 1, 2, 3). Thus, the actual changes in mood that underlie the statistically significant average that "supports" the hypothesis are not entirely supportive of the restorative hypothesis. Tiredness did decrease as predicted, but so did energy. The overall hypothesis (originally formulated as a combined change of tiredness and energy) was supported because of a greater drop in tiredness than in energy. These sorts of findings are similar to those reported by More and Payne (1978). They found that negative moods improved as a result of a park-like experience. They also observed a drop in positive moods to occur from arrival to departure.

The restorative hypothesis receives more support from the relationship between mood change and stress. It was predicted that the amount of prior stress should correlate positively with the magnitude of mood changes from tired to energy. Highly stressed people should seek restoration, and as a consequence, experience greater relief of tiredness and increased feelings of energy. This appears to be the case, as the correlation between the stress index and the magnitude of mood change from Time 1 to Time 3 was positive and significant ($r = .29$, $p < .003$). Interestingly, the correlation between a subject's stress index and their mood changes from tired to energy was positive and significant ($r = .23$; $p < .02$) for the change that occurred between Times 1 and 2, but not significant for the change that occurred between Times 2 and 3. This suggests that much of the restoration effect (if that's what it is) of a local park experience occurs early during the visit.

Conclusion

The results are generally, but not overwhelmingly, supportive of the restorative hypothesis. This suggests that visits to an urban park reduce stress and to some degree restore the visitor. This, in turn, suggests that urban parks have important public health benefits. These results, however, are only correlation and certainly do not "prove" that restoration occurred, that recreationists realize it occurred, or that restoration influenced decisions to visit the park. More sophisticated experimental designs are needed to sort out the various confounding variables associated with mood regulation studies (some of these designs are reviewed in Morris & Reily, 1987). Nonetheless, we believe that the methods and theories explored here have potential to contribute to our understanding of these important issues.

Note

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ECOLOGICAL FUNCTION AND THE PERCEPTION OF SUBURBAN RESIDENTIAL LANDSCAPES

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Vernacular aesthetic expectations often limit the degree to which suburban residential landscapes enhance ecological function. Conventional lawns that are neat, weed-free, and recently mown may have little biodiversity or habitat value. Landscape design can enhance ecological function, but little is known about how people might perceive the aesthetic and maintenance characteristics of more ecologically sustainable alternatives. This project proposed a range of seven alternative suburban landscape treatments designed to meet vernacular aesthetic expectations while varying degree of ecological function. It then measured 234 suburban residents' perceptions of the proposed alternatives. While the results suggest that ecological knowledge profoundly affects perceptions and preferences for suburban landscapes, results also suggest that considerable latitude exists for designing suburban landscapes that greatly enhance ecological function and meet the aesthetic expectations of the general suburban population.

Suburban Landscape Aesthetics and the Ecology of the Lawn

Think of the suburbs and broad expanses of mown turf inevitably come to mind. For some this landscape of lawns is an inviting-- even reassuring --image, but for others it epitomizes the benign subjugation of nature. Although a tidy lawn may suggest that its caretaker is a courteous neighbor (Nassauer, 1988a), it can also suggest more sinister effects: pesticides and herbicides posing health risks for people and animals, fertilizer nutrient overloading of lakes and streams, and use of limited freshwater resources for lawn watering. Some companies in the "green industry" have responded to growing awareness of these effects with development of different varieties of turf grass that are more resistant to drought, pests, and weeds. Although this kind of change can improve some aspects of the environmental quality of suburban ecosystems, it does not address a fundamental problem related to the ecological structure and function of the suburban landscape: the failure of traditional lawn design to provide for biodiversity. The turf matrix does not provide for connection of environmental resource patches and the movement of species, and it accelerates surface water run-off rates and resultant aquifer depletion and downstream flooding. These effects have caused one observer, practiced in ecological restoration, to assert that a permit should be required for making a lawn (Sauer, 1992).

The typical standard for local governments is quite the opposite. Local "weed" ordinances, intended to remedy situations in which property owners have neglected to care for their lawns, frequently have equated indigenous vegetation with weeds. Across the country, these ordinances impose a traditional mown lawn on homeowners who may want their yards to become meadows or prairie gardens. In fairness to the lawn innovators, local governments are struggling to codify the difference between a weedy, neglected lawn and an aesthetically acceptable suburban yard that is not dominated by turf. For example, several draft or recently adopted ordinances require a band of mown turf at the front or around the edges of a property (e.g., Montgomery County, Maryland; Minnetonka, Minnesota; Madison, Wisconsin). Others specify that meadows and prairie gardens be limited to native plants to be acceptable (e.g., White Bear Lake, Minnesota). Still others require that meadows and prairies be confined to the backyard. All struggle to identify the limits of a pervasive but largely implicit suburban landscape aesthetic.

Looking beyond the scale of the individual lawn, the suburban landscape can be seen as the great, spreading organism of western metropolitan structure. It surrounds cities, typically built at ecologically rich junctures or ecotones, along rivers or baysides. With the conventional landscape aesthetic one of biological homogeneity, the suburban landscape insulates these rich edges or points from the greater biodiversity of the surrounding countryside. In the face of global climate change, these suburban blankets of turf may become barriers to plant and animal species seeking to move along with shifting climatic bands (Peters & Lovejoy, 1992).

A central assumption of the project described here is that a more heterogeneous structure and greater biodiversity in suburban landscapes has ecological value. Perhaps it will reduce chemical and water use. More importantly, it will facilitate the movement of species across the landscape, create habitat patches, and increase aquifer recharge across a metropolitan region.

A second key assumption of the project is that the conventional neat, green, mown turf matrix of suburban landscapes is a powerful means of communicating care and neighborliness (Nassauer, 1988a, 1988b, 1992), and has great cultural value. The project tests alternatives for increasing the ecological quality of suburban landscapes while accepting the decisive nature of public perception in defining suburban landscape structure.

Hypotheses and Method

This project investigates how landscape structure and biodiversity might be increased in suburban residential landscapes while meeting vernacular aesthetic expectations.

Operational Definitions

Aesthetics is construed broadly here to mean what one enjoys seeing. It is not limited to concepts of the scenic or beautiful,

and it does include concepts of attractiveness, care, neatness, and naturalness.

Landscape structure is drawn from landscape ecology (Forman & Godron, 1986) and refers to:

- **Heterogeneity-** The more types of ecosystems (homogeneous plant communities) within a landscape, the greater the potential number of species.
- **Connectivity-** The more connected the landscape network of environmental resource patches and corridors, the greater the potential for movement of species.
- **Patch size-** The larger the environmental resource patch size, the greater the habitat value for interior species.

Biodiversity is operationalized in this project to mean both the number of indigenous plant species and the number of individuals of indigenous species within a landscape.

Hypotheses

The central hypothesis of the project is that if suburban landscapes are designed to include vernacular aesthetic cues, increased biodiversity and improved landscape structure can be aesthetically pleasing. Vernacular cues applied here are cues to care of the yard. A secondary hypothesis is that people who are knowledgeable about ecological systems are more likely to perceive increased biodiversity and improved landscape structure as attractive than are people who are less knowledgeable.

Study Sites

In this project, video-imaging simulations (Nassauer, 1990; Orland, in press; Pitt, 1990) were used to display seven experimental landscape treatments on each of four suburban sites in the Minneapolis-St. Paul metropolitan area. Each of the properties had been developed within the previous two years. Two of the properties (sites 1 and 2) had real estate values somewhat over $200,000. Two properties (sites 3 and 4) had real estate values somewhat over $100,000. Each treatment was displayed in the simulations from two perspectives: the view along the street, showing the larger landscape matrix; and the view of a single residential site on that street, directly facing the house. In each of the simulations, only the plant community and proportion of the site in turf was varied. The design of the subdivision, including topography and street and sewer infrastructure, were maintained in their conventional, *in situ* pattern. The planting plan was also held constant across the sites. Each of the treatments was simulated as it would look in August, fifteen years after planting.

Treatments

The seven experimental treatments ranged from a highly conventional treatment with a turf lawn and ornamental plants (treatment 1) to a design in which most of the turf had been replaced by indigenous plants of the oak savanna. One of the seven treatments was a variation on the conventional landscape plan, in which the landscape was shown as it would look if it were not maintained (treatment 2). This kind of weedy lawn is the intended target of local ordinances that have frequently jeopardized indigenous plants on residential sites.

The remaining five treatments exhibited vernacular cues to care (Nassauer, 1992) while increasing the ecological quality of the planting design. Based on results from a number of previous projects in rural settings, preliminary interviews with Twin Cities suburban residents, and information from related projects elsewhere (e.g., Anderson & Schroeder, 1983; Morrison, 1981; Palmer, 1988; Schaumann et al., 1987; Smardon, 1988), the following vernacular cues were used in each planting design: the retention of at least some mown turf near the front and entry of the house, the use of foundation plantings, and the colorfulness of herbaceous cover (including a high percentage of showy forbs). This range of treatments began with a mown lawn and native canopy trees of oak, cedar, and aspen (treatment 3). Next, 50 percent of the mown turf was replaced with an herbaceous prairie plant mix heavily dominated by forbs (treatment 4). For the next treatment (5), 75 percent of the mown turf was replaced with an herbaceous prairie plant mix dominated by forbs. Treatment 6 showed 50 percent of the turf replaced with indigenous sumac and hazelnut shrubs. The final treatment (7) had the greatest heterogeneity, connectivity, patch size, and biodiversity, where 75 percent of the turf was replaced by a combination of indigenous shrubs and canopy trees, with prairie forbs shown along the edges.

Respondent Sample

The opportunity sample of respondents included 167 residents of third tier suburbs in the Minneapolis-St. Paul metropolitan area. To measure how knowledge of indigenous plant communities might influence perceptions, the sample also included another 67 people who belonged to the state native plant society or to a suburban citizens group concerned with the use of native plants. Respondents participated in the survey during one of eight group events: four meetings of suburban church groups, two meetings of local suburban governments, the annual meeting of the state native plant society, and a weekend-long event at the University arboretum. The mean age of the respondents was 44; about 60 percent were between the ages of 31 and 50. A little less than half (43%) were men, a little more than half (57%) women. About one third had at least some graduate school, and slightly more than one third had a high school education or less. Ninety percent of the respondents reported that their family spent an average of at least two hours per week doing yard work. Sixty percent reported that their family spent at least 4 hours per week doing yard work. Half (51%) reported that viewing wildlife from their home was very important to them.

Presentation of Simulations to Respondents

The respondents viewed color slides of the simulations and rated them on seven-point semantic differential scales. The simulations were viewed in two random orders, equally distributed between the two respondent groups. Five perceived characteristics were rated for each simulation:

attractiveness, care, neatness, naturalness, and amount of maintenance necessary. The first four characteristics fell within the working hypothesis of aesthetic quality and were hypothesized to be highly intercorrelated. The fifth characteristic, necessary maintenance, also was believed to be useful in predicting suburban dwellers choices for their yards. The perceived characteristics were also randomly ordered on each of two different versions of the questionnaire, and each version was randomly distributed at each data gathering event.

Results and Discussion

Analyses of variance showed that neither slide order nor order of characteristics on the questionnaire produced significant differences in the normalized ratings of respondents. Anecdotal discussions with respondents after the survey indicated that some thought the treatments with more complete ecological function were more attractive on sites that had larger, more expensive houses. However, an analysis of variance showed no significant site effect in respondents' ratings of attractiveness, or any of the other characteristics. Rather, variation in perceptions was more directly related to variations in the landscape treatments, and to variations in respondents' knowledge of indigenous plant communities.

Aesthetic Characteristics

Comparing the aesthetic and maintenance characteristic ratings within and across treatments revealed some patterns suggesting what may be driving people's preferences for suburban residential landscapes. They also suggest how change in landscape structure might be designed to be more acceptable to suburban dwellers, and where the limits of acceptable change may lie.

Plots of the relative normalized means showed regular patterns of rating clusters across some of the seven treatments (Figure 1). For treatments 1-4, the means for attractiveness, care, and neatness perceptions tended to form one cluster, while the means for naturalness and maintenance formed another. Although the relative position of the clusters changed across treatments, indicating that the treatments were differentially perceived, the clusters themselves remained intact. For example, the conventional landscape (treatment 1) tended to be perceived as attractive, well-cared for, and neat, but not very natural and requiring relatively high maintenance. For the conventional landscape, all characteristics including maintenance also tended to be highly intercorrelated ($p < .01$).

The weedy landscape (treatment 2) on the other hand, tended to be perceived as unattractive, not well-cared for, and messy, but was seen as natural and requiring little maintenance. Furthermore, while attractiveness, care, and neatness were significantly intercorrelated; naturalness and required maintenance were not consistently correlated with the other characteristics.

The least of the ecologically improved treatments (3), was seen as attractive, well-cared for, and very neat. The native tree canopy and mown turf was seen as requiring a little less maintenance and being more natural than the conventional landscape, but less natural and requiring more maintenance than the weedy landscape. Once again, ratings of attractiveness, care, and neatness tended to be highly intercorrelated for this treatment, but naturalness and required maintenance ratings varied.

As with the first three treatments, ratings of attractiveness, care, and neatness for treatment 4 also clustered together. But unlike the first three treatments, naturalness was also consistently intercorrelated with attractiveness, care, and neatness. Only maintenance did not have a statistically significant correlation with the other ratings. While the 50 percent prairie landscape was generally not perceived as being as neat as the conventional landscape or the landscape of savanna trees and turf, it was perceived as being at least as or slightly more attractive. Importantly, the 50 percent prairie landscape was also perceived as being distinctly more natural than any of the previous treatments (except the weedy lawn). On the average it was perceived as requiring less maintenance than the conventional lawn but more than the landscape of trees and turf. Responses to open-ended items and in post-survey discussions suggested that respondents thought that all of the colorful flowers shown in treatments 4, 5, and 7 would probably require a lot of maintenance. This may account for higher maintenance ratings for treatment 4.

This regular pattern of rating clusters began to break down after treatment 4, particularly with respect to the relationship of ratings of attractiveness, care, and neatness. In other words, the increased levels of ecological quality represented in treatments 5, 6, and 7 appeared to violate people's vernacular aesthetic conventions for suburban residential landscapes. For example, while treatment 5 was perceived as more natural and requiring less maintenance than treatment 4, the 75 percent prairie groundcover was also perceived as messy and much less attractive. All of the five characteristics measured were highly intercorrelated for this treatment.

Treatment 6 had the most disordered rating pattern of all the treatments. Correlations among the rating means were inconsistent among the 4 sites for attractiveness, care, and neatness. Naturalness and required maintenance were consistently intercorrelated; the treatment was perceived as requiring some maintenance but being quite natural. Overall, this 50 percent woody shrub treatment was perceived as unattractive, not well-cared for, and messy. Open ended responses and anecdotes suggested that some people may have perceived tall shrubs around a house as creating safety problems. They also described treatment 6 as "too closed in," "out of proportion for residential sites of this size," and "too dark inside the house."

Treatment 7 was the most ecologically complete plant community, but while it was generally perceived as being natural, it was also perceived as very messy and unattractive. Each of the five characteristics were significantly intercorrelated. It should be noted here that even this alternative, which had 75 percent cover of trees, shrubs, and prairie forbs, was not seen as being as messy or unattractive as the weedy lawn (treatment 2). The weedy lawn seems to be perceived as qualitatively different from any of the designs

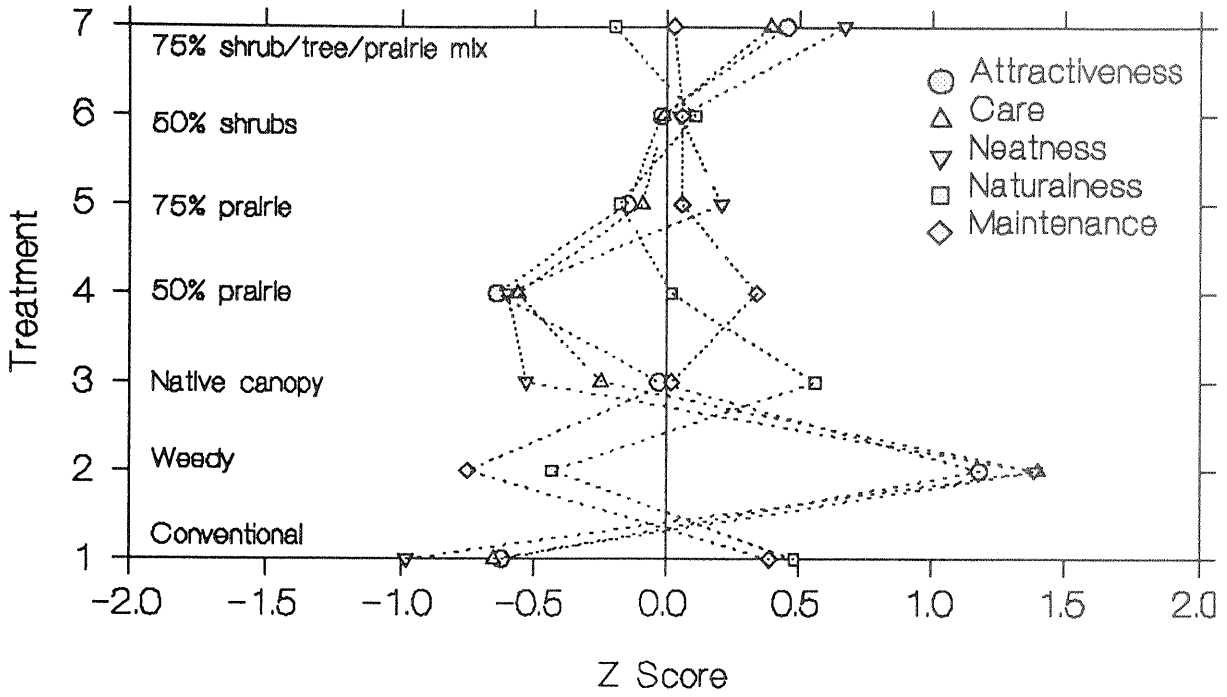

Figure 1. Pattern of relative normalized means for characteristics- all seven treatments for site 1.

for increased ecological quality.

Knowledge

Respondents who were knowledgeable about indigenous plants rated some landscape treatments very differently than did those who were less knowledgeable, but on other treatments the responses of the two groups were quite similar. This pattern of responses has interesting implications for local governments attempting to regulate "nuisance" lawns and to foster ecological quality. The responses also suggest some current limits for homeowners who wish to innovate with their lawns.

In all, each respondent rated 140 items-- five landscape characteristics for the four sites representing each of seven treatments. On all but 49 of those 140 items, mean ratings were significantly different for the knowledgeable and less knowledgeable groups (Table 1). The two groups differed markedly in their perceptions of the conventional lawn (treatment 1), and the two treatments where 75 percent of the turf was replaced by indigenous vegetation (5 and 7). In general, the conventional lawn was perceived as more aesthetically pleasing by respondents with no special knowledge of indigenous plants, while treatments replacing 75 percent of the turf tended to be perceived as more aesthetically pleasing by those with knowledge of indigenous plants. It appears that, within the context of this study, ecological knowledge does make a difference in perceptions of landscapes.

Similarities in the responses of the two groups offer some direction for governments and individuals wishing to increase ecological quality while maintaining aesthetic quality. There was no significant difference between groups in their perceptions of the weedy lawn (treatment 2); both groups rated it the least aesthetically pleasing of all the treatments. Even those with less knowledge of indigenous plants found the weedy lawn less pleasing and distinct from the treatments replacing 75 percent of the turf (treatments 5 and 7). There was also no significant difference between the two groups in their ratings of treatment 6; these scenes showing 50 percent of the turf replaced by indigenous shrubs were generally perceived as aesthetically displeasing by both groups.

Most instructive, however, was the finding that there was no significant difference between groups in their ratings of treatment 4, where 50 percent of the turf was replaced by herbaceous prairie vegetation. Despite the fact that the less knowledgeable respondents found the conventional lawn (treatment 1) most attractive, and the more knowledgeable respondents found the treatment that replaced 75 percent of the turf with prairie (treatment 5) most attractive, this moderate treatment level appeared to have broad aesthetic appeal.

Conclusions

These results imply that if individuals or governments want to increase the ecological quality of suburban residential landscapes, there are some aesthetically acceptable ways to change. They suggest that to be publicly acceptable, ecological practices must be designed to pay special attention to vernacular cues to care. Design that maintains aesthetic quality should include prominent mown areas in front of patches of indigenous plants. As a general guideline, these

Table 1. Mean normalized ratings of aesthetic characteristics by knowledgeable (n= 67) and **less knowledgeable** (n= 177) participants, Sites 1-4*.

SITE 1

Ratings	Attract	Care	Neat	Natural	Maint.
Treatment:					
Conventional	.21*	-.26*	-.61*	.95*	.88*
	-.96	**-.82**	**-1.13**	**.27**	**.20**
Weedy	1.05	1.38	1.68*	-.29*	-.85
	1.22	**1.43**	**1.30**	**-.50**	**-.72**
Canopy	.57*	-.05*	-.31*	.92*	.47*
	-.27	**-.33**	**-.62**	**.42**	**-.15**
50% Prairie	-.65	-.57	-.55	.06	.22
	-.66	**-.56**	**-.61**	**-.01**	**.37**
75% Prairie	-.83*	-.47*	-.27*	-.62*	-.15
	.15	**.07**	**.40**	**.01**	**.15**
50% Shrubs	.16	.13	.18	.02	.08
	-.09	**-.06**	**-.00**	**.13**	**.06**
75% Prairie and Shrubs	-.12*	.14*	.48*	-.46*	-.38*
	.66	**.48**	**.74**	**-.10**	**.19**

SITE 2

Ratings	Attract	Care	Neat	Natural	Maint.
Treatment:					
Conventional	.31*	-.30*	.72*	1.13*	.95*
	-1.06	**-1.01**	**-1.22**	**.29**	**.19**
Weedy	1.05	1.74*	1.45*	-.03*	.94
	1.09	**1.42**	**1.21**	**-.43**	**-.80**
Canopy	-.20*	-.56*	-.86	.91*	.67*
	-.88	**-.90**	**-1.01**	**-.04**	**-.24**
50% Prairie	-.75	-.87*	-.73*	-.39*	.31
	-.51	**-.46**	**-.47**	**-.03**	**.26**
75% Prairie	-.76*	-.34*	-.10*	-.82*	-.33*
	.12	**.05**	**.30**	**-.15**	**.21**
50% Shrubs	-.37	-.23*	-.10*	-.30	-.17
	-.43	**-.50**	**-.38**	**-.20**	**-.04**
75% Prairie and Shrubs	-.50*	-.43*	.10	-.84*	-.34*
	.17	**-.04**	**.35**	**-.17**	**.36**

SITE 3

Ratings	Attract	Care	Neat	Natural	Maint.
Treatment:					
Conventional	.56*	-.22*	-.74	1.04*	.91*
	-.56	**-.67**	**-.79**	**.56**	**.42**
Weedy	.87*	1.41	1.47*	-.45*	.88
	1.16	**1.46**	**1.20**	**-.51**	**-.73**
Canopy	.29*	-.17*	-.55	.78*	-1.08*
	-.44	**-.47**	**-.60**	**.07**	**-.09**
50% Prairie	-.59*	-.59	-.53*	-.18	.23
	-.30	**-.36**	**-.22**	**.05**	**.26**
75% Prairie	.55*	-.13*	.38*	-.83*	-.51*
	.44	**.51**	**.68**	**-.24**	**-.03**
50% Shrubs	.12	.06	.00	.26	-.20*
	-.00	**-.15**	**.01**	**.18**	**.11**
75% Prairie and Shrubs	-.48*	-.17*	.26*	-.78*	-.64*
	.40	**.50**	**.77**	**-.20**	**.09**

SITE 4

Ratings	Attract	Care	Neat	Natural	Maint.
Treatment:					
Conventional	.52*	.05*	-.18*	.95*	.52*
	-.33	**-.44**	**-.56**	**.42**	**.14**
Weedy	.94*	1.46	1.40	-.06*	-.68
	1.19	**1.42**	**1.20**	**-.31**	**-.57**
Canopy	.45*	.10*	-.40*	.66	.35*
	-.04	**-.32**	**-.66**	**.40**	**-.36**
50% Prairie	-.50	-.45	-.53	-.33*	.34
	-.50	**-.40**	**-.39**	**.11**	**.34**
75% Prairie	-.61*	-.55*	-.29*	-.81*	-.30*
	.13	**.00**	**.24**	**-.08**	**.30**
50% Shrubs	.11	.14	.09*	.00	.08*
	.16	**.05**	**-.00**	**.12**	**-.20**
75% Prairie and Shrubs	-.31*	-.25*	-.08*	-.51*	-.06*
	.16	**.11**	**.26**	**-.06**	**.31**

*$p < .01$

mown areas should cover at least half the front yard.

The indigenous species should emphasize colorful flowers and conventional foundation plantings. Additional elements of the local vernacular should also be sought. For example, in this project we may have increased perceived aesthetic quality by simulating indigenous trees in a more conventional street tree pattern.

Furthermore, the results suggest that there are identifiable limits to the degree of change that will be generally aesthetically acceptable-- replacing 50 percent of the turf with a colorful range of prairie plants may be acceptable, but replacing 75 percent of the turf with those same plants may not. However, even replacing 75 percent of the turf will be perceived more positively than a weedy lawn, the intended target of local weed ordinances.

Public perceptions also are likely to evolve with increased knowledge of indigenous ecosystems. What looks weedy to most people today may look beautifully diverse as people learn more about the function and sustainability of ecologically designed landscapes. One way that people will learn how to appreciate biological diversity and rich landscape structure is by seeing it in suburbs that encourage people to begin to innovate. Innovations that are designed with vernacular cues to care will undoubtedly ease the transition to greater ecological awareness.

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PERCEPTIONS OF ECOLOGICAL

RESTORATIONS IN URBAN PARKS

Policy Recommendations and Directions:
A Lincoln Park Case Study

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A survey evaluated perceptions and preferences for ecological restoration concepts and policy issues for Chicago parks. Results showed a high level of favor by public and park employees for the concept of ecological restorations in urban parks, with high preferences for woodland, wetland-pond, and oak savanna restorations. The leading perceived benefits of ecological restorations were aesthetic and educational, while leading problems were litter, vandalism, and maintenance. Overall there was a high degree of consensus among survey respondents, but some significant differences did occur among ethnic groups and between park employees and the public on specific issues. Findings suggest that urban park managers wishing to implement ecological restorations need to balance biological site and space limitations with public preferences and recreational use demands. In some cases this may mean smaller and less diverse ecosystems, while in other cases more complete, large scale restorations may be possible.

Introduction

Ecological restoration is the process of managing and repairing (or reconstructing) damaged ecosystems in order to recreate an earlier condition, often the Native American landscape existing before European settlement. The Society for Ecological Restoration defines ecological restoration as "the process of intentionally altering a site to produce a specific historic ecosystem. The intent of the work is to emulate the natural structure, function, diversity and dynamics of a defined, indigenous ecological system" (Munro, 1991).

The ecological restoration movement in northern Illinois and other regions has grown dramatically in the last few years, both in the number of projects underway and in the number of participants involved. However, the vast majority of ecological restoration projects have been attempted on large rural and suburban tracts away from areas of concentrated public use. City parks and other urban open spaces also contain important land and water resources and afford likely opportunities for ecological restorations, but there is little information on how such places would be perceived by the large numbers of people who would experience them. To begin to examine the acceptability of urban ecological restorations, urban park users, community groups, and park employees were surveyed in a case study.

The study focused on Lincoln Park, a 1200-acre park located on the north side of Chicago along Lake Michigan. The park was selected for study due to its popularity, diverse uses, and landscape potential. Park resources and users were also being studied as part of an on-going master plan for the park, and it was hoped that this survey could provide additional information about management of the park landscape to the planning process.

While ecological restoration is a relatively new concept as applied to urban parks, in one sense it is not without precedent. The Chicago Park District has a history of "naturalistic" landscape designs by Frederick Law Olmsted, Jens Jensen, Ossian Simmonds, and Alfred Caldwell (Sniderman, 1991). These landscape architects used native North American plant material and naturalistic shapes and patterns to achieve their design goals in various Chicago parks. While their methods and philosophy share some similarities with ecological restoration, their designs played more to human concerns of aesthetics than to the dynamics of biologically diverse ecosystems (Grese, 1992).

In the purest sense, ecological restoration in Lincoln Park would be a fallacy, since the origin of most of the park can be traced to a series of human-constructed landfills in Lake Michigan. However, the environment of the southern Lake Michigan region in its Native American condition included wetlands, oak savannas, prairies, and woodlands. Hence, any ecological restoration in Lincoln Park would be a re-creation of elements of the native landscape, and not a true restoration.

Methodology

The survey evaluated perceptions, preferences, and knowledge of ecological restoration concepts and policy ideas for Chicago parks. The goal of the assessment was to formulate policy suggestions for planners with regard to ecological restoration in Lincoln Park and elsewhere in the Chicago Park District. The case study results might also be generally applicable to other urban open spaces, in Chicago and elsewhere.

Sample

The study sample included recreational users of Lincoln Park, members of school and community groups near the park, and Chicago Park District employees. Respondents were contacted between August and November 1991, and 400 out of 574 agreed to participate in the survey (70% response rate). Recreation users (n= 233) were contacted on-site in the park; a sampling design was constructed to ensure a representative cross-section of users by age, ethnic background (African-American, Hispanic, White, and Asian), gender, activity engaged in at the time of the survey (active, passive) and time and location in the park. School and community groups (n= 127) completed their surveys at locations away from the park. School groups included children in grades 6-8. Community groups included established organizations who did not have an overt environmental agenda. Chicago Park District employees (n= 40) included planning and management administrators and field staff who had direct or indirect responsibilities for park landscape management.

Survey Instrument

The investigator explained the study purpose and need, then asked respondents to rate on a five-point scale their preferences for each of nine color photos of ecological restoration sites and "traditional" manicured urban park landscapes (1= least preferred,..., 5= most preferred). The restoration sites were typical of those that could be implemented in urban park settings, ranging from a small patch of fenced-in prairie to ponds and savannas several acres in extent. Some of the scenes showed adjacent housing or recreational facilities.

A statement defined ecological restoration as:

> the process of converting a parcel of land to its natural or Native American condition. This process would involve restoring the plants, animals, insects etc. native to the area. Some examples would be prairies, oak savannas, woodlands and wetland ecosystems.

Using the photos and definition to clarify the idea of ecological restoration, a series of open ended and yes/no questions probed various aspects related to ecological restoration in Lincoln Park and the Chicago Park District as a whole. The survey given to park employees was basically the same as the public survey, with some slight variations.

Analysis

The sampling design permitted some group comparisons. User, school, and community group respondents comprised the "public" sample. Within this sample, chi-square comparisons were made among ethnic, gender, and age groups to see if any significant differences existed that might call for special policy considerations or further study. The park employee sample was also compared with the public sample to see if differences existed that might imply changes in park management policies. Differences among these groups were tested at the .05 significance level.

Results

Photo Rating and Ecosystem Selection

The landscape photo mean preference ratings were highest for a scene showing a "traditional" park landscape with a mowed lawn, prominent pond, and mature trees ($\bar{x}$= 4.40). Other favored scenes included pond-wetland ($\bar{x}$= 4.23) and oak savanna ($\bar{x}$= 3.50) restoration landscapes. The four lowest rated photos were prairie restorations of various scales (range from $\bar{x}$= 3.19 to $\bar{x}$= 1.90).

Comparisons among study subgroups showed a high degree of consistency in overall photo preference rankings. Within the public sample, Whites gave all photos an overall higher mean rating and generally rated prairie scenes and the more "naturalistic" landscapes higher than did African-Americans and Hispanics. Park employees rated prairie landscapes significantly higher than the public.

These results agree with other landscape studies, finding higher preferences for savanna and woodland scenes and lower preferences for landscapes lacking trees (e.g., Kaplan and Kaplan, 1989). While the survey indicated a significant difference among ethnic groups for some landscape scenes, on the whole there were more similarities among the groups' ratings than there were differences.

In a related written question, respondents were presented with a list of five ecosystem types that might be practically restored in Lincoln Park. When asked which ecosystems they felt would be most appropriate to restore in the park (respondents could check as many types as they wished), the public group said woodlands and wetland-ponds were most appropriate and prairie and Lake Michigan-wetlands were the least (Table 1). A small percentage felt that none of the ecosystems mentioned were appropriate for restoration in the park. There were few statistically significant differences within the public group due to age, gender, or ethnicity, with the biggest difference between Whites (56%) and Hispanics (35%) with regard to the appropriateness of woodlands. Park employees differed significantly from the public with regard to their perceived appropriateness of prairie ecosystems in park restorations. Employees ranked prairies the highest in terms of appropriate ecosystems, while the public ranked prairies near the bottom.

Table 1. Appropriateness of restoring ecosystems as perceived by the public and employees, percent of each sample group.

Ecosystem Type	% Public	% Park Staff
Woodlands*	50	50
Wetland-ponds	49	60
Oak Savanna	44	48
Prairie**	38	65
Lake Michigan wetlands	33	25
None	8	0

* chi-square among ethnic groups significant ($p<.05$)
** chi-square between public & employees significant, ($p<.05$)

Familiarity and Visitation of Ecological Restoration Sites

A substantial majority (61%) of the public said they had heard of the term "ecological restoration." Two-thirds (67%) of the employee sample said they were familiar with the term. For the public, chi-square analysis showed a significant difference among ethnic groups, with Whites the most familiar (68%) and Hispanics the least familiar (35%). However, some of the sample who said they were familiar with the topic actually did not have a clear idea of the specifics of ecological restoration. Some felt that environmental subjects such as acid-rain, ozone depletion, and global warming were in the realm of ecological restoration.

When asked whether they had visited an ecological restoration or natural area, around half of both the public and employee samples answered "yes." Respondents who referred to specific locations tended to mention local county forest preserve land and certain larger Chicago parks, but few mentioned an actual restoration project.

Benefits of Ecological Restorations

In response to an open-ended question about the perceived benefits of ecological restoration sites in Lincoln Park, public participants mentioned 32 different benefits. The leading benefits expressed by the public were: aesthetics (29%), educational (24%), ecological (20%), the opportunity to observe wildlife (19%), and urban nature (19%). Park employees ranked these top benefits somewhat differently, seeing education as the top benefit (32%), followed by wildlife (23%), aesthetics (20%), ecological (8%), no benefits (5%), and urban nature (3%). Survey responses showed no significant differences between public and employee samples, or among ethnic, age, or gender groups within the public sample.

Due to the wide range of individual responses, the 32 benefits were combined into six general categories, shown in Table 2. Environmental benefits ranked the highest and economic benefits ranked the lowest. Despite variations in sub-group percentages, there were no significant differences among public/employee or public sub-groups.

Table 2. Categories of benefits perceived by the public and employees, percent of each sample group.

Benefit Category	% Public	% Park Staff
Environmental	65	50
Quality of life	49	55
Appearance	37	55
Park diversity	27	35
"No benefits"	18	18
Economic	2	2

Problems of Ecological Restoration

A related question asked about foreseeable problems with ecological restoration projects in Lincoln Park. Public participants mentioned 32 different responses; top problems included maintenance (17%), litter (16%), funding (15%), vandalism (14%), over use (14%), use conflicts (13%), crime (11%), and insects (8%). These top problems showed little variation in their frequency of mention among the public sub-groups. Park employees seemed more concerned with overuse (35%) of sites and vandalism (23%) than the public, but other differences were smaller and none was statistically significant.

Seven categories were created to summarize the types of problems foreseen with ecological restoration sites in Lincoln Park (Table 3). Park employees were significantly more concerned with the appearance and ecological feasibility of an ecological site than were the general public. Additionally, within the public group more Hispanics mentioned appearance as a potential problem, and more Whites and Asians mentioned that ecological restoration might be inappropriate in Chicago parks than did other ethnic groups.

Table 3. Categories of problems perceived by the public and employees, percent of each sample group.

Problem Category	% Public	% Park Staff
Appearance* **	69	95
Crime/safety	38	43
Eco-feasibility**	37	62
Inappropriate*	22	35
Economic	15	15
Public disapproval	12	37
No problems	12	10

* chi-square among ethnic groups significant, $p<.05$;
** chi-square between public and employees significant, $p<.05$

Reasons for Visiting An Ecological Restoration Site

When the public sample was asked if they would visit an ecological restoration site in Lincoln Park, 90 percent replied "yes," 7 percent replied "no," and 3 percent were "unsure." The sample gave 19 different reasons to visit an ecological restoration site, which fell into six basic categories: ecological interest (28%), the convenience and curiosity of visiting the site (21%), feelings of peace and relaxation obtained at the site (16%), aesthetics of the site (16%), the opportunity to learn about nature (12%), and the diversity of parks (5%). More Hispanics said they would visit a site because of its peaceful/relaxing qualities than other ethnic groups, but otherwise there were no differences in sub-group comparisons.

Controlled Fire Use

The survey presented respondents a brief explanation of controlled fires:

> Controlled fires are sometimes used (once every year or two) for the maintenance of ecological restoration areas. The fires can eliminate undesired plants, allowing native plant species to grow. These fires can quicken the process of restoration.

A question then asked how people perceived the use of controlled fires as a maintenance tool for an ecological restoration in a Chicago park. Answers for both public and employee groups were split quite evenly between "yes" and "no" responses (Table 4).

Those who said "no" to the use of fire felt it could be too dangerous, inappropriate, could cause pollution, and could not be adequately controlled. Those who felt fire could be used in Chicago parks would accept it if it were done with trained workers, enhanced natural processes, were necessary, and if it included signs or other public education programs. Sub-group comparisons showed that Hispanics, African-Americans, and individuals age 10-25 were more likely to reject the use of fire because of its danger than other ethnic or age groups. Otherwise, there were no significant differences among public sub-groups' reasons for or against the use of fire.

Table 4. Acceptability of controlled fire in Chicago parks by the public and employees, percent of each sample group.

Reasons	% Public	% Park Staff
No (dichotomous response)	51	45
Reasons (open-ended)		
Too Dangerous*	19	38
Not Appropriate	14	28
Pollution	8	6
Unable to Control	7	0
Yes (dichotomous response)	45	55
Reasons (open-ended)		
Trained Workers	38	23
Natural Processes	20	14
Only if Needed	7	0
Signs/Education	6	14

* chi-squares among ethnic groups and among age groups significant, $p<.05$.

The public sample was also asked if they would accept a controlled fire across the street from their residence. The overall response was similar to the previous question, with 51 percent answering "no" to controlled fires near their homes and 45 percent answering "yes." There was a significant difference among ethnic groups, with Whites and Asians supporting the use of fires 2-to-1 over Hispanics and African-Americans.

Limitations of Public Access and Volunteer Use

Public respondents were asked if ecological sites should be restricted to the public to protect the fauna and flora. The results were: 70 percent "yes," 29 percent "no," and 1 percent "unsure." There was a significant difference among ethnic groups, with African-Americans, Hispanics and Asians expressing more reservations about the idea of restricted public access than Whites. A general comment made by some of the sample who answered "yes" was that public use limitations would be necessary for proper maintenance of an ecological area. Others who answered "no" did not feel that any part of a Chicago park should be restricted to the public.

A final question asked the public sample if they would volunteer in an ecological restoration project in Lincoln Park. Responses were 48 percent "yes," 46 percent "no," and 6 percent "unsure." There were no significant differences among public sub-groups. Asked a slightly different question, nearly all of the employee sample (92%) said they favored the use of volunteers.

Discussion

Overall, results from this study show a relatively high acceptance of the idea of having at least some types of ecological restorations in Chicago parks. However, attempts to create sites must carefully consider park users' perceptions of and reactions toward such areas, along with the ecological character of the parks.

Ecosystem Selection

Woodlands. While the survey showed that woodlands were the most highly preferred ecosystems considered for restoration, the practicality of a woodland restoration in Lincoln Park, or in any Chicago park, may be limited. It could be considered in the few large parks where concentrations of older native trees exist. However, the lack of existing woodlands of any scale, the number of years needed to grow mature trees, and the fragility of the woodland understory make this ecosystem restoration a long term, somewhat controversial idea for Chicago parks. Nevertheless, the planting of native trees for a woodland restoration in an ecological area is something that planners should attempt for the future ecological integrity of the parks.

Wetlands around Pond Shores. Pond-wetlands rated highly in the survey, and some pond areas within Lincoln Park and other Chicago parks show good potential for wetland restorations. For higher public acceptance it might be prudent to locate a wetland restoration area near, or incorporate it with, a water feature. Wetland areas could become valuable educational resources because of the diverse biological communities that occur there, and aquatic ecosystems colonize naturally with fauna and flora more quickly compared with other ecosystems. Areas in Lincoln Park and other park locations that are prone to periodic flooding or restricted in recreational use might be considered for a wetland or wet-prairie creation.

Oak Savanna. Oak savannas were also given a relatively high rating by survey participants, suggesting these might be desirable ecosystems to restore in Chicago parks. The creation of oak savannas is largely dependent upon mature native oaks as major landscape elements. A 1991 tree survey of Lincoln Park found several 200-300 year old native oaks located on an ancient beach ridge currently used for picnics and other passive recreational activities (Green, 1992). Historic landscape designation, accompanied by ecological restoration, could be appropriate for the site, and the feasibility of relocating the picnic areas away from these historic trees should be studied. In addition, the area could be planted with other native oak species, along with native flora in the understory.

Prairie. Acceptance of prairie landscapes was lower among the public group than any of the aforementioned ecosystems. There were also significant differences in ethnic group preferences for prairies: African-Americans, in particular, rated prairies lower than other groups. The lack of trees, blocked vision in tall-grass prairies, and lack of the traditional "groomed" aesthetic look are possible causes for the lower public ratings (Kaplan and Kaplan, 1989). In contrast, employees in the survey ranked prairies as the most highly acceptable type of ecological restoration for Chicago parks. Designers and planners should be aware of this difference, and not allow their selection bias to override public preference.

Generally, less populated park areas with lower recreational

use might be considered for prairie creation. A landscape option that might be more acceptable would be the use of prairie flora in a stylized design around existing trees and shrubs, or in hard-to-manage edge areas, creating fewer areas of mowed lawn (see Nassauer, this volume). A stylized natural landscape may incorporate some the natural features of a location, and give some regional identity to these areas. If seen successful and desirable, these areas could be expanded into a full-scale ecological restoration in the future.

Wetlands along Lake Michigan. The lowest public rated ecosystem in the Lincoln Park survey was wetlands along Lake Michigan shores. The low rating might reflect public concern that an ecological restoration along the lake would occupy land that is currently used for beaches and other high demand waterfront activities. Ironically, much of this area's lakeshore in the Native American landscape consisted of wetlands; today there are few feasible options for this type of restoration in Lincoln Park. Elsewhere along the city's lakeshore there is an undeveloped beach area near the South Shore Cultural Center where an ecological restoration might be feasible and desirable for educational and recreational purposes. In addition, wetland creation from new landfill off the current lakeshore could add significantly to the city's lakefront park system and contribute to the ecological quality of the urban environment. However, the cost of construction and maintenance needed to sustain the integrity of such a project could provide formidable resistance.

Perceived Benefits of Ecological Restoration

Education. Of the benefits mentioned in the Lincoln Park survey, education could be the most important incentive for the creation of ecological restoration sites. People today are generally more educated about nature through facts on ecology and pollution, rather than through direct experiences with the natural world (Swan, 1990). However, programs that provide environmental knowledge indirectly through words and the media may neglect the emotional ties between people and nature. Given the diverse population of Chicago, community participation at local ecological restoration sites could offer opportunities for environmental education to groups unable to visit natural areas elsewhere. Education programs might help nurture an ethical change and increased responsibility toward the environment for all age and ethnic groups.

Environmental education programs for urban residents are often hindered because of the current low biological diversity of urban parks (Gobster, 1992). Ecological park sites near schools could be used in environmental education programs, and could provide opportunities for student participation in site creation and maintenance. Involvement by local institutions and park programs could prove valuable in such efforts; in Chicago natural ties include the Lincoln Park Zoo, the Chicago Academy of Sciences, and the Field Museum of Natural History. On-site interpretative signage could also help explain the intentions of ecological restoration projects. This might also reduce some negative public feedback from those who do not understand the purpose of the ecological site. A variety of methods are needed to convey the message to the public that an ecological restoration is a management redirection with a sense of purpose, and not a condition of neglect (Nassauer, 1992).

Appearance. Some in the public sample perceived that the general appearance and aesthetics of the park could be improved through ecological restoration projects. However, other findings from this and related research show people generally prefer traditional "scenic" and "manicured" park landscapes, and perceive ones resulting from certain ecological restoration projects as "weedy" (e.g., Nassauer, 1988). The aesthetics of landscape design is an important goal in serving the public good, but if visual appearance is used as a sole criterion in defining how ecosystem restorations are carried out, this could compromise the intrinsic ecological values of a site (Allen & Hoekstra, 1987).

Aesthetic design considerations may be paramount in certain visibly conspicuous ecological restoration areas (e.g., near streets, homes, buildings) in Chicago parks. For example, small, garden-like ecological areas (e.g., .5 acre) could serve as demonstration areas in many parks for people to observe some characteristics of the native landscape (Hobbs, 1988). However, planners should be aware that overly-stylized native landscape designs may mislead the public about the full worth of ecological restorations, as well as how real nature looks and functions. Thus in a few locations it would be valuable to have larger sites (e.g., 10 acres) where the public could get a stronger sense of the native landscape and the ecological processes that occur.

Wildlife. The opportunity to view wildlife was a highly rated reason in the Lincoln Park survey for visiting an ecological restoration site. Wildlife can enrich the park experience for visitors, along with providing additional recreational opportunities. An ecological restoration area within Lincoln Park could improve the factors that limit park wildlife. Some crucial elements currently not in the park landscape include leaf litter, dead trees, and ground cover (Nilon & Lindenlaub, 1992). Placement of ecological restoration areas near potential sources of wildlife (e.g., cemeteries, rivers, etc.) could enhance and attract additional fauna to an ecological restoration site.

Economic. Although the public did not mention economic values as a significant benefit, it is possible that some long-term savings could result from ecological restorations in urban parks. Some ecologists have suggested that costs might be reduced by the adoption of natural vegetation patterns that would require less maintenance. While a shift to a naturalistic landscape approach may not reduce costs initially, it could alter the approach of the specific maintenance duties (Parker, 1986). An ecological restoration maintenance crew-- using retrained landscape maintenance employees --could absorb some site duties. The reduction in labor intensive park maintenance duties (e.g., mowing, pruning and fertilizing) for ecological restoration areas could result in long-term cost savings (Parker, 1986).

Volunteers. This survey found almost half the sample

willing to volunteer in a restoration effort in Lincoln Park, and most park employees in favor of using volunteers. While the actual number of people who would volunteer might be less than who answered "yes," the positive survey response holds promise for future park endeavors. If a volunteer program was to be created by the park district, a coordinator might be necessary to work with community, school, and other organizations. Volunteers could be used for the maintenance and educational interpretation of ecological restoration areas, and might reduce park district costs.

Perceived Problems of Ecological Restoration

Appearance and Maintenance. The general appearance and maintenance of ecological restoration sites in Lincoln Park was perceived as a potential problem by the majority of the sample. Many factors affect visual acceptance: proper site selection, signage, educational programs, design, and maintenance. Addressing these factors may alleviate aesthetic concerns, especially in the critical stages of a restoration (e.g., site establishment, burning). Choosing a restoration site buffered from residential views might prevent negative public reaction from those who perceive ecological sites as weedy in appearance, although many in the survey expressed a positive reaction to the possibility of living "across the street" from an ecological restoration site. The overall reaction of living "across the street" from an ecological site may depend upon the specific ecosystem and condition of the restoration.

Safety and Security. The safety and security of ecological restoration sites was mentioned by a substantial portion of the public sample. Proper signage might increase the feeling of security for visitors (Gobster, 1992). Site location, along with nearby features which are not part of the ecological restoration, could also influence visitor perceptions of safety. By locating an ecological restoration near the Lincoln Park Zoo or a field house, the site could be used for educational programs and at the same time reduce the feeling of isolation that might inhibit some from visiting. Given that only 11 percent of the public sample specifically mentioned crime potential as a problem, this issue might not be as significant as other issues.

Ecological Limitations. If the goal of an urban park ecological project is to restore biological communities to their native state, or to a "self-sustaining" condition, one should expect that goal to be unattainable. The space limitation of a Chicago park restoration area can restrict some of the ecological process, and require close monitoring to control successional change in the mixed communities of native and exotic flora and fauna. Ecological populations isolated in a Chicago park tend to be small and prone to extinction, partly because they depend upon resources beyond the boundaries of the community (Allen & Hoekstra, 1987).

Use Restrictions. To maintain the viability of ecological restorations, in some cases it may be necessary to restrict public access. While a high percentage of the public saw the need to impose use restrictions, there were significant differences among ethnic groups. A higher percentage of African-American, Hispanic, and Asian individuals expressed that no area of the park should be restricted to the public. This might reflect the institutionalized restrictions and prejudice that some of the ethnic respondents have experienced. Further information on this issue should be gathered before ecological restoration sites are developed in neighborhood parks, and encouraging participation in the restoration could help gain the acceptance and enjoyment of sites by the local community.

Use of Controlled Fires

The use of controlled fires in urban park restorations is an important and controversial maintenance issue. Current information on ecological restoration projects suggests that the use of fire is a major element in the eventual success of the restoration. Given the survey responses, public education would be necessary to increase acceptance of this management tool for all groups, with special concern directed toward Hispanic, African-American, and younger people.

Park Employees Management Considerations

There were numerous similarities between the responses of park employees and the public. Given the diverse population and recreational uses of Chicago's parks, employees were cautious in predicting public reaction to ecological restoration sites within the park system. The concern exists within many park employees that negative public reaction over a perceived weedy appearance could be translated into poor public relations and negative press coverage, with repercussions from park administrators. These factors can stifle new landscape design or maintenance techniques. Park designers and maintenance workers have seen first-hand the level of effort in the installation, coordination, management, and maintenance of various parks landscape projects. Despite these practical and often justifiable reservations, survey findings generally show support by key administrators and field workers for urban park ecological restoration sites.

Research and Policy Implications

Ecological Inventory. A thorough inventory of potential ecological restoration sites should be accomplished throughout the park system, to evaluate the scope and parameters of restoration efforts. The inventory should include documentation of native vegetation (e.g., condition and type), historic trees (e.g., oaks) and landforms (e.g., ancient beaches, ridges), along with analysis of wildlife habitat areas. Such an inventory could contribute to the establishment of an urban ecological data base, and over time help to evolve and refine the science and technology of urban ecological restoration. A study of the biological and social forces acting upon urban ecological restoration areas is a logical and important extension of such research, and should receive future attention.

Social Research. Statistical comparisons of survey responses given by participants of different ethnic and age groups revealed more commonalities than differences in perceptions and preferences toward ecological restoration. However, some important differences were found, and further research could provide data on these groups regarding specific issues. These data could be used to anticipate public response and more effectively serve park users.

Park Management Policy. There is a need to re-examine urban park landscape management policies in relation to ecological sites. Although athletic fields in urban parks are valuable and desired, their purpose is often limited in serving the varied needs of an urban population (Kaplan and Kaplan, 1989). The idea that parks should be used exclusively for active recreation is an inaccurate view that contradicts the history of park development in America and most current user preference research (e.g., People, Places, and Design Research, Inc., 1991). A better balance is needed between active and passive recreational spaces, and the psychological benefits of urban nature as provided through ecological restorations sites deserve closer attention by park managers and planners.

The evolution of urban park and recreation departments to include ecological conservation and preservation agendas, in addition to the current practice of historical preservation of buildings and statues, is essential. The American urban design tradition has often viewed nature as a "humanized landscape" influenced by horticultural science which replaced the native landscape (Hough, 1990). Urban parks could be an important element in the concept of biologically sustainable management (Hough, 1990).

Conclusion

With 74 percent of the United States' population living within urban areas, a majority of the nation's 21st century decision makers will have grown up in cities (Reference Bureau Inc., 1991). The location of ecological sites in or near cities could offer increased environmental awareness and education opportunities and might allow a reconnection with the natural environment for urban residents. Ecological restorations could also help redefine the regional sense of place which we seem to have lost in our park and residential areas, and help to improve the sustainability of these landscapes. These ideas need to become part of the ethical consciousness of future planners, teachers, and political leaders, to inspire action for more livable urban spaces and healthier residents. Although cities appear to have evolved into an imbalanced ecological monotony, their biological base is not as sterile as once believed. The potential exists for change and improvement of urban ecological diversity and increased environmental education awareness through the use of public parks, applying some of the principles of ecological restoration.

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HOUSEHOLDERS' EVALUATIONS OF STREET TREES IN SUBURBAN CHICAGO

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Residents of a Chicago suburb were surveyed about the street trees in front of their homes and in their neighborhoods. The survey determined residents' perceptions of the benefits and annoyances they receive from the trees; the trees' size, shape, and growth rate; and the quality of maintenance the trees receive.

Research on the esthetic quality of residential streets in the midwest has shown that street trees are the single strongest positive influence on the quality of the view along the street (Schroeder & Cannon, 1983; Buhyoff et al., 1984; Lien & Buhyoff, 1986; Schroeder & Cannon, 1987). Research carried out independently in Ohio and Michigan communities has yielded comparable models for predicting how the visual quality of street corridors varies depending on the number and size of street trees (Schroeder et al., 1986).

These studies have provided useful information for managing vegetation in street corridors, but they have several important limitations:

1. They examine the view looking along the street more or less as it would be seen by a passing motorist. The visual quality of the view from this perspective is not necessarily the same as it would be from the perspective of a person viewing the street from a yard or house.

2. The studies use photographs to represent the appearance of the streets. These photographs accurately depict the global visual character of the street, but do not convey visual details of individual trees, nor important nonvisual benefits and annoyances that homeowners experience through day-to-day contact with a tree.

3. Evaluations of the visual quality of streets have usually been made by people who do not live in the neighborhoods or communities shown in the photographs.

To obtain more detailed knowledge of householders' perceptions and preferences about the trees in front of their own homes, a survey was developed and tested in California cities (Sommer et al., 1989; Sommer & Sommer, 1989). This survey asked people to evaluate their overall satisfaction with the street trees in front of their residences, the importance of several benefits and annoyances associated with street trees, and their satisfaction with attributes such as the size, shape, and growth rate of the trees. Significantly different levels of satisfaction and different sets of specific problems were associated with trees of different species located in different cities. These results provide extremely useful information to guide future decisions on species selection for urban street trees.

The results of the California survey are not immediately applicable to communities in other parts of the country because differences in tree species, climate, demography, and other factors may give rise to very different patterns of response. Therefore, this survey method is best viewed as a tool that can be employed by individual urban foresters to obtain information from the people in their own communities. As a first step in the dissemination of this research methodology to communities outside of California, the present study used the survey approach to assess residents' satisfaction with three tree species in Downers Grove, a suburb of Chicago, Illinois.

Methods

The survey used by Sommer et al. (1989) was modified to include factors relevant to the Chicago area, remove factors relevant to California but not to Chicago, and include items of specific interest to this community. The survey was mailed to homes with three different species of trees: hackberry (*celtis occidentalis*), green ash (*fraxinus pennsylvanica*), and Kentucky coffee-tree (*gymnocladus dioicus*). A cover letter told the homeowner that the survey was being conducted by the Downers Grove Forestry Department in conjunction with the U.S. Forest Service and the Morton Arboretum. A postage-paid return envelope was included. In cases where there was more than one street tree in front of a home, a village employee marked the tree to be evaluated with a small spot of paint.

Results and Discussion

Response Rate

Of the 223 questionnaires mailed out, 90 were sent to homes with hackberry trees, 93 to homes with green ash, and 40 to homes with Kentucky coffeetree. Forty-one questionnaires (46%) were returned for hackberry, 43 (46%) for green ash, and 21 (53%) for Kentucky coffeetree. The overall response rate was 47.1 percent. Some of the returned questionnaires were unusable, either because the respondent left many questions unanswered, or because the respondent answered for more than a single tree or for a tree of the wrong species. This reduced the usable responses to 36 for hackberry, 36 for green ash, and 16 for Kentucky coffeetree.

Overall Results

This section summarizes the combined results for all three species of trees. Respondents in this survey had a generally positive opinion of their trees; 65 percent rated their tree as "good" or better. Twenty percent rated their tree as "poor" or "very poor." While this is a minority, it is still a large enough percentage to be of concern.

The most important benefits of street trees were visual--"pleasing to the eye" and "enhances look of my yard and house." Other important benefits included "brings nature closer," "increases property values," and "increases sense of community." The highest rated benefits averaged only between "minor" and "moderate" on the benefit scale. The fact that the benefits were not rated higher is perhaps due to the generally small size of the trees in the sample (see the discussion below on tree size).

The least important benefit was "flowers on tree." This probably reflects the fact that none of the species examined in this survey have showy flowers. Other benefits that were rated low included specific physical benefits such as "reduces noise," "slows wind speed," and "cools home in summer." The low performance of the trees on these more physical benefits may have been in part due to the small size of the trees. Also, the location of the trees (on the street and not right next to the house) would make them unlikely to have a cooling effect on the house itself.

The most important annoyances of trees in this survey involved falling leaves and other debris, insects, and diseases. The least important annoyances were those involving falling flower parts and those involving the tree blocking the sun or the view and making the surroundings too dark. Again, the minor importance of these annoyances may be due to the small size of the trees and the absence of flowering species in this study.

Overall, the annoyances were rated as being less important than the benefits. Even the strongest annoyance was rated on average between "minor" and "no annoyance." This suggests that, although noticeable problems may occur on particular trees, the annoyances of these trees are generally less prominent in people's minds than their benefits.

Three additional questions asked whether the trees attracted different kinds of animals, specifically birds, bees, and squirrels. According to the respondents, birds were attracted most frequently (41%), squirrels less often (19%), and bees hardly at all (5%). Birds were overwhelmingly viewed as a benefit, while bees and squirrels were generally viewed as neither a strong benefit nor an annoyance.

Several questions asked about people's satisfaction with different attributes of their trees. On average, people were satisfied with the form or shape of their tree. Seventy-seven percent thought their tree had a somewhat or very attractive shape, while only 20 percent thought the shape was unattractive. People were less satisfied with the size of their trees, however. Over half of the respondents said their tree was too small, while 32 percent thought it was just right. No one thought their tree was too large. Half of the respondents thought that their tree grew at a good rate. A substantial proportion (35%) thought their tree grew too slowly, and no one thought their tree grew too fast. Dissatisfaction with the size and growth rate of the trees was also reflected in the open-ended responses. People frequently commented that they were looking forward to the time when their tree would have a larger, fuller, more mature look. Several expressed impatience or disappointment with the slow growth rate of their tree.

The great majority indicated that their opinion of their tree had not changed over time. Of those that had changed, most indicated that their opinion had improved as the tree grew and acquired a more mature look (or at least that they expected that this would happen).

Most of the sample (67%) thought that maintenance of their tree was "good" or better. About one-fourth of the sample thought that the village should provide additional maintenance services. The most frequently requested additional services were pruning or trimming and fertilizing or feeding.

Despite the fact that most people expressed at least moderate satisfaction with their present tree, the majority (53%) said they would definitely or probably have preferred the village to have planted a different tree originally. Only 25 percent said they would not prefer a different tree. The most frequently preferred species named was maple (including red maple and sugar maple). The next most preferred was oak. The characteristics of preferred tree species most frequently named were color, large size, full shape, and fast growth rate.

Background questions

To characterize the respondents in this survey, several background questions were asked. The sample was evenly divided between male and female, with an average age of about 45 years. Average household income was fairly high ($56,000). Most respondents (82%) had attended college or technical school, with about half having completed degrees. The average length of occupancy was 12 years, and almost all owned their own house. Most of the respondents in this survey did their own yard work.

There were few differences in background characteristics between the subsamples that evaluated different species of trees. People with green ash trees tended to have a somewhat shorter average length of residency (9 years as opposed to 13 years for Kentucky coffeetree and 14 years for hackberry). People with Kentucky coffeetree were somewhat more likely to rent rather than own their residence, although the proportion of renters was still quite low. Overall, the responses to background questions were quite similar across the three subsamples, so it is unlikely that differences in preferences for tree species were caused by differences in these background variables.

Species differences

There were definite differences in responses to the three species of trees. Green ash received the highest overall

Table 1. Significance of independent effects of species and size on overall opinion.

Source	Sum of squares	df	Mean square	F	P
Species	6.56	2	3.28	5.43	.007
Size	10.09	1	10.09	16.70	.000
Species x Size	0.58	2	0.29	0.48	.622
Error	39.87	66	0.60		

opinion ratings. Its benefits were also rated higher than the benefits of the other species, particularly the important benefits of "pleasing to the eye," "increases property value," "fall color," and "increases sense of home and family." Green ash was given the highest ratings for shape, size, and rate of growth, and was also seen as being better maintained by the village. It was seen as attracting birds more often than the other species, and this was perceived as an advantage. Residents with green ash were less likely to wish that the village had planted a different kind of tree than were residents with the other two species. Green ash was clearly the tree with the best "image" in this survey.

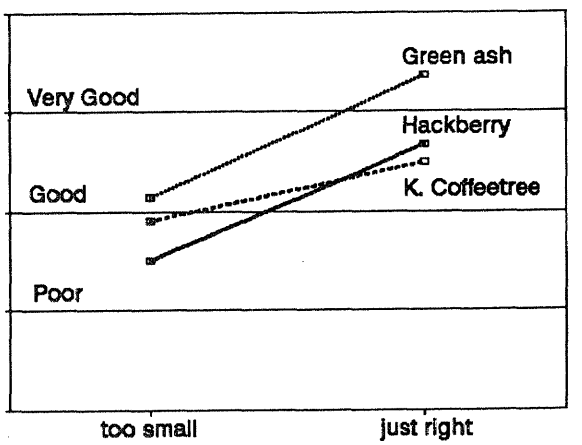

Figure 1. Overall opinion of street tree: Effect of species and size.

Kentucky coffeetree, on the other hand, appeared to be the least preferred species in the study. Its benefits were rated lower on average than those of the other two species, and its annoyances were seen as more severe. The problems of falling leaves, limbs, and especially sticks and pods were rated as more severe for this species than for the other two. Kentucky coffeetree attracted birds less often than the other two species, and was most often rated as being too small. Residents with Kentucky coffeetree were the most likely to wish that a different species had been planted originally.

Hackberry was rated approximately equal to Kentucky coffeetree in overall opinion, but did not exhibit any particularly strong specific annoyances. Its fall color was rated lower than that of the other two species. It attracted squirrels more than the other two species, but this was seen as neither a strong benefit nor an annoyance.

Table 2. Mean overall opinion rating (1=excellent,...,5=very poor) for different tree species and sizes (number of cases in parentheses).

	Size	
Species	Too small	Just right
Hackberry	3.50 (20)	2.33 (9)
Green ash	2.86 (14)	1.63 (16)
K. coffeetree	3.09 (11)	2.50 (2)

It appears from peoples' responses that the three species examined in this study were not equivalent in size, and that small size of the trees was a major source of dissatisfaction. This raises the question of whether preferences among species differed because the green ash species in this study happened to be represented by older, larger trees than the other two species.

An analysis of the combined effects of tree species and the perceived adequacy of tree size on overall satisfaction suggests that the differences in preference between species cannot be attributed solely to the difference in size between the trees representing each species. Both species and size have independent significant effects and their interaction is not significant (Table 1).

On average, trees evaluated as "too small" were rated as "good" in overall opinion, and trees evaluated as "just right" in size were rated as "very good" in overall opinion. Green ash was rated slightly below "very good" in overall opinion, while the other two species were rated as "good" (Table 2, Figure 1).

Relation Between Street Tree Benefits and Overall Satisfaction

Almost all of the individual benefits are positively correlated with both overall satisfaction with the tree and satisfaction with village maintenance of the tree (Table 3). This means that people who gave high ratings to the individual benefits of their tree also tended to rate their general satisfaction with the tree as high, and people who gave low ratings to individual benefits tended to rate general satisfaction as low. The benefits that seem to be most strongly related to overall satisfaction are "pleasing to the eye," "enhances look of my yard," "brings nature closer," and "increases property values." "Flowers on tree" and "cools home in summer" are the only two benefits that do not appear to be related to overall satisfaction.

Table 3. Correlations between street tree benefits, overall opinion, and opinion of maintenance.

Benefit	Correlation with overall opinion	Correlation with opinion of maintenance
Pleasing to the eye	.771 **	.571 **
Increases property value	.508 **	.466 **
Flowers on tree	.110	.113
Fall color	.375 **	.365 **
Gives shade	.283 *	.381 **
Reduces noise	.342 **	.349 **
Slows wind speed	.333 **	.357 **
Increases privacy	.422 **	.325 **
Increases sense of community	.399 **	.405 **
Cools home in summer	.119	.206
Filters pollutants from the air	.390 **	.387 **
Screens unwanted views	.254 *	.244 *
Brings nature closer	.538 **	.480 **
Enhances look of my yard and house	.589 **	.496 **
Increases sense of home and family	.398 **	.387 **
Provides spiritual values	.493 **	.303 *
Mean of all benefits	.542 **	.500 **

* $p<.05$ ** $p<.01$

Table 4. Correlations between street tree annoyances, overall opinion, and opinion of maintenance.

	Correlation with overall opinion	Correlation with opinion of maintenance
Sap drips from tree	-.104	-.001
Causes allergies	-.036	-.007
Insect damage to tree	-.139	-.057
Attracts annoying insects	-.087	.036
Roots too close to surface	-.093	-.089
Sidewalk damaged by tree roots	.020	.105
Branches or suckers from base or roots	-.166	-.055
Fruit, nuts, sticks, or pods fall from tree	-.219 *	-.062
Flower parts fall from tree	-.045	.056
Fallen leaves in autumn	-.041	-.126
Leaves fall throughout summer	-.207*	-.181
Falling limbs	-.006	-.051
Makes street or yard dark	.044	.127
Reduces safety by limiting visibility	.114	-.025
Roots clog sewers	.125	.111
Diseases on tree	-.207 *	-.065
Blocks view	.061	.077
Blocks sun so lawn won't grow	-.006	.042
Mean of all annoyances	.077	.151

* $p<.05$

Relation Between Street Tree Annoyances and Overall Satisfaction

Most of the individual annoyances are not significantly correlated with either overall satisfaction or satisfaction with maintenance (Table 4). This suggests that the presence of particular annoyances does not necessarily result in a lower overall evaluation of the tree or its maintenance. The only annoyances that do seem to be related to overall satisfaction are "fruit, nuts, sticks, or pods fall from tree," "leaves fall continuously throughout summer," and "diseases on tree."

Conclusions

The survey was effective in revealing the overall level of satisfaction, the most important benefits and annoyances, and the desired improvements in street trees from the point of view of the residents who experience the trees in front of their houses. There was a generally high level of satisfaction, but with a strong indication that people would like to have larger, more mature-looking, and faster growing trees. The most important benefits involved the visual quality of the tree and its contribution to the appearance of the home and yard. Physical benefits such as cooling the air and removing pollutants were seen as quite minor. Green ash was the most

preferred tree. Kentucky coffeetree, which had a problem with falling pods and sticks, was the least preferred.

The homeowners' desire for larger and faster growing trees is understandable, but urban foresters must weigh this desire against the longer term costs of selecting fast growing trees. Individual residents naturally take a short-term point of view; many of them may live in a particular home for only 4 or 5 years. Faster growing trees will provide more short term enjoyment for these residents but will incur greater maintenance and replacement costs over time. The urban forester must take a longer term view of the community's welfare, since trees planted today must serve not only present residents but future residents as well. From this point of view, trees with a slow or moderate growth rate may be the best choice despite the frustration they cause for current residents.

The major limitations of this survey were the small number of participants, the small number of species, and the apparently small size of the trees. If it is assumed that certain benefits of the trees, for example shade, are proportional to the size of the trees, then a valid comparison of the species should include substantial numbers of mature trees. Collecting information on the actual sizes of the trees (instead of just the residents' perceptions of adequacy of size) would also be very desirable for interpreting the responses that people give. All of these limitations could be addressed in future studies using this kind of questionnaire in Downers Grove and other Chicago-area communities.

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ETHNIC MINORITIES AND THE ENVIRONMENT SESSIONS

PERCEPTION AND USE OF PARK AND FOREST RECREATION AREAS

ETHNICITY AND RECREATION USE IN CHICAGO'S LINCOLN PARK: IN-PARK USER SURVEY FINDINGS

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A major planning effort for Chicago's largest park included two in-park surveys-- a random sample of all park users and a quota sample of ethnic minority users. The total sample of 898 park users-- 217 African-Americans, 210 Latinos, 182 Asians, and 289 Whites-- allowed the investigators to look in detail at recreation patterns and preferences among the racial and ethnic groups represented. Results showed that all park users shared many common interests, preferences, and concerns about the park and its management. But there were also some important differences between racial and ethnic groups, including differences in park use patterns, participation, and reports of racial discrimination. Suggestions are offered for the planning effort and for future research.

As Chicago's oldest, largest, and most heavily used park, Lincoln Park provides lakefront access and diverse recreation, leisure, and cultural opportunities to over 20 million users annually (Chicago Park District, 1989). Of these users, urban ethnic minority groups are an important and growing clientele. Concern about the park needs and interests of ethnic minorities was voiced by a citizens task force on recreation and leisure, one of eight task forces assembled by the Chicago Park District to direct studies leading to a master plan for Lincoln Park. An in-park survey commissioned for the master plan during Summer 1990 yielded a random sample of 409 park users. But because the large majority of park use is by Whites, the information collected on particular ethnic groups through the on-site survey was sparse: The random sample of 409 individuals included 49 Blacks, 45 Latinos, and 16 Asians. To better understand the needs and interests of ethnic minority park users, a followup survey was conducted the next summer. This paper reports the combined results of both surveys and addresses the following objectives:

1) To develop an on-site sampling design and interview procedure to collect information from ethnic minority park users;

2) To identify park use and activity patterns, and compare these findings across racial/ethnic groups;

3) To collect information particular to minority park users, including racially or ethnically based problems and concerns.

Methods

The on-site survey instrument developed for the original study contained 14 items addressing use patterns, activities, preferences, management concerns, and user demographics. The followup instrument included the same basic set of questions as the original, but was expanded to address additional issues regarding preferred locations within the park, incidences of racial discrimination, and ethnicity. A Spanish-language version was made available for Latino park users.

In the original survey sampling design, the park was divided into three major zones (south, middle, and north) and 30 subzones (e.g., beach, harbor, playfields), and interviews were conducted within each zone at various times and days of the week to attain a representative cross section of park users. Because the park's south end is more heavily used, a higher proportion of interviews took place there. During each sampling period the interviewer made a "sweep" along a predetermined route through one of the subzones, and at a predetermined interval used a random procedure to solicit interviews from park users. The final sample of 409 users provided a reasonable estimate of the proportion of different racial and ethnic groups who use the park: 71 percent White, 12 percent Black, 11 percent Latino, 4 percent Asian, and 2 percent other.

Our followup survey used a modified version of the original sampling design to increase the sample of minority park users. We focused our sampling more heavily on the park's north end because of the higher minority use there. Sweeps through subzones were made in a similar fashion, except only minority park users were asked for interviews. An "ethnic team" concept was used, where Black interviewers interviewed Black park users, Latino interviewers interviewed Latinos, and Asians interviewed Asian users. This procedure helped to ensure a more comfortable conversation with park users, especially on sensitive topics such as discrimination. In some cases, this also helped to complete interviews with non-English-speaking park users. A quota of 167 completed interviews per ethnic team (500 total) was established, with guidelines given on how to spread the interviews out over time and space. As with the original survey, the goal of this procedure was to aim for a representative cross-section of minority users.

Findings

Between the two surveys a total of 911 interviews were completed. There were few refusals in either survey (less than 10%), with most of those declining because they did not have the time or because of language differences. A few of the questionnaires from the original survey were not usable because race/ethnicity was not given. This resulted in a total usable sample size of 898, of which 217 were Black, 210 were Latino, 182 were Asian, and 289 were White.

Research findings showed that all park users shared many

common interests, preferences, and concerns about the park and its management. But there were also some important differences between racial and ethnic groups, ones that could have implications for planners trying to better understand and meet the needs of an increasingly diverse clientele. Major study findings are summarized by the following five points:

1) Lincoln Park is a regional draw to many minority users. On the whole, minority park users tended to come from farther away to use the park, more often came by car, and used the park less frequently than White park users. Zipcode information from the combined data set showed that 80 percent of White park users came from neighborhoods nearest the park, compared to around 60 percent of minority users. For the remaining 40 percent of minorities, a significant percentage of Blacks (36%) came from neighborhoods south of the park, while a major portion of Latinos (37%) came from west side neighborhoods. Asian park visitors were the most dispersed group, with a relatively high percentage (19%) coming from the suburbs. Travel time estimates were solicited only in the minority survey; they averaged 22 minutes for Blacks, 19 for Latinos, and 30 for Asians.

Shorter living distances to the park may partially explain the large differences between Whites and minorities in how they reached Lincoln Park. A full 54 percent of Whites walked to the park, and only 30 percent drove. These figures were essentially reversed for Blacks and Latinos, while most (83%) Asians drove and only a few (9%) walked. Bicycling was an option chosen by 10 percent of both Blacks and Whites; Latinos were the only group for whom mass transit was a major form of access (20%).

Of the ethnic groups, Whites used the park most often, with 42 percent stating that they used Lincoln Park on a nearly daily basis. Latinos, however, were also frequent visitors; 37 percent stated they came to the park "virtually every week," and another 24 percent stated they came "virtually every day." Blacks and Asians showed a larger range in frequency of park use, with about a third of each group classified as light users (3 times/year or less), a third moderate (4-25 times/year), and a third heavy users (over 25 times/year). There was a small, negative correlation between travel time and frequency of park use, showing that those who lived farther away from the park were likely to use it less often (r= -.24, p< .001). Again, data on travel time were available only in the minority survey, so we do not know if this relationship holds true for White park visitors.

2) Families and organized groups are important social units of participation for minority visitors to Lincoln Park. One of the biggest differences among racial/ethnic groups who used the park was in terms of social group size and composition. Whites tended to use the park as individuals or couples, and had an average group size of 1.6. Minority groups were significantly larger, averaging 3.7 for Blacks, 4.4 for Latinos, and 5.0 for Asians. Latinos and Asians had relatively high percentages of large groups; over 10 percent of each reported using the park in groups larger than 10 persons. Group type information was collected in the minority survey only. Although results showed that one-third to one-half of minority visits took place by individuals or couples, the survey also revealed the importance of family groups in the social patterns of minority users of Lincoln Park. Visits to the park by families accounted for 38 percent of park use by Blacks, 41 percent by Latinos, and 47 percent by Asians. In all three cases, park use by "extended" families-- the immediate family plus close relatives and friends-- was the rule rather than the exception. This contrasts with the available information on White park users, 88 percent of whom either came alone or with one other person. Organized outings also figured significantly in the types of groups in which Blacks and Latinos used the park, with 11 percent of visits by each occurring in organized groups.

3) There is a core of shared activities common to all groups, but some activities and activity types reflect different ethnic or cultural "leisure styles." We asked park users in two open-ended questions what they were doing at the time of the interview and what they liked to do in the park during other times and seasons. The answers to these questions are categorized in Table 1, showing activity participation by race/ethnic group.

Common Activities. Results showed a core of high participation activities that occur in the park regardless of race or ethnic group. These activities included walking, swimming or sunning at the beaches; picnicking and barbecuing; going to the zoo; sitting and relaxing; and bicycling. Frequency of participation for these top activities (averaged over all groups) ranged from 27 percent for walking to 14 percent for bicycling. Some groups, however, participated in these activities to a much higher extent than others. Whites, for example, walked and bicycled much more than other groups, while more Latinos and Asians picnicked, and more Latinos visited the zoo than did other groups.

Group Variations. Outside of the core activities were other pastimes that some groups participated frequently in while other groups did not. As with the use patterns, these activities help to define cultural differences in leisure that may be important to recognize when planning for particular groups. Some of these differences might be understood in terms of the category groupings shown in bold in Table 1, while others are best understood by the particular activity itself.

- ***Passive Activities:*** All minority groups participated in passive, social park activities to a greater extent than White users. Picnicking has already been mentioned as a frequent activity among Latinos and Asians; other passive social activities include talking and socializing by Blacks, participating in organized festivals and parties by Asians, and watching organized sports by Latinos.

- ***Active-Individual Sports:*** Whites were the most active in active-individual sports. Walking and bicycling have already been mentioned; other activities in this category that showed significantly less participation by minority groups included jogging and dog walking.

Table 1. Things people do in Lincoln Park, by race/ethnicity.

Response Categories	% Black n=217	% Latin n=210	% Asian n=182	% White n=289	% All	N All 898	χ^2 sig. (p)
Passive	50.2	66.2	63.7	45.0	55.0	494	0.000
Sightseeing/hang out	11.1	9.1	16.5	3.1	9.1	82	0.000
Sitting relaxing rest	16.1	18.1	7.7	21.1	16.5	148	0.002
Taking in fresh air	.9	4.9	.0	.7	1.6	14	0.000*
Watch people, opp. sex	8.3	4.3	.6	6.2	5.1	46	0.004
Watch organized sports	2.8	5.7	3.9	1.0	3.1	28	0.026
Talking, socializing	7.8	4.8	2.8	.7	3.8	34	0.000
Dating, affection	1.8	3.3	1.1	.4	1.6	14	0.059*
Picnicking, BBQ	10.6	33.8	32.4	16.3	22.3	200	0.000
Festivals, parties	1.8	3.3	14.8	2.1	4.9	44	0.000
Active Individual	32.7	33.3	24.2	75.8	45.0	404	0.000
Walking	16.6	18.1	13.2	50.2	27.1	243	0.000
Jogging, Running	3.2	7.6	4.4	18.3	9.4	84	0.000
Bicycling	11.1	11.9	6.6	22.5	14.0	126	0.000
Rollerblade/skateboard	.0	.0	.0	3.5	1.1	10	0.000*
Exercising	3.7	2.4	4.4	4.2	3.7	33	0.695
Walking the dog	1.4	1.9	1.7	10.0	4.3	39	0.000
Active-Group	18.4	28.6	23.1	22.2	22.9	206	0.095
Playing Soccer	.9	12.4	1.7	.0	3.5	31	0.000
Playing Baseball	3.7	2.4	1.1	4.5	3.1	28	0.180
Playing Basketball	6.5	1.4	.6	.0	2.0	18	0.000*
Playing Volleyball	.5	2.4	6.0	3.5	3.0	27	0.011
Playing Tennis	.9	1.0	1.1	4.8	2.2	20	0.004*
Playing Football	.0	.5	.6	.0	.2	2	0.456*
Playing Golf	1.4	1.0	6.6	6.6	4.0	36	0.001
Play oth. org. sports	2.8	2.9	1.7	1.0	2.0	18	0.406*
Children Playing	.5	6.2	1.7	.4	2.0	18	0.000
Playing Games	1.8	.0	1.1	3.5	1.8	16	0.030*
Playing Frisbee	.5	2.4	1.7	1.7	1.6	14	0.441
Water Sports	18.0	38.6	25.8	39.1	31.2	280	0.000
Swimming, sun on beach	13.8	33.8	15.9	35.0	25.7	231	0.000
Fishing	3.2	4.3	9.3	2.4	4.5	40	0.003
Boating, watch boats	1.4	1.0	.6	3.8	1.9	17	0.033*
Miscellaneous							
Zoo, watch zoo animals	10.6	28.6	12.6	18.3	17.7	159	0.000
Museums, Conservatory	.9	1.9	.0	2.1	1.3	12	0.216*
Birding, feed birds	.0	.0	.6	1.4	.6	5	0.113*
Commuting through park	.9	1.0	.6	.0	.6	5	0.435*
Working, studying	.5	1.0	2.2	1.4	1.2	11	0.447*

*Results of the χ^2 significance test for this activity may be unreliable because 1 or more groups had low participation rates (5 individuals or less).

- ***Active-Group Sports:*** All groups participated in active-group sports in the park, but the types of activities differed among groups. For Blacks, basketball was a frequent pastime, for Latinos it was soccer, and for Asians volleyball and golf. More Whites also mentioned golfing as an active-group sport, and had relatively higher percentages of participation in tennis and game playing than other groups.

- ***Water-Oriented Activities:*** Participation in water sports among groups differed by activity. As mentioned in the core group of activities, Whites and Latinos were relatively more active in swimming. Fishing was more often mentioned as an activity by Asians, and Whites were more likely to participate in boating-related activities.

Finally, as an overall measure of how similar the groups were in their activity preferences in the park, we correlated the rank order of activities between each group. The highest correlation was r_s= .69 between Blacks and Latinos, indicating a moderately high correspondence between the groups' activity

participation in the park. The two groups with the least in common were Whites and Latinos, reflected in the moderately low correlation of r_s= .35.

4) Discrimination has affected 1 in 10 minority users of Lincoln Park.

An important issue affecting minority groups who use parks is racial discrimination. We asked the question directly: "In your past use of the park were there any times or situations where you felt discriminated against because of your race or ethnic background?" Interviewers from the same racial/ethnic group then probed about specific circumstances, locations, and times. Results showed that on the average 1 in 10 respondents stated they had been discriminated against in the park. Reports of discrimination were highest among Blacks (14%), and somewhat less among Latinos (7%) and Asians (9%). Incidents of discrimination recalled by respondents were from three sources: from other users (4%), from police (4%), and those that were facilities or staff related (0.5%). Discrimination from other users included verbal harassment, physical gestures or assaults, and nonverbal messages resulting in a feeling of discomfort. Police-related incidents included verbal harassment and complaints about being treated unequally compared to Whites. Finally, reports of facilities and staff-related discrimination mentioned unfair treatment of minorities and an unequal distribution of facilities in park areas that are predominantly White compared with areas that are predominantly minority.

5) Ethnic backgrounds reflect a great diversity of park users.

A final question addressed in the followup survey was the issue of ethnicity itself. Results up to this point have been reported on the basis of four major racial/ethnic groupings, but study findings suggest that for some questions these comparisons may overlook differences that occur because of particular subcultural or regional ethnic distinctions. Park users we interviewed identified with 25 different ethnic groups; these users were from large, well-established Chicago ethnic groups such as Mexicans and Filipinos, and smaller groups of more recent immigrants from countries in Africa, Central and South America, and South and Southeast Asia. African-Americans who have lived in the U.S. for many generations are often treated as culturally homogeneous in recreation research, but some literature suggests that there may be differences in leisure patterns and activities within the African-American community. In northern cities such as Chicago, one such difference is between those whose recent ties are to the northern U.S. and those who (or whose parents) moved to the North from the South (Woodard, 1988). We questioned African-Americans about their recent regional ties, and included southern and northern subgroups in the analysis.

Because of small sample sizes, comparisons between some ethnic groups may be unreliable, but some preliminary comparisons can be made for the larger ethnic groups or regional groupings (Central and South American, Southeast Asian).

Blacks. In terms of use patterns, African-Americans with recent southern roots lived in neighborhoods closer to the park, more often traveled there on foot (34% vs. 19%), and were more likely to frequent the park on a weekly or daily basis (42% vs. 20%) than Blacks with northern roots. Activity participation also differed; those with southern roots were more likely to fish (5% vs. 1%), swim (14% vs. 6%), and picnic (12% vs. 4%) in the park, while those with northern roots were more likely to bicycle (14% vs. 5%) and golf (2% vs. 0%). There were too few Blacks in our sample who identified with countries in Africa or the Caribbean to make reliable comparisons for these ethnic groups.

Latinos. We found few differences in use patterns between Latino groups, but there were some variations between Mexicans, Puerto Ricans, and Central and South Americans in the activities they pursued in the park. The biggest of these activity differences was with soccer, which was played by 26 percent of Central and South Americans, 14 percent of Mexicans, and no Puerto Ricans. In other activities, basketball had higher rates of participation among Puerto Ricans (7%) and Central and South Americans (6%) than Mexicans (1%); swimming was more frequent among Puerto Ricans (47%) than Mexicans (31%) or Central and South Americans (23%); and more Mexicans (40%) and Central and South Americans (32%) picnicked than Puerto Ricans (13%). There were too few Cubans in our sample to include in these comparisons.

Asians. Asians had the most diverse use patterns and activity participation, perhaps reflecting the number of different groups for which we had data to compare. With respect to use patterns, Japanese park users stood out among the other groups most distinctly. This group lived closest to the park, had the highest proportion who came on foot (31%), and used the park every week or every day (46%). Filipinos also stood out among the other groups in their social use of the park. They were more likely to use the park in organized groups (14%) and to come in large parties of 11 or more (27%). Comparisons in activity participation showed that fishing was relatively frequent among Filipino and Southeast Asian groups (16% each), but did not register as an activity for any of the other groups. Volleyball was somewhat frequently mentioned as an activity among Filipino (11%), Japanese (15%), and Chinese (7%) park-goers, but not among the other groups. Golf, too, showed up as an activity among some Asians, particularly Southeast Asians (14%) and Japanese (8%). Finally, picnicking and barbecuing was frequently mentioned by Filipinos (62%), South Asians (46%), and Chinese (36%), but less so by the other groups.

Discussion and Implications

Accessibility and Park Use

Access to park opportunities is a key issue in the planning and management of recreation areas. An important aspect of park accessibility addressed in this study relates to physical site accessibility: site location, site characteristics, and available transportation systems (Wendling, 1981). For this factor, our study data reveal some potential constraints to access by minorities. In terms of site location, a significant proportion

of Black, Latino, and Asian park users live in neighborhoods farther away from the park than do White park users. For these users Lincoln Park serves as a regional attraction, but most Whites who use it come from local neighborhoods. Distance to the park, combined with other factors such as larger family-oriented groups, can restrict the choice of feasible transportation alternatives. The automobile in these cases becomes more important as a means to reach the park, and for some visitors, especially some Asians, parking was cited as a problem that hampered access. Master plan policies instituted for parking should recognize that further parking restrictions could have a disproportionate impact on these users. For other users, including a significant percentage of Latinos, mass transit appears to be a feasible option. Further study of user origins could more definitively identify likely travel corridors to and within the park, and thus facilitate park use by current mass transit users and encourage more to use this alternative.

Activity Participation

User demand for recreation opportunities involves more than access to a park; it also includes participation in a preferred activity. Much of the existing research on leisure and ethnicity has focused on comparisons of activity participation among groups (e.g., Washburne and Wall, 1980; O'Leary and Benjamin, 1982; Dwyer and Hutchison, 1990; Dwyer and Gobster, 1992). These comparative studies provide useful information for park planning and management, and give us a baseline to compare our own findings.

Studies of activity participation have found differences between White and minority (most have dealt only with Blacks) groups, and have described an "underparticipation" by minority groups in some types of outdoor activities such as swimming in lakes, boating, hiking, and camping. Such differences have been explained in terms of "marginality" factors (e.g., Washburne, 1978), but have also been explained in terms of differences in leisure styles that are ethnically based. Our on-site survey provided a useful way to rule out some marginality factors that might otherwise play a role in looking at inter-racial/ethnic differences. For those surveyed, the costs of getting to the park have already been accomplished, and in an urban setting such as Lincoln Park most of the activities that take place require little investment in equipment or user fees. Despite this relatively equal baseline, we found substantial differences between racial/ethnic groups in their activity participation.

Activities with high participation by Whites tended to fall in the "active-individual" category, including activities such as walking, bicycling, jogging, and dog walking. Minorities as a whole had higher participation in passive, social activities such as picnicking, sightseeing, socializing, and attending festivals and parties. All in all, the substantial number of statistically significant differences among groups-- on 24 out of 34 activities --shows that there are important variations in activity participation that may at least be partly due to ethnically based preferences. As further evidence of the ethnicity thesis, we also found substantial differences among groups on activities such as swimming, golfing, and relaxing, where the major source of variation was not between Whites and minorities but between two minority groups.

Research supporting ethnically based differences in activities suggests the implementation of policies and programs that meet the interests of these individual groups. Our data show that an equitable planning strategy would take into account what important interest groups like to do and see and would integrate these preferences into current programs and budgets. In the case of Lincoln Park, management activities that maintain and upgrade the quality of the "passive landscape" and facilitate social interaction-- picnic areas, seating, the sidelines of sports fields-- will improve conditions for all park goers including minorities. Active group facilities, notably basketball courts, soccer fields, and children's play areas, should also be maintained in quality condition because of their centrality to minority park use. This part of the study did not provide information on the adequacy of current facilities, though park managers should investigate the distribution of facilities throughout the park, paying particular attention to areas that are popular for use by minority groups.

Social Use Patterns

Along with activity participation, the social patterns of park use by minority groups show distinct differences when compared with White users. The results of this study are supported by two observational studies of Chicago area parks: one by Hutchison (1987), the other by Gobster (1992). Both studies showed larger group sizes for non-White park users, and Hutchison found substantially different group types between Whites and Latinos. In fact, Hutchison argues that it is: "the social composition of recreation groups-- rather than the specific activity --which is most important in understanding the differences and similarities between ethnic and racial groups (p. 206)."

Management actions that can facilitate ethnically based social patterns of use might include table and seating arrangements that accommodate larger groups; an information and permit system that minimizes the difficulty of obtaining picnic areas for organized group festivals; and location and maintenance of restroom facilities throughout the park that provide safe and clean access.

Discrimination

Inter-ethnic user conflict is one aspect of a larger problem that confronts some minorities who use parks, namely discrimination. Discrimination is a serious issue in park management, even when reports of it are relatively isolated. In its mildest forms, discrimination can make users feel uncomfortable and decrease their enjoyment of their recreation experience. At higher levels it can generate anger and physical violence, and result in user displacement or non-use by some groups altogether.

Of the three sources of discrimination identified in our study, those stemming from police and from park staff and facilities may be the most treatable. Police and park supervisors should make their staffs more sensitive to the possibilities that their language and actions can discriminate against certain groups,

or be perceived as such. For example, we heard several reports from Black males who were stopped by police and searched because they were carrying duffel bags, and who felt they were under suspicion simply because they were Black males. Several Latinos also reported being hassled or arrested for illegal consumption of alcohol in the park, while Blacks and Whites nearby who were also drinking were left alone. We do not advocate that police stop doing their job, but how they do it could make a difference. By treating all park clientele equitably and courteously, police and park staff can help minimize actual and perceived discrimination against minority users.

In some cases sensitivity awareness and training could go a long way in minimizing discrimination, but in other cases a more substantial commitment to change might need to be made. In parks like Lincoln Park that have large concentrations of certain minority groups, staff of the same race or ethnic group, and in some cases staff who speak the same language, could go far in serving the needs of clientele and minimizing actual and perceived discrimination. This might require hiring new employees or relocating those already on the job.

We heard only one complaint about facility inequities in our study, but considering the size of the park and segregation of minority groups, possibilities for an uneven distribution exists. Park managers should investigate the quantity and quality of facilities, services, programs, and staff throughout the park, paying particular attention to areas that serve minority clientele. Racially based "park equity" (Brune, 1978; Knopf, et al., 1987) can be seen as part of a growing concern for "environmental equity" that includes such related issues as toxics, air pollution, and landfill siting (Bullard and Wright, 1990). As with the environmental equity movement, as grassroots groups voice concerns about their open space and recreation needs, more demands will be put on public parks to service them. By taking a proactive approach through surveys and other forms of outreach, park managers can avoid negative reactions and charges of inequities.

Discrimination is a difficult topic to discuss in interviews, and partly due to the sensitivity of the issue, it has not received a lot of attention in the research literature. West's (1989) study of Detroit parks was one of the first to identify racism and prejudice as barriers to park use by Blacks, and suggested that responses in his telephone survey may only be "the tip of a larger iceberg, and that a larger percent of respondents may have been affected by this than the number who would talk about these matters to a stranger over the phone (p. 22)." For similar reasons our on-site interviews may not have uncovered the full extent of problems occurring in the park. We feel confident, however, that our findings have identified the various sources and types of discrimination, and that park managers may be able to take positive steps to counteract some of them. Future research, including in-depth interviews with individuals and small groups, may provide further information about user discrimination. Such research might also involve park staff and police, to understand their perspectives and how they attempt to deal with difficult issues where discrimination may exist.

Ethnicity

As a final discussion point, our findings begin to suggest that in some cases broad racial/ethnic groupings may be still too general to identify culturally based differences in leisure behavior. We agree with Hutchison (1988), who in his recent critique of research in this area argues that future work "must include population subgroups which contain ethnic subcultures, and must develop a research methodology capable of the capturing the very significant social phenomenon under study (p. 25)." We attempted to begin such an endeavor in the present study, but found the quota sampling method we chose limited us to sketchy ethnic comparisons the same way a random sampling of the general population has limited others to sketchy racial comparisons. To address this problem, in related work (in progress) we are using in-depth focus group discussions with individuals representing a selected cross-section of ethnic minority groups in Chicago, to further identify ethnic leisure interests and needs. We hope that together this quantitative and qualitative data will give us a more complete picture of racial and ethnic leisure patterns and preferences.

If we can offer any management implications in this respect, our research has helped to identify the wealth of ethnic and cultural diversity present in Lincoln Park. This in itself should be something to let others know about. In some ways the park would serve as a logical center of activity for festivals or a cultural center that celebrates the multicultural population of park users. If done correctly, these activities could help to foster a better understanding among park users of diverse ethnic backgrounds and could also help to reduce discrimination (Dawson, 1991).

Conclusions

This research has examined the use and activity patterns of racial and ethnic groups who use a large city park. As a case study, the findings demonstrate the similarities and differences among users from major racial and ethnic groups, and to some extent, among those of different ethnic subcultures. More research in this area is needed; and qualitative, ethnographic methods are seen as the logical way to "dig deeper" into the meaning and values that leisure experiences have for different cultural groups (Allison, 1988). On a pragmatic level, the study also demonstrates how surveys of particular populations can be integrated with more broad-based surveys to provide a picture of park clientele interests and needs that extends beyond the "average user." In Lincoln Park, ethnic minority groups were identified as an important population deserving of further study; in other parks and regions these groups might include older adults, children, people with disabilities, and important activity-based user groups like trail users or boaters. By reaching out to these groups through research and related activities, planners and managers can make more informed and equitable decisions about how best to serve their clientele.

Acknowledgements

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URBAN PARK USE:

RACE, ANCESTRY, AND GENDER

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This study hypothesizes that ethnicity, gender, family, friends, social class, and the neighborhood that one resides in are important variables affecting local park use. Findings support these hypotheses, and show that while larger percentages of Blacks avoid using neighborhood parks, those who do tend to use them, use them more intensively than Whites.

Theoretical Background

There has been a growing body of research that tries to determine what factors affect leisure participation. Some of that research has focussed on race, ethnicity and social class as being key determinants of leisure participation. Researchers pursue this line of inquiry because it has been argued that the socio-economic position of the individual, the ethnic background of the individual, or a combination of both factors are important in determining whether an individual participates in leisure activities.[1]

There are several theories of leisure participation,[2] but I will not discuss them here. However, I will discuss briefly two problems with past race and ethnic leisure research.[3] The first problem is one of conceptualizing a model of leisure participation as it relates to race and ethnicity. Most of the comparative race and ethnic leisure studies focus on a very narrowly-specified model, where race and social class are sole determinants of leisure participation (Figure 1). Sometimes a more sophisticated model is implied that includes ethnicity and attitudinal variables (Figure 2), but in actual practice there seems to be little difference between it and the narrower race-class model.

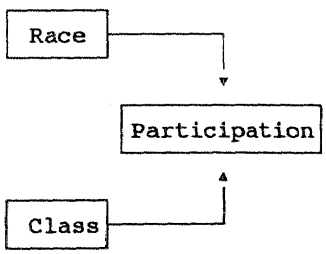

Figure 1. Model tested in past research.

The reason for reliance on this simplified model is due to a second problem inherent in many comparative studies to date, that of operationalizing the components of the model. This is

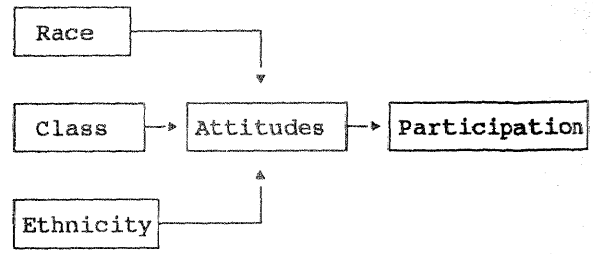

Figure 2. Implied model of past research.

especially true with respect to the distinction between race and ethnicity. Ethnicity in many cases is not operationalized; instead researchers analyze data collected on race and interpret the differences in participation as differences caused by ethnicity.

Thus neither of these models really give us a meaningful picture of what determines leisure participation. Consequently, I have developed an alternative explanation in the "differential access model" (Figure 3). This model more accurately reflects the complexity of socio-structural and cultural variables (and their interrelationships) and their influence on leisure participation. This paper summarizes briefly how the differential access model was applied to a study of local park use.

Research Site and Sample Description

The study focussed on the people and parks of New Haven, Connecticut during 1989. New Haven is well endowed with parks; the park system was laid out at the turn of the century by the son of Frederick Law Olmsted, designer of Central Park in New York.

Two-hour interviews were conducted with people living in various neighborhoods in the city. Responses from 144 interview schedules were analyzed; there were 63 Blacks of which 14 were Jamaicans and 49 were African Americans; and 81 Whites of which 26 were Italians and 55 were other Whites.

Results

Proximity to Park

While 60 percent of all Blacks lived very close to a park (less than four blocks), 72 percent of all Whites lived very close to a park. Jamaicans were least likely to live very close to a park. Blacks were more likely than Whites to say they did not know which park was located closest to them; 11 percent of all Blacks and 5 percent of all Whites could not name the park closest to their residence.

Ninety-one percent of the respondents who did not know which park was located closest to them were women. That is, Black women were far more likely than any other group to say they did not know which park was located closest to them.

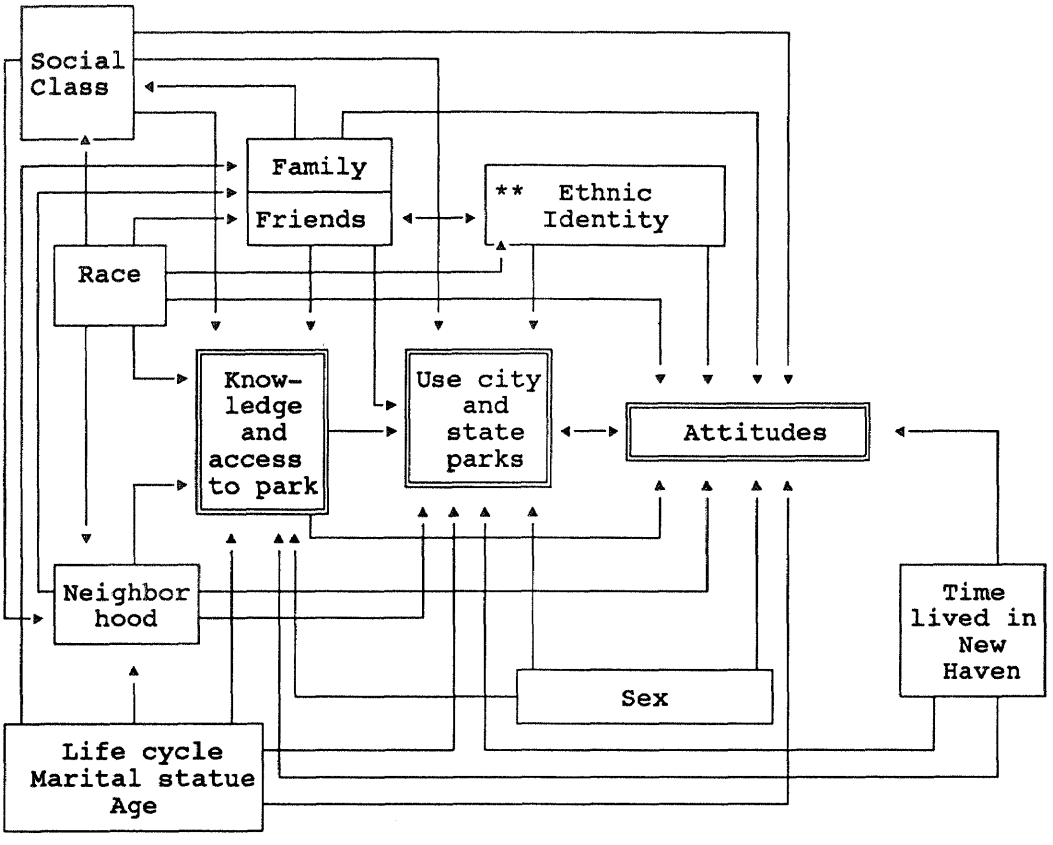

Figure 3. A model of the factors affecting park use. (**In the context of this study, ethnic identity refers to the individual's ancestry, whether they identified with an ethnic group, and whether they identified most often as an American.)

Use of Neighborhood Parks

Blacks were about twice as likely as Whites to say they did not use the parks closest to them. While 59 percent of all Blacks did not use the park closest to them, only 27 percent of the Whites didn't use those close parks. Males were more likely to use the parks closest to them than females; 50 percent of the males and 30 percent of the females used the parks closest to their residence. Once again, Black females were least likely to use the parks closest to their residences. However, when Blacks did use the neighborhood parks, they were more likely than Whites to be frequent users of the park. Females were also slightly more inclined than males to be frequent users.

As Table 1 shows, Blacks did not use the neighborhood parks because they perceived them to be dangerous places or because they had no interest in them, while Whites used their neighborhood parks either because of the facilities they contained or because they found these parks aesthetically appealing. African Americans were more likely to perceive the parks as dangerous than any other group; danger in the parks was not an issue with Italians and other Whites (Table 2).

This can be partly explained by looking at the distribution and maintenance of parks. Blacks were more likely to live close to poorly-maintained, small, drug-infested parks where many men hung out constantly, or they lived close to parks which were primarily ball fields. Females, regardless of race, did not like to use parks which were primarily used by young men, or in which men constantly loitered; they feared they would be sexually assaulted by these men. In addition, they didn't see such parks as appropriate places for family recreation.

Favorite Parks

Blacks were twice as likely as Whites to say they did not have a favorite park in New Haven. However, about 60 percent of all the Blacks who listed a favorite park, listed one park -- Edgewood Park. This was striking especially considering that in the White sample 33 percent having a favorite park chose Edgewood Park; 15 percent chose Lighthouse Park; and another 15 percent chose East Rock Park.

Fifty-nine percent of the people listing Edgewood Park as their favorite park were Black and 41 percent were White. Except for Edgewood Park, there was almost no overlap between Blacks and Whites in their favorite parks (20 parks were listed

Table 1. Race and a ranking of reasons for neighborhood park use or avoidance.

Black	%	White	%
Reasons for park use:			
Park facilities	11	Park facilities	29
Love outdoors	11	Aesthetic appeal	25
Aesthetic appeal	9	Love outdoors	16
Convenient location	7	Convenient location	16
Reasons for avoiding parks:			
Perceived dangers	30	No interest	6
No interest in parks	16	Life cycle limitations	4
Life cycle limitations	11	No time	4
No time	5	Perceived danger	0

Table 2. Ancestry and a ranking of reasons for neighborhood park use.

Ancestry	Reasons for Using Parks	%	Reasons for avoiding parks	%
African American	Love outdoors	11	Perceived danger	34
	Aesthetic appeal	11	No interest	14
	Park facilities	9	Life cycle limitation	11
	Convenient location	3	No time	6
Jamaican	Convenient location	22	No interest	22
	Park facilities	22	Life cycle limitation	11
	Love outdoors	11	Perceived danger	11
	Aesthetic appeal	0	No time	0
Italian	Aesthetic appeal	29	No interest	6
	Park facilities	29	Life cycle limitation	0
	Love outdoors	18	No time	0
	Convenient location	18	Perceived danger	0
Other Whites	Park facilities	28	No interest	6
	Aesthetic appeal	22	Life cycle limitation	6
	Love outdoors	16	No time	6
	Convenient location	16	Perceived danger	0

as favorite parks). The segregation is even more nuanced. Almost all the people who listed Lighthouse Park as their favorite park were Italians. Lighthouse is located in a predominantly-Italian section of the city. East Rock, located in a predominantly-White, middle-class section of the city, was the favorite park of non-Italian Whites.

Edgewood was seen as an overwhelming favorite among Blacks because there were large open spaces to have games and picnics, and there were walkways along which people could stroll. Recreationists could go to the duck pond, sit under trees, play football, soccer, and baseball. Respondents liked the children's play area because it had good, safe equipment. Blacks thought the park was safe, calm, and drug free. In short, the park was ideal for large groups of recreationists of mixed ages and genders. Groups made the trip to spend an afternoon in the park because there was something for everyone to do there.

For many Blacks, going to Edgewood park offered them a chance to leave noisy, crowded neighborhoods with small ill-equipped parks and playing fields, for the sanctity of a larger, more serene park. An overriding concern of Blacks was to find a place with well-maintained play equipment for children in which they could recreate safely. They also wanted to see other Blacks recreating in such parks.

Whites enjoyed this park primarily because of the tennis courts and the jogging trails. Whites were less concerned about finding safe play equipment because they could afford to install play equipment in their backyards or they could use the tot lots in their neighborhoods. Unlike the vest pocket parks in Black neighborhoods, the tot lots in most White neighborhoods were well maintained.

Unlike Blacks who drove all the way across the city to go to Edgewood Park, Whites could use many of the smaller neighborhood parks and not worry about their safety to the same extent that Blacks did. As a matter of fact, many Whites listed these smaller neighborhood parks as their favorite parks.

Attractive Park Features

Respondents listed many desirable features of their favorite parks. These were grouped into six categories: (1) the type of facilities present, (2) the peaceful nature of the park, (3) the aesthetic appeal of the park, (4) the size of the park, (5) the convenient location of the park, and (6) the good maintenance of the park.

By far the most important feature of the park for respondents was the kind of *facilities* the park had. It should be noted that while Blacks were most often attracted to facilities like ball fields and picnic grounds, Whites were more attracted by facilities like tennis courts and jogging trails. Forty-one percent of all respondents mentioned the facilities as an attractive feature. The peaceful nature of the park and the aesthetics were also important features, while the location and level of maintenance were seen as less significant. Whites placed slightly more emphasis on the kind of facility in the park, while Blacks were more attracted to the peaceful nature of parks than Whites.

While there was very little difference in the way males and females ranked the various attributes, the ranking by various age groups was significantly different (Table 3). Whereas 16-19 year olds were attracted to parks because of the aesthetics or because the park was peaceful, older respondents cared more about the facilities in the park. Respondents over the age of 45 placed a high emphasis on good maintenance and upkeep (the highest level recorded by any subgroup analyzed in the study). Whereas a third of the 16-19 year olds were attracted by the aesthetics of the park, none of the respondents over 45 were concerned with that feature.

Ancestry had some interesting effects, too. African Americans were most attracted to the peaceful nature of the park. Jamaicans by contrast ranked peacefulness very low. Jamaicans were most likely to be attracted to the facilities in the park; Italians and other Whites also found this feature attractive. African Americans were also attracted to the park because of the size-- more so than any other group.

Education had very significant effects. As education increased, the facilities in the park became a more salient feature for the respondent, and aesthetics declined in importance (Table 4). Peacefulness, as an important attractive feature of the park, also decreased with increased education.

The effects of occupation were similar to that of education. Professionals emphasized the facilities as an attractive feature of the park more than respondents in clerical, service, or other occupations. Professionals were also least likely to mention aesthetics as attractive features of parks.

Table 3. Age and the Ranking of Characteristics of Favorite Parks

16-19 Years old		20-30 Years old		31-45 Years old		Over 45 years	
Aesthetics	32%	Facilities	30%	Facilities	57%	Facilities	45%
Peaceful	32%	Peaceful	22%	Aesthetics	13%	Peaceful	20%
Facilities	27%	Aesthetics	17%	Peaceful	11%	Mainten.	20%
Location	5%	Size	16%	Size	7%	Size	10%
Size	5%	Location	12%	Maintenance	6%	Location	5%
Maintenance	0%	Maintenance	4%	Location	5%	Aesthetics	0%

Table 4. Education & Ranking of Characteristics of Favorite Parks

Grammar School		High School		College		Graduate School	
Peaceful	38%	Facilities	26%	Facilities	45%	Facilities	51%
Aesthetics	31%	Peaceful	23%	Size	16%	Peaceful	17%
Facilities	19%	Aesthetics	17%	Aesthetics	14%	Aesthetics	13%
Size	13%	Size	12%	Location	12%	Size	7%
Location	0%	Location	11%	Peaceful	12%	Maintenance	7%
Maintenance	0%	Maintenance	11%	Maintenance	1%	Location	5%

Summary

This research demonstrates that park use is influenced by a multiplicity of factors. The study from which this research summary was taken also found that family, friends, and neighborhood were very important factors influencing leisure participation. The study makes a convincing case for the use of more complex models like the differential access model (Figure 3) in comparative race and ethnic research.

Endnotes

1. Washburne, 1978; Washburne and Wall, 1980; Hutchison, 1987; Klobus-Edwards, 1981; Peterson, 1977; Dragon and Ham, 1986; McMillen, 1983; Dwyer and Hutchison, 1990; O'Leary and Benjamin, 1982; Stamps and Stamps, 1985; Mueller and Gurin, 1962; Yancey and Snell, 1971; Enosh, et al., 1975.

2. See Taylor, 1993; Hutchison, 1988; Stamps and Stamps, 1985; O'Leary and Benjamin, 1982.

3. See Taylor, 1993, and Hutchison, 1988 for a more detailed discussion of problems of past research.

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HMONG LEISURE AND RECREATION ACTIVITY

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While most research on ethnic/racial variations in leisure and recreation activity have compared Whites and Blacks, this study examines the activity of the Hmong population in Northeastern Wisconsin. The *recreation activities* of the Hmong population closely resemble that of other (White and non-White) groups in the local community, and reflects both the importance of recreation opportunities in the local environment and childhood socialization to outdoor activities such as hunting and fishing. *Leisure activities*, on the other hand, reflect the influence of demographic characteristics, family composition, and gender segregation as well as the overriding importance of family and kinship relations within the Hmong community. Responses to open-ended questions concerning leisure and recreation activity suggest that the Hmong population has a very different conception of these activities than do other groups.

Introduction

Research on the leisure and recreation activity of ethnic/racial groups has focused almost exclusively on comparisons between Black-White and, less often, White-Hispanic groups. This research has produced conflicting results and presents a number of conceptual problems for those seeking definitive statements as to the impact of ethnicity/race on leisure choices and recreation activity participation. In much of this research, the object of study (racial and ethnic subcultures) has become simply a residual category: any differences observed between Whites and other groups are assumed to be due to racial or ethnic background, the terms race and ethnicity are used indiscriminately and interchangeably, and the focus is almost exclusively on discovering differences among groups, reflecting the *a priori* assumption that there are or perhaps even that there should be differences between ethnic/racial groups.

One of the major interpretative obstacles in this literature involves disentangling the effect of ethnicity/race from that of social class/marginality; in several studies, racial differences in leisure and recreation activity disappear when variables measuring social class are included in the analysis (see Stamps and Stamps, 1985). Although race and ethnicity represent important sociological constructs with overlapping definitions and meanings (Barth, 1969), these concepts are rarely defined and even less frequently operationalized in the leisure research studies which purport to examine the influence of ethnicity/race *vis a vis* social class/marginality (see Duda and Allison, 1990). Hutchison (1987, 1988) argues that there may be relatively few differences in leisure and recreation activity between Black and White groups due to the extensive exposure of African Americans to American society. This argument can be extended to the activities of Mexican American population in many areas of the Southwest, and to other ethnic/racial groups as well. Not only are there significant conceptual and theoretical problems with the existing research, but the very groups which have been used in this research may be inadequate to the purposes and questions which researchers have sought to answer.

One solution to this dilemma is to investigate the leisure and recreation activity of groups with ethnic subcultures different from those of the dominant society. Duda and Allison (1990) note that restricting the study of sports and other recreation activity to just a single group contradicts the most basic tenets of scientific inquiry. Indeed, there has been a consistent call within the field for additional research contrasting various ethnic/racial groups since the early work by Washburne (1978). In this paper I want to focus on the leisure and recreation activity of the Hmong population in Northeastern Wisconsin. Because the Hmong population is very different not only from the general American population but from other Southeast Asian immigrant and refugee groups, we have the opportunity to compare the leisure and recreation activity of this group in precisely the manner suggested by Duda and Allison, Washburne, and other scholars.

Background and Methods

During the Second Indo-China War, the American CIA organized Hmong tribesman in the central Laotian highlands as a "secret army" for raids into North Vietnam, mining of the Ho Chi Minh Trail, and other activities kept secret from Congress. Hmong refugee families began to arrive in the United States immediately following the collapse of American military intervention in Southeast Asia. Between 1976 and 1989 some 90,000 Hmong refugees came to the United States, and by 1990 their number had increased to more than 160,000 persons. The extensive secondary migration of Hmong households from the initial resettlement locations has produced population concentrations in California (60,000), Wisconsin (45,000), and Minnesota (40,000). The settlement pattern in Wisconsin is distinct from that of both California and Minnesota, as the Hmong population is dispersed across eight cities, each with a Hmong population of 2,000 or more persons. In Green Bay/Brown County, the location of the research reported in this chapter, the Hmong population numbered approximately 2,000 persons in 1990.

Descriptions of the Hmong people usually begin with the note that they are a "pre-literate hill tribe" from the mountains of central Laos who did not have contact with the outside world until the 1960s. While this characterization is misleading in many respects (see Hutchison, 1992), it is clear that Hmong culture is distinct from that of the American population as a whole and from that of other Asian immigrant and refugee groups. Rumbaut and Ima's (1988) comparison of six different Southeast Asian refugee groups in Southern

California, for example, indicates that the Hmong have successfully retained their traditional family clan structure to a much greater extent than have other groups (also Dunnigan, 1982). Although there is evidence of a significant shift to English among children born in the United States, the Hmong language is universally spoken at home by the adult population. Among the important cultural differences between the Hmong population and the American mainstream are a strong emphasis on family and communal relationships and responsibilities, a strong pro-natal culture which permeates all aspects of family and community life, and a commitment to preserving cultural traditions among the first generation now growing up in the United States.

The data reported here come from a research project sponsored by the University of Wisconsin-System Institute on Race and Ethnicity during the Summer and Fall of 1990. One hundred-twenty five Hmong households participated in 40-minute interviews conducted by Hmong students from the University of Wisconsin-Green Bay (see Hutchison, 1992 for a complete description of this research project). Included in the questionnaire was a series of open-ended questions concerning leisure and recreation activities, along with a special section of questions on fishing activity. We can compare the response of Hmong households to these questions with information from other surveys of the general population in the same community (in the case of outdoor recreation) and to the general U.S. population (in the case of leisure activity).

Recreation Activity

There are two distinct groups of outdoor recreation activity in the Hmong community. The first involves outdoor sports activities such as hunting and fishing, which adult males participate in at levels matching those of the general population. A second group of recreation activities center on community events held in public parks on a continuing weekly basis. Soccer is a major activity, primarily for male adolescents and young adults; organized soccer tournaments are also an important part of community festivals held several times each spring and summer in cities and towns across Northeastern Wisconsin. Volleyball is a less structured activity played by both male and female adolescents. The extent of participation in outdoor recreation activities by adults and children from the Hmong households we interviewed is shown in Table 1.

Information shown in this table was generated by responses to an open-ended question that asked which outdoor activities adults and children participated in. The results are similar to other studies of ethnic/racial groups and of the general population: while sports activities are most common, outdoor activities requiring travel to areas away from the home (such as hunting) are less frequent. The results also demonstrate both age-specific and inter-generational differences in recreation activity: swimming is more common for children than parents; none of the Hmong adults interviewed for our study listed bicycling riding as a recreation activity.

Table 1. Outdoor recreation activities reported by the Green Bay Hmong population.

Outdoor recreation activities	Percent adults	Percent children
Local parks	37.6	28.0
Soccer	32.0	20.0
Visit friends	31.2	4.0
Picnics	20.8	12.0
Volleyball	18.4	19.2
Swimming	11.2	32.0
Fishing	10.4	12.0
Hunting	9.6	1.6
Bicycling	0.0	12.0

N=125

Note: Figures shown only for those activities generating 10 or more responses for either adult or children activity.

Two of the most common activities--visiting with friends and going to parks--deserve further mention. Several neighborhood parks in Green Bay are inundated each weekend with scores of Hmong families; extensive age and gender segregation is the norm as adult males participate in competitive sports, youngsters circulate among a variety of playground activities, and women take care of children and prepare food for picnics. The activity patterns observed within these neighborhood parks are very similar to those described for Mexican-American neighborhoods in Chicago by Hutchison and Fidel (1987), where the majority of activity groups are comprised of mixed family groups, and the activities of individuals within this group are segregated by age and gender.

Fishing Activity

Concern in the local community over the fishing activity of the local Hmong population led us to direct special attention to this activity in our study. There have been a number of health advisories from the Wisconsin Department of Natural Resources concerning the potential health hazards of eating certain species of fish from local waters. A recent study by the Wisconsin Division of Health and State Laboratory of Hygiene found that the consumption of fish by Wisconsin anglers was nearly three times the national average--although the study also indicated a high level of awareness and compliance with the Wisconsin Fish Consumption advisory (Fiore et al., 1989).

Because groups of Hmong fisherman are noticeable in the local waterways, the University of Wisconsin Sea Grant Institute receives many calls each year from concerned persons in the community who are afraid that the Hmong are unaware of the health advisories and may be consuming toxic fish. The results of this section of the study are very interesting, both with respect to the rapid acculturation to activities available in the local environment, and to the very real concern over urban minority groups and consumption of toxic fish (see West, 1990).

Table Two presents information as to the frequency of fishing activity within the local Hmong population. Substantially more than half (60.5% of all households) reported that they or other members of the household engaged in fishing. The first column of Table Two shows the frequency of participation in fishing activities for the 60.5 percent of the Hmong households (n=72) who reported that they did fish; the second column shows this same information, but relative to the total sample of 125 households.

Table 2. Frequency of fishing activity reported by the Green Bay Hmong population.

Frequency of fishing activity	% Anglers only	% Total sample
Everyday	0.0	0.0
2-3 times a week	8.2	4.8
Once a week	20.5	12.0
2-3 times a month	31.5	28.4
Once a month	39.7	22.4
Less than once a month	--	42.4
N=	72	125

(The discrepancy in reporting this activity between the open-ended responses shown in Table One and the closed-ended responses in Table Two demonstrates the significant impact of questionnaire construction on the extent and quality of data: more than half of the respondents gave us detailed information on fishing activities when directly asked about this activity, yet only 10 percent included fishing in the listing of recreation activity on the open-ended question. This pattern of response may well indicate a cultural difference as well; because fishing was a subsistence activity for the Hmong population in Southeast Asia, it may not be considered a leisure or recreational activity in the United States.)

Although none of the respondents reported that fishing was a daily activity for members of their household, more than one-quarter of the households that do fish (28.7%) reported fishing once-a-week or two-to-three times a week. Less than a third of these households (31.5%) reported fishing as frequently as "a couple of times" each month.

The activity of Hmong fishermen conforms to the pattern of fishing activity among the Green Bay population more generally (see Hutchison and Kraft, 1992). One surprising result, particularly in view of the concerns raised as to the large number of Hmong fishermen observed along the Fox River and lower Green Bay waterway, is (a) the selection of a wide variety of fishing areas, and (b) the extent of travel to locations outside the local community for this activity. This information is presented in Table Three.

Less than a third (16.9%) of the Hmong anglers indicated that they fished anywhere in Green Bay or the Fox River, areas which have been targeted for the health advisory warnings. The most frequent fishing site was the Lake Winnebago and Butte des Morts area. These two bodies of water, located some 45 miles south of Green Bay, form part of the Wolf River/Fox River water basin in Northeastern Wisconsin.

Table 3. Location of fishing activity reported by Green Bay Hmong anglers.

Location of fishing activity	Percent of respondents	Distance (miles)
Butte des Morts	14.4	48
Oconto River	12.0	44
Fox River-Green Bay	12.0	1
Lake Winnebago	11.2	38
Lake Michigan	7.0	31
Manitowoc River	5.6	39
Fox River-Appleton	4.8	33
Peshtigo River	2.4	29
N =	72	125

The finding that the Butte des Morts and Lake Winnebago areas are the most frequent fishing locations corresponds both to other responses on the survey and to cultural preferences of the Hmong population more generally. White bass is the preferred game fish for Hmong anglers, as this species most closely resembles game fish from freshwater lakes and rivers in Laos and other Southeast Asian countries. Furthermore, the Lake Winnebago/Butte des Morts area is the only site in Northeastern Wisconsin where white bass is available year-round.

These results indicate that fishing is a popular activity among the local Hmong population, reported by more than half of the households interviewed for this research. Fishing groups are male oriented, including either adult males or, less frequently, father-son groups. Although fishing is a common activity for males within the Hmong community--the rate of participation exceeds that of the general population--fishing is not a frequent activity among those who do fish: only a third of those households who fish do so as often as once-a-week. Fish consumption by the Hmong population appears to be only moderate even among those households who regularly fish; most of these households report eating fish caught in local waters only once-a-month. Of potential concern, however, is the high level of fishing activity focused on white bass, which is not recommended for consumption by *anyone* when taken from the waters of lower Green Bay or the Fox River (Wisconsin Department of Natural Resources, 1991).

Perhaps most interesting, fishing activity among the local Hmong population closely resembles the recreation behavior common to Northeastern Wisconsin as a whole. The typical

fishing trip involves travel to locations outside the Green Bay area, often to relatively distant locations; these trips most often involve adult males, and less frequently fathers with male children or the entire family on a picnic. Because the respondents indicate that the consumption of fish occurs much less frequently than the actual fishing activity, there is evidence that what once was an instrumental activity (collecting food for the household) has evolved into a leisure pursuit in the new American environment.

Leisure Activity

Because the Hmong community emphasizes family and clan responsibilities in a manner very different from that of the dominant society, much of the leisure activity of Hmong households is focused on the home and on family activities. Watching television, listening to music, and reading are common leisure activities for both adults and teenagers, as is playing with children. Responses to an open-ended question that asked what leisure activities the respondents and their children usually participated in are shown in Table Four.

Table 4. Leisure activities reported by the Green Bay Hmong population.

Leisure activities	Percent of parents	Percent of children
Television	68.0	66.4
Reading	13.6	31.2
Socialize with friends	22.4	8.0
Play games/toys	16.0	40.8
Listen to music	12.0	2.4
Cooking	7.2	0.0

Note: Figures shown only for those activities generating 10 or more responses for two separate questions asking about leisure activities for both adults and children. N=125.

The activities included in Table Four demonstrate the pervasive influence of the mass media, even within an ethnic population very different from the general population. Although only about a third of the adult Hmong report that they are able to speak or understand English (Hutchison, 1992), more than two-thirds reported that watching television was one of their primary leisure activities (there is no television programming in the Hmong language in Northeastern Wisconsin, and the only radio program is a half-hour Hmong language program each weekend on the local public radio station. And just as we would expect with other children and teenagers, watching television is the most frequent leisure activity in the younger generation).

Inter-generational differences appears in reading as a leisure activity: while more than a third of the respondents reported that their children were involved in reading as a leisure activity, only 10 percent of the respondents reported that they themselves were regularly involved in reading. This generational difference in part reflects the language abilities of each group; while many of the adult Hmong speak both Hmong and Lao, very few were able to acquire the formal education necessary to read and write in either language. Their children, on the other hand, have learned to read and write English in public schools, and regularly make use of books for homework and school reports, as well as more general leisure reading.

While it might appear that there are few differences in either leisure or recreation activity to differentiate Hmong households from others in the local community, a more detailed look at the full range of leisure activities mentioned by Hmong respondents provides a very different portrait. Most activities take place in the home and in a context involving interaction with other family members; many activities often considered as "household chores" by others are mentioned as leisure: taking care of children, helping with homework, even cleaning the house. Other activities outside of the home also are classified as leisure activity by many respondents--including such things as shopping and taking children to stores. Many of these findings were unexpected and do not appear on comparable surveys of the general population.

Conclusions

Research which has sought to assess differences in leisure and recreation behavior among Whites, Blacks, and other ethnic/racial groups in the United States has been inconclusive due to problems in delineating the specific impacts of race/ethnicity *vis a vis* those of social class and other factors. An examination of leisure and recreation in the Hmong community overcomes one of the basic methodological problems of earlier studies, as there can be no question that the Hmong community retains a distinct ethnic subculture which differentiates this group not only from the dominant American society, but from other Asian and Southeast Asian groups as well. Despite the important difference between Hmong culture and that of other groups, there is much in the leisure and recreation literature to help us understand and explain the activities noted here.

The recreation activities of adult Hmong males focus on outdoor activities such as hunting and fishing. Virtually all of the adult Hmong were active hunters in Laos even before they became participants in the Indo-Chinese Wars. These activities reflect the influence both of childhood socialization and an opportunity to relive cultural experiences from their past. Westermeyer's studies in Minneapolis report an increase in the mental well-being of adult males who were able to involve themselves in activities such as these (e.g., Westermeyer et al., 1984). Active participation in hunting and fishing also indicates that, like others in the local population, the Hmong have selected among those recreation activities available in the local environment (Kelley's earlier [1978] survey of recreation activity in a similar community in Northeastern Wisconsin indicated that hunting and fishing were the most common activities among the general population).

Although the Hmong participate in the same outdoor recreation activities as other groups, they are much more extensively involved in those activities: while about 30 percent of the Green Bay/Brown County population participates in hunting and fishing (Hutchison, 1989), the figure is more than 60 percent for Hmong households, indicating the influence of an ethnic subculture and earlier life experiences. The prevalence of soccer (learned in relocation camps in Laos by youngsters and teenagers, who are now young adults) and volleyball (learned in the United States) indicates the rapid shift in recreation activity that may take place in a new living environment.

The structure of outdoor leisure and recreation activity observed in public parks very much resembles the family activities described by Hutchison and Fidel (1984) and Hutchison (1987) for Mexican-American and Hispanic activity groups Chicago, characterized by the intensive use of specific areas of public parks by large numbers of extended family groups for extended periods of time. The age and gender segregation observed in these activities reflects traditional cultural values which emphasizes the family unit and the child care role of women and female children in the Hmong family. Our information about recreation activities in the Hmong community also demonstrates the utility of the social networks approach, where attention is focused on the extended relationships of community which influence recreation patterns (c.f., Stokowski, 1992).

Household leisure activities, on the other hand, reflect the pervasive popular culture and mass media in the United States. As in other households, the most common leisure activities mentioned by the Hmong include watching television and listening to music. Because of the lack of local programming in Hmong, television has become a powerful influence on the Americanization of Hmong children and adolescents. Listening to music, on the other hand, reflects both the influence of American popular culture as well as traditional Hmong culture, as a large number of Hmong-language cassettes circulate within the community.

The most striking feature of Hmong leisure activity, however, is the degree two which it is integrated, both conceptually and in everyday practice, with daily household activities and with the extended family. In the United States and in European societies more generally, there is a clear dividing line between work and leisure: work is what we do from 9:00 until 5:00. If we have children, child care activities are often defined as "work" and not "leisure;" therefore child care becomes an extension of work, and leisure begins in the evening and on the weekend when children are sleeping or engaged in other activities.

The sharp division of personal activities and family life from the broader social sphere and the alienation of work from other activity is a defining characteristic of industrial and post-industrial life in the twentieth century. Clawson and Knetsch (1969: p. 6) note that, in contemporary societies, "Recreation contrasts with work, which is done primarily to earn money or otherwise provide the *necessities* of life, or what have come to be so considered, for one's self and one's family. It also contrasts with the mechanics of life. such as eating, sleeping, housekeeping, and personal care."

This distinction does not exist in traditional societies. For the Hmong, taking care of children, helping them with homework, shopping for the family, and other activities which would ordinarily form an extension of our work-sphere represent instead important dimensions of family-oriented leisure and recreation patterns. As Glass et al. (1990, p. 154) note, "Characteristics often attributed to subsistence, such as labor intensity and self-containment within kinship, tribal, or community groups, are not mutually exclusive from recreational participation."

Viewed from this perspective, Hmong leisure and recreation activity is distinct from that of the general population and of other groups in: (a) its emphasis on family-related activities and particularly the care of younger children, and (b) a different conception of what constitutes leisure activity. To a significant degree, this is a consequence of the broad historical processes which have swept the Hmong out of Laos, into resettlement camps in Thailand, and then to Australia, France, and the United Sates. The kinship system, leisure patterns, and recreation activities very much reflect the influence of "traditional" (non-urban, non-industrial) cultural patterns which define the ethnic subculture and which have been continued in the midst of a very industrial and urban world.

The study of the Hmong is useful in considering the debate over the existence of ethnic subcultures in contemporary society and the potential influence of these subcultures on leisure and recreation activity. Like other sub-groups (working class or middle class, Black or White) the Hmong have selected from among the recreation opportunities available in the local environment those activities which are most familiar and which can been transferred from their earlier activity patterns (in this instance, hunting and fishing). In some instances these activities may already have been transformed from instrumental, work-like activities (such as fishing to supplement the household's food supply) to leisure activities more similar to those of the general population. While accommodating their leisure activity to American mass media and popular culture (television viewing habits and popular music), the very distinct family-oriented subculture structures other leisure activity in a very different direction from that of the larger community. Further studies of distinct ethnic subgroups in American society, and the longer-term longitudinal studies to observe changes in leisure and recreation activity of ethnic groups such as the Hmong will provide valuable insights into the more usual comparisons of White-Black-Hispanic activities.

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PREFERENCES FOR NEARBY NATURAL SETTINGS: ETHNIC AND AGE VARIATIONS

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Existing evidence suggests that urban Blacks and Whites both highly value their contacts with nearby nature, but may differ in the particular types of settings which they prefer. The current study extends this work by examining the landscape preferences of Blacks and Whites in adolescent and adult age groups. The results support earlier findings, but also suggest that adolescents' landscape preferences are distinct from the preferences of adults.

Introduction

The importance of access to nearby natural settings has been shown in a number of studies (Francis, 1987; Kaplan & Kaplan, 1989; Schroeder, 1988). Although empirical studies related to satisfactions associated with the urban forest have seldom encompassed racial and ethnic issues, research on the landscape preferences of urban Blacks and Whites suggests that both groups highly value opportunities to enjoy the nearby outdoors (Kaplan & Talbot, 1988).

An appreciation of having nature nearby can express itself in a variety of ways, in terms of the patterns of activities as well as the kinds of settings that are preferred. Our previous research with Black urban residents, using photographs of natural settings, suggests a preference for small, carefully manicured areas with relatively few trees as opposed to larger, more densely wooded spaces. The fear of danger in urban areas with poor visibility may account for some of this pattern, rather than ethnic or cultural differences per se. Whatever the underlying basis for such differences, it is important for managers of urban recreation resources to take them into account in attempting to meet the needs of current urban residents (Talbot & Kaplan, 1984).

Adolescents living in urban areas may be especially vulnerable to such prevalent urban ills as drug abuse and gang involvement. Diverting their needs for risk and excitement into more appropriate paths is a major challenge. It may be critical that recreation managers and planners develop a better understanding of the landscape preferences of urban adolescents, as well, if they are to meet this critical challenge.

Relatively little research has explored how adolescents perceive the natural environment or the nature of their preferences for it. Research by Balling and Falk (1982) showed a consistent pattern of lower preferences among a group of 15-year olds, compared with either younger or older participants. Medina's (1983) study showed that people in this age group preferred scenes suggesting activity rather than predominantly natural views. On the other hand, Anderson (1978), working with slightly older participants, found that the landscape preferences of Black and White high school students were relatively closely correlated with the preferences of adult residents from these two ethnic groups.

Based on these few studies to date, it is difficult to know whether during the adolescent years there is a reduced appreciation for natural settings, whether preferences are strongly related to what the settings afford in terms of activities, or whether the patterns differ depending on background factors. The present study makes it possible to look at the preference patterns of Black and White adolescents, as well as to compare the preferences of these individuals with those of Black and White adults.

This study examines the landscape preferences of Black and White adolescents who participated in outreach programs conducted by the University of Michigan. These middle-school-aged participants were given the same task that we had used previously with samples of Black and White adults. In combination with these previous studies, the findings offer a rich opportunity for comparing preferences based on age as well as ethnicity.

Methods

Landscape preference data were gathered from 140 adolescents participating in outreach programs conducted by the University of Michigan. These seventh and eighth grade students were attending one of three programs developed to encourage individuals from "underrepresented" geographic and ethnic groups to consider scientific and academic careers, at a time when relevant high school courses are still available to them. The sample included 69 Blacks and 71 Whites. Thirty-eight students were male and 102 were female (one of the three programs was only open to girls). The students came from a wide variety of urban, suburban, and rural communities throughout the state of Michigan. No individual demographic data were available for the participants.

Participants in the study sorted 26 black-and-white photographs of outdoor areas into five piles according to preference, where preference was defined as how well they liked each of the areas pictured. They were encouraged to use each of the piles when sorting. The photographs represented a wide variety of outdoor areas, including unmanicured wooded areas, lakes and rivers, landscaped parks, picnic areas, and front yards along residential streets. People were not visible in any of the photographs.

This set of photographs had been used in two earlier studies of preferences for everyday natural landscapes (Talbot and Kaplan, 1984; Kaplan and Talbot, 1988). The first study was a small pretest, with a sample of 31 Black and White Ann Arbor residents (primarily adults, but including a few teenagers). The second study involved interviews with 97 adult residents of inner-city Black neighborhoods in Detroit, Michigan.

Results

There are a variety of ways to compare the preferences for the scenes across the different studies. The discussion here focuses on a correlational analysis, a comparison based on mean preferences, and a more detailed examination of the particular kinds of settings that received high and low preferences.

Comparison of Overall Pattern of Preference

A frequently used approach for comparing preferences is by computing the degree of relationship between ratings of different samples. Such correlations have often shown very high agreement across groups, often representing different cultures (e.g., Zube & Mills, 1976; Zube & Pitt, 1981; Kaplan & Herbert, 1987).

Table 1 presents the correlational results for comparisons among the various subsamples in the present and previous studies. The values in the table that are in the same range as those reported in previous studies ($r > .65$) are all between same-ethnic groups. This holds true even for comparisons across ages (e.g., adolescent and the adult Detroit sample).

Table 1. Correlations of preferences across age and ethnic groups.

	Adults			Adolescents	
	white (AA)	black (AA)	black (Det)	white	black
Adults:					
white/AA					
black/AA	.05				
black/Det	-.51	.77			
Adolescents:					
white	.80				
black		.68	.71	.39	

Note: AA= Ann Arbor study, Det= Detroit study

By contrast, the correlations between different-ethnic groups, though same age range, show a strikingly different and quite variable pattern. In the case of the adolescents subsamples in the most recent study, the correlation is $r = .39$. For the previous studies the comparable values include one that is near zero ($r = .05$) and one that is distinctly negative ($r = -.51$). Certainly these results suggest that substantial differences exist between different ethnic groups in the preferences for everyday urban nature settings.

General Landscape Preference Comparisons

Another way to examine the differences among the samples is in terms of the actual preference ratings. Table 2 provides the overall mean rating for each subsample for the entire set of 26 scenes. These show virtually no variation, averaging to a value somewhat higher than mid-scale.

The table also includes an analysis of scenes rated particularly favorably (means of 4.0 or higher) and those that were distinctly non-preferred (ratings of 2.5 and lower). The latter

Table 2. Variation of preferences across age and ethnic samples.

Subsample	Mean Preference	Percentage of Scenes Preferred	Non-preferred
Adults:			
white/AA	3.4	31	15
black/AA	3.5	31	12
black/Det	3.5	35	12
Adolescents:			
white	3.4	19	8
black	3.4	0	12

Note: AA= Ann Arbor study, Det= Detroit study

category shows considerable consistency across age and ethnicity, with two to four scenes receiving relatively low ratings. The selection of preferred scenes, however, shows considerable contrast between the adult and adolescent samples, and between the adolescent subsamples. In other words, in general, the younger participants find fewer scenes to be particularly preferred -- a pattern that is similar to the Balling and Falk (1982) and Medina (1983) findings for similar age groups.

Particularly striking is the total lack of highly preferred scenes for the black adolescents. They rated half the scenes as moderately positive (between 3.5 and 4.0), reflecting a much more uniform reaction to the set of photographs as a whole than was the case for other groups.

Preferences for Individual Scenes

The correlational results suggest relatively high agreement within ethnic groups, even across ages. The analysis in Table 2 suggests that while overall preferences are quite similar, the likelihood of rating scenes as highly preferred is far greater for adults than for youths, regardless of ethnicity. None of these analyses, however, provides insights as to the kinds of scenes that the different subsamples favor. The purpose of Figure 1 is to do just that. The two scenes in the top row received low ratings from all three Black sub-samples, but significantly higher ratings (according to the results of Student-t tests, with .05 significance levels) from each of the corresponding White sub-samples. All of the scenes which were non-preferred by the Black subsamples had an undeveloped or unmanicured appearance. These scenes typically received moderate to high preference ratings from the White subsamples.

The middle row of Figure 1 shows two scenes which received relatively high preference ratings from all of the Black subsamples, but significantly lower ratings from the corresponding White subsamples. These scenes typically include built elements such as benches, park equipment, paved walks, and picnic shelters. Despite these constructed components, most of these scenes also have ample trees and vegetation. The open, spacious quality of many of these scenes is similar to the settings which were rated as highly preferred by both the adult and the high-school rural Blacks in Anderson's (1978) study. Each is characterized by smooth

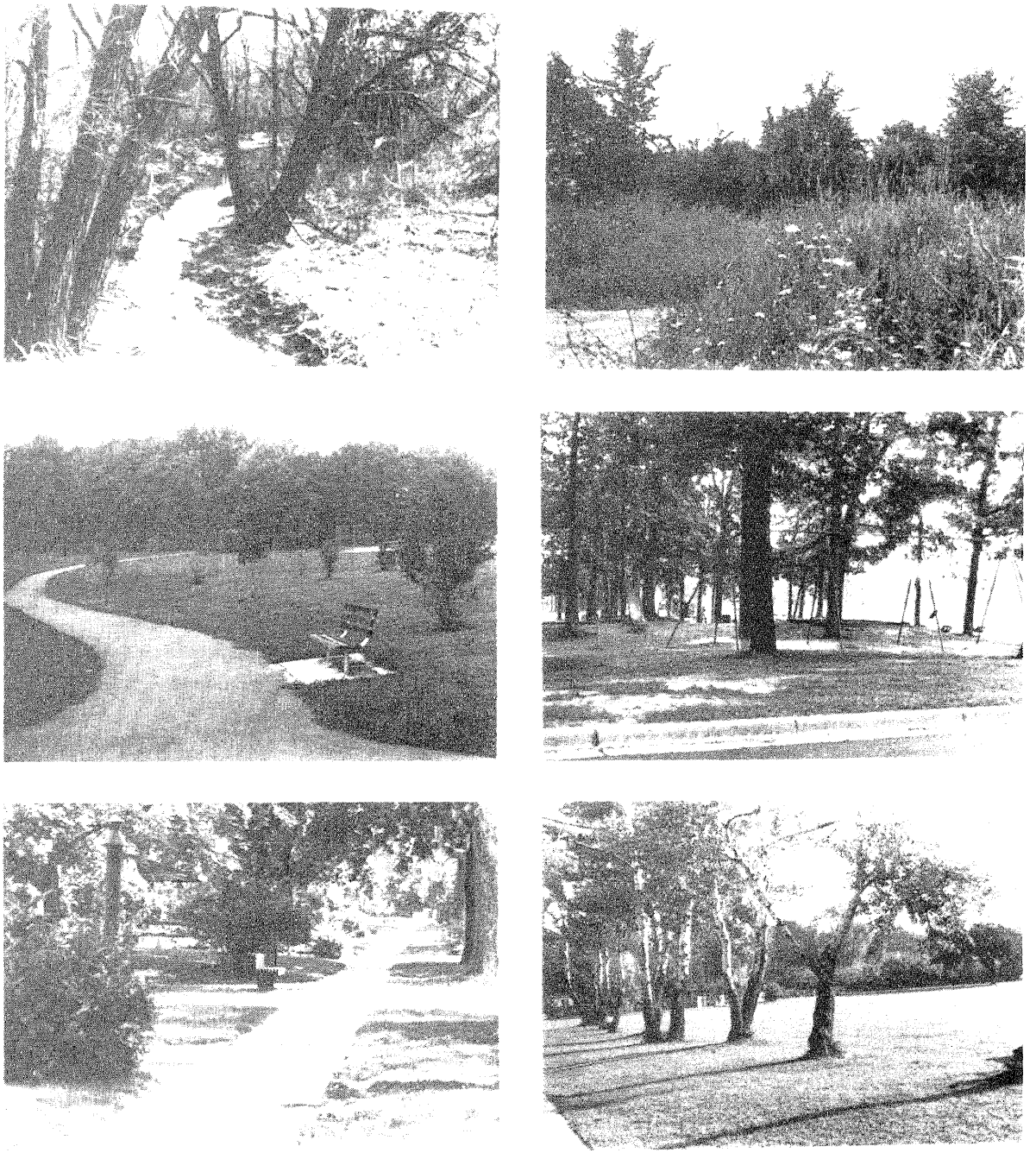

Figure 1. Settings showing both differences (top and middle rows) and similarities (bottom row) in landscape preferences across age and ethnic groups. Scenes in the top row were preferred by adolescent and adult Whites, but not by Blacks. Scenes in the middle row were preferred by adolescent and adult Blacks (with adults giving higher ratings than adolescents), but not by Whites. Scenes in the bottom row received moderately high preference ratings from all samples.

ground texture and by a generally well-kept appearance. Many of these scenes were among the least liked for the White participants, while a few others received moderate preference ratings.

The bottom row of Figure 1 shows two scenes which received moderately high preference ratings from all subsamples. There were no significant differences between ethnic groups in preference for these and other scenes which included both

large trees as well as open areas with filtered sunlight.

Among the adolescents, the current data show that ethnic differences in preferences for everyday urban nature settings are very similar to the findings of the earlier study with adults. Again, the nonpreferred scenes among the Black adolescents were undeveloped or unmanicured. Among the White adolescents, the less preferred scenes included built elements, paving, and smooth ground texture.

Scenes which were highly preferred among the Black adults were relatively preferred among the Black adolescents, although none of the twenty-six scenes were given high average ratings (4.0 and over) by the Black adolescents-- as was the case for each of the other subsamples. While still liked by the Black adolescents, these few scenes were not differentiated from the many other scenes which they considered generally pleasant.

Discussion and Implications

The findings of the current study, with adolescent Black and White samples, indicate that these ethnic groups vary in the types of everyday natural settings which they prefer. These findings reinforce earlier results with adult samples, giving additional indications that Blacks have higher preferences for settings that are carefully manicured and relatively open, while Whites prefer settings that are more heavily wooded and show less evidence of human influence.

While the consistency of these findings lends weight to their credence, it should be remembered that the adolescent participants represent opportunity samples, and there is no information on other background variables which may affect preference. The earlier data had shown greater preference differences between White Ann Arbor residents and Black residents of Detroit than were found between White and Black residents of Ann Arbor. This finding had been interpreted as suggesting that other cultural and/or situational factors, such as the fear of danger in deteriorated urban environments, may account for some of these landscape preference differences. The current participants are only known to come from a wide variety of urban, suburban and rural settings. The issue of other factors which may affect the preferences of urban residents remains an intriguing question for future research.

In addition to ethnic differences, the current results indicate that age affects preference. The general level of landscape preferences across all the scenes used in these studies was very similar across age and ethnic subsamples. However, the adolescents found fewer scenes that they particularly enjoyed. This finding was most clearly evident among the Black adolescents: while responding positively to these everyday natural settings, the adolescent Blacks rated none of them as being highly preferred. These findings are consistent with the results of the Balling and Falk (1982) research, and are compatible with Medina's (1983) finding that adolescents are particularly favorable to outdoor settings suggesting opportunities for action, rather than to predominantly natural scenes.

These differences in preferences between adolescents and adults were not as strong as the differences between the two ethnic groups. The current findings fit well with the results that Anderson (1978) reported: the preferences of youths and adults within the same ethnic group are relatively closely related, when compared with the preferences of other ethnic groups.

It should be noted that the findings of these studies do not relate to views of spectacular nature settings, which everyone appreciates, but to the kinds of settings that are typically found in and around large urban areas. These findings are directly relevant, therefore, to the management of urban nature settings. Managers and planners should be sensitive to the fact that local residents' landscape preferences are likely to be distinct, in significant ways, from their own.

These findings are also relevant to the design and management of recreation programs intended to appeal to adolescents. Adolescents may be like adults in benefiting from contacts with natural settings, but they are less likely than adults to perceive natural settings as being particularly inviting. The appeal of risk, challenge, and adventure is particularly strong among this age group. Nature programs may be able to offer unique benefits to adolescents, but it is critical that their offerings be embedded in program structures that allow adolescents to test themselves against meaningful challenges, as well.

Acknowledgement

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UNDERSTANDING DIVERSE RECREATIONISTS: BEYOND QUANTITATIVE ANALYSIS

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Understanding the recreation experiences of ethnically diverse populations who use urban-proximate national forests requires a broadening of research questions and methodologies. This study, focused on Hispanic recreationists on national forests in Southern California, employs the concept of a social field as a way of increasing understanding of Hispanic people's recreation experiences. Using a combination of quantitative and qualitative methods, findings are reported as a narrative describing the social field of each of four study sites.

Introduction

Outdoor recreation on national forests near large urban centers is changing and diversifying as users of many ethnic backgrounds increasingly choose urban-proximate forests as recreation sites. Recent articles in the outdoor recreation and natural resource policy literature have questioned the ability of researchers and managers to address the recreation needs of ethnic minorities (and other "under represented" groups such as the elderly and the disabled). Concerns raised in these articles include:

1) The profession's membership not being representative of the diversity found in society today (Knopf, 1989);

2) The tendency for those who choose the forestry profession to have a resource orientation rather than a social orientation (Knopf et al., 1987; Magill, 1992);

3) Once in the profession, the minor emphasis given to social science training in college curricula or continuing education programs (Magill, 1992);

4) Traditional theoretical perspectives and research methodologies are not designed to answer many of the questions being posed (Knopf et al., 1987; Kelly, 1992).

Many of these concerns are beginning to be addressed. Some university programs in forestry and natural resources are broadening their curricula require social science courses. Social science positions and career tracks are being established in the land management agencies. Education and outreach efforts targeted at women and minorities are beginning to yield a more diverse workforce.

The purpose of this study is to address the last concern, that research questions and methodologies are not designed to answer pertinent questions. Both Knopf et al. (1987) and Kelly (1992) argue that research efforts need to move beyond quantification of study respondents as the sole means of collecting data. Frequently the recreationists studied are abstracted into independent and dependent variables to the point of losing who they are as people--precisely what we need to know if we are to understand what recreation experiences mean to ethnic recreationists and where recreation fits within the context of their lives. What is needed are "creative ways in our methodologies to identify how [ethnic minorities] would like to integrate the outdoor environment into their daily interactions and social networks" (Knopf et al., 1987: 24).

This paper presents a theoretical and methodological approach to addressing this concern. Existing studies of ethnic minority outdoor recreation experiences lack an understanding of the social context and meaning within which they occur. This fact hinders the development of a deeper understanding of how best to serve ethnic recreationists. When recreation researchers-- most of whom have been of Anglo descent -- design studies to explore Anglo recreation, they unknowingly apply information about the meaning and context of the recreation being studied. This information includes a wealth of experience they learned not in college courses, but as children on family picnics, as teenagers at the beach, as young adults hiking in wilderness areas, and as parents teaching their children to fish or play baseball. These researchers have thus experienced Anglo recreation from a participant's perspective. And while this knowledge is not perfect and varies among individuals, it aids in the design of a culturally relevant study. Managers-- most of whom have also been of Anglo descent -- use this same "insider information" in their decision-making and interactions with Anglo visitors. It helps them provide the experiences the visitors desire, while protecting the resource.

When similar information about the meaning and context of the recreation experience is applied to various ethnic minority groups using the forests, however, it becomes "outsider information" and hinders the understanding of and communication with these groups. It is akin to using a road map to guide your travel. A map of Washington D.C. is quite useful in Washington D.C., but very confusing if used out of context in New York City, even though both are large east coast cities.

The Social Field

The concept of the social field has been proposed as one way of helping to bring context and meaning into research. As applied in this study, the social field offers a theoretical perspective useful for addressing relatively unstudied subjects such as the recreation experiences of ethnic minorities. Stokols and Shumaker (1981) define the social field of a place as "the totality of meanings conveyed to current or prospective occupants" (p. 447). Similarly, Lee (1973) states that

"individuals seek outdoor areas where they may share a scheme of order with others similar enough to themselves to be able to take for granted many of the everyday normative constraints. It is only in such situations that individuals feel at home or that they belong" (p. 185). The social field or scheme of order is the context within which recreationists act. The social field is composed of a confluence of variables present at the site, some of which have been captured in existing studies while others elude quantification and are easily missed in traditional survey approaches. It includes all the environmental and social characteristics of the site. The process of describing the social field of a site also describes the users of the site. Unlike traditional ways of describing the users of a given area, the social field description places the users in the site, integrating them and their activities with the physical environment. This not only describes who the users are, but their relationship to the site. Because the process of describing a social field involves many different variables, both quantitative and qualitative methods are necessary.

This study explores the social fields of four recreation sites in two national forests in Southern California in an attempt to gain an understanding of Hispanic recreation experiences at these sites. Given Lee's (1973) statement that people seek to recreate around others similar to themselves, it follows that one important aspect of a recreation area's social field is the ethnic composition of the site. If the percent composition of Hispanic recreationists (and concurrently the percent composition of Anglo recreationists) is used as the primary delineative characteristic of a social field, other user characteristics might also be expected, based on the findings of Keefe and Padilla (1987). In one of the most extensive demographic studies of those of Mexican descent in Southern California to date, Keefe and Padilla (1987) found positive correlations between generational status and 1) acculturation, 2) income, and 3) education. Given these findings, in areas where Hispanic visitors are the majority (and where Anglos are the minority) it might be expected that the visitors would be relatively less acculturated, lower SES individuals born outside the United States. In areas where Hispanic visitors are in the minority (and Anglo visitors are the majority), it might be expected that Hispanic visitors to the site would be more acculturated and of a higher socio-economic status. Further, it would be expected that the desired social field of the site (from the Hispanic recreationists' perspective) would vary from one of traditional Hispanic characteristics to one of traditional Anglo characteristics, depending on how acculturated the individual is.

Study Design

Study sites were chosen to span a continuum from areas used almost exclusively by Hispanics (the East and West Fork sites of the San Gabriel River on the Angeles National Forest) to areas of diverse ethnic composition (Lytle Creek on the San Bernardino National Forest), to areas where Anglos were the majority (Forest Falls on the San Bernardino National Forest). These sites were chosen to be as similar as possible in terms of the physical environment and facilities available. Each was in lower elevations (1800 to 4500 feet) along riparian zones and had little to moderate facility development.

A combination of data collection methods were used to study different aspects of the social field. First, a self-administered, on-site survey was used to ask demographic questions, as well as items related to the meaning of the recreation experience. Also included in the survey was a 4-item acculturation scale developed by Marin and Marin (1991), using language choice in various situations as an indicator of acculturation level. Several other indicators of acculturation level were also recorded, including income, education, place of birth, and recreation group composition. At each site an attempt was made to contact all recreation groups present, and surveys were given to all group members who wished to participate. This resulted in a sample size of 732 respondents. Second, an observation form was used to record information about each survey respondents' recreation group and on-site activities and equipment. Third, 25 open-ended interviews were conducted where individuals were given an opportunity to talk freely about the site and their recreation experiences. Finally, extensive field notes were taken to record what was seen at the sites each day. Data were collected over 5 to 8 weekend days at each site.

The Social Fields of the Sites

Because the social field is a confluence of variables, the sites are best described as a whole rather than breaking the data out into quantitative and qualitative results.

The West Fork of the San Gabriel River. The West Fork site is the most unique of the four sites. Its heavy litter accumulation, impacted use areas, and large amounts of graffiti do not fit the traditional image of a Forest Service recreation site. There are no picnicking facilities available (only a pit toilet and small parking lot); visitors must bring all the equipment they will need. Access to the stream area is relatively difficult, down an old stairway that ends in a two-foot drop off, leaving about a fifty-foot distance through a rock field that must be traversed before getting to the stream. The absence of facilities and difficult access may in part explain the smaller percentage of individuals of both Mexican and Central American descent who said they came to the site because it was a good place to picnic, barbecue, swim, and relax compared to the other sites, where access and facilities were better.

Ninety-three percent of the visitors to the West Fork site were Hispanic, approximately three-quarters of whom were of Mexican descent and one-quarter of whom were of Central American descent. There were many indications that the social field of the West Fork was composed of groups who were less acculturated than those at the other sites. The West Fork site included: (1) the largest number of individuals born outside the United States, (2) the lowest acculturation score, income, and education levels, (3) fewer groups that included Anglo members, and (4) more respondents who spoke only Spanish and chose Spanish language surveys. Individuals of Central American ancestry were the newest visitors to the site and came least frequently. The few individuals of Anglo origin using the site appeared to have been visiting the longest. The most common reason given for coming to the site was enjoying the place itself, followed by wanting to

spend time with family/friends. Like groups at the East Fork site and Lytle Creek, recreation groups of both Mexican and Central American visitors were much larger than Anglo recreation groups. Both Hispanic ancestral groups were more likely to be at the three sites with immediate and extended family than Anglos.

Of particular concern to managers is the amount of what has traditionally been thought of as depreciative behavior taking place at the West and East Fork sites. The majority of visitors at these sites were Hispanic immigrants with lower acculturation scores. The temptation may be to assume these individuals have no land ethic and need to be taught about respecting the land.

User observation and a survey question shed light on this assumption. First, in observing people's littering behavior, very little active littering took place (i.e., deliberately throwing something down). The most frequent form of active littering was piling garbage in a particular spot-- in a fire ring or at the base of a tree. Most of the littering behavior witnessed was passive-- items blown away by the wind or floated away in the creek and not retrieved. When asked what respecting the forest meant to them, less acculturated Hispanics tended to focus on the forest's existence values-- having clean air and water and having a safe place to come to were frequently given answers. Answers that focused on specific behavioral actions-- not littering, cleaning up after yourself --were much less common among this group than among Anglos and more acculturated Hispanics at the four sites. The question of appropriate behavior may be more accurately posed as a situation of differing land ethics, rather than no land ethic on the part of these visitors.

Only eight individuals (4.3%) of Anglo descent were surveyed at the West Fork site. Possibly because so few individuals of Anglo origin use the site, the Hispanic visitors were very aware of and curious about the data collection people, and tended to watch them and ask questions. Even when not dressed in data collection team shirts, people wanted to know what they were doing and why.

The West Fork site was below road level and densely treed, making it feel very secluded. The sound of Spanish language radio stations carried up and down the stream. On an initial visit to the West Fork, the finals for the world soccer cup were being held and involved a Central American country. Radios blasted the coverage in Spanish and cheers and groans were heard throughout the area. Preparation of the picnic was the focal point of activity for many groups, particularly the women. Carne asada (thinly sliced steak highly marinated and seasoned) served on tortillas with fresh grilled vegetables was frequently the meal of choice. Besides picnicking, playing in and near the creek was popular. It was not unusual to see both children and adults fully clothed in the creek. Children played quite freely up and down the creek, seemingly freer than Anglo children at other sites. It is difficult to put into words all the sights and sounds that were part of the social field at the West Fork site, but is was here that the "Hispanic atmosphere" was strongest and most pervasive.

The East Fork of the San Gabriel River. The social field of the East Fork site was similar in many respects to the West Fork, although the "Hispanic atmosphere" occurred in pockets around the site, rather than widespread like the West Fork. The site consisted of Forest Service designated sites in a heavily shaded picnic area with approximately fifteen double length picnic tables and barbecue grills on concrete pads with adjoining pit toilets and parking lot. These designated sites were usually full. Often hammocks were strung between the trees. The creek areas was about 150 feet below road level. Access to the creek was difficult unless the visitor spotted one of two unmarked dirt "ramps" down a cliffside. There were no facilities on the creek side of the road.

There was less graffiti here than at the West Fork area. Because of regular Forest Service maintenance in the picnic area, the heaviest build-up of litter was almost exclusively confined to the creek area. Unlike the West Fork, the most frequently given reason for coming to the site was that it was a good place to picnic, barbecue, swim, and relax, followed by wanting to spend time with family/friends. These reasons were reflected in a comment by a man of Mexican descent, who came to the East Fork because:

> I just like to go out from the big city into wilderness to try to get a family gathering and just have fun. The things we're going to find here are relaxation and food. We really like that.

Those of Hispanic descent comprised 83.7 percent of the respondents at the East Fork site. Of these individuals, approximately three-quarters were of Mexican descent and one-quarter were of Central American descent. These individuals tended to be more acculturated than their counterparts at the West Fork site given that: (1) their acculturation scores, income, and education levels were slightly higher, (2) they spoke English-only more frequently and chose English language surveys more frequently.

Hispanic picnickers at the East Fork and West Fork were similar in terms of the foods prepared and other activities taking place with two notable exceptions. First, the groups consisted of several large families at the East Fork, making the average group size larger. Second, water activities were more concentrated because the creek was larger and some areas were too deep to play in. Through the course of the summer there were several occurrences of cutting trees down either for fire wood or to open up a space along the creek to picnic. In one case a group cut down four two-inch saplings to use as poles to build a make-shift cabana for shade.

In addition to the picnickers, church groups made up a large component of users at the East Fork site. These groups consisted mainly of individuals of Central American descent. They often brought with them entire public address systems and generators, musical instruments, folding tables and chairs, and large quantities of food. The sounds of their services could sometimes be heard throughout much of the site, but less so near the bubbling creek. Their services included regular sermons given by their leader in Spanish, frequently

followed by full immersion baptisms in the creek. It was difficult to talk with these groups because they were often in services the entire day. When they were contacted it was not unusual to get only one or two surveys from fifty or sixty people, sometimes everyone deferring to the minister to fill out a survey for them all. Early in the season, contact with one of the Central American church groups provided an explanation as to why so many church groups came to the East Fork site. According to the informant, a Hispanic church group visiting the area around the turn of the century had a religious experience; they had visions, spoke in tongues, and so forth. The knowledge of this experience has been passed among many churches in the Los Angeles area and now many church groups come to the site. This unique aspect of the social field of the East Fork site is reflected in many facets of the data. Those of Central American descent were more likely to be with church groups than either of the other two ancestral groups (22.1%, 4.3%, and 5.7% for those of Central American, Anglo, and Mexican descent, respectively). Those of Central American ancestry came to the site most frequently and had been coming here longer than they had to other sites.

Those of Anglo descent were the minority at this site, comprising 12.8 percent of the sample. In addition to Anglo picnickers, there was a small but often present group of Anglo gold miners-- primarily middle-aged men. The miners brought a great deal of equipment including motorized dredging machines to mine the stream. For the most part they tended to keep to themselves. They mined mainly for recreational purposes; most said the amount of gold they took allowed them to break even on their expenses. Through conversations and interviews with several of the miners, it seemed they very much disliked the litter and noise of the Hispanic picnickers, but they did not dislike the people themselves. Some miners seemed to enjoy the picnickers' curiosity about their activities. Continued access for mining, getting a site to use their dredger, and being left to their own devices were some of their major concerns. Conversely, no Hispanics commented positively or negatively about the miners or their activity at the site. The dredging equipment was quite small and didn't make a significant amount of noise. The few dredge piles visible were mostly of rock, and attracted children for play.

In addition to the Anglo picnickers and miners, there were at various times in the summer three homeless groups living at the East Fork site, all of Anglo descent. One group stayed several months. They were a family of four who had been homeless for six months when they came to the site. When they moved into the site they chose an area that had been particularly popular with large Hispanic church groups. In doing so they placed themselves right in the middle of a heavily used area. This set them up for a summer of what they perceived as extreme conflict because of the close proximity of the Hispanic groups on weekends. During an interview the man of the group said:

> They invade your space and leave their trash. They were going to camp right here in our yard and finally we said you're not going to camp here, you've got to leave. I had to more or less shove them out. Can't they see we're camped here? My other tent is down there by the water, that doesn't keep them from dumping water on it, it doesn't keep them out of our pitchers we have down there or getting into our coolers down there. They invade your stuff.

It had not occurred to him that the church groups had been using the sites longer than he and his family had, making them the intruders, not the other way around. There were other instances of what appeared to be territorial conflicts like that described above. Miners would rope off the area of the creek and bank they were using to keep others out. Other picnickers near the homeless people mimicked their rock wall, building smaller versions around their picnic sites.

Lytle Creek. Lytle Creek is a narrow picnic area following the course of the creek for about 1/4 mile. It has thirty picnic tables, each with a barbecue grill and/or fire ring. In addition to these facilities, three small parking lots run along the area, and there are several pit toilets and water spigots. The area is regularly maintained by Forest Service personnel, resulting in a relatively litter- and graffiti-free area. Several people at Lytle Creek commented that they used to go to the San Gabriel River, but it had gotten too dirty and crowded so they now came to Lytle Creek. In addition to these maintenance activities, the Forest Service seemed to be trying to communicate with the Spanish-speaking clientele with Spanish-language signage, including one thanking them for their visit posted on the way out of the site.

Those of Hispanic descent comprised 84.8 percent of the respondents at Lytle Creek; of these 93 percent were of Mexican descent and 3 percent were of Central American descent. The individuals of Mexican descent as a whole seemed more acculturated than their counterparts at the West and East Fork sites given that: (1) the number of individuals born outside the United States was much lower, and the number of second generation individuals was three times greater, (2) acculturation scores were higher, (3) respondents that spoke English-only were more common and chose English language surveys more frequently, and (4) respondents were in mixed Anglo/Hispanic groups more frequently. Interestingly, on two occasions during interviews, individuals of Mexican descent born in the United States made a point of distinguishing themselves from nearby groups they believed were immigrants. The few individuals of Central American ancestry did not seem to be different from their counterparts at the West and East Fork sites in the above characteristics, except that their education levels were slightly higher.

The geography of the area contributed a different atmosphere to the social field of Lytle Creek. Its close proximity to foothill communities and easy access to parking was similar to many urban parks; this urban park perception fit with how some of the visitors saw it as well. In conversations and interviews with site users, some wished it had a grassy area, playground equipment, and sandy areas along the shore. Also, it was not unusual to see gang members hanging out in the parking lots at Lytle Creek. An Anglo family that lived in a city neighboring Lytle Creek was interviewed at Forest Falls.

When asked why they drove all the way to Forest Falls rather than go to Lytle Creek, the husband described Lytle Creek as a crowded, noisy party place.

The majority of the visitors located themselves in shady areas along the creek rather than in the designated sites, many of which were out in the direct sun. It was not uncommon to have one thousand or more people at the site and to have picnic tables go unused. Not only were the tables out in the direct sun, they were also too small to seat most of the Hispanic groups. With the exception of Central Americans at the East Fork, respondents of all ancestral groups had been coming to Lytle Creek the longest of the four study sites. It was also the site that those of Anglo origins visited most frequently. Survey responses showed the most frequently given reason for coming to the site was that it was a good place to picnic, barbecue, swim, and relax, followed by enjoying the place itself. These reasons were echoed in conversations with respondents. Several individuals commented about how much better Lytle Creek was for picnicking than San Gabriel Canyon. Also, several respondents of Mexican descent mentioned that they enjoyed the environment at Lytle Creek because it was very similar to that found in Mexico.

Possibly because of the longer use history and frequent visits, many people seemed to have adapted their recreation equipment to fit their needs here, including building a barbecue with wheels and creating a baby bassinet that hangs from a tree. Like the East Fork area, hammocks strung up between trees were relatively common. Possibly because of the easier access here, equipment and food preparation tended to be more elaborate. Several times in the summer, groups were seen cutting up entire pig skins to deep fry fresh pork rinds at the site. On two occasions groups were seen simmering an entire skinned and dressed goat in a large kettle.

Like the East Fork area there was evidence of extensive tree cutting activity. An encounter with a group of Mexican descent seemed to indicate that this may not be considered inappropriate behavior. When the group was approached to participate in the study, they were friendly and very conscious of social norms. The man who was acting as the group's leader asked if it was against the rules to be drinking beer in the area (many in the group were holding beer cans) and were relieved when the interviewers said it wasn't. He also asked if it would bother us if they spoke in Spanish while we were there. After he completed the survey he proceeded to cut branches off a nearby tree for the children in the group to roast their hot dogs with. Given his concern over other types of acceptable behavior, it seemed he had no question about the acceptability of this action or he would have either asked about it or waited until we left the area.

Lytle Creek had an interesting gradation within the social field. After repeated visits it was evident that many more Spanish language surveys were used at the north end of the area. The change in the social field of the area from end to end was quite striking. At the southern end, there were many Anglo groups and English speaking Hispanic groups. Toward the middle this distinction blurred, and at the north end, the social field was very much like that at the West Fork area. A unique aspect of the social field at Lytle Creek were the many Hispanic vendors, a traditional method of sales in Latin America. Vendors included a for-hire mariachi band, women and children selling rice and corn-on-the-cob, and an ice cream man with a pushcart. With the exception of the ice cream man, these vendors were found almost exclusively at the northern end of the picnic area. The visual cues related to variation in the backgrounds of Hispanic visitors seemed larger at Lytle Creek. People varied from those who appeared of modest means and spoke little English to fairly affluent-looking individuals who spoke English with no Spanish accent. Unfortunately observations about the differences within the area were made too late in the summer to develop location codes within Lytle Creek that could be used to compare this gradation quantitatively.

Lytle Creek could be characterized as having the most varied social field, but because of its size most visitors had little idea what was going on in areas further up or down stream from them. A more accurate description of Lytle Creek is that it contained two or more "micro" social fields.

Forest Falls. Forest Falls is likely what comes to mind for most people in the outdoor recreation profession when they think of Forest Service picnic sites. Located under large Ponderosa pines, it consists of approximately twenty widely-spaced individual sites that include a table, barbecue grill, and fire ring located around a loop road. Forest Falls receives less use than the other sites; it is rarely more than three-quarters full. The creek runs through the back of the picnic area. In addition to single parking spaces located at each picnic site, there is a large parking lot at the entrance to the picnic area.

Those of Anglo descent comprised the largest group at Forest Falls (58.8%). The income level of these Anglos was more than $13,000 higher than Anglos at Lytle Creek. Education levels, however, were not significantly different. Individuals of Mexican descent comprised 28.1 percent of the respondents. They seemed to be the most acculturated group relative to individuals of Hispanic descent at all of the other sites given that: (1) the number of individuals born outside the United States was lower and the number of second generation individuals was higher, (2) acculturation scores, income, and education levels were higher, and (3) more groups spoke English-only and chose English language surveys more frequently. There were no individuals of Central American descent studied at Forest Falls. In addition to those of Anglo and Mexican origins, Forest Falls was the only site to have Asian/Pacific Islander groups in any great number, comprising 5.6 percent of the respondents.

The most frequently given reason for coming to the site was enjoying the place itself, followed by wanting to spend time with family/friends. Similar to the Hispanic groups at Lytle Creek, two Anglo groups interviewed at Forest Falls commented about how the environment at Forest Falls reminded them of where they grew up in the United States. Individuals of Mexican ancestry who came to Forest Falls did so more frequently than did individuals of Mexican ancestry

who visited the other sites, but had been coming to Forest Falls for a much shorter length of time. A man of Mexican descent commented that Forest Falls was alright the first time he visited there, but the more he came the more he liked it.

Group sizes were smaller at Forest Falls that at the other sites, particularly for those of Mexican descent. It was generally a much quieter picnic area, and playing radios loudly did not seem to be considered acceptable. Neighboring groups asked people to turn their music down a few times when study personnel were present. Children were generally kept close to the parents or were supervised when they went to the stream. An Anglo man commented during an interview that there was a psychological impact associated with being at Forest Falls, indicating that people were quieter and more respectful there that they would be elsewhere. The food prepared was more typically American barbecue fare--primarily hotdogs and hamburgers. The large Hispanic groups that would have blended in at the other sites were more noticeable at Forest Falls. A Hispanic woman at Lytle Creek mentioned she knew about Forest Falls, but that "only white people go there, not my people." She said she would not feel comfortable there.

Conclusion

Describing the social field of a recreation site entails pulling together in-depth information about the meaning and context of the recreation experience. This description serves two purposes. First, the information can be used to test hypotheses and build empirical support for theory. This study explored the relationship between the demographic characteristics of the Hispanic recreationists and the ethnic composition of the recreation sites. Overall, the Hispanic recreationists followed the trends expected. The sites with the highest percentage of Hispanic recreationists were the sites with the least acculturated individuals, and the sites with the highest percentage of Anglo recreationists had more acculturated individuals of Hispanic origin. These results are more thoroughly presented in Carr & Williams (1993).

Second, as a descriptive record the study can provide management information about the sites. Describing visitor and site characteristics simultaneously highlights the inter-relationships between them, frequently providing explanations that would have been obscured otherwise. Combining information about group size, facility usage, site modification by visitors, and activities pursued provides a better picture of how existing facilities are meeting visitor needs, how site impacts come about, and suggests what modifications may benefit visitors and the environment. An example of this is the relationship between visitor behavior and land ethics. The combination of a survey question, participant observations, interviews, and casual conversations seem to support the existence of a *different* land ethnic among many of the Hispanic visitors rather than the *absence* of a land ethic. Another example is the seemingly unique relationship many of the Central American church groups have with the East Fork area. Again, through the combination of questions and methods, a pattern and history of usage was revealed that likely would not have emerged through traditional methods.

Finally, in reflecting back upon the concerns raised about professional ability to address the needs of what have traditionally been underrepresented groups, it appears that the natural resource research and management community does indeed have the ability to meet the recreation needs of ethnic minorities if we challenge ourselves to do so. Knopf et al. (1987) point to this challenge in saying:

> Let us get research going on meanings attached to recreation experiences of all people; let's start unfolding the life quests of those under-represented in outdoor recreation. Let's start relating to people as people, rather than as demographic statistics. Let's put our minds in outdoor recreation to work on combining natural resource preservation with human resource maximization (p. 27).

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THE WILDLAND-URBAN INTERFACE:

HISPANICS IN THE NATIONAL FORESTS

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This study examined Hispanics who visited National Forests in southern California. The study population was comprised of United States born, Mexico born, and Central America born Hispanics. These subgroups differed from each other on many attributes salient to wildland recreation. This study focused attention on visitation patterns, preferences, and attitudes.

Many visitors to wildland recreation areas in southern California National Forests are from the Los Angeles basin. The cultural diversity found in outdoor recreation areas reflects that found in the basin. This study examined the diversity of visitors to four outdoor recreation areas in two National Forests in southern California and focused on "urban Hispanics."

The Hispanic population using the forests consists primarily of Hispanics born in the United States, those born in Mexico, and those born in Central America. These subgroups may differ from each other on many attributes salient to outdoor recreation such as visitation patterns, preferences, and attitudes. This study examined visitation patterns such as repeat visits, preferences for recreation sites, activities, and site characteristics, and opinions about access. Resource management implications are addressed.

Research Methods

Design

Data were collected from 145 visitors to the Angeles and San Bernardino National Forests on weekends and holidays (peak use times) during the summer months of 1991. Sites on the Angeles National Forest included the West Fork and East Fork of the San Gabriel River. Sites on the San Bernardino included Lytle Creek and Forest Falls. The sites were riparian zones managed for dispersed use but were actually receiving concentrated use. Respondents were randomly selected for inclusion in the survey. Self-administered questionnaires were available in English or Spanish. Completion rate was 90 percent. Statistical techniques for analysis of survey items included ANOVA and Chi-Square.

The Sample

Although the focus was on Hispanic visitors, Anglo visitors were also given an opportunity to participate in the survey and comprised 27 percent of the sample. The majority of the sample were United States born Hispanics (referred to as "Hispanics"--43%), the remainder were Mexico born (17%), and Central America born (13%).

About half the sample were male (47%), and half were married (50%). On average, the Anglo group was older (34 years compared to 26 years for all Hispanics), and had more formal education (14 years compared to 11 years for all Hispanics). Over half (56%) of all respondents spoke English and Spanish, 31 percent spoke English only, while 13 percent spoke Spanish only. On average, Anglo group sizes were smallest (7), while Central America born visited in groups of 9, Hispanics in groups of 10, and Mexico born in groups of 11.

Research Findings

Visitation Patterns

In general, most visitors (7 in 10) were repeat visitors to the sites. Anglos were most likely to be return visitors. On the Angeles National Forest, the East Fork was visited most often by Hispanic or Mexico born while visitors to the West Fork were most often Anglo or Mexico born. In the San Bernardino National Forest, Lytle Creek was visited most by Central America born and Hispanic visitors while Forest Falls received almost equal representation from all groups. No site was more likely than another to have repeat visitors.

Preferences

Favorite place. An open-ended question addressed favorite places to go. In general, the mountains (60%) were identified as the favorite place to go. Other favorite places were beaches (11%) and lakes (8%). Many visitors (40%) cited their present location as their favorite place (for example, if they were at Forest Falls they identified "the mountains like Forest Falls" as their favorite place).

Favorite activity on-site. A closed-ended question addressed preferred activities on-site. Respondents could report only one activity as the favorite. In general the favorite activity identified by all groups was picnics followed by relaxation. These findings did not differ by ethnic group nor by site. Other favorite on-site activities were swimming and hiking.

Site characteristic preferences. A closed-ended question identified that several site characteristics were important to visitors at these outdoor recreation sites. Site attributes considered more important by those born in Central America included picnic areas, parking, signs, and friendly rangers. Also more important to Central America born was having a place easy to get to. More important to Mexico born was having few rules and regulations. Other site attributes that were considered important and did not differ by ethnic or racial group included garbage disposal, toilets, clean areas, trails, and low-cost areas.

Preferences for outdoor activities. Respondents were asked if they had heard of, participated in, or desired to participate in several activities. Specified activities included a set of newer activities offered on some National Forests:

camera safaris, eco-vacations, and volunteer hosting. Anglo respondents were most likely to have heard of these activities. About half the Anglo respondents had heard of camera safaris (47%) and volunteer hosting (45%) while about one-third (33%) had heard of eco-vacations. No group was likely to have tried these activities (at most 6% had tried any of these). All groups expressed an interest (ranging from 16% to 40%) in trying these activities in the future.

Another set of activities were the more traditional activities found on many National Forests such as natural history hikes, off-road riding, and mountain biking. The Anglo respondents were most likely to have heard of these activities. About 9 in 10 Anglos had heard of natural history hikes (91%), off-road riding (90%), and mountain biking (91%). Anglo respondents had more often tried natural history hikes (56%) and off-road riding (47%). All groups expressed an interest (ranging from 39% to 66%) in trying each of these activities in the future.

The last set of activities was comprised of high-risk activities and included heli-skiing, bungee jumping, and hang gliding. The Anglo respondents were most likely to have heard of these activities. While about one-third of the Anglos (32%) had heard of heli-skiing, more than 7 in 10 had heard of bungee jumping (73%) and hang gliding (86%). Very few in any of the groups (less than 4%) had tried any of these activities. All groups expressed at least some interest (ranging from 11% to 32%) in trying each of these activities in the future. In general, the Hispanic groups expressed more interest in trying heli-skiing and bungee jumping while, Anglo respondents expressed more interest in trying hang gliding in the future.

Opinions About Access

Respondents were asked about access to each site. They were given a list and asked if they would recommend the site to an elderly person, a person who is deaf, a person who is blind, a family with a baby in a stroller, someone on crutches, someone using a walker, or someone in a wheelchair. Over half would recommend these sites to someone who is deaf (65%) or an elderly person (56%). Four in ten would recommend these sites to a family with a baby in a stroller (41%) or someone who is blind (38%). Three in ten (28%) would recommend these sites to someone on crutches. Only two in ten would recommend these sites to someone using a walker (19%) or someone in a wheelchair (18%). There were no differences by ethnic or racial group. The only significant difference by site was that fewer respondents would recommend a person in a wheelchair go to Lytle Creek.

Management Implications

There were several findings in the study of potential interest to managers of outdoor recreation areas. Additionally there were several differences among ethnic and racial groups that may be important for managing resource areas known to attract multicultural visitors.

Over 70 percent of the visitors to these sites were return visitors and 60 percent of the visitors said that mountains were their favorite place to go. These are important findings that may suggest that these people have found a "special place." When people have a special place they have more reason to become involved in maintaining that place and perhaps in managing that place. Couple this information with the knowledge that these visitors are interested in volunteer hosting and eco-vacations. For resource managers there are two potential ways to use this information; one would be to get those visitors involved in projects at those sites--perhaps as volunteer hosts or providing eco-vacation areas, and the other is to involve those visitors in resource management decisions. Also, "special places" can evoke feelings of possessive rights which may be challenged by changing use.

Another useful piece of information is that favorite activities on these sites are picnicking and relaxing. Thus, providing day use areas is an important aspect of meeting the needs of these visitors. However, most of these sites are not managed for this use and are actually managed for dispersed use and have few site amenities. Couple this with the desire visitors have expressed for garbage disposal and toilet facilities and there may be an issue that resource managers would need to address. Another caveat here is that Central America born visitors had the greatest desire for amenities at these sites yet made up the smallest proportion of visitors. Resource managers would have to decide how many people it takes to make an amenity important and worthwhile for the site and they would have to consider the increasing numbers of Central America born Hispanics entering the United States, especially the southwest.

Another issue concerning the sites has to do with access. For the most part these sites are not perceived as amenable to people with physical challenges. Resource managers would have to consider some renovations at these sites to address the needs of the physically challenged.

Finally, the data suggest types of activities that are known to appeal to visitors to those sites. The more traditional activities like natural history hikes, off-road riding, and mountain biking are still in demand by these visitors. These are activities that have been and can continue to be managed for outdoor recreation use. Some newer activities are also desired by many of the visitors to these sites including camera safaris, eco-vacations, and volunteer hosting. Perhaps more of these activities could be offered by resource managers. High-risk activities such as heli-skiing, bungee jumping, and hang gliding are less likely to attract visitors and may not be appropriate to these outdoor recreation areas. Resource managers should also be aware that an expressed desire to try an activity does not necessarily indicate that a person would actually try the activity.

Summary

This study examined visitors to two National Forests in southern California. The study focused on visitation patterns, preferences for site attributes and activities, and opinions on access. Management implications were addressed.

RACISM: A CONCERN FOR RECREATION RESOURCE MANAGERS?

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This paper investigates the role of racial barriers to participation in park and forest recreation by ethnic minorities. Based on 22 focus groups with 168 ethnic minority individuals in Chicago, six different forms of interpersonal and institutional racism were identified. Findings suggest that racial barriers are much more complex than have been indicated in past research, and recreation professionals need to consider the different forms of racism as they impact recreation planning, training, and research. Implications for "ethnicity" and "marginality" explanations of recreation participation are also discussed.

Introduction

Social equity and environmental justice are becoming major concerns in natural resource management (Fairfax, 1992; Mohai & Bryant, 1992; Blahna & Toch, in press). Questions of equity include the provision of outdoor recreation opportunities, and have arisen from research showing that ethnic minorities, especially African Americans, are underrepresented in most forest recreation activities and areas (Washburne, 1978; West, 1989; Dwyer & Hutchison, 1990). While there have been several theories presented to explain this phenomenon, such as the marginality and ethnicity theories, none have received widespread support. Furthermore, few studies have looked at the issue of race relations in parks, and those that have, found only weak support for the notion that racism may act as a barrier to recreation participation (West, 1989; Phelan, 1991; Blahna, 1992a). West argues, however, that these results just represent the "tip of the iceberg."

One problem with past research is that race relations are difficult to study using traditional survey research methods (West, 1989). Furthermore, the investigation of recreational barriers is a relatively recent focus of research. As a result, it is unclear which constructs and measures are most pertinent for studying racial barriers.

This paper reports findings from focus group research on the recreation preferences of a sample of ethnic minority students in Chicago. The results indicate that for the group, racism was an important barrier to park and forest recreation participation, especially for African Americans and Hispanics, and that the influence of racism is far more complex than suggested by past research. We identify six different forms of racism that can restrict park use by ethnic minorities, and present research and management implications based on the findings.

Research Methods

The study is based on the results of focus group interviews held with students at Northeastern Illinois University (UNI) in Chicago. UNI is a socially and economically diverse university; over one-third of its 10,000 member student body is nonwhite, and there are 15 ethnic student groups on campus. Many students are older (mean age is 28 for undergraduates and 36 for graduate students), work full time, and are of the first generation in their family to attend college. Nearly all of the students are from Chicago or its suburbs.

Most of the focus groups held for this study were with members of ethnic organizations based on the main campus and at the University's Center for Inner City Studies. Three focus groups were also conducted with geography classes that had primarily minority students. The 22 focus groups assembled for this study ranged in size from 3 to 15 students, with an average of 8 students per group. Forty three Asians, 34 African Americans, 55 Hispanics, and 36 Caucasian students participated in the study, a total of 168 individuals. In addition to the focus group interviews, 10 personal interviews were conducted with minority student and faculty leaders on campus (see Blahna (1992b) for a full discussion of research methods and participants). Most references to the racial barriers discussed in this paper came from these personal interviews and from the 11 focus group interviews with the 89 African American and Hispanic students.

In the interviews, participants were asked about their use of local, regional, and national park and recreation areas, activities in which they participated in those areas, and problems or barriers they encountered. Interviewers progressively moved the participants from discussing neighborhood parks to more regional and finally national areas. Some specific questions for each of these areas included: "Where do you like to go?" "Why?" "What do you do there?" and, "What keeps you from going more often?" There were also questions on their participation in specific resource based recreation activities such as hiking, camping, hunting, and fishing. Participants were encouraged to discuss their recreational interests and the reasons they did or did not like certain types of areas or activities. The purpose of the interviews was to encourage participants to discuss their activities in, and attitudes toward, natural areas in general.

The interviews were taped, transcribed, and coded for content in three major areas: 1) images and preferences for forest recreation areas and activities, 2) barriers to participation in forest recreation, and 3) recommendations for making forest recreation opportunities more available to urban minorities. This paper focuses on barriers to recreation participation, especially the role of racism, and the relationship of racial barriers to other recreational barriers for minorities.

Defining and Coding Forms of Racism

Racism is a broad term that includes any attitude, behavior, or institutional arrangement that tends to favor one race or ethnic group over another (Farley, 1988). Thus it encompasses both racial prejudice (i.e., racist attitudes and ideology) and racist behavior or discrimination. Due to the research question and methodology, this paper focuses primarily on actual experiences of racist behavior. By their very nature, incidents of racial prejudice are more difficult to identify, but are also reported as perceived or experienced by study participants.

Comments dealing with racism and racism related barriers were coded by thematic categories that emerged from the data, rather than from any *a priori* categorization based on hypothesis or the literature. One reason for this was that there have been few studies of racism as a recreational barrier (West, 1989), making it unclear how existing categorizations would apply. Furthermore, as a qualitative, nonrepresentative method, a major goal of focus group research is to uncover the major themes that emerge from the participants themselves (Churchill, 1987). While results of such work can be insightful and valuable in and of themselves, focus group methodology is often used as an exploratory tool to generate ideas and information for future quantitative research that can more explicitly test the validity of particular concepts or hypotheses.

Past studies of racism and minority access to public services did, however, provide significant guidance in structuring focus group themes. That literature identifies two general forms of racial or ethnic discrimination: individual or interpersonal discrimination, and institutional racism. Interpersonal discrimination refers to occurrences of actual behavior on the part of individuals that leads to unequal treatment on the basis of race or ethnicity (Farley, 1988). Institutional racism occurs when "an institution's policies, practices, and procedures favor some ethnic groups over others" (Haas, 1992: 2). Institutional racism can be deliberate, it can "develop without any conscious racist intent," or it can even be the current effects of past discrimination (Farley, 1988: 10; Haas, 1992).

The focus group sessions indicated that all of these forms of discrimination existed in park and forest recreation areas, and that recreation related racism is far more complex than this simple categorization implies. There is also a temporal effect; both past and expected experiences with racism seem to influence recreation participation of minorities. Thus racism has a more complex and subtle influence on recreation behavior than simply a matter of experiencing a racial slur in a neighborhood park, and on-site surveys of experiences with racial discrimination might only begin to tap the complexity of these barriers.

Results

A total of 537 barrier related comments were coded into nine categories: 156 (29%) comments referred to management barriers (such as poor facilities and maintenance and lack of programs or information), 129 (24%) referred to safety or crime barriers, 65 (12%) referred to racism, 65 (12%) referred to cultural barriers (language, dress, family or gender roles, etc.), 36 (7%) related to economic or transportation constraints, 36 (7%) related to time barriers, 29 (5%) related to discomfort in the outdoors (primitive facilities, physical discomfort), 15 (3%) referred to fear of the environment, and 6 (1%) of the comments dealt with user conflicts. For the sample of participants, racism was the second most common barrier for African Americans (20% of all their comments) and the third most common (15%) for Hispanics. Again, it must be stressed that the qualitative nature of focus group methods precludes generalizing these findings beyond the sample, and the frequency of coded comments are quantified here for descriptive purposes only.

Comments on racism related barriers followed six general themes: 1) on-site experiences of racism from other recreationists, 2) on-site experiences of racism from professional staff, 3) differential upkeep and management of local parks, 4) fear of expected or potential racism, 5) socialization resulting from historical experiences with racism (historical racism), and 6) social effects of past economic discrimination (economic deprivation/marginality). References to on-site experiences and potential and historical racism were clearly based on race or ethnic discrimination, and so were included along with other racism related barriers. Differential management and economic deprivation, on the other hand, refer to broader and more subtle effects of institutional racism. In some cases the focus group participants were unclear if there was a racial basis for the barrier they were describing. Therefore, these comments were coded in the "management" and "safety/crime" barrier categories in the quantitative analysis. This reflects the fact that it is often difficult to identify a specific racial basis for institutional barriers. It also shows that some of the comments in all three of the major quantitative categories of barriers discussed above may be related racism to some extent.

Racism of Recreationists

The first category refers to actual experiences of interpersonal discrimination exhibited by other recreationists or evidence of interpersonal discrimination in parks. For African American students, about 20 percent of the comments coded in the racism category (4% of all barriers), were experiences of interpersonal racism between recreationists. For example, a Black student told us that in one park: "you may run across cross-burning . . . [and] they have KKK rallies there." Another Black student said a certain park was so: "racist you can't even use the beach."

Hispanic students in the study were equally likely to identify examples of interpersonal racism, such as this story from a member of the Aspira Hispanic Heritage Club:

> When I went to [a neighborhood park] where they have tennis courts, I was playing and this Caucasian told me to get out. I said: 'Excuse me?' And he said: 'Get out, you don't live here.' And I said: 'How do you know I don't live here?' and I sat on the tennis court and wouldn't leave. . . Then the guy said: 'I'm going to call immigration.' I just refused to go.

The following story illustrates that this is not just a problem in urban areas:

> [When I was a kid, we went camping] in Wisconsin, but we were the only Hispanics there. I remember the campsite we had every year, and this White lady didn't want us [there, and] she kept complaining about the Hispanics and their music.

Finally, two examples from Hispanic students illustrate that actual encounters with racist behavior is often directly related to the color of one's skin:

> In my neighborhood, I'm satisfied with [the parks]. But when my cousin came -- he's Puerto Rican but he looks Black -- and this man kept looking at him and [my cousin] just left. He said: 'I can't stand it.' The only Black person they have is this guy that works there and the rest are Whites and Hispanics.

> When we went to the [Wisconsin] Dells, there was this Black family there by themselves, but it was obvious there was racism because no one camped by them.

Racism of Professional Staff

Perhaps the biggest surprise in the results of the study was the reports of discrimination exhibited by park personnel or other authority figures such as police or security officials in the parks. While there were fewer comments regarding discrimination of professional staff than by recreationists, these experiences resulted in much more heated discussion in the focus groups than any of the other forms of racism.

Several examples of racism by professional staff involved incidents at parks and forest preserves (county level natural areas and parks) in Chicago and the suburbs. For example, one student in the Spanish Club told us:

> I was at [a nearby forest preserve] and we were parked in a car and one of the park guards asked us to leave the park because he said it was dangerous for us to be there. He said, 'you know you guys don't belong in this park, they kill Hispanic people here.' We left.

This story prompted a Mexican American student to relate an incident she experienced while taking cross-country ski lessons at the same forest preserve. She said that the ski instructor was discussing the many benefits that can result from participating in cross country skiing, when she heard the instructor's assistant say to another class member: "Besides that, you won't see any 'niggers' doing it." The skiing assistant was not in uniform, and while the woman who related the experience thought he was a member of the park staff, he may not have been. This indicates that it may not always be park or recreation personnel who are the problem, but other authority figures such as police or security staff, concessionaires, recreation specialists, etc.

As with race discrimination by recreationists, it seems that Black visitors are especially likely to run into discrimination by professional staff. One illustrative example was given by a member of the Black Heritage Club:

> My friends and I, three years ago, were riding our bikes. When we got to the beach (which was in a White neighborhood), I said: 'This is one of the cleanest beaches I ever saw.' And so we began to ride through and everybody was staring at us, and when we were leaving some White boys said: 'Niggers, get out of our beach,'. . . and they threw bats and balls at us. We passed the fieldhouse director and we saw two [White] policemen and told them what happened and they told us we shouldn't have been there in the first place. They told us to go to (a beach in a Black neighborhood).

This comment indicates racist behavior by both recreationists and professional staff. Racist behavior on the part of formal authority figures is especially troubling. The reason for the anger that many students exhibited while relating examples of institutional racism is clear: While racism by park visitors can be chalked up to a few "bad apples," racism by police and park officials implies that this behavior is acceptable in parks, and that it will remain so for years to come.

In addition to interpersonal discrimination, the last quote also provides evidence for a more subtle and insipid form of racism: differential upkeep and management of recreation resources. This indicates that recreation participation may also be impacted by institutional racism.

Differential Upkeep and Management

Some students in the study felt that the parks in their neighborhoods were not kept up or managed nearly as well as parks in "better neighborhoods." This has been a controversial topic in Chicago for decades. While no explicit policies of differential management exist, as with other forms of institutional racism (e.g., access to education), policies do not have to be overtly racist for their effects to be racially biased.

Responses related to differential management were originally coded as management barriers rather than racism related ones. But in the experiences of some students, differential management had a distinctly racial effect. Members of the Spanish Club discussed one such example:

> We have a [park] close by, but we don't want to go there. If you came from another city, you would think it was a beautiful park -- lagoons and nature -- but you don't want to go there because of the problems. If you compare parks in the White neighborhoods, they keep them up. But money isn't pumped into [the park] in terms of cleaning. I'll be honest, if [the park] was in a White area, it would be better taken care of.

Several African American students echoed this sentiment:

> Two things bother me. . . about the parks, just the fact that the swings perhaps aren't there or it's just not kept up. . . Team sports that were offered and now just aren't there. . . it's probably like we said, its the different

neighborhoods. The "good" neighborhoods are kept up better [than] the "bad" neighborhoods.

The only Black beach I could say is clean, because the brothers and sisters keep it clean, is (name of a beach in a predominantly Black neighborhood). They keep the park clean, but I don't see the park district cleaning there.

A more subtle example of racially biased management was provided during an individual interview with an Hispanic faculty member on campus. He said that one of the reasons many parks are not used by minorities is that they do not offer the types of activities nonwhites might enjoy. For example, for years the park in his neighborhood offered summer concerts, but they always had "White bands" despite the fact that most of the people living in the neighborhood were Hispanic. When they finally had a Latin band, he noted that the park was "crawling with cops," which he had never noticed before. While it is difficult to say if prejudice dictates specific management practices, it is obvious that some study participants felt park management was biased by race as well as by social class.

This is similar to the problem of "bureaucratism" which was identified by Haas (1992: 214) in a case study of institutional racism in the provision of health care in Hawaii. While there may be no overt policy that requires preferential upkeep and management of parks in White neighborhoods, it may occur simply as a matter of bureaucratic convenience such as reacting to political pressure. On the other hand, the problem could also result from agency policies that on the surface appear to be "race neutral," but actually result in differential upkeep of the parks based indirectly on racial criteria. For example, if individual park budgets are determined by non-impact related criteria, such as the size of the park, rather than on impact related criteria (e.g., number of people served, number of visitors per acre, or amount of erosion, graffiti, etc.) it would be an example of institutional racism because parks in poor and densely populated neighborhoods would suffer. Thus, racism can be institutionalized even if individuals within the agencies harbor no ethnic or racial prejudice (Haas, 1992).

Expected or Potential Racism

Expected or potential racism are cases where respondents express general fear or discomfort due to the potential for, or expectation of, prejudice or discrimination. These expectations may result from their own past experiences in recreation areas, or the experiences of friends, media accounts, or other secondary sources of information. This category also includes comments related to general discomfort in recreational areas that are dominated by Whites.

There were actually more examples of expected racism than comments related to actual experiences. This is especially true for African Americans, for whom two-thirds of all the examples of racial barriers, and 13 percent of the total barriers they mentioned, were coded in this category. But this was also important for Hispanic respondents, as the following cases show:

I'm afraid to go to certain parks where there are too many Anglos. I feel like I'm a minority because I don't know what their attitudes are toward having a minority come into their park. . . Most minorities will hang out at a particular area where you see a lot of Hispanics because of the fact: you don't know.

Far away from your neighborhood you can find more White people . . . so they start to look at you like: 'Who are you?' I don't mind looks, but I'm afraid there might be . . . conflict in those forest areas where [my kids are] playing . . . But when I see Hispanics, I feel much more comfortable and familiar. . . I'm not just talking about trees, I'm talking about people.

Whether these cases are based on actual experience, accumulated experiences in several areas, or rumors and myths, the effect as a barrier to full participation in outdoor recreation settings is the same. This effect seemed especially pertinent for some of the African Americans in the study. In response to a question about why Blacks and Hispanics use the active use areas of a local park near the University, but are rarely seen in the wooded forest preserve adjacent to the park, the following exchange took place:

RESPONDENT 1: How many will go in and how many will come out?

RESPONDENT 2: Do you supply guns?

RESPONDENT 3: One day somebody threw an egg at me at the park.

RESPONDENT 4: I remember once I was riding [past the park], and they said: 'Get out of here nigger.' And that was last year.

INTERVIEWER: SO ARE YOU TELLING ME THAT IT'S NOT THE SAFEST THING FOR YOU TO DO?

RESPONDENT 1: You lead the way and we will go with you.

This discussion contains examples of both interpersonal racism and expected racism. A key element in the exchange is that it is not simply reflecting the attitudes of one person, but most of the people in the group. Also, the place of discussion was located on the north side of town in what is considered a "good" neighborhood.

Historical Racism

This category refers to outdoor related racial experiences in the cultural heritage of the respondent. It was included in an attempt to get at the deeper cultural roots of recreation preferences.

In his paper "Red, White, and Black in National Parks," Meeker (1973) argues that minorities may not want to visit natural areas because of negative experiences with the land in their cultural background, such as slavery for African

Americans and the subjugation of Native Americans. He suggests it is culturally biased for Whites to expect minorities to have similar outdoor interests.

Although we found many examples of cultural influences on recreation behavior, especially for Asian, Hispanic, and ethnic White respondents, we found only two cases in the focus groups where racial barriers had an historical basis. While both of these cases predated the respondents' own experiences, they just referred to the early years of integration in Chicago neighborhoods rather than deeper cultural preferences on a level discussed by Meeker (1973):

> Going back to the '20's and '30's, my uncles would tell me that they would try to go swimming and the White boys would give them a hard time and run them home. At that time, [the] Englewood area was more White than it was Black. . . When I was growing up, we tried to go on the Loomis side to play on those baseball diamonds [and] the White boys would run us home. I remember. . . being called all sorts of names . . . If you want to go out of your area where you live, it's like asking for trouble, and conversely, if the White boys wanted to come on our side, they would get run now.

Evidence in the sociological literature suggests this is a widespread phenomenon. For example, Hirsch (1983), explains that parks played an important role in racial "turf battles" in Chicago neighborhoods. In fact, he said that, during the years of Black migration to Chicago, "the worst [racial] violence occurred when the use of public parks and beaches were contested" (p. 65), and that by the early 1960s, "it was apparent that the use of public parks surpassed housing as the city's most explosive issue" (p. 293). He gave many examples of the role of parks in neighborhood turf battles, such as the day when 6,000 Whites attacked 100 Black picnickers in the portion of one park that was "reserved" for Whites. It took 500 police and two days to calm the situation.

We also found evidence that for some, historical racism can be more fundamental than what was indicated by those in the focus groups. In an individual interview, a Black graduate student said that his mother did not like the fact that he enjoyed going hiking in the woods in Michigan. He said that his mother used to tell him: "Blacks just go to the woods to die." He said that her attitude was the result of growing up in Alabama when beatings, hangings, cross-burnings, and KKK rallies often took place in the woods, and it could be literally life threatening for Blacks to be caught in the woods alone. And an Hispanic faculty member who went camping in Colorado every year said his mother and sisters thought this was "crazy" behavior. His mother said that his father and she had worked hard to get them out of having to live in tents as migrant farm workers, and now he spends his free time going camping in a tent.

Despite the potential importance of one's ethnic subculture in determining recreation interests, the results do not support Meeker's conclusions that it is ethnocentric to discuss recreation differences of Whites and minorities. First, most of the examples above, and even the examples Meeker provides, are the result of past discrimination. Thus, these behaviors have been *externally imposed* rather than determined purely by one's internal ethnic group processes. It is unclear how subgroup preferences would be expressed if racial prejudice was reduced. And second, in the last two cases described above, the respondents *did* like to participate in forest recreation. So even if cultural preferences do tend to exclude forest recreation activities for certain ethnic groups, some persons in those groups will embrace these activities, but only if other racial barriers to their participation do not exist.

Economic Deprivation/Marginality Based Barriers

These are barriers that result from the ongoing effects of past racial discrimination, such as living in poor, crime ridden neighborhoods. This was not a content coding category per se, but rather it is presented as a barrier because it was obvious that many comments coded in other categories, especially safety, crime, and differential management, had an underlying racial basis. Thus, rather than availability of economic resources for recreation pursuits, this barrier reflects the *sociological* component of marginality. That is, it is a direct result of broader, societal racism.

Safety was one of the biggest barriers to forest recreation participation for all ethnic groups in the study. While safety and crime were site specific barriers for most groups, for African Americans they were more likely to be affiliated with parks and forests in general.

> I don't feel safe. I'm always afraid of getting hurt. And I'm afraid of someone doing bodily harm to me in the forest preserves. I've heard [of people having problems] on the radio or seen it on T.V., and I suppose that's put the fear in me.

> We heard on the news people got raped and thrown in the bushes and killed and they found the body in the forest preserve. It's on the news, so it's just a fear from all you hear.

> My father wouldn't let me go [into the local forest preserve]. Why? Things you hear on the news [or that] he reads in the newspaper.

One woman in a group of 15 inner city Black students stated it bluntly: She said, "I hate trees." She provided a litany of examples like those above, and virtually everyone in the group, including the men, agreed with her. They also supplied their own examples, and one student summed it up as follows:

> That's the reason I fear for high trees, high grass, and a lot of trees . . . you never know what's in there and you're afraid to venture in to see what's in there. You go in, who's gonna come and bring you out? You're not to venture in unless you're with a group. To me, that's the best place to commit a crime.

Crime, safety, and differential management can be linked to institutional racism in many ways. For example, Black and

Hispanic residents of low or modest incomes tend to be relegated to poor, crime ridden neighborhoods as the result of discriminatory housing practices of the real estate industry (e.g., redlining) and government agencies (Hirsch, 1983), and employment policies (Haas, 1992; Farley, 1988).

The social definition of place (Lee, 1972) is also important for understanding the basis for the attitudes reflected in the comments above. When racism and crime present potentially life threatening environments, it is imperative that one understands the rules of conduct for an area. For persons who live in poor, inner city neighborhoods, the need is no less apparent in natural areas outside the city. It can be as threatening to an inner city kid to walk in a park after dark as it is for a suburban resident to walk down skid row at night. Put another way, the suburbanite is no more likely to understand the rules of conduct on an inner city street than a streetwise, inner city kid will in an all White national park campground.

One way to cope with racism and crime in parks is by going in large groups:

> When me and my friends go [camping], it has to be in a big group. I mean I don't like to go to many places myself, especially places where trees and stuff are.

> I wouldn't mind going camping. . . [but] I couldn't go camping with my family. I would have to go with a group of people. That way I would feel more safe -- you know -- when it's like 20 of us out there.

But recreating in large groups is not always functional given many current park management practices. For example, the forest preserves in Chicago require a special use permit and notification one week in advance for groups of 20 or more persons. And most national park and national forest campgrounds have a limit of eight persons per site for camping.

Finally, urban lifestyles can lead to restricted contact with the outdoors:

> When I was a young person, we used to go South a lot . . and that's all we had was the woods and forests and stuff like that. They hunted, they fished, they were very outdoors because they were from the South and that is part of their experience. But that's not my experience. . . For me going up into the city . . . I gradually became less and less outdoors.

> When you don't frequent that type of environment, it becomes alien to you. If it's alien, that means you don't know anything about it. If it's foreign to you, you kind of stay away from it.

A lack of experience may reinforce negative interpretations of the woods (Lee, 1972). It increases the likelihood that negative past experiences, media accounts of crime, personal experience with racism, and even myths related to forests, take on more importance for determining one's perceptions of natural areas. In addition, given the history of the role of urban parks in interracial "turf battles" (Hirsch, 1983), and continuing problems in parks today with gangs and drugs, urban minorities may not start with the impression of parks being safe or "free" areas.

While most of the ethnic students in the study, including the Asians and White ethnic students, felt a loss of contact with nature as a result of moving to the city, only the African American students exhibited a generally negative attitude towards the woods. This seems to indicate that, for African Americans, and probably Black Hispanics as well, it is the combination of extreme racism in addition to the other barriers that can constrain minorities (e.g., crime, economic deprivation, lack of experience) that fosters an uncertain or even negative attitude towards the woods and some forms of park and forest recreation.

Conclusions

Despite the inconclusive findings of survey research, the results of this study indicate that racism may be an important barrier to participation in forest recreation, especially for urban Blacks, and the problem warrants further research and management attention. Racial barriers may result from on-site and off-site experiences, as well as broader, societal discrimination.

Research Implications

Since the results of focus group research are nonrepresentative and anecdotal, the categorization presented above must be considered suggestive. Further research is needed to verify the existence and importance of the various forms of racism discussed above, and the extent to which they influence recreation service delivery, recreation barriers, and even ethnic preferences. Research is also needed to compare these forms of racism with other categorizations of racism derived from research in other areas of public service delivery such as health care and education.

There were many similarities between the findings of this study and other studies of race discrimination. For example, both interpersonal and institutional racism seem to influence recreation participation, and the forms of racism may be both overt and subtle. These conclusions correspond with several other studies of racism which indicate that, while race discrimination is becoming less overt in our society, there are "a wider variety of factors causing racial inequality than there once were" (Farley, 1988: 214). In recreation participation and service delivery, racial barriers can be the cumulative result of past discrimination, economic disadvantage, and institutional discrimination, as well as lingering interpersonal racism. Given this diversity, a range of research methods are needed to investigate the problem.

Concerning recreation theory, the results of this study indicate that it is too simplistic to simply attribute ethnic minority recreation patterns to cultural preferences, as Meeker (1973) suggested. While culturally based preferences certainly exist, it is not culturally biased, as Meeker suggests, to be concerned

with participation differences between minorities and Whites. What is interpreted as ethnic preference, may in fact be a reflection of past and ongoing racial discrimination rather than the result of internal group processes. Until we have addressed some of the racial inequities related to participation in the outdoors, we cannot say what is cultural preference and what is behavior that is enforced by externally imposed norms and sanctions. To address this, research on the preferences of cultural subgroups that are less impacted by past discrimination, such as new immigrants to the U.S. and African Americans who live in communities where they are a population majority, is needed.

The results also indicate that defaulting to marginality as the primary alternative hypothesis to ethnicity is misleading. In the literature, the concept of marginality has been used almost solely in an economic sense. Proponents of this concept maintain that, due to racial discrimination, ethnic minorities tend to have fewer financial resources than Whites (Washburne, 1978). As a result, minorities are less likely to be able to afford travel to parks, to buy recreational equipment, and so forth. Our results indicate that the social and cultural effects of marginality may be significantly more important than one's ability to buy a canoe or tent. The concept of marginality must be expanded to include the interrelationship between racism and economic deprivation, and the other results of discrimination that constrain freedom of choice in recreation, such as lack of experience in natural areas, exposure to crime, and the social definition of place. In short, marginality influences ethnicity; they are not separate constructs let alone separate theories.

Management Implications

Managers need to address the problem of on-site racial discrimination. As West (1989) has pointed out, there is no reason to believe that recreation areas should be any more immune to the effects of racism than other areas of social life. This was borne out in the findings of this study. But it is not just interpersonal racism that is the concern. One of the most enlightening, and yet distressing, findings was the apparent existence of several forms of institutional racism.

Understanding and providing for the recreational preferences of ethnic minorities, such as providing more developed areas and opportunities for large groups (Dwyer & Hutchison 1990), is an important first step in combating the problem of differential management and increasing the participation of minorities in forest recreation areas. Increasing visitation can have the added advantage of reducing crime and increasing feelings of security for participants during heavy use periods.

Combating on-site racism is a more complicated matter, however. Training programs need to highlight racial problems, and staff need to receive training in ethnic and race relations. Agencies also need to institute opportunities for staff to identify and deal with racist behavior within their own ranks. This is a delicate matter, as officials of several metropolitan police forces across the country will attest. In recreation areas, anonymous visitor and staff reporting systems can be instituted. Increasing the representation of minorities in the workforce is also a critical element in combating institutional racism. This should be accomplished by hiring a diverse workforce of park employees, managers, and police and security personnel at all grade levels. Perhaps resource agencies can recruit staff from urban police forces and parks.

Other methods to increase the participation of ethnic minorities in recreation areas include instituting volunteer programs and contacting and encouraging use by ethnic groups or organizations. This can help increase the visibility of minority visitors and help provide experiences in a safer, group setting, which may be especially important for those who may not have enjoyed the resources in the past. An active outreach effort on the part of resource managers is a necessity for this to work.

Finally, providing opportunities for residential camps and other organized outdoor programs would be important for increasing use by minorities. Job training programs and Outward Bound type programs designed for urban youths and unemployed adults would be likely to attract many needy minorities (as well as Whites), especially if the programs are coordinated with minority social service organizations. Again, this will only be effective if there are cooperative efforts between the recreation agencies and interested ethnic groups.

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OUTDOOR RECREATION PARTICIPATION: AN UPDATE ON BLACKS, WHITES, HISPANICS, AND ASIANS IN ILLINOIS

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Blacks, Whites, Hispanics, and Asians in Illinois attach a high level of significance to outdoor recreation. However, there are important differences in the outdoor recreation participation patterns of these four groups, including the activities participated in and where they participate, that have important implications for outdoor recreation resource planning and research.

Recreation resource planners face significant issues as they try to meet the needs of people from increasingly diverse racial and ethnic backgrounds. Research has identified differences in the recreation preferences and behavior of Blacks and Whites (Dwyer and Hutchison, 1990; Dwyer and Gobster, 1992); but planners face important questions about how to best serve other important groups as well, including Hispanics and Asians. The recreation participation patterns of these four important groups are compared using data for 1987, 1989, and 1991 collected in random sample telephone surveys for the Illinois Department of Conservation. The combined data for these years yielded a sample of 2,510 Whites, 342 Blacks, 87 Hispanics, and 56 Asians. The discussion focuses on differences among these four groups to help planners identify the special needs of each group, and to suggest possible responses to changes in the racial/ethnic composition of the population served. Small sample sizes preclude analysis of the substantial variation in recreation participation within each of these groups.

The Results

Each of the four groups places a high level of importance on outdoor recreation, and there are no significant differences in ratings among the groups (Table 1).

Table 1. The importance of outdoor recreation to Illinois adults, 1989, 1991 (percent of each racial/ethnic group).

	White n=1660	Black n=213	Hispanic n=65	Asian n=36
Very important	38	43	54	44
Somewhat important	41	34	29	44
Not too important	16	18	12	8
Not at all important	5	5	5	3

Differences between groups not significant (p = .05).

There are statistically significant (p= .05) differences in the percent of group participating among Whites, Blacks, Hispanics, and Asians in 23 of 30 diverse outdoor recreation activities (Table 2). In general, Whites are the most likely to participate in each activity and Blacks are least likely. The participation of Hispanics and Asians usually falls between the other two groups. Notable exceptions include high participation by Blacks in softball/baseball, running/jogging, and basketball; high participation by Hispanics in soccer, basketball, and picnicking; and high participation by Asians in picnicking and tennis.

Table 2. Participation in outdoor recreation activities by Illinois adults, 1987, 1989, & 1991 (percent of each racial/ethnic group).

Activity	All N=3029	White n=2510	Black n=342	Hispanic n=87	Asian n=56
Pleasure walking*	73	74	68	71	64
Pleasure driving*	62	64	51	59	66
Picknicking*	55	54	56	66	68
Outdoor pool swimming*	45	47	29	49	36
Bicycling	42	42	41	46	32
Non-pool swimming*	27	29	11	34	21
Fishing*	28	30	16	26	14
Softball or baseball*	27	26	39	41	16
Motorboating*	24	27	5	11	13
Running or jogging	27	26	32	33	30
Golf*	21	23	8	13	14
Tennis*	17	16	18	25	36
Outdoor basketball*	16	15	24	28	16
Tent camping*	13	14	6	11	20
Hiking*	15	16	8	14	9
Water skiing*	11	12	2	7	5
Off-road vehicles	10	10	8	11	2
Horseback riding	9	9	10	5	4
Ice skating*	9	10	3	11	7
Canoeing*	9	9	3	8	14
Downhill skiing*	8	9	2	1	9
Vehicle camping*	8	8	2	11	2
Sailing	7	7	6	6	7
Hunting*	6	7	2	3	0
Cross-country ski*	5	5	1	3	2
Snowmobiling*	4	5	0	7	2
Soccer*	4	4	4	14	5
Backpacking	4	4	4	6	5
Ice fishing*	2	3	1	0	0
Trapping	1	1	1	0	0

*Differences between groups significant (p= .05).

There are also significant differences in the kinds of places in Illinois where each of the four groups engages in outdoor recreation (Table 3). Significant differences exist among groups in the use of sites far from home, such as federal- and state-operated recreation areas, which may reflect the difficulty that members of some minority groups have in reaching more distant areas. At the same time there are significant differences among groups in the percent using a friend's yard or property for outdoor recreation in Illinois. This may be a reflection of a lower proportion of minority group members

owning property that provides opportunities for outdoor recreation. Significant differences also exist in the probability of the four groups using commercial recreation areas open to the public, which may reflect the cost of these areas as well as their locations far from centers of population. There is the greatest similarity in participation among groups for nearby public facilities such as city or county facilities. Over all types of resources, the different patterns of use by Blacks stand out. Whites have the highest average level of satisfaction with parks in their neighborhood, and Blacks have the lowest (Table 4).

Table 3. Use of Illinois areas for outdoor recreation by Illinois adults in the past 12 months, 1987, 1989, 1991 (percent of each racial/ethnic group).

Recreation area	White n=2510	Black n=342	Hispanic n=87	Asian n=56
A friend's yard or property in Illinois*	72	67	79	75
A vacant lot or street in Illinois	20	26	34	27
A private club in Illinois that requires membership, (e.g., country club)	22	18	17	20
A commerical recreation area in Illinois open to the public (e.g., campground)*	38	24	40	29
A city or county park, forest preserve, or school yard in Illinois	57	56	63	55
A federal recreation area or forest in Illinois	18	14	8	25
A state park or other state - operated recreation area in Illinois*	31	16	20	27

* Differences between groups significant (p= .05).

Table 4. General satisfaction of Illinois adults with local community or county parks and facilities, 1989, 1991 (percent of each racial/ethnic group)*.

	White n=1573	Black n=196	Hispanic n=62	Asian n=30
Very Satisfied	29	7	11	13
Satisfied	61	64	69	67
Dissatisfied	9	21	16	17
Very dissatisfied	2	8	3	3

*Differences between groups significant (p= .05).

In addition, there are significant differences in the outdoor recreation travel patterns among the four groups (Table 5).

Whites are more likely to take overnight trips in Illinois or outside Illinois than Blacks, Hispanics, or Asians. As with activities, the largest difference in the likelihood of taking trips is between Blacks and Whites, with the other groups falling in between. Whites who take overnight trips for recreation tend, on the average, to take more trips than the other groups. The out-of-state travel patterns of ethnic groups suggest relatively high numbers of trips to areas where there is a high proportion of individuals from their group, such as Blacks traveling to the Southeastern United States and Hispanics to Mexico, perhaps reflecting trips "back home." Asians concentrate their out-of-state overnight trips in adjacent states. There is less overnight travel by Blacks, Hispanics, and Asians; the concentration of racial/ethnic groups in urban areas in Illinois (particularly Blacks) makes urban and near-urban resources especially critical.

Table 5. Vacation or overnight trips where the main reason was to enjoy the outdoors or participate in outdoor activities 1987, 1989, 1991 (by racial/ethnic group).

	White n=2509	Black n=342	Hispanic n=87	Asian n=56
Percent reporting an overnight trip in the previous 12 months:				
To anywhere*	63	43	48	63
In Illinois*	20	12	17	14
Outside Illinois*	56	39	43	57
Both inside & outside Illinois*	14	7	11	9
Average number of trips per year for those who reported trips:				
In Illinois*	3.6	3.1	2.6	1.6
Outside Illinois*	3.1	2.8	2.4	2.1

*Differences between groups significant (p= .05).

Discussion

There are many important differences and similarities in recreation participation among the four groups, but the largest and most consistent differences tend to be between Whites and Blacks. Across the 31 outdoor recreation activities examined in this study, many of the significant differences in participation are between Blacks and Whites. This suggests that planners concerned with White and Black communities should be aware of possible differences in participation. Compared to Whites, Blacks tend to participate more in sports than Whites, but less in activities that take place in more remote areas and involve undeveloped settings or water resources. These findings are consistent with a number of other studies (see Dwyer and Hutchison, 1990). Blacks are also less likely than Whites to take overnight trips in Illinois and elsewhere, but Blacks who travel are more likely than other travelers to take trips to the Southeastern United States (except Florida). There are also important Black/White differences in the types of outdoor recreation resources used in Illinois; Blacks are more likely to use streets and vacant lots, but less likely than Whites to use all other types of recreation resources.

It is also important to recognize differences among other racial/ethnic groups as well, and certainly to avoid referring to all non-Whites as "minorities" and assuming that all "minority groups" have similar participation patterns. While limited sample sizes make it difficult to make comparisons across the minority groups, significant differences (among Black, Hispanic, and Asians) emerged with seven activities. There is significantly higher participation in picnicking by Hispanics and Asians than by Blacks. Hispanics have significantly higher participation than Blacks in swimming at pools, swimming elsewhere, and fishing. Asians are significantly more likely than Blacks to drive for pleasure or play tennis, but significantly less likely than Blacks to play baseball. Hispanics and Asians are more likely than Blacks to use a friend's yard, state park, or commercial recreation area for outdoor recreation.

There is not a clear pattern of differences between Whites and Asians or Hispanics. This is due partly to the small sample sizes, and partly to the high levels of diversity within the Asian and Hispanic groups. This diversity could reflect a combination of recent immigrants and individuals who have been in this country for a long time, as well as the diverse countries and cultures from which members of these groups have come. It is particularly interesting to note the high level of significance that Asians and Hispanics attach to outdoor recreation activities. We have much to learn about these important groups, as well as about Black and White groups in Illinois and elsewhere, to provide for the needs of all recreation customers.

Planners should interpret with care the results of this and other analyses of actual participation patterns. Present patterns reflect preferences, but are also limited by constraints such as availability of recreation facilities, skills, and equipment; knowledge of and ability to travel to recreation areas; and fear of discrimination or other anti-social behavior. While it was not possible to evaluate all of these factors, when individual (gender, age), household (number, income), and locational (Chicago; northern suburbs; southern suburbs; and Northern, Central, and Southern Illinois) variables are held constant, some differences among groups are eliminated, but many others remain. This suggests that we have yet to understand many of the differences we have observed.

Conclusions

The results point out important differences in recreation participation among the four racial/ethnic groups. This suggests that planners give careful attention to the needs of each of these groups. Past studies have focused on Black/White comparisons; this analysis confirms these differences, but also suggests that Asian and Hispanic groups are different from Blacks and Whites and from each other. While we have made comparisons among four groups, there is significant variation within each of those groups and great care must be taken to avoid stereotyping a group by its average or by its differences from others. Additional research is needed to identify the recreation preferences of important population groups such as those studied here, but we also need an intensified effort to understand why these differences exist and to explore more fully the variation within each group.

Acknowledgement

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LEISURE AMONG AFRICAN AMERICANS: TOWARD AN INDIGENOUS FRAME OF REFERENCE

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Much of the research on the leisure behavior of African American and other racial and ethnic groups has been conducted within a comparative framework, studying, for example, rates of leisure participation among African Americans and whites. This research has been very beneficial in highlighting differences, but monocultural interpretations often work to devalue rather than value and celebrate differences. Comparative research within and across racial and ethnic populations can facilitate the creation of recreation environments that are equitable as well as desirable, and promote understanding as well as comfort. Survey and ethnographic research methods are offered as two alternatives for accomplishing these goals.

Introduction

The recent civil unrest that began in Los Angeles and spread to other cities across the country was a protest against the institutionalized racism that African Americans have experienced over time. It was a protest against the blatant mistreatment and disregard exhibited most recently in the judiciary, but resulted from the circumstance that African Americans experience racism everyday and in every American institution, leisure notwithstanding.

To the extent that managers of leisure resources ignore or do not provide activities desired by African Americans at park sites, is the extent to which resource managers inadvertently or intentionally operate a system of leisure that is inherently racist. The onus, however, does not rest solely or primarily with resource managers; we as researchers must be held accountable as well. Traditionally, researchers concerned with explaining the leisure patterns of African Americans and other so-called ethnic groups have operated from a monocultural and, indeed, a Eurocentric perspective. The perspective of the ethnic group, the subject of the research, is usually omitted however. In this paper I will discuss briefly how this Eurocentric perspective affects how much of the current research on African American leisure behavior is conceptualized, conducted, and reported, and what it implies to managers and policy makers. Based on this discussion, I will identify some new directions for research that look outside this traditional perspective.

Comparative Research

We are quite familiar with the rich body of literature that seeks to explain the leisure behavior of ethnic minority groups. Much of that research is comparative in nature. It seeks to show how various ethnic minority groups differ from each other and from this society's majority group, particularly in non-urban outdoor or wildland activities. Indeed, leisure science, so far as it relates to the African American, is built upon this comparative tradition. Several of the papers appearing in this conference proceedings express what I believe are very adequate examples of comparative research.

The strength of comparative research is that it highlights differences in participation among various groups. Comparative research then proceeds to offer explanations for these observed differences. The weakness, however, in comparative research is that it tends to devalue the very difference that it is designed to identify and emphasize. Let me illustrate this point. Several early sociological studies have described leisure activities popular among some urban African Americans such as partying, socializing, and engaging in civic improvement projects as "frivolous" (Frazier, 1957) and "petty" (Mrydal, 1942), and the degree of participation in them as "exaggerated" (Frazier, 1957). These adjectives imply that compared to whites, African American leisure is of a lower worth or value and is non-normative in character. While contemporary leisure research avoids such blatant judgments of what is or what is not a worthwhile pastime, terms used to describe the participation of African Americans remain value-laden. Contemporary terms used in comparative research to describe African American leisure behavior include: under-participation (Washburne, 1978), underrepresentation (West, 1989); limited interest (Dolin, 1988); and limited use of recreation activities (Murphy, 1974). These terms describe the leisure behavior of African Americans when their participation rates do not measure up or equate to majority group Americans, especially in non-urban outdoor activities.

I think that you can see that the terms noted above are culturally loaded terms from a monocultural perspective. They are biased terms. Terms biased in favor of one group over another group.

Comparative research, rooted in a monocultural perspective, and that relies upon the terms mentioned above, has informed policy for some time. It leads resource managers to the conclusion that *"if we can just get participation rates of African Americans up to or down to the participation rates of Caucasians then everything will be all right"* (emphasis mine). For researchers, this misinterpretation begs the following questions: "Where are the terms that are based upon the participation rates of African Americans?" "Where are the terms that use African Americans as a standard by which to evaluate their own participation?" "Where are these terms in the leisure literature?"

A monocultural perspective in comparative research is not an ethical choice for researchers or for those in professional programming. I am not suggesting that we forsake comparative research. What I am suggesting is that instead of devaluing difference in our research, we must value and celebrate difference. Diversity is not a courtesy but a necessity. Let me share with you the comments of Dr. Jonetta Cole, President of Spelman College, on "Differentness and Diversity:"

> Differentness must be celebrated and encouraged. We are for recognizing difference; we are for respecting difference; we are for encouraging difference until difference doesn't make a difference anymore.

It is my contention that research that values and celebrates diversity is much more useful to resource managers than research that devalues difference. Diversity means inclusion, not exclusion. By diversity in leisure, I refer to creating a recreational environment such that individuals from a variety of backgrounds can feel comfortable recreating in that environment. By embracing the concept of diversity in leisure, resource managers will be better able to provide the activities desired by specific ethnic groups.

Toward an Indigenous Frame of Reference

One way we can value and celebrate difference is by looking more deeply into the leisure patterns, preferences, needs, and concerns of African Americans as a group that differs within itself as well as between other racial and ethnic groups. For example, in an earlier survey of an African American community in Chicago referred to as the Western Avenue Corridor, I found that social class and regionality were important factors that differentiated patterns of leisure participation across activities, and that demographic factors such as age and gender were important in defining participation in specific activities (Woodard, 1988). These findings suggest that future study of leisure among African Americans should recognize the vertical and horizontal differentiations that occur within the social structure.

Another strategy by which we might better understand leisure among African Americans is to look more closely into critical roles that social institutions play in African American life. Among these, W.E.B. DuBois noted that the church is a central institution in African American life. The church serves the traditional role as the outlet for religious and emotional expression, but it also has many other instrumental functions. The church provides day care, health care, educational tutoring, rights of passage for youth, housing, voter registration, elder care, and substance abuse education. The African American church fills many voids in African American life not addressed by mainstream institutions.

There are studies that have examined the instrumental roles of the church that I have just mentioned. To my knowledge, however, no study has sought to examine the way in which the church meets leisure needs of the African American people. This line of research views African American culture as central to any explanation of leisure behavior and management plan to provide leisure resources. To examine leisure behavior without an adequate consideration of the significance and location of leisure within an ethnic groups' own culture will surely result in incomplete if not vacuous explanations of leisure behavior, and unproductive management policy.

In work now in progress I am attempting to look at some of the major ways in which the church affects leisure behavior among African Americans. Working with ministers of Baptist and Methodist denominations in Chicago, we have conducted in-depth focus group interviews with members of 12 church groups. The interviews center on the following four questions:

1) In what leisure activities does participation occur through the church?

2) What are the types of settings desired by church group participants for specific leisure activities?

3) To what extent do church groups use nearby parks, forest preserves, and more remote natural areas?

4) To what extent does fear of crime, and desires to avoid racial prejudice and discrimination influence church group members' participation and nonparticipation in specific activities?

One finding in our preliminary analysis of the interviews shows a strong negative attitude toward wildland activities due to perceived discrimination based on race. It seems, however, that age and participation that occurs within the context of church groups can have a mediating effect on the strength of the negative attitude toward wildland recreation activity. This suggests that policy and leisure programmers concerned with serving diverse populations consider the church as an avenue to reach underserved African Americans.

Other types of ethnographic and survey research could also be put to productive use to fill the vacuum in our knowledge of leisure and ethnic diversity. This might include large scale longitudinal and cross-sectional surveys that would help define how leisure participation among African Americans changes over time and as a function of social and demographic structural changes. Research might also focus on particular leisure problems or concerns experienced by specific segments of the African American population such as older adults, male and female adolescents, and young children. In doing so, our research can help to celebrate and value diversity by moving from a monocultural perspective towards an indigenous frame of reference.

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UNDERSTANDING INTRA-ETHNIC ENVIRONMENTAL ATTITUDE VARIATIONS: CUBAN ORIGIN POPULATION VIEWS

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This study examined intra-ethnic environmental attitude variations among Cuban ancestry persons from South Florida. Specifically, the effects of acculturation and religious participation on environmental attitudes were examined. Effects of age, national park use and awareness, level of education, and length in U.S. residence were also examined. These variables were treated as controls. The analysis showed that as ethnic integration (i.e., low acculturation) increased, there was greater agreement with anthropocentric environmental attitude scales. The same relationship held for religious participation and age.

Study Background

This paper is an extension of a previous study by Noe and Snow (1989/90). They compared the environmental attitudes of various samples of Hispanics and non-Hispanics in South Florida, including visitors to Biscayne Bay National Park and a general sample of households from the Dade County-Miami area. Using Dunlap and Van Liere's (1978) "New Environmental Paradigm" (NEP) instrument, they found that Hispanic and non-Hispanic users of Biscayne Bay National Park were similar in their agreement that humans must live in harmony with nature, that the balance of nature is easily upset, and that humans are severely abusing the environment. They also reported that Hispanics in the general population compared to those in the park survey held an ecological orientation toward nature that strongly opposed the anthropocentric view of mankind being dominant over nature. Finally, factor analysis results indicated that Hispanics in the park sample held a two dimensional orientation towards the environment, while Hispanics in the general population held a three dimensional orientation. The dimensions that emerged from the Hispanics in the general population were "anthropocentric," "balance of nature," and "limits to growth." Among Hispanics in the park sample, "balance of nature" remained a separate dimension, while the "anthropocentric" and "limits to growth" items loaded on a single factor.

As a result of these findings, we became interested in investigating the sources of environmental attitude variation within the Hispanic population in South Florida. Recognizing cultural (and structural) heterogeneity within the Hispanic population, our research focused on the relative influence of cultural background on environmental attitudes among a single Hispanic group, persons of Cuban origin. Specifically, we sought to examine the effect of two variables-- acculturation and religious participation --on environmental attitudes, since they are powerful influences within the Cuban community.

Although the various Hispanic groups have common cultural attributes (e.g., Spanish language), there are a number of reasons for selecting only Cuban origin persons for this study. First, unlike Puerto Ricans and Chicanos who participated in residential dispersion away from states of traditional concentration over the past decade, Cubans became more concentrated in a single state-- Florida (Bean and Tienda, 1987). Second, the climate and geographical proximity to Cuba enable them to approximate the physical and social milieu of their country of origin. Third, population projections indicate that by 2000 the Miami-Dade County region will be over 70% Hispanic and largely Cuban (Noe and Snow, 1989/90). Finally, there is little social science information on how this burgeoning population group, which is more affluent and politically active than other Hispanic groups, might affect environmental management in the region.

Cultural Ethnicity, Religion and Environmental Perspectives

In this inquiry of Cuban ethnicity and environmental attitudes, two variables-- "acculturation" (the acquisition of dominant group cultural characteristics) (Gordon, 1964) and religious participation --were chosen as independent variables.

The literature on Hispanic environmentalism is sparse. However, studies involving other cultural groups provide evidence of cultural effects on environmental attitudes. For example, Pierce et al. (1987) reported that environmentalism in Japan can broadly be characterized as "victim oriented," concerned with the negative impact on humans of alterations in the natural environment. In the Western paradigm, nature is generally viewed as the victim. In studies of the Bantu of Kenya, Burnett and Kang'ethe (1992) conclude that wilderness in the Bantu mind is not structured in the Cartesian duality found in most philosophies in contemporary resource management. Rather than being separate from humanity, the Bantu see wilderness and wildlands as a part of human social space. Knowlton's (1972) historical analyses suggest that the pro-environmental attitudes of many Hispanics today are a reflection of the importance of communally owned lands during the Spanish colonial era.

In addition to cultural ethnicity, religious institutions have been identified as important in shaping environmental attitudes. Hand and Van Liere (1984) provide empirical evidence on this relationship. They found that persons of Judeo-Christian backgrounds showed less concern for some environmental problems, while emphasizing an anthropocentric perspective. Findings by Shaiko (1987) further suggest that

there are denominational differences. Mastery-over-nature (i.e., anthropocentrism) may be more common to Protestants and Catholics.

Religion, Roman Catholicism in particular, has been an important aspect of the Cuban-American experience. Although it is estimated that only about 10 percent of the population of pre-Castro Cuba attended mass on a regular basis, the church has provided emotional security, social assistance, and support for the initial and subsequent waves of immigrants (Boswell & Curtis, 1984). In light of Hand and Van Liere's (1984) and Shaiko's (1987) studies, religious participation and the exposure to "human centered theology" possibly contribute to an anthropocentric environmental perspective among some Cuban origin persons.

Research Methods

Data from the Miami-Dade County population survey collected by Noe and Snow (1989/90) were used in this analysis. Telephone interviews were conducted with 405 randomly selected Spanish surname households. Among Hispanic households contacted, 68 percent completed an interview. All respondents who indicated Cuban ancestry or nativity were included in the sample.

Acculturation and religious participation were the two major independent variables of interest in the analysis. Acculturation was measured by interviewer ratings of how much Spanish was used during the interview. This was coded as: (1) English, (2) mostly English (some Spanish), (3) both English and Spanish equally, (4) mostly Spanish, and (5) Spanish. Religious participation was measured by asking respondents how often they attended a place of worship. This was coded as: (1) never, (2) hardly at all, (3) once/twice monthly, (4) once a week, and (5) more than once a week.

The effect of these variables on environmental attitudes was observed while controlling for several social and demographic characteristics of the sample. Because of the importance of generational shifts in ethnic communities, length of residence in the U.S. and chronological age at last birthday were included in the analysis, both measured in number years. Because of differences found in the earlier Noe and Snow study between users and non-users of Biscayne Bay National Park, a dichotomous variable was included here to measure respondents' awareness or use of the park. Finally, because some studies (e.g., Buttel & Flinn, 1978) have shown environmentalism to be related to level of education, the number of years of schooling was also included.

The dependent variables in this analysis were three subscales of the NEP scale developed by Dunlap & Van Liere (1978). The subscales were based on factor analysis results of Cuban origin person's responses to the NEP. Items making up those subscales were coded: (1) "strongly disagree" to (5) "strongly agree." Items forming a subscale were summed, with each respondent receiving a composite score for each subscale. The subscale themes were "balance of nature" (alpha=0.27); "anthropocentric" (alpha=0.60); and "human abuse" (alpha=0.47).

The relative influence of acculturation and religious participation on these dependent variables was assessed by OLS multiple regression, with attention given to standardized beta coefficients (i.e., beta weights).

Results

There appeared to be little or no relationship between the independent variables and either the "human abuse" (agreement with the belief that humans are abusing the environment) or "balance of nature" (agreement with the belief that humans must live in harmony with nature) dimensions of the NEP scale. The model for "balance of nature" was not significant. The model for "human abuse" was significant (F=2.89, p< .01). Age, however, exhibited the only significant effect, with younger respondents more likely to say that humans are abusing the environment. Acculturation and religious participation were not effective in explaining variation in either the "human abuse" or "balance of nature" scales.

Several models for the "anthropocentric" scale were significant (Table 1). Beginning with acculturation (Model 1), the more that Spanish was the preferred language for the interview, the more respondents agreed with statements like "plants and animals exist primarily to be used by humans," and "humans need not adapt to nature because they can remake it to suit their needs." The explained variance for this bivariate case was 20.16 percent.

Table 1. Multiple regression models for the "anthropocentric" environmental attitude subscale (N=288).

Model	Independent Variables	Regression Coefficient	Beta Weights	Variance (%)
Model 1	Language	-.780	-.449***	20.16
	Intercept	10.403	-----	
Model 2	Language	-.737	-.424***	21.72
	Worship	-.239	-.127**	
	Intercept	11.205	-----	
Model 3	Language	-.490	-.282***	25.72
	Worship	-.227	-.121**	
	Age	-.036	-.248***	
	Intercept	13.810	-----	
Model 4	Language	-.466	-.268***	26.59
	Worship	-.252	-.134**	
	Age	-.034	-.233***	
	Education	.059	.084	
	Park Use/Awareness	-.312	-.054	
	Years in U.S.	.029	.094	
	Intercept	13.810	-----	

** denotes p< .05; *** denotes p< .01.

The effect of religious worship was also negative and significant, with more frequent religious participation associated with greater agreement with anthropocentric attitudinal statements (Model 2). The addition of worship to the original model resulted in a modest increase in explained variance, with only a small reduction in the effect of acculturation.

Age also exhibited a negative effect; among older respondents there was greater agreement with anthropocentric attitudes (Model 3). This finding is consistent with previous research that shows greater concern for the environment can be found among younger age groups (e.g., Jones & Dunlap, 1992). The addition of age resulted in about a 5 percent increase in explained variance over the bivariate model. There was an appreciable reduction in the magnitude of the beta weight associated with acculturation (i.e., language). However, it remained significant and the most important variable in explaining variation in the anthropocentric subscale.

The addition of other control variables added little in the way of explained variance, and, with the exception of age, none were statistically significant (Model 4).

It was suspected that the regression estimates obtained might have been affected by multicollinearity. For example, age and language were moderately and positively correlated (r= 0.55). However, tolerance values indicated that correlation among the independent variables did not present a severe problem in the calculation of parameter estimates.

Conclusions

The emergence of acculturation as a significant variable in understanding one set of environmental attitudes suggests that ethnicity should be an important consideration in environmental management. With particular regard to anthropocentric beliefs, are such attitudes reflected in environmental behaviors? At a park specific level, do these attitudes manifest themselves in recreational behaviors that may negatively affect natural resources? For example, recreational fishing is a popular activity among Hispanic groups (Market Opinion Research, 1986). Would Cuban Americans support regulations to enhance the viability of recreational fisheries in the south Florida region?

The emergence of acculturation, religious participation, and age as significant variables in understanding intra-ethnic attitude variation is theoretically revealing. Younger people, who are more acculturated and have lower rates of church attendance, may be willing to accept and substitute certain values and beliefs more readily than older, more traditional persons. More research on indigenous environmental beliefs and attitudes is needed to further understand the role of culture in environmental attitude formation and change.

As efforts to increase environmental knowledge continue on the public agenda, there is a need to understand how various ethnic groups interpret the environment and associated issues. At the same time, other social influences such as age and education attainment should not be neglected. In further study, the interaction between the social structural and cultural forces in America's "melting pot" need to be considered to arrive at a more complete understanding of how various ethnic groups respond to the environment.

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INTERETHNIC COOPERATION IN CHALLENGING INDUSTRIAL POLLUTION

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The American environmental movement is being rapidly transformed by the emergence of a new group of activists arising in predominantly blue-collar and minority neighborhoods. This movement is challenging our society to rethink its assumptions about locating noxious or toxic facilities and about finding new ways to reduce our output of waste and pollution.

Probably the most significant development within the environmental movement in the last decade has been the sudden increase in involvement of blue-collar and minority neighborhoods in grass-roots environmental issues. At least as environmentalism had previously been defined by the national mainstream organizations that had long dominated its agenda, these groups had been perceived as largely indifferent or even occasionally hostile to environmental concerns. Although there are still important elements of organized labor--for instance, loggers in the Northwest--who are clearly opposed to environmentalists, in other, more urban areas, there has been a dramatic shift. Both minority and White, blue-collar communities are now actively engaged in fighting industry and government on issues they perceive as vital to their own health and welfare. And I want to state up front that, in using the terms "blue-collar" and "minority," I see them as largely overlapping, rather than distinct, groupings. Some people tend to forget that many non-Whites are also blue-collar workers and play complex roles in our society, varying with their own personal backgrounds, geography, and socioeconomic status.

Nature of Project

My own research is more of a journalistic than of a statistical nature. About two years ago, I conceived the idea for a book that would profile the development of this movement, selecting case studies from around the U.S. to illuminate various aspects of how this movement functions politically under varying circumstances. I soon discovered that, aside from a relatively small number of academically oriented case histories--Robert Bullard's book, *Dumping in Dixie*, comes to mind--no one had attempted to write at book length about this important new phenomenon. I immediately took up the challenge, and am now approaching completion of a book-length manuscript for publication next year.

In the course of this project, I have traveled to nearly a dozen states and interviewed upwards of 250 people--company and government officials, activists, researchers, and scientists. I have begun to develop at least a conceptual framework for understanding the dynamics of this movement, and I encourage others to help develop the methodologies for probing this question in depth. The rewards in such study are multifold, for the participants in this growing movement can bring unique insights and concerns into the broader environmental agenda that might well have stagnated without their emergence as a new force on the political scene. They have reintroduced into the discussion of the environment such issues as worker safety, the disproportionate public health burdens among poor people, and the need to focus more on pollution prevention than on end-of-pipe solutions to pollution control. For a new movement, injecting so much profundity into the public debate is no mean feat. Some of these issues might have arisen anyway, but not nearly so soon or so forcefully. More importantly, this movement gives those issues the constituency they need to become politically viable. In contrast, more paternalistic middle-class environmental efforts waged on *behalf* of these people have tended to be politically anemic.

My focus in this paper is on one aspect of this movement that is particularly challenging--that of interethnic cooperation. While Bullard's book tends to focus on the special challenges facing African-American communities, and others may examine the roles of Hispanics or Asian-Americans in responding to environmental challenges or opportunities, I think the time has arrived to examine as well the instances where various labor and minority groups have joined forces to combat a perceived threat. To that end, I will briefly summarize a few of these cases and offer some general observations.

Los Angeles

Let me start by discussing the volatile situation in Los Angeles. It was only last November (1991) that I visited the now riot-torn neighborhood of South Central Los Angeles, interviewing the leaders of the Concerned Citizens of South Central to discuss their fight against the city's LANCER incinerator project. What struck me, despite the area's poverty, was not the local leadership's desperation, but its sophistication. They defeated LANCER because of their ability to rally White environmentalists and others to a cause that they could easily have fought and lost in isolation. In 1985, the city proposed that the first of three 1,600-ton-per-day incinerators be located in South Central, an area about 60 percent African-American, with the rest comprised largely of illegal--and, therefore, politically inactive--Spanish-speaking immigrants. The other two units were to eventually end up in White, environmentally oriented, and politically more powerful West Los Angeles and the San Fernando Valley. It was the South Central leadership, however, that brought to the attention of some West L.A. leaders that, if they failed to object to the first incinerator in an African-American neighborhood, it would be morally hazardous to object later when Units II and III were announced for their areas. The opposition campaign went citywide in time for municipal elections and Mayor Bradley's ill-fated 1986 gubernatorial campaign. In short, these people aggressively built a coalition that no one at City Hall thought them capable of building. Now, nearly five years after LANCER bit the dust, the group continues to challenge City Hall to develop comprehensive recycling as a solution to the city's solid waste problem.

The L.A. story, however, does not stop there. At about the same time, Gov. Deukmejian was proposing a new prison to be built in the largely Mexican-American neighborhood of East Los Angeles. This proposal spurred the creation of Mothers of East L.A., which organized weekly protest marches and eventually forced Deukmejian to back down. The mothers' rationale was quite simple: Long-neglected East L.A. did not need more prisons or more residents in prison. It needed its fair share of schools and decent jobs for its undereducated residents.

Unlike many such groups, Mothers did not disband after winning on the issue that brought it into existence. The battle lasted long enough that many members had learned of other threats to the neighborhood, including the toxic air that emanated from the numerous industrial facilities woven into the fabric of what a team of UCLA urban planning graduate students deemed a "land-use planning disaster." Consequently, when a firm proposed building a hazardous waste incinerator in the neighboring industrial suburb of Vernon, the Mothers again went on the march. This time, they had the cooperation and support of the Concerned Citizens of South Central. And the UCLA students supplied an extensive bilingual study that informed them of the basics of toxic air pollution from body shops, auto paint shops, and other small businesses in the area. Together, the two groups are impacting the policy-making process at a regional level, having persuaded the four-county South Coast Air Quality Management District to create a 30-member Ethnic Advisory Council to deal with environmental questions affecting minority communities.

Out of this rapidly evolving milieu has arisen a group with an even larger vision--the Labor/Community Strategy Center, whose organizers were schooled, ironically enough, in a battle to avert the shutdown of a General Motors assembly plant in Van Nuys. Why ironically? Because the group's strategic focus now is on regional air pollution--something attributable in large part to the influence of the automobile. Yet this group argues that L.A.'s auto dependency is largely a product of corporate policy and that regional air-pollution policy ought not now to impose undue burdens on workers and the poor. The answer, they argue, is to first develop a serious public plan for mass transit that will replace that auto dependency. The group's pioneering study, *L.A.'s Lethal Air*, makes the case, complete with charts, maps, and graphs, that Southern California's poor and minorities are disproportionately impacted by poor air quality. Nonetheless, the middle class, often nestled against the mountainsides where air inversions are the worst, are also affected and are, therefore, potential allies in seeking comprehensive solutions. It is one of the most sophisticated approaches to the politics of air pollution that any activist group has ever developed. Its regional scope totally belies the NIMBY tag that industry has tried so hard to pin on this movement.

Louisiana

If Los Angeles is a powderkeg in which interracial cooperation on environmental issues might seem problematic, let us consider the even more problematic case of Louisiana. On the surface, it would seem that African-Americans, in particular, would have little reason to cooperate with Whites, among whom some 55 percent of those who voted supported David Duke for governor in Fall 1991 election. But that still leaves 45 percent who did not, many of whom did vote in the primary for reformist Gov. Buddy Roemer, who had a strong environmental track record--at least in comparison to his predecessor and successor, Edwin W. Edwards.

Let me not kid you. There remain serious relational problems between African-American activists and some White environmentalists, but my perception is that, for the most part, these are problems of class as well as race. Put another way, if you strip away some of the class differences, there is substantial and effective cooperation between the remaining low- and moderate-income White and African-American activists. But there is a streak of upper-class White environmentalism running through some organizations that muddies the water. That same problem sorely afflicts relations with Louisiana's labor unions, as well, despite the fact that one Oil, Chemical, and Atomic Workers local is underwriting the local National Toxics Campaign office with a dues surcharge and that the state is spawning a growing new militant movement called the Injured Workers Union. One earlier manifestation of worker concern was a group called LA-WATCH--Louisiana Workers Against Toxic Chemical Hazards. There is a great awareness in Louisiana of the shortcomings of state and federal regulation of the petrochemical industry.

But this is also a movement that was too young and politically inexperienced to reelect Gov. Roemer, who largely allied himself with environmentalists. It has, however, gained considerable savvy in using national movement themes like environmental racism to reshape some of the local debate. In light of tensions in New York and Los Angeles between African-Americans and Korean-Americans, and in Chicago between African-Americans and Arab-Americans, it was fascinating to observe a recent meeting in eastern New Orleans between African-American and Vietnamese-American leaders to discuss their mutual opposition to the city's landfill siting process on grounds that it seemed to steer most consideration to areas heavily populated by minorities. This issue is especially poignant in a water-logged city that even the state's Geological Survey says has no acceptable site for a landfill. In other words, any site in the city will cause problems for its neighbors. The immediate issue of the meeting was the imminent final hearing of the city's citizen advisory commission. Originally planned for the Vietnamese neighborhood where this meeting was taking place, the hearing had been moved to the University of New Orleans. The plan that the two groups agreed upon that day was to demand that the commission hold another hearing--this time in the Vietnamese district. Compared to the L.A. riots taking place that same week, such cooperation was a breath of fresh air.

Other Examples

It is possible, in varying degrees of detail, to note such cooperation in numerous other locations, even in small towns like East Liverpool, Ohio, where there rages a fierce debate

over a hazardous waste incinerator now under construction. The facility is on East Liverpool's East End, an isolated area of small, woodframe working-class housing on a bluff above the Ohio River. Just 1,100 feet from an elementary school and even closer to some residential housing, the incinerator sits at the bottom of a ravine in a floodplain (though remedial engineering work will leave it technically just above the 100-year floodplain). The working-class area consists of both Whites and African-Americans, most of whom have worked in the area's declining steel mills and pottery plants. The president of Save Our County, the Ohio wing of the Tri-State Environmental Council in Columbiana County, which is hosting the facility, is a retired African-American steelworker.

Across the river, in slightly more affluent but downwind Chester, West Virginia, Mayor Sally Riley rode into office as an angry housewife determined to stop the facility. She has since been arrested for jumping the fence at the facility in an act of civil disobedience that involved 32 other protesters, among them actor Martin Sheen, an Ohio native. One amusing footnote is that a McDonald's restaurant recently broke ground in Chester, having been lured by the mayor's off-the-cuff remark to the news media that, given the choice of economic development through an incinerator or the golden arches, she would choose the latter. In any event, the opposition has grown formidable and widespread enough to marshal support from the West Virginia congressional delegation and governor and Ohio's Senator Howard Metzenbaum. And, I assure you, it is methodical. Virtually every month, I and many other environmental writers receive a packet of documents, news clips, and even videos from the opponents. These people have no intention of losing.

Prospects

In examining this movement's progress, I have not made any attempt to quantify what I am sure is the growing frequency of this type of interethnic cooperation. I am not even sure what would constitute a valid measure for this type of phenomenon. Will Collette, of the Citizens Clearinghouse for Hazardous Waste, a national network support group based in Arlington, Virginia, told me two years ago that he estimated that approximately 8,000 of these grass-roots environmental groups might exist across the nation. Of course, the number fluctuates almost weekly, as some groups rise up in response to new circumstances and others fade away. And not all of these groups are heterogeneous.

There is also the problem of definition. Which groups count? A salient feature of this movement is the porous boundaries that it virtually insists upon in defining its own environmental issues. It is a philosophical presumption of this movement that environment can no longer be deemed something "out there," like national and state parks, and dunes and wetlands, but is rather something "right here," in our homes, backyards, workplaces, and neighborhoods. Environment is no longer an amenity for public and private consumption, but the physical and psychological quality of our lives. In the inner city, environment includes drugs, gang warfare, poor education, and lead-based paint falling from the walls of substandard housing. With such definitions, neighborhood organizations move into environmental issues, and environmental groups move into neighborhood issues, and the old distinctions blur, as they did when Mothers of East L.A. defeated a proposed prison and then targeted a hazardous waste incinerator. Both were perceived as assaults on the neighborhood's quality of life. Unquestionably, the environmental quality of South Central has been altered for the worse by riots triggered by a jury verdict in a police brutality case. How, then, do you separate issues of racism and the environment? This movement argues that you cannot.

How, then, does this cooperation develop? To be blunt, racists often find it difficult to identify or sympathize with the oppressed--even if they are in part among that class. Racism functions in part through a psychological need to have someone else at least one rung lower on the socioeconomic ladder. Racism has helped many working-class Whites, for example, disguise their own reality of being economically at the mercy of those who hire or fire them. Nonetheless, there have always been others, including some in progressive labor unions, who identified with the struggles of racial minorities like Hispanics, Native Americans, and African-Americans. In recent years, those who have struggled with the political system over issues like Love Canal and industrial air pollution have learned that the system is not always fair or responsive to their concerns. That realization makes it far easier to cooperate with groups of other ethnic and racial backgrounds who have known this for a long time. A shared sense of injury establishes some common ground.

Still, it is a shaky proposition to bring all these forces together under one roof, even within the vast tent of a movement to save the planet. Nonetheless, the current momentum is impressive. Last October, more than 600 participants, African-American, Asian-American, Native American, Hispanic, and White, joined hands at the First Annual National People of Color Environmental Leadership Summit in Washington, D.C., to chart strategy. Like any large coalition, its progress is halting and fitful. A few members want merely to bang on the door of the large national environmental groups and demand that they open up and hire more minority staff members, feeling that this move would then sensitize them to minority issues. Most see the established environmental movement groups as irrelevant and prefer to build their own strength outside that framework. Both tendencies will probably move forward in their own ways. But one point about the summit stands out above all: The overflowing rooms were filled with people whose movement had clearly bubbled up to Washington from the grass-roots level, where the real lessons in interethnic cooperation are being learned. This is truly an instance where national leadership can only lead, follow, or get out of the way.

Literature Cited

Bullard, R. D. (1990). *Dumping in Dixie.* Boulder, CO: Westview Press.

Mann, E. & the WATCHDOG Organizing Committee. (1991). *L.A.'s Lethal Air.* Los Angeles: Labor/Community Strategy Center.

Schedule for Presenters and Moderators

Urban Forestry and Ethnic Minorities and the Environment Paper Sessions

4th North American Symposium of Society and Resource Management
Madison, WI, May 17-20, 1992

For information and a book of abstracts of Symposium talks contact:

Donald Field, Program Chair
Mary Miron, Symposium Coordinator

4th North American Symposium on Society and Resource Management
School of Natural Resources
1450 Linden Dr., Rm. 146
University of Wisconsin-Madison
Madison, WI 53706
608-262-6968 FAX 608-262-6055

(Note: Titles of final papers may be slightly different than titles of original talks)

URBAN FORESTRY SESSIONS:

MONDAY, MAY 18 **Time:** 1:30 - 2:45

Title: *Modeling Choice of Urban Forest Resources* (Session 17)

Moderator: Linda Langner
RPA Forest Service -- USDA
P.O. Box 96090
Washington DC 20090-6090
(202) 205-1265 or 1370

Presentations:

Modeling user choice of National Forest recreation sites: A stated preference approach

Dr. Donald Anderson
Department of Statistics
University of Wyoming
Laramie Wyoming 82070
307-766-6238 fax 766-3927

Dr. Jordan Louviere
Department of Marketing
Eccles School of Business
University of Utah
Salt Lake City Utah 84112
801-944-5007 fax 942-4474

When will a rational choice model of recreation apply in the urban setting? A first approximation

James Christensen
School of Natural Resources, Room 465
The Ohio State University
2021 Coffey Road
Columbus OH 43210
614-292-2265 fax 292-7162

Daily cycles of urban park use: An observational approach

Ray Hutchison
Urban and Public Affairs
2420 Nicolet Drive
University of Wisconsin- Green Bay
Green Bay, WI 54311-7001
(414) 465-2355/2767

TUESDAY, MAY 19

Time: 1:30 - 2:45
Title: ***Public participation in urban forest planning*** (Session 51)

Moderator: Pam Jakes
North Central Forest Experiment Station
1992 Folwell Avenue
St. Paul MN 55108
(612) 649-5163

Presentations:

Public participation in Rail-Trail planning: Two case studies

Janet Frey Talbot
School of Natural Resources
University of Michigan
Ann Arbor, MI 48109
313-764-0426 FAX 313-936-2195

The stewardship of urban parks: Chicago's master planning efforts (3 papers in a panel presentation)

Julia Sniderman
John Henderson
Kathleen Dickhut

Chicago Park District
Department of Research and Planning
425 East McFetridge Drive, Third floor
Chicago Il 60605
312-347-6744 fax 362-0988

Time: 3:00 - 4:15

Title: *New urban forestry leadership* (Session 59)

Moderator: Luz Parris
Cooperative Forestry Staff
Forest Service -- USDA
P.O. Box 96090
Washington DC 20090-6090
(202) 205-1695 fax 202-205-0974

Presentations:

Exercising leadership in the urban forestry context

Terry Tipple
RPA Staff, U.S.D.A. Forest Service
14th & Independence, S.W.
PO Box 96090
Washington DC 20090-6090

Douglas Wellman
College of Forest Resources
North Carolina State University
Raleigh NC 27695

Why trees? The motivations and values of urban forestry volunteers

Lynne M. Westphal
USDA Forest Service
North Central Forest Experiment Station
5801 N.Pulaski Rd.
Chicago, IL 60646
(312) 588-7650 fax (312) 588-5336

Urban Resource Initiative: Community benefits from forestry

Morgan Grove
William Burch

School of Forestry
Yale University
New Haven, CT 96520
203-432-5117/5100 fax 432-5942

Maureen H. McDonough
Kerry Vachta

Department of Forestry
Michigan State University
East Lansing, MI 48824
517-336-2293 fax 336-1143

WEDNESDAY, MAY 20

Time: 10:45 - 12:00
Title: ***Aesthetics of the urban forest experience*** (Session 79)

Moderator:
Linda Kruger
Pacific Northwest Forest and Range Experiment Station
Forest Service -- USDA
Forestry Sciences Laboratory
4043 Roosevelt Way N.E.
Seattle, WA 98105
(206) 553-7817

Managing visual quality in big, diverse urban parks: A case study of Chicago's Lincoln Park

Paul Gobster
USDA Forest Service
North Central Forest Experiment Station
5801 N. Pulaski Rd.
Chicago, IL 60646
(312) 588-7650 fax (312) 588-5336

Urban forestry and the workplace

Rachel Kaplan
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313-764-0426 FAX 313-936-2195

The role of natural environment aesthetics in the restorative experience

Stephen Kaplan
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Mood and the urban forest experience

Bruce Hull
Sean E. Michael

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Virginia Polytechnic and State Univ.
305 Cheath_ n Hall
Blacksburg, VA 24061-324
703-231-7272/ fax 703-231-3330

Time: 3:15 - 4:30

Title: ***Perceptions of urban forest ecosystems*** (Session 96)

Moderator: Deborah Carr
FIERR
Forest Service -- USDA
P.O. Box 96090
Washington DC 20090-6090
(202) 205-1344

Presentations:

Perception of the ecosystem function of suburban residential sites

Joan Iverson Nassauer
Department of Landscape Architecture
University of Minnesota
89 Church St., S.E.
Minneapolis, MN 55455
612-624-7216/625-8285 FAX 625-2227

Perception of wildlife and management of habitat in suburban residential settings

Ross Martin
Joan Iverson Nassauer

Department of Landscape Architecture
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89 Church St., S.E.
Minneapolis, MN 55455
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Survey on ecological restoration of urban parks

John Raffetto
Chicago Park District
Garfield Park Conservatory
300 N. Central Park Blvd.
Chicago, IL 60624
312-533-1281

Householders' evaluations of street trees in suburban Chicago

Herbert W. Schroeder
North Central Forest Experiment Stn.
5801 N.Pulaski Rd.
Chicago, IL 60646
(312) 588-7650 fax (312) 588-5336

Stephen R. Ruffolo
Village of Downers Grove
801 Burlington
Downers Grove IL 60515

Tree inventory: Essential to the preservation of wooded parks

Thomas L. Green
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Western Illinois University
Macomb, IL 61455
309-298-0074

ETHNIC MINORITIES AND THE ENVIRONMENT SESSIONS

MONDAY, MAY 18

Time: 10:45 - 12:00
Title: ***Perception and Use of Park and Forest Recreation Areas*** (Session 8)

Moderator: Earl C. Leatherberry
North Central Forest Experiment Station
1992 Folwell Avenue
St. Paul MN, 55108
(612) 649-5138

Managing urban parks for everyone: Use patterns and preferences among an ethnically diverse park clientele

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Antonio Delgado
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University of Illinois-Chicago
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Urban park use among Jamaicans, African-Americans, Italians, and other Whites in New Haven

Dorceta Taylor
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Hmong leisure and recreation activity

Ray Hutchison
Urban and Public Affairs
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Preferences for nearby natural settings: Ethnic and age variations

Janet Frey Talbot
Rachel Kaplan

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Environmental values and landscape perceptions of Hispanic forest visitors

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TUESDAY, MAY 19

Time: 8:00 - 9:15

Title: ***Management Issues at the Wildland-Urban Interface*** (Session 31)

Moderator: Deborah Chavez
Pacific Southwest Forest and Range Experiment Station
4955 Canyon Crest Dr.
Riverside, CA 92507
(714) 276-6285/6523; Fax 714-276-6426; FTS 799-6285

Presentations:

Use of and satisfaction with forest recreation information among Hispanic and Anglo recreationists

John Baas
Pacific Southwest Forest and Range Experiment Station
4955 Canyon Crest Dr.
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Sources of variation among visitors to the forests of Southern California: The influence of different levels of analysis

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The wildland/urban interface: Hispanics in the National Forests

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Managing for the diverse visitor in a remote wildland-urban interface area: Research and management perspectives

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Effects of varying user density levels on Hispanic perceptions of outdoor recreation

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WEDNESDAY, MAY 20

Time: 8:00 - 9:15
Title: ***Recreation Participation and Barriers*** (Session 65)

Moderator: Irene Tatum
North Central Forest Experiment Station
1992 Folwell Avenue
St. Paul, MN 55108
(612) 649-5296

Presentations:

Is racism a concern for recreation resource managers?

Dale Blahna
Kari Black
Department of Forest Resources
College of Natural Resources
Utah State University
Logan, Utah 84322
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Race and nonconsumptive wildlife participation: A national and regional portrait

Dale Hall
Joseph O'Leary
Dept. of Forestry & Natural Resources
Purdue University
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Outdoor recreation preferences and participation: Blacks, Whites, Hispanics and Asians in Illinois

John Dwyer
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Church group membership and leisure behavior among urban African Americans

Michael Woodard
Los Angeles Institute for MultiCultural Training & Center for Afro-American Studies
University of California- Los Angeles
Los Angeles, CA 90024-1545
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Time: 1:30 - 2:45
Title: ***Environmental Concern and Action*** (Session 87)

Moderator:
Dorceta Taylor
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Understanding intra-ethnic environmental attitude variations: Cuban origin population views

Myron Floyd
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Interethnic cooperation in challenging industrial pollution

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Cooperation between environmentalists and ethnic communities: Opportunities and constraints

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1993. **Managing urban and high-use recreation settings**. Gen. Tech. Rep. NC-163. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 142 p.

Presents a selection of papers from the "Urban Forestry" and "Ethnic Minorities and the Environment" paper sessions of the 4th North American Symposium on Society and Resource Management. Nine paper sessions organized by the North Central Forest Experiment Station-Chicago brought together 51 authors in 34 talks, 23 papers of which are included here.

KEY WORDS: urban forest landscapes, ethnic minorities.

Our job at the North Central Forest Experiment Station is discovering and creating new knowledge and technology in the field of natural resources and conveying this information to the people who can use it. As a new generation of forests emerges in our region, managers are confronted with two unique challenges: (1) Dealing with the great diversity in composition, quality, and ownership of the forests, and (2) Reconciling the conflicting demands of the people who use them. Helping the forest manager meet these challenges while protecting the environment is what research at North Central is all about.