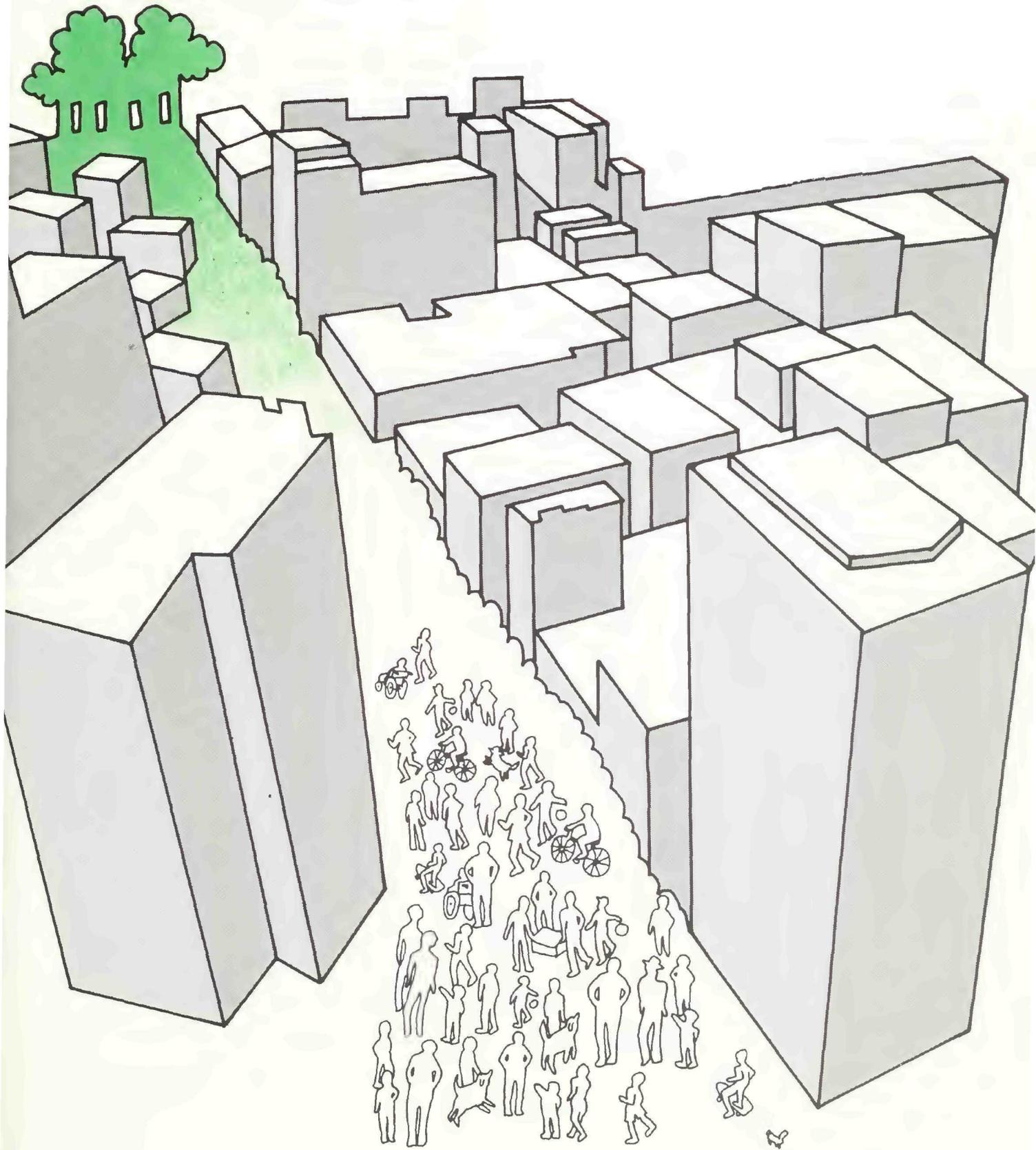


# Trends

Volume 25, Number 3, 1988

## Urban Parks and Recreation

U.S. Department of the Interior  
National Park Service  
and  
National Recreation and Park  
Association





## Trends

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# Introduction

by Thomas A. More



*Urban parks provide daily service to millions of Americans.*

USDA Forest Service

Municipal parks are a cornerstone of our nation's recreation estate, supplying service to millions of Americans every day. In large cities, sophisticated professional departments operate park systems containing thousands of acres in hundreds of different units. At the other extreme, however, even the smallest of towns are likely to have some land set aside for a park. Overall, the President's Commission on Americans Outdoors estimated that 67,685 local parks contained 3 million acres. These parks supply their communities with many important benefits: they offer recreation opportunities, preserve open space and wildlife habitat, beautify cities and towns, serve monumental or memorial functions, provide visual diversity, act as landmarks, even guide traffic flows. Moreover, Americans make good use of these lands: 39 percent of the people surveyed for the Commission reported that they used local recreation areas often. By the year 2000, when over 80 percent of Americans are projected to be living in cities, the significance of municipal parks will be tremendous.

Despite this obvious importance, research on urban and municipal parks has lagged well behind other areas of recreation research. Over the past 15 years, for example, wildland recreation has seen the development of sophisticated concepts and models that greatly further our understanding of recreation planning and management in these areas. Laura Szwak (National Park Ser-

vice), who compiled the Literature Review for the President's Commission, commented that in terms of research, it was a shame that what had been done for resource-based recreation had not been done for urban parks and recreation. A few researchers are deeply involved in this area, however, and their work forms the beginnings of a systematic body of knowledge and theory about urban parks. In this special issue of *TRENDS*, we have asked some of these researchers to summarize the results of their studies and suggest practical ways that their findings might be applied in communities. Taken together, these papers provide an overview of some of the major issues in urban park and recreation research.

One major theme in recent research on urban parks has dealt with issues surrounding park use. Studies conducted in this area have focused on total use, factors that affect use, particular types of use (like anti-social behavior) and use by special groups like bikers and the elderly. In the first of the articles on use, John Dwyer reviews his research on factors that affect use levels in Chicago's Cook County Forest Preserve system. Information on use levels, obtainable at relatively low cost, can help support budget requests as well as provide useful management information about issues like scheduling special events, patrols and maintenance.

One aspect of use that has received particular attention in the

research literature is crime and anti-social behavior. Theresa Westover discusses urban parks as social settings in her article on visitor perceptions of anti-social behavior and crowding. Different groups of visitors express widely different views of the kinds of activities they find acceptable in parks, and Westover's research suggests that there may be a wider range of acceptable activities than most managers think. Clearly, the kind of activities that people find "acceptable" in urban park settings will influence how safe they believe they are in a particular park.

Women appear to feel particularly vulnerable and express concern about visiting the parks alone, especially in the evenings. Yet, while women generally desire more visible and formal controls, other users, especially young male members of minority groups who are frequent park visitors, feel that many park rules are either not fair or are not fairly enforced. These sentiments make challenging work for park managers who must strike an appropriate balance between enforcement and fairness.

Not all our emphasis on crime and anti-social behavior in urban parks may be well founded, however. My own article, "The Positive Values of Urban Parks," reports the results of an intensive study in which the activities of over 20,000 central city park users were recorded, both during the day and throughout the night. The results suggest that the vast majority of park users

are "ordinary" people doing "ordinary" kinds of things. This very ordinariness, however, creates a sort of transcendence from which the great values of city parks—freedom, education, recreation—become visible. These are the key values that provide the very foundation of park and recreation services; we must not lose sight of them amid our concern for everyday management problems.

While these and other positive values are important to the millions of Americans who live in cities, not all parks are equally effective in providing them. What makes the difference between a high quality, enjoyable city park and a low quality, undesirable park? Herbert Schroeder summarizes the results of several years of research on this topic in his article "Perceived Quality of Urban Parks and Forests," and makes recommendations about managing park vegetation to increase aesthetic quality and increase visitors' perception of safety.

Park use by special groups has also been investigated. One use that is increasing rapidly is biking. Paul Gobster, in his article "Urban Bicycle Trails: Use Patterns and User Preferences," points out that development costs are so high that any recreation planner must think twice about whether potential use will justify expenditures. Yet, use monitoring on Chicago's North Branch Trail suggests that, at the rate of just one dollar per visit, development costs would be recouped in only 2.5 years. Gobster

also discusses bikers' social characteristics and preferences and suggests ways that communities considering bike trails can use this information to provide high quality biking experiences.

Older people are another important and growing constituency for urban parks. Regrettably, few parks provide quality services specifically for older Americans. As Geoffrey Godbey points out in his article on how to better serve older people, our parks are going to have to be rethought and then "retrofitted" if they are to flourish in an older society. The challenge is not just to add on a few services for "senior citizens," but rather to rethink our whole idea of what urban parks are for in a society in which the majority of households have no one under 18 years old residing in them. In this intriguing article, Godbey summarizes the results of several of his studies of older Americans—their hopes, fears and judgments with respect to parks—and offers practical suggestions about ways to enhance their park experience.

Economic analysis represents a second major theme in recent research on urban parks and recreation, so three articles in this special issue are devoted to economic themes. The first, "The Economic Benefits and Costs of Urban Parks: An Overview" by Thomas Stevens and Thomas More, reviews the recent series of studies that document the economic value of urban parks by examining the effect they have on the value of surrounding

property. Often this effect can be substantial, with values running into the millions of dollars. It can also be negative, however, with some parks actually detracting from neighborhood values. Although this type of economic analysis is becoming more common, it can often be misapplied. Understanding the basic concepts involved can help park and recreation professionals use this tool more effectively.

Social equity—the issue of “who gets what and who *ought* to get what”—is a second economic topic of great concern today. In “Implementing Equity in the Urban Recreation and Park Context,” Bruce Wicks and John Crompton examine the different conceptions of equity and suggest a five-stage implementation model with examples from the experience of recreation and park administrators in Austin, Texas. Carefully applied, their model can help provide a rationale for a meaningful pricing policy and a capital improvements program that reflects the long-range needs of the city.

A third economic concern has to do with the effective marketing of urban park services. Several recent studies of city residents have found that they know surprisingly little about the park and recreation services provided by their communities. Daniel Stynes reviews his own research in this area in “The Public’s Awareness of Urban Parks,” and suggests that an individual’s awareness of parks depends upon personal characteristics,

park characteristics and promotional activity. By segmenting the market for urban park and recreation facilities, Stynes is able to suggest a variety of strategies for information management to enhance park management and service delivery.

The final article in this special issue—“Neighborhood Stands: An Analogy for Urban Environmental Management” by James Palmer—treats the natural environment in cities holistically. For administrative convenience, we divide the city into departments: parks, schools, streets, residential yards and vacant land, all with their own responsible authority. Yet, city residents respond to their environment *in toto*. Using a forestry analogy, Palmer suggests that we consider the neighborhood to be the basic management unit into which we integrate these various elements. Management planning based upon such a holistic conception may be the most effective way of improving the quality of the natural environment in cities.

These few articles, then, can serve as a general introduction to research on urban parks and recreation. Any of the authors would be pleased to supply additional information about their articles or about urban park research in general—please feel free to contact them directly. The “Who Can You Turn To?” section at the end of this issue provides additional sources of information.

We have a long way to go in building a body of scientific knowledge about municipal parks

and the people they serve. For example, most of these papers have dealt with major metropolitan areas; smaller cities and towns are also struggling with many of the same issues and there is a great need to extend our research effort to assist them as well. Similarly, we must also extend research to cover a broader spectrum of urban recreation activities and facilities. Still, this is a start, and such a body of knowledge is likely to be increasingly necessary as the demands placed upon our park systems increase—necessary to make the best use of the resources, to support budget requests, and, ultimately, to facilitate the delivery of park and recreation services to our nation’s municipalities.

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# Levels and Patterns of Urban Park Use

by John F. Dwyer

Managers of public outdoor recreation areas often monitor the number of people entering their areas to demonstrate the importance of resources and to help guide management. Use monitoring has seldom been done for urban parks, so there is limited information about the use of these important resources to guide managers. This article focuses on one instance where substantial use information was obtained for urban parks, and discusses its implications for the management of existing facilities and the development of new ones.

A threat to change the operation of a reservoir in the Chicago suburbs, and thereby flood significant outdoor recreation areas, prompted an urgent need to identify the amount of use that would be displaced by the flooding. The areas are forest preserves, managed by the Forest Preserve District of Cook County. Since most users arrive by automobile, it was possible to monitor use with traffic counters and supplemental direct observations. The effort was sufficiently useful to managers and has been continued and expanded.

The forest preserves are large areas with a mixture of dense forests, open grassy areas and scattered trees. Facilities include picnic shelters and tables, water pumps, lakes and rivers for fishing and boating (swimming and water contact sports are prohibited), backstops for softball games (but no playground equipment), paved bicycle trails (also used for walking and cross-coun-

try skiing), horse and cross-country ski trails and toboggan slides. Use monitoring took place at individual access areas (each served by a single road) that differ significantly in size, location, landscape (character and mix of forest and open areas) and resources provided.

## Use Levels

Traffic count data showed that use levels were significantly higher than expected. The number of vehicles entering an area per day ranged up to more than 6,000 at the largest area. Field observations aided our understanding of this information by showing that high levels of traffic are the result of relatively few individuals per vehicle (averaging less than 1.5 on weekdays and less than 2.3 on weekends), and relatively short stays (averaging one hour on weekdays and two hours on weekends). Especially high traffic flows of up to one vehicle every five seconds (in the same direction) are most likely to occur at mid-afternoon on weekends and at noon and in the early evenings on weekdays. On spring and early summer weekend afternoons with nice weather, particularly Sundays, it is not uncommon for all parking places to be occupied and the roads full of cars.

The low average number of persons per vehicle was surprising. However, many visitors come from short distances and find it convenient to meet others at the site rather than travel in a

single vehicle. Trends toward smaller vehicles, increased use of motorcycles and smaller households have also contributed to the low average number per vehicle.

The relatively short lengths of stay were also surprising. Average stay is strongly influenced by a substantial volume of "drive through" use. This is facilitated by an excellent road system and no entry fees. Turnover of users is especially high at smaller sites that are highly visible from well-traveled roads, and where the number of vehicles entering per day may exceed five times the number of parking spaces. Forest preserves are convenient to many Chicago-area residents, and a number of visits are made in conjunction with other trips. For example, fishermen stopping on their way to or from work, stops for lunch or dinner, salespeople filling out their paperwork or passing time before a nearby appointment and groups meeting after work on summer evenings for softball games and picnics.

The analysis of use patterns focused on use within a day, as well as the variation in daily use that can be attributed to season (month), day of the week (weekday, Saturday, Sunday/holiday) and weather (temperature at 12 noon, percent sun, percent rain, snow on the ground at 6 a.m.). Models (equations) were developed to predict daily use from these variables. Some of the insights about patterns of site use gained from this effort are:

## Seasons

Daily use is highest in the late spring-early summer and then decreases steadily over the summer. There is a sharp decline in the fall, with lowest use occurring in the late fall and early winter (Figure 1). This is followed by substantial increases in the spring until the peak is reached. Seasonal patterns of use vary between sites depending on location and opportunities provided. The "spring peak" is particularly prominent for areas that are popular for large picnics by younger users. These individuals apparently leave the preserves and gravitate to opportunities for swimming elsewhere as the weather (and water) warms.

Areas with limited shade are not popular during the summer months. Drives through forests with large mature trees are especially popular in the fall when the leaves change color. Bicycle trail use remains high throughout the summer. Forest trails used for cross-country skiing draw large crowds when there is sufficient snow cover, as do sledding hills and toboggan slides.

## Day of the Week

Daily use is highest on Sundays and holidays, followed by Saturdays and then weekdays. Over the year, daily use on weekends averages twice that of weekdays. The weekend/weekday (percent) difference peaks in late summer since weekday use drops at a faster rate than weekends over the summer. Weekend/weekday percent differences are

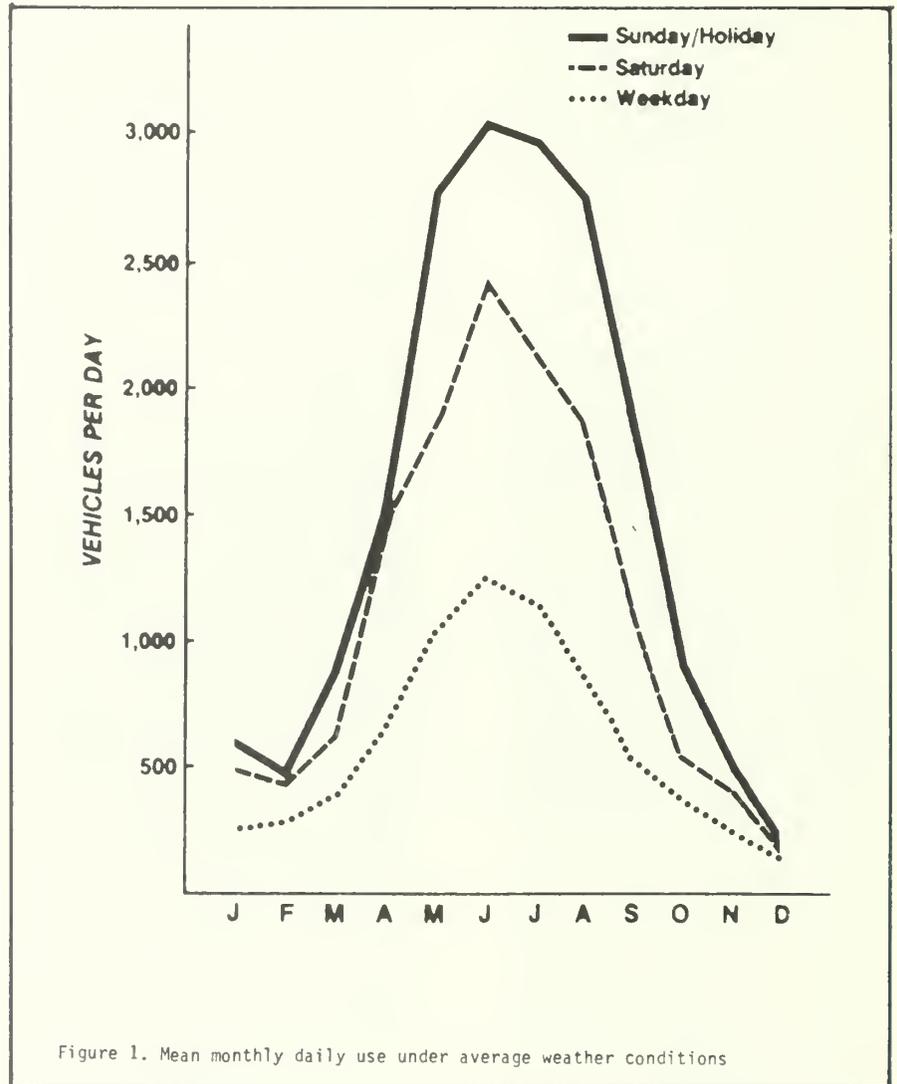


Figure 1. Mean monthly daily use under average weather conditions

lowest from fall to early spring when outdoor group outings on weekends are not popular, but then expand in the spring with the growth of weekend outings. The weekend/weekday percent difference tends to be greatest for the more suburban sites that have substantial attractions, provide for large group outings and have relatively long travel distances.

## Within-Day Patterns

Patterns of use within a day are distinctly different for weekend and weekday use. On summer weekends the number of vehicles on site, as well as the flows of vehicles in and out of the area, peaks in the afternoon. On weekdays the peaks are at noon and in the early evenings. Winter use peaks earlier in the day and drops off more rapidly

in the afternoon as the days are shorter and temperatures fall off rapidly. Within-day patterns at individual areas may reflect, depending on their location and resources, noontime crowds on summer weekdays, picnics and softball on summer evenings, fishing in the morning and evening, as well as "stopping by" throughout the day.

## Weather

Sun, rain, temperature and snow on the ground are useful for explaining variations in daily use. Since weather is highly correlated with season, the association between these variables and use was separated out by looking at weather as deviations from a seasonal (monthly) average. Throughout the year, increased use is associated with an above-average percentage of sun but these percent increases are greatest in the spring and lowest in the late summer and fall. Bright, sunny days trigger early spring crowds but do not have a similar influence later in the year after a summer of sun. Above-average temperatures bring increased use in all but the warmest months when they bring a significant decrease.

Large, treeless areas are where above-average summer temperatures bring the greatest decreases in use. Percent increases in use with above-average temperatures are highest in the winter and spring when temperature often limits use. Of particular significance to managers are warm and sunny weekends in the spring and early summer (March-June)

that can bring huge crowds. Rain limits use, particularly in the summer when picnics, softball games, etc. are affected. Boat rentals and launchings follow the same general pattern as overall use but are more responsive to weather. The association between depth of snow on the ground and use is not always clear, possibly because snow facilitates some uses but deters others.

## Predictive Models

The foregoing discussion, based largely on daily site-use prediction models, presents a reasonable explanation of user behavior. However, the actual models are particularly useful for predicting daily use under complex conditions. For example, high levels of use are to be expected on warm sunny Sundays in late spring and early summer, but what if it is hot and cloudy on a Saturday in June? Should managers be concerned and plan extra police patrol? Is use on a cold and rainy weekday in November sufficiently low that an area can be closed? The actual daily use equations developed for each site can provide answers to these and similar questions. The model can be solved using a hand calculator or programmed into a micro-computer to facilitate calculations, as was done in this study.

## Implications for Management

The following observations are offered for planners and managers of recreation resources in and near urban areas where a

significant portion of users arrive by automobile.

1. The amount of use was higher than anticipated, and the flow of automobiles far exceeded expectations (i.e., fewer people per vehicle and shorter stays). This information has been very useful in establishing the importance of the areas for recreation and fighting off attempts to flood an important area, as well as in helping to guide the planning for new areas.

2. Consistently high levels of use on nice spring weekends, particularly on Sundays, point out the importance of preparing for these occasions. Managers have found that banning the consumption of alcoholic beverages on or within 50 feet of a road or parking lot helps keep users off the roads and traffic moving. Police vehicles driving through the area keep traffic moving and are more effective at reducing congestion than is closing down the entry until congestion is relieved which causes great concern to individuals trying to join or re-join a group.

3. High levels of traffic call for significant attention to the design and maintenance of roadways. The entry to the largest area has been expanded to a divided road with double lanes in either direction to avoid "backed up" traffic on main roads or in the site. Regular traffic patterns over the day suggest certain times when police patrol is critical at particular sites.

4. Low numbers of individuals per vehicle indicate that a fairly

large number of parking places is required to provide for a group of a given size. An alternative is an information program to encourage car pooling. Perhaps individuals securing a permit could be told that a limited number of parking places will be available for their group.

5. There is a significant amount of entry both early and late in the day, as well as substantial numbers staying until the areas are closed. This suggests that to facilitate users, areas should be opened as early as possible and kept open as long as possible.

6. Group picnic permits, required for groups of 25 or more at all forest preserves, and specifying an area to be used, help spread group outings out over the areas as well as the season, most likely reducing congestion in the spring and early summer. Reducing picnic permits during peak times would not be an effective means of reducing crowds since if a group does not show up and claim their area, it rapidly fills up with others.

7. Field observations suggest that individuals looking for groups that they are to join are an important component of the traffic on weekends. Those obtaining picnic permits are given a map to copy and distribute to others. However, this is not always done, and some individuals cannot read maps. Managers are reluctant to put up maps on sign-

boards out of concern that those signs will contribute to congestion. Groups often post signs at entries, but these are often unsightly and not always effective.

8. It may be useful to distribute information telling potential users that they can avoid congestion by staying home on spring weekends and visiting at other times.

9. There are a number of resources and site attributes that attract large numbers of users. The flow of bicycles on paved trails can exceed 4,000 per day passing a given point from either direction. Cross country ski trails in forested areas draw capacity crowds when snow and weather are good. At Busse Lake, fishing walls are well used and boat rentals popular—ranging up to 250 boats per day, with nearly as many brought on site and launched. Fishing is popular year-around, including ice fishing in winter.

Picnic areas are filled to capacity on summer weekends, and softball fields are heavily used on weekends and weekday evenings in the summer. Examination of use over a range of sites suggests that high levels of use are a reflection of attractive sites, large populations in nearby areas, few comparable opportunities, substantial traffic passing by the site and having a good view of the area.

10. Models that include season, day of the week and weather have been very useful in

predicting daily use of access areas.

## Conclusions

With relatively little effort and cost it was possible to provide useful information to managers. They have used the findings to fight off the flooding of important areas as well as to guide the management of existing facilities and the development of new ones. Discussions of the observations of use levels and patterns were useful to managers, planners and researchers, often bringing up new questions about user preferences and behavior as well as means of handling substantial traffic flows and large crowds. Other managers of urban recreation resources should consider similar monitoring programs. Findings to date suggest that urban site use falls into very predictable patterns. It would be useful to examine those patterns in other areas as well. With information from a sufficient number of diverse sites it will be possible to predict changes in use that can be expected to accompany changes in site attributes.

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# Urban Parks as Social Settings: Visitors' Perceptions of Anti- Social Behavior and Crowding

by Theresa N. Westover, Ph.D.

The urban park is widely considered an important antidote to the stresses of modern life. It is seen by some as an oasis of green and quiet amidst the roar and bustle of the city; by others as the setting for vigorous play and exercise to counteract the sedentary and stressful aspects of our everyday lives. Unfortunately, urban problems such as crime and crowding do not stop at the park boundary. Indeed, they extend well into the countryside as increasing numbers of visitors bring their urban attitudes and expectations to our more remote parks and forests. However, the social theories and management approaches to controlling these problems in back-country areas may not be appropriate to urban recreation settings.

We know, for example, that people visit different parks for different reasons and that parks have distinct "images" shaped by both their physical characteristics (such as location, design, etc.) and their social atmosphere. These images, then, shape not only the visitors' expectations about what kinds of facilities they will find in a particular park but also how many and what types of people they are likely to meet there and how they will behave. When these expectations are not met and/or different visitors' images are sharply divergent, management problems emerge. Thus, park managers need to keep in touch with how visitors see the park—the way it both looks and "feels" to them—in order to bet-



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*Park visitors may differ from managers in the park conditions and kinds of behavior they tolerate.*

ter understand visitors' behavior and expectations.

## Anti-Social Behavior

Anti-social or depreciative behavior means different things to different people. While we can all agree that violent crime is unacceptable in any environment, park visitors and management often hold very different views about the extent to which things such as carving initials on picnic tables, littering or rowdy play are appropriate in a given setting. Indeed, different groups of visitors will express widely differing views about the kinds of activities they find acceptable in the park and the same people will hold different behavior standards for different parks.

### *Perceived Safety*

We know, for example, that people generally feel urban parks are less safe than those in more rural locations. In fact, research suggests that ideas about the relative lack of crime in rural campgrounds persists even in the face of extensive theft and vandalism in these settings. Urban parks, on the other hand, are often portrayed in the media as the haunts of teenage gangs and muggers. Some people, especially the elderly and women, may avoid parks entirely for fear of being victimized. However, most parks in urban and suburban areas are, if anything, overused.

A study conducted in three popular midwestern urban and suburban parks found that visi-

tors' perceptions of personal safety varied widely depending on time of day (evenings were considered more dangerous than daytime) and whether the visitor was male or female. About 90 percent of the women and girls questioned expressed reservations about visiting the park alone because of safety concerns, compared to only 8 percent of the male respondents.

Females were also much more likely to report avoiding parks in general or some parts of the park, in particular, due to fear of crime. Observational data supported these views. Women tended to visit the parks in larger groups than men and their visits were more concentrated in the early afternoons (nearly 70 percent of the women using the parks were there between noon and 4 p.m.) while men were more evenly represented throughout the day and evening.

Perceived safety was *not*, however, strongly related to whether or not the visitor had actually seen or been threatened by anti-social behavior in the park, their perceptions of other park visitors or their familiarity with the park. Further, women were slightly *less* likely than men to report direct experience with disturbing behavior or rule violations in the park.

Nonetheless, women were also more likely to report being dissatisfied with park law enforcement efforts, both in terms of being more likely than men to give park police and rangers "poor"

performance ratings (88 percent of all "poor" ratings were from female respondents) and in saying that they "never" or "seldom" saw law enforcement personnel (73 percent of the women, compared to 51 percent of the males). No doubt these differences between male and female park visitors in perceived safety and satisfaction with law enforcement are related less to the specific park environment than to overall societal attitudes and role constraints. In fact, some women told interviewers that they "never go anywhere alone" due to personal safety concerns.

However, in light of the increasing number of women living alone and woman-headed households (a disproportionate number of which are poor), public park managers cannot afford to ignore the safety concerns of this growing constituency. The highly visible presence of enforcement personnel, for example, is likely to be favorably received by female visitors and more women might be attracted to evening activities if adequate supervision and lighting can be provided.

#### *Rules and Rule Compliance*

Overall, nearly three-quarters of the park visitors reported seeing some type of problem behavior in the park—notably alcohol consumption (prohibited in all the study parks), rule or traffic violations, littering or rowdy behavior. More serious problems such as drug use and assaults were less commonly reported

(ranging from 10 to 25 percent of those questioned).

However, in spite of this fairly widespread exposure to rule violations, the majority of park visitors believed that most people obey park rules and that park law enforcement was doing a "good job." This is not to suggest that park visitors are entirely oblivious to problem behaviors. There were significantly more reports from visitors of non-compliance in the study park that had measurably more crime and rule violations than the others. What the study findings do suggest is that there may be a wider range of acceptable behavior in urban parks than managers might think or than research based on backcountry recreation might indicate. The urban park manager is faced, then, with the task of identifying the point of diminishing marginal returns in designing control policies.

When visitors were asked how they knew about park rules in these urban and suburban sites, signs were cited as the major source of rule information (52 percent), followed by talking with park personnel (16 percent). When questioned about various strategies to improve rule compliance, in contrast to the findings of other research in more rural locations, visitors to these parks favored increasing visitors' awareness of the rules (58 percent) over more stringent access control (13 percent).

In terms of law and park rule enforcement, visitors seemed

generally satisfied with the number and behavior of park enforcement personnel, although 23 percent felt there were "too few" rangers or park police. Again, women were considerably less satisfied than were men.

However, while women generally indicated a desire for more and more visible formal controls, other smaller subgroups of park visitors in these urban and near-urban settings felt that park rules and their enforcement were unfair or too strictly interpreted. This group tended to have one or more of the following characteristics: member of a racial minority, frequent park visitor (once a week or more), young male (teens and early twenties), and/or annual income less than \$12,000. These individuals were more likely to say that park rules were not fair or were not fairly enforced and that most people did not obey them. It is not clear whether these opinions reflect differential treatment by park enforcement officers or simply different definitions of acceptable social behavior in the park.

While it is tempting to label this subgroup as the "trouble-makers," managers and enforcement personnel need to carefully consider the special recreation needs and preferences and the cultural differences reflected in these comments. This is a particular problem for enforcement since one person's definition of "rowdy" or "disturbing" behavior is another's idea of a "really good time."

Sometimes conflict may be re-

duced by thoughtful park design to segregate incompatible uses and visitors. For example, one of the study parks had a particularly attractive parking lot, with parking bays separated by narrow, grassy, shaded peninsulas. Young men found this to be the ideal location for boisterous play and car care (waxing, etc.) accompanied by loud music from their car radios. This would have been less of a problem had the parking bays been more widely separated or had parking for the zoo and playground areas been in a different area.

Further, the parking lot was completely enclosed by the circle drive which every car had to travel during entry and exit to the park. Consequently, families and older visitors could not avoid these groups of young men and often reported annoyance with the noise and occasional profanity. Further, the circle drive and central parking encouraged "cruising" by young people, leading to traffic congestion and further irritation for other visitors.

### **Crowding**

Just as behavior standards, in general, will vary depending on park location and facilities, so do people's expectations about what constitutes a "crowded" park. At the one extreme is the solitude cherished by wilderness visitors and at the other is the pleasure sports fans experience when their team draws a "good crowd." While there has been considerable research on perceived crowding and its assumed negative

impact in both residential settings and in backcountry parks, little work exists to guide urban park managers in determining appropriate use levels for their parks. In fact, urban site managers, unlike their more rural counterparts, often find themselves engaged in marketing and promotion to increase park attendance, thus demonstrating public support and justifying increased or continued levels of public funding.

As with perceptions of park safety, people's evaluations of park crowding are filtered through their own predispositions and experiences. It is the salience of site conditions to individuals' goals and expectations that determine how they are evaluated. Research has identified factors such as physical site capacity (e.g., the number of people who can use particular facilities at the same time), the different space needs of different activities (power-boating versus bank fishing, for example) and the compatibility of activities and visitor groups as mediating or exacerbating factors in shaping visitors' response to various use levels.

Our research in midwestern urban and suburban parks suggests first that actual use levels in these environments are more closely associated with park visitors' assessments of whether or not the park is "crowded" than has been the case in most studies of recreational crowding in more rural settings. This is probably related to the fact that these parks

are smaller and have more concentrated use patterns than back-country recreation areas and thus the number of other visitors is more obvious.

Second, relatively few park visitors reported that the park was crowded even on the heaviest use days in these urban settings. This seems to reflect both visitors' expectations about seeing many other people in these types of parks and the general acceptability of these relatively high use levels.

Some people did report crowding, however. These responses were more common (though not exclusively) during heavy use periods. Hot, humid conditions increased "crowded" responses during high use times. Interestingly, when there were many people in the park, members of larger groups (more than five people) felt *less* crowded than those in smaller groups. Perhaps park visitors are evaluating the number of "strangers," not simply the number of people present, when they report crowding. This may also partly explain why more frequent park visitors were more likely to report crowding, regardless of the objective site conditions. Not only does the frequent visitor have more experience with low use times but they also tend to be more familiar with the park and its other frequent visitors.

In contrast to research in more rural settings, better educated and higher income urban park visitors were *less* likely to report

crowding than were those in lower income and education categories, regardless of the actual number of visitors present at the time. Also, individuals in the higher socio-economic categories were over-represented during low use times, likely reflecting their greater range of choice in recreation location which allows them to go elsewhere when they do find the park crowded.

Differences in perceived crowding also varied depending on the visitor's location within the park. However, these differences were not merely reflections of user density in various areas—in fact, the opposite was true. People in more lightly populated areas were *more* likely to report crowding than those in the heavily used sections. We speculate that these individuals may have moved to less used areas to escape the unacceptably "crowded" portions of the park. Also, people using park areas with more definable resource limits (playgrounds, picnic areas with individual table-grill sites, etc.) were more likely to report crowding than those in more open, undefined park areas with fewer facilities.

So, it is clear that perceived crowding in recreation settings is not a simple or mechanical response to a discrete set of factors. The way people respond to various use levels varies both among individuals and parks and as objective site conditions at a given park change over time and space. The site manager, then, needs to understand what people expect

to find at the park and how various use levels and activities meet or thwart these expectations. This can be particularly important in urban parks where multiple uses and multiple publics must be accommodated.

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# The Positive Values of Urban Parks

by Thomas A. More



The great parks of the central cities constitute some of America's most significant recreation resources. Fredrick Law Olmsted called them the "lungs of the city"—islands of green amid dreary brick and mortar, offering city residents daily opportunities to renew both body and spirit. Yet, a much less positive view emerges from the publicity the parks receive today. Deteriorated and vandalized facilities have become havens for muggers, drug dealers and addicts, teenage run-aways, male prostitutes. The parks are a microcosm of all the plagues of modern urban life.

Actually, claims for both the positive and negative views of the parks remain largely unsubstantiated: we have very little documented information about what really does occur in central city parks. If anything, there is probably more information about the negative—problems are somehow more easily seen than positive values. In this article, I summarize the results of a large, detailed study of people's actual behavior in central city parks (More 1985). The study supplies baseline data on people's activities in parks, and the results both suggest implications for park design (see More 1985) and provide insights into the positive values that city parks serve in modern life.

The study itself used systematic observation to examine people's use of two major central city parks—Boston's Public Garden and Hartford's Bushnell Park—throughout the day and night



USDA Forest Service

*The ordinary things people do each day in urban parks create a transcendence from which the great positive values of the parks emerge.*

during the summer of 1978. Both parks are naturally landscaped areas bounded by busy streets in the downtown central business district. They are similar in size (24 and 18 acres, respectively), and share many common landscape characteristics: trees, fountains, statuary, flower beds, shrubbery, ponds, etc. In Boston, swanboat rides have been a tradition for over 100 years, while in Hartford an old fashioned carousel entertains children and adults alike.

To make the observations systematic, I divided the day into nine time periods: early morning (5 a.m.–7 a.m.), morning rush hour (7 a.m.–9 a.m.), morning shopping (9 a.m.–11 a.m.), lunch (11 a.m.–2 p.m.), afternoon (2 p.m.–4 p.m.), afternoon rush hour (4 p.m.–6:30 p.m.), early evening (6:30 p.m.–8 p.m.), evening (8 p.m.–midnight), and night (midnight–5 a.m.). I also divided the week into four periods: weekdays (Monday–Thurs-

day), Friday, Saturday and Sunday. Assigning observations randomly within this framework enabled me to piece together a mosaic of what was happening in the parks at different times of the day and night; I could compare early mornings on weekdays, for example, with afternoon rush hour on Saturdays. At each designated time, a trained observer moved systematically through the park recording people's activities and social characteristics. When completed, data on over 20,000 people had been recorded.

## Use and Use Patterns

From the time sample I estimated that these two parks—just 42 acres of urban parkland—supplied over 300,000 visitor hours of use during two summer months: 178,728 in Boston and 121,346 in Hartford. While use levels varied dramatically throughout the day and night, I never found a time when the Public Garden was empty, not even in the middle of the night in the pouring rain. In Hartford, Bushnell Park was empty only three times—a rainy Monday morning at 2:30 a.m., a rainy Saturday morning at 6:15 a.m., and a clear Monday at 4:10 a.m. Clearly, these resources are intensively used.

Use levels varied substantially throughout the day. On weekdays, use levels were low in the early morning but rose rapidly to a peak at noon, then declined throughout the afternoon and evening, reaching their lowest

point during the night. The pattern for Fridays was similar except that people tended to linger in the parks during afternoons and evenings. Saturdays were strikingly different: there was less use overall and, although use was relatively high at lunch time, it peaked in the afternoon. Sundays were glorious days in the parks, fulfilling my every expectation of what a well-used park should be. As with Saturdays, use was high at lunch but peaked during the afternoon. People lingered throughout the afternoon and into the early evening. Eventually, use declined to very low levels on Sunday evenings and nights; these were among the quietest times of the week.

Demographically, there were similarities between the users of the two parks. Over 50 percent of the users in both parks were adults between the ages of 20 and 39. Hartford had higher proportions of children and teenagers than Boston, while in Boston more users were in the older age groups. The majority (about 60 percent) of users in each park were males. In the Public Garden, 85 percent of the users were white, but in Bushnell Park, although most (50 percent) were white, there were many more black and Hispanic users. In both parks about 30 percent of the users were alone; the remainder came in groups of two or more.

The social composition of users also varied throughout the day. For example, only 20 percent of the early morning (5 a.m.–7 a.m.) users were women. By

lunch time, however, women constituted about 40 percent of the users. The percentage declined slightly throughout the afternoon and then more rapidly throughout the evening. The pattern was similar for both parks.

The percentage of users who were alone, an indicator of social activity, was also similar for both parks. Between 80 and 90 percent of all users were alone during the early morning and morning rush hours, but this declined to nearly 50 percent at lunch time. Social activity remained relatively constant throughout the rest of the day except for a substantial increase during the evening in the Public Garden.

## The Activities of Park Users

Behaviorally, the most striking

result was the sheer numbers of different things people did—we recorded some 156 different activities, including everything from rollerskating to playing the cello, to photographing flowers, to washing in the ponds and fountains, to praying. After the data had been collected, I grouped these different activities into 14 major categories plus a miscellaneous category (Table 1).

The three primary activities occurring in the parks are walking, conversing and looking at something. Walking is the most common, and a more specific breakdown (presented in More, 1985) shows that strolling is twice as common as walking purposefully. Also included in the walking category were walking pets, jogging, running, pacing, etc.

Of the other two major activities, conversing represented 23

**Table 1**  
Frequency of activities observed in central city parks.

Activity Category	Boston			Hartford		
	Frequency	Percent	Rank	Frequency	Percent	Rank
Walking	5,282	31.1	1	3,731	34.9	1
Conversing	3,985	23.4	2	3,059	28.6	2
Looking	3,480	20.5	3	1,647	15.4	3
Affection	1,034	6.1	4	251	2.3	8
Eating	643	3.8	5	304	2.8	5
Play	223	1.3	10	611	5.7	4
Reading/writing	574	3.4	6	166	1.5	9
Sleeping	432	2.5	7	82	0.8	11
Mechanized movement	207	1.2	11	298	2.8	6
Consummatory behavior	245	1.4	8	118	1.1	9
Feeding birds/animals	235	1.4	9	11	0.1	14
Music/dance	168	1.0	13	153	1.4	9
Photography	179	1.0	12	17	0.2	12
Problem	98	0.6	14	30	0.3	13
Miscellaneous	208	1.2		303	2.8	
<b>Total (All Behaviors):</b>	<b>16,993</b>	<b>99.9</b>		<b>10,781</b>	<b>100.7</b>	

percent of all activity in Boston and 29 percent in Hartford, and looking at something accounted for 20 percent of the total in Boston and 15 percent in Hartford. After these major categories came affectionate behavior (hand-in-hand, arm-in-arm, embracing) which was quite important in Boston, but less so in Hartford.

Eating ranked fifth in both parks, followed by play behaviors, reading and writing, sleeping, mechanized movement (cycling, skateboarding, wheelchairs, etc.), consuming behaviors (alcohol, marijuana), feeding birds and squirrels, music and dance, photography and problem behaviors. Note that problem behaviors which included arguing, fighting, throwing rocks and sticks, urinating, soliciting, littering, picking the flowers, etc., were among the least common. In Boston, they ranked last among the major categories, accounting for less than 6/10 of one percent of all the activity we observed. In Hartford, they were even less common, constituting less than 3/10 of one percent of the total.

## A Day in the Parks

The information on use levels, user characteristics and behavior enables us to construct a comprehensive portrait of park use throughout the day. A new day in the parks really begins in the *early morning* (5 a.m.–7 a.m.), a quiet, solitary time. An average of 17 people were observed in the Public Garden while 11 peo-

ple were counted in Bushnell Park, mostly single adult males. The activities exceeding statistically expected levels in both parks were walking, mechanized movement and problem behavior.

The same pattern continues into the *morning rush hour* (7 a.m.–9 a.m.) when an average of 57 people used the Public Garden and 26 used Bushnell. Walking, looking, reading and photography were above average. Although social activity had increased, the users were still overwhelmingly adult males, perhaps on their way to work.

During the *morning shopping* period (9 a.m.–11 a.m.), the rush hour is over and the morning is devoted to the normal commerce of a shopping day. Although still quiet—there was an average of 129 users in Boston and 87 in Hartford—the parks begin coming to life. Social activities increase and women and children appear in more substantial numbers. Activities exceeding expected levels in both the parks were reading, looking, feeding wildlife and play. In Hartford, vendors began to line the edges of Bushnell Park, preparing for the noon lunch crowd.

The *lunch time* (11 a.m.–2 p.m.) activity in both parks was tremendous. Overall, lunch was the single busiest time, although not on every day of the week. There was an average of 240 users in Boston and 210 in Hartford. During lunch, social activity increased and the proportion of women users peaked in both

parks. Only eating and conversing consistently exceeded expected levels.

The huge activity generated during lunch lingered into the *afternoon* (2 p.m.–4 p.m.). To me, life in the parks seemed a bit slower and lazier in the warmth of the afternoon sun. Although use levels had declined from the peaks reached during lunch—the Public Garden averaged 229 users while Bushnell Park averaged 154—the behaviors observed were more diverse during the afternoon than at any other time of the day. Behaviors exceeding statistically expected levels in both parks were conversing, looking, feeding wildlife and photography.

Eventually, afternoon gave way to *afternoon rush hour* (4 p.m.–6:30 p.m.), as work ended and people started home. Use levels declined substantially in both parks; there was an average of 177 people in the Public Garden and 131 in Bushnell Park. Play greatly exceeded expected levels in both parks, reflecting both children and to some degree, the after-work play of adults. Also exceeding statistical expectations were mechanized movement, conversing and consuming behavior.

By *early evening* (6:30 p.m.–8 p.m.), the day's clamor had died down and the average number of users dwindled to 118 in Boston and 52 in Hartford. Most seemed to be city residents who lived nearby. This was reflected in the behaviors we observed: affection, consuming behaviors and conversing, three highly compatible

activities, all exceeded expected levels in both cities as did music/dance behavior.

As daylight faded and the park lights came on, the numbers of users continued to decline. During the *evening* (8 p.m. to midnight), averages of 71 people in Boston and 21 people in Hartford were recorded. In both cities the proportion of younger adults (20 to 40 years) using the park at this time increased, while users in other age brackets declined. Although the majority of users in both parks were men, in Boston there was a dramatic increase in social activity from the many couples who used the park in the evening. As one might expect, the evening behavior patterns were similar to those of the early evening, with affection, conversing and consuming behavior exceeding expected levels in both cities. Problem behaviors and mechanized movement also exceeded expected levels, but there were few users in these categories.

*Night* (midnight–5 a.m.) was the time period with the lowest use levels: an average observation recorded 17 people in Boston and 5 in Hartford. In both cities over 75 percent of these users were in the 20 to 40 age bracket, with teenagers accounting for most of the rest. Over half the users were alone. Behaviorally, sleeping, consuming behavior, affection and mechanized movement all exceeded expectation. However, with so few people in the parks, the number of people

engaged in each activity was small.

### The Positive Values of City Parks

The two summer months the observers and I spent in the parks confirmed our sense of their positive values. The data which form the basis of the results described above are flecks and dabs of city life: walking, talking, looking, sitting in the shade, getting some sun, playing Frisbee® at lunch or ball after work—these are the essential activities for which people use the parks. None of these activities are dramatic or spectacular in any particular way. What is memorable about a couple holding hands or two friends talking quietly on a beach? And yet I believe that taken together, they create a sort of transcendence—a testament to the enormously positive role that parks can play in the lives of city residents.

Unfortunately, we tend to hear only about the sensational: the crime or bizarre people or unusual occurrences. And, since these are the things that we tend to remember, these are things that govern our behavior. I remember a conversation with a Boston woman: “The Public Garden? Oh, sure, it’s a beautiful place during the day, but at night? It gives me the creeps. I won’t even let my husband park anywhere near there.” Yet, what actually went on? Nothing! The dominant use of the Public Garden throughout the evening until 1 a.m. seemed to be lovers holding hands and gazing into the

pond, or people crossing through the park on their way home.

After 1 a.m. use shifted to single males sitting alone on benches or pacing to and fro. In Bushnell Park, there were more small groups of two or three, mostly men sitting on a bench or picnic table talking quietly. In neither park were the observer nor I ever bothered after dark.

Let’s take a closer look at what problem behavior did occur. As a class of activity, problem behavior was uncommon. Excluding the miscellaneous category it ranked last in Boston and next to last in Hartford. Moreover, many of these activities—passing out leaflets, pulling branches, littering—are not personally threatening. Even if we included all the alcohol and marijuana consumption, and a few questionable miscellaneous activities, problem behavior still represents only about 2 percent (2.1 percent in Boston and 1.8 percent in Hartford) of all the activity that occurred. The key point is that the vast majority of users are ordinary people doing ordinary kinds of things. We remember the unusual precisely because it is unusual. It is much more difficult to remember—and see the value of—the ordinary, everyday activities that formed the bulk of park use. Yet it is these very ordinary activities that form a substratum from which the true value of urban parks arises.

Life in the parks is rich and varied. Overall, I’m left with a set of Hogarth-like impressions to which the numbers do not do

justice: four drunken women wandering through the Public Garden at 2:30 one Sunday morning, singing and picking the flowers; the laughter, singing, cake and candles of a birthday party given in Bushnell Park on a Friday evening; the groups of Hispanic teenagers hanging around Bushnell in the afternoons with their 10-speed bikes and nothing to do; the tremendous undercurrents of loneliness in both parks, but especially in the Public Garden; and everywhere, children laughing, shouting, chasing pigeons. These people and activities are really the essence of the parks, giving them life and vibrancy. What broader positive values, then, do these data suggest the parks serve?

First, and most important, they provide *freedom*. Cities are segregated in a variety of ways. Although we hear most about racial segregation, there are other dimensions of segregation including behavioral in which certain behaviors are associated with particular locations. For example, a certain set of activities occurs within a department store. A different set of behaviors may be appropriate for an office building, sports arena or subway stop. In most public places, perhaps even on the street, only a relatively small number of behaviors occur. Of those, an even smaller number are considered acceptable.

Not so in the parks. Here, some 156 different activities occurred in close proximity on slightly more than 40 acres of ur-

ban open space. In this sense the parks are a neutral ground, a remarkable free space, where people tolerate a wide range of different activities. I can think of no other public space within the city where so many different activities would be permitted.

The same holds true for people, too. City people are typed in many ways—there are businessmen, seniors, Krishnas, etc. Although many different types inhabit the city as a whole, they seldom mix. Often there are sanctions (both legal and normative) against other “types.” William Whyte (1980) points out how concerned retailers are about having “undesirables” in or around their stores. The result of these sanctions is, of course, that different “types” of people occupy different subsections of the city.

Not so in the parks! Here, sanctions break down and men in expensive business suits and fashionably dressed women can be seen near derelicts and street people. There seems to be greater tolerance of differences between people in the parks. Of course, conflicts do exist between these different user groups; disapproval is frequently voiced.

Yet, as with behavior, the parks are neutral, a place free to all. As a Boston policeman put it: “But as long as the bums aren’t bothering anyone, we can’t arrest them for anything. Everybody lies down in the Common. Who’s to say one person can and the other can’t?” (Boston Sunday Globe, July 23, 1978, p. 12). Yet in the parks, the different types

mix relatively freely, and this exposure may create at least some basis for mutual understanding.

A third obvious value of the parks is the *recreational opportunities* they offer. Recreational values are of two types: direct values accruing to people who actually use the park for recreation, and indirect or “opportunity” values. The intensity with which both these parks were used indicates the importance of the direct recreation values. Although I hesitate to label any specific behavior “recreational,” no doubt many of the 156 could be classified as such.

In addition to direct recreation values, the very presence of the park creates an opportunity for all city residents, an opportunity that has value in and of itself. For every person we observed using these parks, there were undoubtedly thousands of others who did not. To some of these people, the knowledge that they could exercise their option to use the park may be important.

Thus freedom, education and recreation are three primary values of central city parks. Other values also have been claimed which are less directly inferable from these data. One point shines through clearly, however: these are functional parks, serving a broad cross section of city residents. Although at first glance they appear to be little more than pleasant green spaces in the midst of the city, the sheer intensity with which they are used ranks them among the nation’s foremost recreational resources.

Urban parks, forests and other open spaces are an important resource for the millions of people who live in cities. They provide opportunities for active outdoor recreation as well as for quiet relaxation and escape from urban stress (Hayward and Weitzer 1984; Ulrich and Addoms 1981; Ulrich 1986; Schroeder, in press, a). But not all parks are equally effective in providing these benefits. Some parks are perceived by users as pleasant, enjoyable places to use, but others are perceived as unattractive, unusable or dangerous. What makes the difference between a high-quality, enjoyable city park and a low-quality, undesirable park? This article summarizes research that we have done over the last several years to identify how various attributes of urban parks influence their quality, as perceived by the public.

## Preferred Features of Parks

In an initial study (Schroeder 1982), we showed photographs of urban parks and open space to students at downtown Chicago universities and to visitors and volunteers at a Chicago nature education center. The photos depicted a wide range of environments, from natural to highly developed. Participants were asked to imagine how much they would enjoy being in each place, and then to list features of the places that made them either more or less enjoyable to be in. The most frequently mentioned features that enhanced site qual-

ity were vegetation (particularly trees), water, opportunities to engage in activities, nature and peace and quiet. The most frequently mentioned features that detracted from perceived quality were man-made objects (particularly fences), litter, maintenance problems, crowding and urban surroundings.

The features of parks that people identified seemed to vary depending on their residential background. People who had grown up in urban areas were less likely to mention vegetation as a desired feature and were more likely to evaluate urban parks in terms of what activities they could do there. People from suburban and rural backgrounds were much more likely to mention man-made features as undesirable, and seemed to like having more trees in the parks than did the people with urban backgrounds.

A similar disparity between urban and nonurban individuals appeared when participants rated the desirability of each photograph on a 10-point scale (Schroeder 1983). People with urban backgrounds tended to give higher ratings to scenes with large open fields and nearby buildings and lower ratings to scenes with unmanaged natural vegetation than did people with suburban and rural backgrounds. These variations in preference suggest that urban park managers should try to provide a combination of natural and developed areas to appeal to the widest possible range of individual preferences.

## Perception of Safety

Many participants in our early research expressed concern about the safety of the areas we were presenting to them in photographs. To follow up on this concern, we conducted a study of perceived safety in urban parks in Chicago and Atlanta (Schroeder and Anderson 1984). Participants rated park and forest scenes on scales of perceived safety and scenic quality. On average, people perceived open areas with long view distances, developed features and urban surroundings to be the safest. The highest scenic quality, on the other hand, occurred in forest or park-like settings with much vegetation.

In general, nearby buildings tended to enhance perceived safety while detracting from scenic quality. Forest vegetation tended to enhance scenic quality while detracting from perceived safety. Features such as graffiti and litter detracted from both scenic beauty and perceived safety (Table 1). The best compromise between scenic beauty and perceived safety was achieved in parks with large trees, having long view distances at eye level but much foliage overhead.

Our research on perceived safety also suggested differences between people with urban and nonurban backgrounds (Schroeder and Anderson 1983). Urban people tended to feel safest in open, grassy, developed parks and least safe in undeveloped,

**Table 1**  
Park attributes that are significantly correlated with perceived safety and scenic quality.

Perceived Safety:	Enhance	Detract
	Grass	Woody vegetation
	View distance	Tree density
	People in park	Shrubs
	Nearness to street	Graffiti
	Park facilities	Litter
	Cars	
	Benches	

Scenic Quality:	Enhance	Detract
	Woody vegetation	Athletic fields
	Water	Structures
	Benches	Parking lots
		View distance
		Maintenance problems
		Nearness to street
		Park facilities
		Cars
		Fences
		Lights
		Graffiti

heavily forested areas. Some non-urban people, however, seemed to feel safest in undeveloped areas with natural vegetation, and least safe in urban surroundings, especially when threatening signs like graffiti were present.

The persistent variation in park preference in our studies is a reminder that there is no one "perfect" kind of park. Certain configurations of trees and other features appeal to a large proportion of the population, but there are frequently smaller subpopulations with divergent preferences (Kaplan 1984, Schroeder 1987). In our research, the physical park dimensions that most consistently account for these variations are the density of vegetation and the degree of development of the park. By providing various types of environments along these two dimensions, park managers can help to ensure that everyone will find enjoyable settings, and that no groups will be short-changed in the effort to satisfy majority preferences.

### Preferred Density of Trees in Parks

Our research clearly shows that

people like trees in parks, but it is not necessarily true that more trees are always better. We analyzed public preferences for park scenes in two Chicago suburbs and found that the preferred density of trees ranged from 50 to 75 trees per acre (Schroeder and Green 1985; Schroeder 1986a). Either too few or too many trees per acre led to decreased preference. The optimum tree density varied somewhat depending on the sizes of the trees and their distance from the viewer (Table 2).

**Table 2**  
Optimum number of trees per acre for park scenic quality.

Average Tree Diameter	Average Distance of Trees from Viewer		
	80 feet	100 feet	120 feet
12 inches	60.4	79.1	113.8
18 inches	46.5	56.9	73.6
24 inches	38.2	44.4	54.1

The most extreme preferences were held by two groups involved professionally in managing trees and parks. Employees and staff of the Morton Arboretum, an institution dedicated to planting and protecting trees, preferred scenes with higher tree densities. Employees of municipal park districts, who are re-

sponsible for maintaining park grounds and conducting recreation and athletic programs, preferred the lowest tree density. These results should caution park professionals against assuming that their own judgments about what makes a park desirable are the same as those of the general public.

### Significance of Landscapes

The research described so far is based on people's responses to photographs of parks and forests, usually expressed on some kind of numerical rating scale. These responses give an excellent preference ranking of park settings, enabling us to say which settings are preferred to others, and what the physical attributes of preferred settings are. But they do not tell us much about the meaning or significance of these set-

tings to people (Schroeder 1986b).

What are the thoughts, feelings, interpretations and memories that people associate with particular types of parks and urban open space? To begin answering this question, we asked a group of members and volunteers at the Morton Arboretum to

**Table 3**  
Relative frequency of experiences in different environmental settings.

Experience	Setting	Frequency of experience in setting
Close to nature:	Forest	.436
	Prairie	.583
	Gardens	.167
Quiet, serenity:	Open space	.238
	Forest	.308
	Prairie	.083
	Gardens	.333
Imagining:	Open space	.190
	Forest	.026
	Prairie	.250
	Gardens	.056
Joyful, happy:	Open space	.095
	Forest	.026
	Prairie	.0
	Gardens	.056
	Open space	.190

select from memory several landscapes in the Arboretum that characterized it for them (Schroeder, in press, b). We asked them to write a description of each landscape in their own words, and then to write about the thoughts, feelings and memories they associated with each landscape.

The most frequently mentioned feature in these written landscape descriptions included forests and woods, lakes and ponds, paths and birds. The most frequently mentioned subjective experience was peacefulness, serenity or quietness. This suggests that one of the most important benefits of urban open space may be the opportunity to escape from urban stress. Other themes in people's responses included experiencing nature, imagining pioneer history or pre-human natural environments, discovering and exploring new environments and the harmonious blending of human and

natural influences.

Some types of settings seemed conducive to specific types of experience. For example, people frequently described "close to nature" experiences in forest and prairie settings, joy and happiness in open sunny spaces and imagining pioneer history in the prairie restoration area (Table 3). Interestingly, the experience of serenity was frequently reported in connection with both forests and gardens, suggesting that this important benefit is not limited to strictly natural settings.

## Summary

Taken together, the results of these research studies begin to tell us what characterizes high-quality urban parks and open space, from the users' point of view. Several important conclusions can be drawn from this research.

1. Vegetation and especially trees are crucial to the perceived quality of urban park environments.
2. Different people prefer different levels of vegetation density and site development. These differences may be related to whether they have lived primarily in urban or nonurban areas, and to their professional backgrounds.
3. Features that enhance the scenic quality of a park may detract from its perceived safety, and vice versa. Nevertheless, certain configurations of vegetation are perceived as both safe and esthetically pleasing.
4. Landscapes that provide an experience of peace and serenity are highly valued. This experience is available in both natural and formally designed landscapes.

For more details about the research studies described here or about other ongoing studies of urban park perception, contact the USDA Forest Service, 5801-C North Pulaski Road, Chicago, Illinois 60646.

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# Urban Bicycle Trails: Use Patterns and User Preferences

by Paul H. Gobster

Bike trails are costly undertakings. Even when lands are owned or can be acquired for a low fee, trail development costs can make any planner think twice about whether potential use will justify expenditures. At the same time, when funds are earmarked for the maintenance of existing trails, trail managers need to be sure that the actions they take will help to satisfy current users. In both cases, it makes good sense for planners and managers to find out as much as possible about trail use and users before a plan or action is implemented.

Use considerations are especially important in the development and maintenance of urban bike trails. For example, by the time the North Branch Bicycle Trail in Chicago was completed (1985), the development of highway overpasses, fencing and other necessary preparations had stretched the cost of the 20-mile trail to over \$2.6 million. At \$150,000 per mile, planners had a lot more riding on the trail than just bicycles! The North Branch Trail has since become a well-known success, both to those who use it and to the staff of the Forest Preserve District of Cook County who plan for and manage the trail. So much so that the Forest Preserve District continues to expand its bike trail system to other areas in the County.

## Case Study

The North Branch Bicycle Trail



USDA Forest Service

A 1979 survey indicated that bicycle trails received the highest satisfaction rating of all forest preserve facilities.

presents an interesting case study of how planners and managers can collect and apply user information to improve urban forest recreation opportunities. In cooperation with the U.S. Forest Service's Chicago urban forest recreation research project and the Chicagoland Bicycle Federation, the Forest Preserve District of Cook County implemented two use information gathering techniques—the traffic counter and the social survey. Together, these tools helped provide the District with useful data on use patterns and user preferences.

### Use Patterns

In June of 1987, one traffic counter was installed along a northern portion of the trail to monitor use levels. The \$1100 counter records the number of crossings in 15-minute intervals and stores this information on a tape. Less expensive counters (\$250–\$300) are available which record only cumulative numbers of bicycles and must be regularly

monitored if more time-specific information is required.

Trail use levels, time-of-day use and weekday-weekend differences have already provided a solid base of information for the Forest Preserve District. Figure 1 illustrates the range in use over four selected summer days. On nice summer Sundays, North Branch Trail use can easily exceed 3000 cyclists passing the traffic counter per day. During the peak weekend hours of 2–5 p.m., use along the trail approached 500 cyclists per hour on one especially busy day. This amounts to one cyclist crossing the traffic counter every seven or eight seconds. Put another way, a cyclist taking a 15-minute rest along the trail during a peak use time would see no fewer than 100 cyclists passing by in either direction.

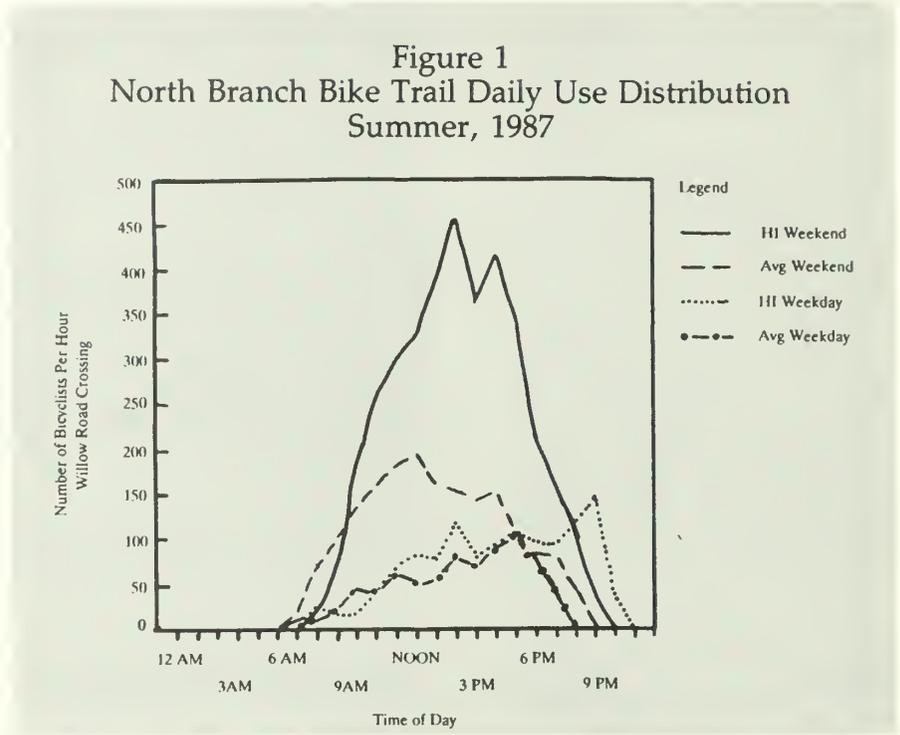
Weekday use was substantial but not nearly so dramatic. The highest recorded weekday use

was 1190 cyclists on Tuesday, August 11, 1987, with a high hourly peak of 150. On an average summer weekend, total use was around 1700 users per day; average summer weekday use was around 750. Besides the obvious weekend-weekday differences in total use, there is a difference in distribution of use over the day. On weekends, mid-afternoons were the highest use times on the trail, while weekday use showed that late afternoon and evening were major use times. On some weekdays, the highest use occurred just prior to sundown, the time District Preserves and trails close. Peak use hours on average weekdays often approach 50 percent of the use level of peak use hours on average weekends.

Use levels remained fairly stable throughout the summer months and began to dip in mid-September with the opening of some schools and the onset of lower temperatures. With continued monitoring, it will be possible to develop a better understanding of how use changes over time. A related article by Dwyer in this issue explains how managers can effectively employ this information to predict use levels on the basis of day, season and weather changes.

#### *User Profile*

A survey of 434 North Branch Bike Trail users on a summer Sunday provided additional information about trail use for planning and management. Short



questionnaires were distributed at two points along the trail on Sunday, July 20, 1986, by members of the Chicagoland Bicycle Federation. The questionnaires were printed by the Forest Preserve District on 5½-in. × 8½-in. cardstock and could be quickly filled out by cyclists waiting for the light to change at street intersections. Most cyclists were happy to offer information about their use and impressions of the trail, making the on-site questionnaire an effective and inexpensive means of obtaining user input.

Basic social-demographic information revealed that 62 percent of the randomly sampled survey respondents were male. The dominant age class (32 percent)

was between 30 and 39, but respondents ranged in age from nine to 65 years. Bicyclists tended to travel in small groups, most (51 percent) riding in pairs and only 5 percent of respondents traveling in groups of over four persons. Trips averaged about 2.5 hours, but ranged from less than an hour to over eight hours in length.

A very high proportion (97 percent) of users saw the North Branch Trail as a recreational trail for pleasure riding. A weekday survey might have revealed a greater proportion of bicyclists using the trail to commute to work, but the traffic counter data and counts by the Forest Preserve District at other points along the trail showed low num-

bers of weekday riders during the 7–9 a.m. commuting period. There may be other sections of the trail where commuting is a more important use, but overall use of the trail for transportation is probably minor.

Another survey question confirmed that North Branch Trail use was primarily recreational in nature by showing a large percentage (40 percent) of users drove to the trail via automobile. It appeared that many people saw the North Branch Trail as a recreational facility to come to and enjoy, rather than a convenient trail for getting from one place to another. In fact, examination of origin-destination responses indicated that at least 80 percent of the riders used the trail as a “loop,” exiting at the same point where they got on the trail.

#### *User Preferences*

The survey data on user preferences is summarized in Figures 2 and 3. When asked in an open-ended question what riders liked about the North Branch Trail, the most commonly cited reason, mentioned by 37 percent of the respondents, was the trail’s scenic beauty. The smooth, paved trail surface was mentioned second most frequently (24 percent of the respondents). Other frequently mentioned positive comments included the separation from auto traffic (10 percent), the surrounding trees and forest environment (13 percent), good trail maintenance (8 percent), peace and quiet (7 percent) and the

Figure 2  
North Branch Bike Trail  
User Preferences

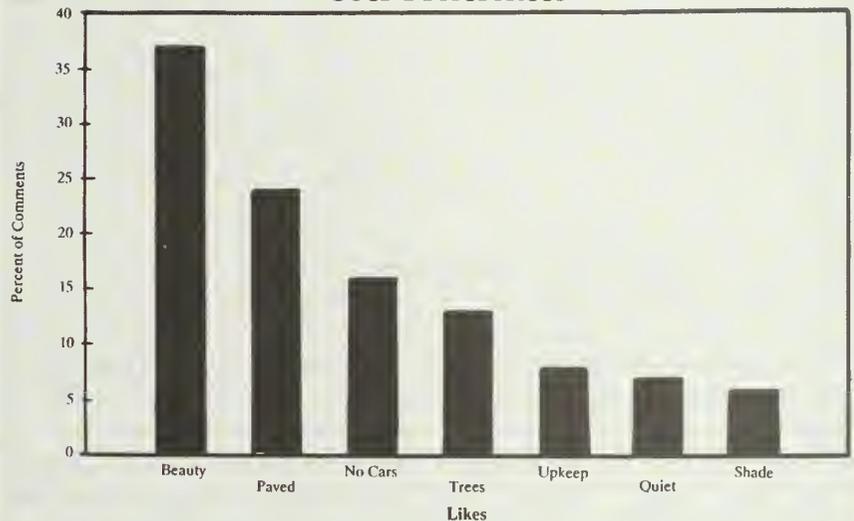
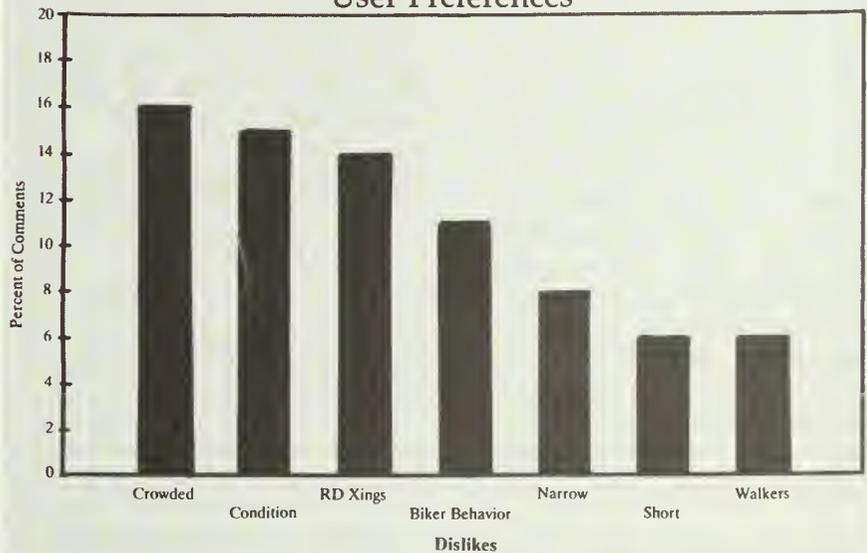


Figure 3  
North Branch Bike Trail  
User Preferences



shade and coolness (6 percent) afforded by tree-lined sections of the trail. It was clear from these responses that trail riders saw the natural environment and the design and maintenance of the North Branch Trail as important

aspects of their recreation experience, an experience that made it unique from riding on the city streets.

People found fewer things they disliked about the North Branch

Trail than things they liked. In fact, for this open-ended question there were nearly twice as many positive comments as there were negative ones. The most common negative comment, cited by 16 percent of the respondents, was that the trail was crowded. This was followed by comments about stretches of bad pavement (15 percent), conflicts between autos and bikes at street crossings (14 percent), inconsiderate bikers (11 percent) and the trail being too narrow (3 percent), too short (6 percent) and having too many pedestrians (6 percent). From this analysis, it appears the majority of negative comments related to crowding and conflicts between users of the resource, and only secondly to the location and design of the trail itself.

These results are not surprising when compared to our previous research on the recreational use of Forest Preserve District areas. A general survey of Forest Preserve users in 1979 indicated that bicycle trails received the highest satisfaction rating of all Forest Preserve facilities. Another survey of Chicagoland bike trail users showed that in choosing a trail, the type of trail surface and scenic views were prime considerations.

## Implications

Information obtained from use monitoring and the user survey has provided the Forest Preserve District of Cook County with data useful for managing the

North Branch Trail and directions for planning future trail development. Use of the traffic counter to establish daily, seasonal and time-of-day use has shown managers when to expect high use levels. Sundays are especially busy times, where on a pleasant summer afternoon trail use can approach 500 bicyclists passing a given point per hour. Such use levels not only document the success of the trail but also show that current and future peak use may exceed the recreational "carrying capacity" of the trail. During these peak times, too many riders may serve to reduce bicyclists' satisfaction due to crowding and conflicts with other users.

In organized discussion sessions with bicycling groups since the survey, we have found that some bicyclists no longer use the trail or changed their former travel patterns to avoid the afternoon crowds. If future monitoring reveals an increased number of these peak Sundays, it may be necessary for planners and managers to develop alternative trails, encourage riders to use other nearby trails or suggest that riders change their use to Saturdays or non-peak hours on Sundays. Additionally, monitoring can clue managers as to what times are best to schedule maintenance and patrolling of trails.

A use monitoring program would be advantageous to managers of all bike trails. Monitoring can be especially useful to detect seasonal and yearly use trends, and to chart user responses to management actions such as trail

resurfacing and new trail development. Monitoring trails on a regional scale would enable planners to find out use distribution and levels throughout an area. This could aid in deciding where to concentrate future efforts, for example, to work towards linkages with other recreational bike trails or to mass transit facilities.

The cost of a traffic counter is relatively inexpensive when compared to the development of the trail itself and related facilities, and provides hard data for planners and managers who could often use such information to document budget needs. In some cases, trail managers might even be able to borrow traffic counters from their local highway department for periodic assessment of trail use levels. Only a slight, temporary modification of the counter is required to register bicycle use.

Use monitoring is particularly effective when it is combined with survey research such as in the North Branch Trail study. Use levels showed peak Sunday uses. These levels, combined with significant numbers of survey respondents commenting that the trail was crowded and that their enjoyment was affected by inconsiderate bikers and non-bike trail users, let managers know more definitely at what point use-related problems are likely to occur.

Additionally, use monitoring and survey responses on the North Branch Trail showed that use was dominantly recreational in character, and that the trail

probably does not receive much use as a transportation route. These findings indicate that trails of this type are a special recreation resource which for a significant minority there are few substitutes. It is likely that certain groups, such as older adults and families with young children, would not take to the streets for bicycle recreation if bike trails were not available.

In fact, one of the survey questions revealed that if the North Branch Trail were not there, 17 percent of the respondents would not ride a bike at all. For trail planners, some trails like the North Branch should be geared expressly for recreational users because they provide this unique experience, a type of experience that for a large segment of the bike riding population is not available elsewhere.

As a recreational trail, a high quality natural environment is an important part of the recreation experience. People ride the North Branch Trail to enjoy the scenic beauty of the trees and surrounding forest, the quiet, sounds of nature, the shade and other experiential aspects of the natural environment often lacking in other types of bikeways. Managers can enhance the recreational experience of bikeways by planting trees and bringing other elements of nature into the bike-way corridor.

Maintenance is also important. Riders are keen on the paved character of the North Branch Trail, some stretches of which were recently paved. And be-

cause of the overall high quality of the trail, rough parts were quickly noticed and commented upon. While paving and consistent trail maintenance can add significantly to the costs of operating a bike trail, for many riders this is a very important attraction to such a trail.

Finally, alignment of recreational bike trails with respect to auto traffic and street crossings poses a major challenge for trail designers, especially in urban areas. Safe crossings are imperative for busy streets and highways, and separation of bikeways from auto routes is important. In some cases, riders on the North Branch Trail commented that even though the trail was physically separated from roads and highways, the noise and visual presence of automobiles detracted from their recreational experience. In cases such as these, trail planners may be able to ameliorate this problem through trail alignment and the screening of roads with vegetation.

## Conclusions

Our study of the North Branch Bike Trail documented use patterns and identified user preferences using relatively simple and inexpensive techniques. The data we collected showed the trail receives a high amount of recreational use and is well liked by bicyclists. Our findings also indicated the high recreational and aesthetic values of the North Branch Trail. Although these values are sometimes difficult to quantify in economic terms, if

cyclists were willing to pay just one dollar per visit, given current summer use levels the Forest Preserve District would recoup the initial cost of trail development in just 2.5 years. This example serves to illustrate the value of recreational trails and might help justify their continued development.

The information we continue to collect on the North Branch Trail and on other areas within the Forest Preserve District is also helping planners and managers more effectively assess recreational opportunities and problems. We are currently expanding our bike trail research to the wider Chicago metropolitan area to find out more about what bicyclists prefer and how they choose bicycle trails. We at the Forest Service encourage planners and managers to apply these use assessment techniques in your own areas, and to contact us and share your experiences. We would be most willing to work with you where possible.

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*Paul H. Gobster is a research social scientist with the USDA Forest Service's North Central Forest Experiment Station in Chicago, Illinois. Portions of this article were presented at the First National Rails-To-Trails Conference in Illinois on Oct. 9, 1987.*

# Them Better

by Geoffrey Godbey

All of us are aware that our population is rapidly aging. The percentage of our population aged 65 and over has reached an all-time high of 12.1 and will continue to grow rapidly. The huge "bubble" in our population's pipeline, the "baby-boomers," have begun to enter their 40's, changing every social institution as they move from one life stage to another. The average (median) age of Americans is 32. It will continue to increase.

A rapidly aging population, plus one that is better educated and has been exposed to an increasingly broad array of leisure behavior will have a profound impact on local parks in our nation's towns and cities. In effect, our local parks are going to have to be rethought and then "retrofitted" if they are to flourish in an older society. The challenge will be not to "tack on" a few services or facilities for "senior citizens" but rather to rethink the whole notion of what parks are for in a nation in which the majority of households has no one under 18 years old residing in them. In this rethinking process, research can help by providing ideas and information to stimulate park professionals who will change the park systems to accommodate an aging society.

The following ideas, findings and implications come from three recent studies involving older people and urban park use. The first study, undertaken for the American Association of Retired Persons (AARP), examined the relation between crime and fear

of crime and the use of public leisure services by those aged 55 and over. The study used both onsite interviews and mailed questionnaires in 12 northeastern cities (Godbey, Patterson, Szwak, 1979).

A second study, also undertaken for AARP, was an exploratory attempt to examine the role of urban parks in the lives of older people. It involved onsite interviews with 750 park users aged 55 or over in 25 neighborhood or multi-neighborhood parks in Chicago, San Francisco, Houston, Atlanta and Boston (Godbey and Blazey, 1983).

A final study examined what features or attributes of local parks were important to the public. Interviews and mailed questionnaires were utilized to establish a list of park attributes and measure their relative importance. The study utilized three Pennsylvania communities of varying sizes: Pittsburgh, Allentown and Lancaster. Approximately one-half of all respondents to this study, which was sponsored by the USDA Forest Service, were over the age of 45; 22 percent were 65 or over (Godbey, Guadagnolo and Derr, 1987).

The findings of all three of these studies appear to have similar implications for park professionals. These and other studies may help to serve older park users better in the future.

## Some Findings and Implications

1. Neighborhood urban parks

serve a diverse spectrum of older Americans. While some urban recreation and park services, such as senior citizen centers, tend to serve a more specialized older clientele (disproportionately women, low education level, low income, etc.), local parks serve a broad cross-section of older residents. In terms of education level, income level, gender, race, age and other demographics, older park visitors exhibit great variety. Thus, the neighborhood park experience transcends social and economic class.

2. The vast majority of older park users are ordinary people doing ordinary types of things. This finding is identical to another study of users of central city parks (More, 1985). While there may be a tendency to think that much park behavior is deviant, there is little evidence to support such a contention among older users. Walking, talking, looking, sitting and exercising were the commonplace activities. With only a few exceptions, very little bizarre behavior takes place.
3. Local park use by those 55-65 is remarkably similar to park use by those over 65. The older group is slightly less likely to be involved in physically demanding behaviors and varies from the younger group with regard to some logistics of use. However, the younger and older groups do not vary in terms of their as-



USDA Forest Service

*What is the purpose of parks in a nation where the majority of households have no one under the age of 18 living in them?*

assessment of the park nor do they vary in terms of motivation and satisfaction derived from the park experience. Thus, it would appear that judgments about the safety or quality of maintenance of a park are fairly consistent for all those age 55 and over, perhaps even those 40 and over. Similarly, the satisfactions derived from park use among older users do not vary by age. One implication is that we do not have to single out "senior citizens," but may plan more inclusively for people in later life stages with regard to maintenance and safety. Another important implication would appear to be that satisfaction with park use does not decline with age among older park users.

4. Older people, generally speaking, exhibit a common set of motivations and satisfactions from neighborhood park use and exhibit a common set of behaviors (although obviously, those who use senior citizen centers in parks vary from those who do not). While older people are similar in motivation and behavior, their assessment of parks and logistics of use does vary greatly. This would seem to indicate that while older people are similar in terms of the role neighborhood parks play in their lives, they face dissimilar conditions and constraints in different parks and in different cities. Therefore, while park planners can use data from other cities concerning the park usage patterns of older people, site spe-

cific planning must evolve from a knowledge of existing situations at a particular site.

5. The usage patterns of older park users appear to be highly manipulable. Older users tend to base their visitation patterns and behaviors upon conditions which exist in the park rather than upon personal considerations. For example, is the park safe?, when is the park likely to sponsor special events of interest to me?, when will the park environment be most desirable?, rather than considerations such as: when does going to the park best fit into my daily schedule? Park managers, therefore, may be able to shape the usage patterns of older people or encourage more use by how they maintain, program or provide for

safety in the park. Since the vast majority of park use for older people takes place during the morning or early afternoon, this is when special efforts might be made to make the park more attractive to the older user.

6. The park usage patterns of older people are as likely to represent a part of routine as a break from routine. Older users visit on a very frequent basis, come at a usual time, stay for a usual amount of time, prefer weekends or weekdays, plan their visit in advance and use the same park for many years. Also, they pursue a specific recreation activity while on site.

The routine use of parks by older citizens has a number of planning implications. Kaplan (1979) has called park use a "roleless" situation. To the extent that park use is routine, however, it makes little sense for it to be "roleless." The vast expanses of grass, dirt, trees, litter, trashcans and benches, which constitute many local parks in urban areas, do not seem to provide the basis for a satisfying routine. While many younger users may use the park as a break from work or as counterpoint to routine, this changes for older users.

What would seem to be implied here is that urban parks must be designed and operated in ways which recognize the systematically different role that urban parks play in the lives of older people. Since

those users age 55 and over visit quite frequently, are likely to pursue a specific activity as well as to socialize, and are likely to stay in the park for relatively long periods of time, greater emphasis should be given to the organized provision of recreation and leisure programs geared to older people.

Summer playground programs do this for children and adolescents. Athletic leagues, rock concerts, marathons and other events are held primarily for younger adults. There is a need for comparable program opportunities which recognize the difference in the role the park plays for older users. Very few organized opportunities exist in parks although, in a few instances, gardening plots have been provided. While a few parks have recreation or senior citizen centers on site, most do not. Even where such centers exist, however, the issue of making parks more of a pleasure for older adults must be addressed, since park use is an outdoor experience.

It may also be implied that a larger portion of areas and facilities of local parks should be specifically designed for older adults. Few examples of park facilities designed for older adults are in evidence. With many kinds of park equipment and facilities, the design features are not specialized for any age group or are specialized for a younger age group. Swings are found in many

parks, for instance, yet the Godbey and Blazey study found only one park in which swings had been designed in a way to be of use to older adults. If older people are thought not to be interested in swings, why are there so many porch swings outside the homes of older people all over the country? Softball fields and basketball courts were found in nearly every park. Where there were swimming pools, they often seemed to be designed more for competitive swimming and diving than for the water usage patterns of older adults.

7. Park visitation appears to be an important event in creating a positive state of mind among older people. About half the sample in the Godbey and Blazey study said they felt different about things after visiting the park and the typical descriptions of such feelings were intensely positive and of an emotional, spiritual or psychological nature. Negative change was almost non-existent. Perhaps, then, local parks should be thought of as an important resource contributing to the emotional health of older citizens. The quality of safety, maintenance and program features of such parks may be importantly related to the contribution this resource makes.
8. Older people get considerable, appropriate exercise from a park visit. The most typical way they get to and from a

park is by walking. Most of them do considerable walking while in the park and over one out of five participate in some other form of sport or physical exercise while in the park. This fitness benefit of park use needs to be made known to decision-makers and park professionals.

9. Older park users want park staff to be visible and identifiable. Order, predictability and feelings of safety are likely to be associated with the presence of park staff. The park superintendent's role is going to change dramatically at almost all levels, to one of "host." If parks are to meet the needs of older people, they will have to be environments where both nature and people are controlled. This means park police should not be reactors but rather actors, mixing informally with visitors. The park superintendent should be visible as much as possible in the park, talking to visitors, shaking hands, trouble-shooting, asking questions and giving answers.
10. The maintenance function of parks has to be further integrated into park management. Older people are highly sensitive to quality of maintenance, and much more judgmental. Maintenance workers need to be more largely professionalized and supervisors of maintenance have to be involved in all phases of park planning. Maintenance supervisors

must also, like the managers of auto companies, spend time with maintenance crews on site. Maintenance crews must be visible, to the maximum extent possible, to satisfy older park users. They must also do a good job.

11. The split between "recreation" and "parks" needs to be closed if older users are to be satisfied. There is considerable evidence that older people want formally organized recreation programs going on in parks. Performances, special events and activities in which they themselves can participate, make older people feel safer and more a part of things.
12. Older people are more judgmental about almost all aspects of parks than younger ones. Certainly, many older people have an experiential basis for such judgments. Those older people who use local parks tend to have used the same park for many years and to be knowledgeable about it. Older people who think one aspect of a park visit is very important, such as maintenance, tend to think the other aspects they are questioned about are highly important as well (Godbey and Guadagnolo 1987).
13. The least safe part of visiting a neighborhood park is the travel to and from the park rather than the onsite experience. Park and recreation staff generally don't concern themselves with this part of the visit. To attract more

older people, they will have to begin doing so.

Perhaps a final conclusion from these studies is that in serving older citizens, there will be the increasing need for park professionals to cut back their existing levels of service and to improve and change the qualities of the remaining services. Older park users are more critical (and more knowledgeable) of local parks than their younger counterparts. Parks are *important* to them but they are likely to use parks only when their expectations are met. Cutting back levels of service to improve those which remain is, of course, a politically difficult task. Doing so, however, or finding ways to substantially increase funding, may be necessary in retrofitting parks for an aging population.

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# The Economic Benefits and Costs of Urban Parks: An Overview

by Thomas Stevens and Thomas A. More

The management of cities and their resources is growing increasingly complex and sophisticated, and economic analysis is playing an ever more important role in the budget allocation process. Many social service agencies, however, including park and recreation departments, resist casting their services in economic terms, preferring to focus on the very real human benefits they provide. Urban parks, for example, supply city dwellers with many valuable services; they provide recreation, preserve wildlife habitat, create educational opportunities, offer solitude and so forth. Yet these benefits are amenable to economic analysis, and some useful information is already available.

A number of studies have shown that urban parks often increase property values and produce valuable recreation benefits. In Philadelphia, for example, Pennypack Park produces estimated benefits of more than \$3 million. However, benefits and costs are concepts which are often misunderstood, difficult to interpret and incorrectly measured.

The purpose of this article is to provide a sort of primer on economic analysis as it has been applied to urban parks by reviewing both the major concepts involved and the recent studies that have been conducted. Understanding these concepts and studies provides perspective on the appropriate role of benefit/cost analysis in decision-making about urban park management and the expenditure of public funds.

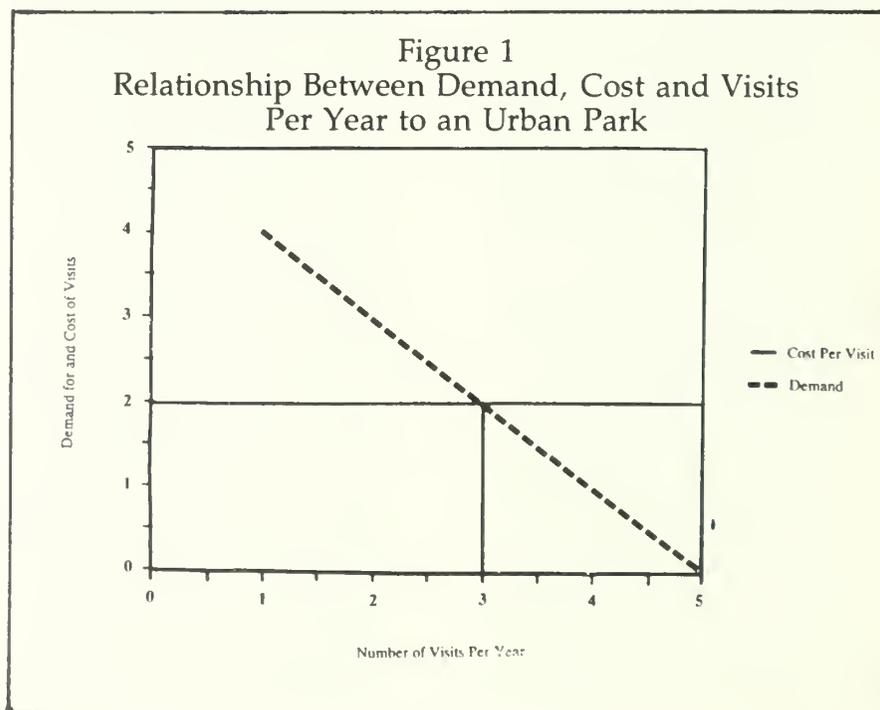
## Definition of Benefits and Costs

In economics, benefits and costs are often more narrowly defined than in general usage. Costs, for example, are defined as the value of other opportunities foregone. This means that the amount of money spent on a park is not always the same as the economic cost. Suppose, for example, someone donates a parcel of land to a city. The city's financial cost (amount of money actually spent) for this land is zero. However, there may be an economic cost: if the land is used for a park, its economic cost is the value it would have had if it had been used for another purpose (i.e., office space, police station, etc.).

Economic benefits of parks are

defined as the difference between the amount of money people would be willing and able to pay for using parks (the demand) and the cost they incur in using them. This cost includes both out-of-pocket expense and the value of other foregone opportunities. Consequently, the actual measure of benefit depends on the income or wealth of the beneficiaries.

To illustrate, consider the following example provided by David Storey. Figure 1 shows the demand (willingness to pay) and cost of visiting a park for a hypothetical visitor. Demand represents what the visitor would be willing to pay, if she or he *had to*, for each additional visit. Costs are the expenditures which must be made to take each trip; gasoline,



opportunity, cost of the time spent, etc.

Demand is the downward sloping line and cost is the horizontal line. With average expenditures of \$2 per trip, the visitor in this example is expected to take three trips per year. The demand curve indicates that the visitor would be willing and able to pay \$4 for the first trip, \$3 for the second trip and \$2 for the third trip. Thus, the total willingness to pay for the three trips is  $\$4 + \$3 + \$2 = \$9$ . Since the visitor's costs are \$2 per trip or \$6 for three trips, the net gain to him or her is  $\$9 - \$6 = \$3$ . The \$3 is the economic benefit of park visits for this person; it shows the net gain to the person from having the park available. This is also the annual benefit measure which should be used in a benefit-cost analysis of the park.

(A common source of confusion in benefit/cost analysis has to do with the difference between the concept of economic benefit and economic impact. Suppose, for example, that our hypothetical visitor does, in fact, spend \$6 per year visiting the park. This expenditure creates a multiplier effect in the local economy. However, this effect is usually an economic "impact" which is NOT included in the benefit measure. Why? In most cases, the \$6 expenditure and its multiplier effect is offset by a decrease in expenditure elsewhere. That is, this tourist now spends \$6 visiting the park and \$6 less on other things. From an economic perspective this is an example of a "transfer" which does not increase the value of the economy as a whole and, therefore, it is not an economic benefit. (If the tourist is from another city within the state, this expenditure is an economic benefit which is gained by one city and lost by another. In this case, the expenditure is clearly a *transfer* from the perspective of the state

as a whole, but is a *benefit* from the perspective of the city in which the park is located)).

## Measurement of Benefits

Given these considerations, the demand for a park must first be estimated in order to measure park benefits. A major problem in estimating demand is that economic markets normally do not exist for most urban parks and the services they provide. Consequently, economists have developed a number of indirect methods for estimating demand. These include the travel cost, land value and willingness-to-pay (or survey) techniques. Although the professional literature contains many applications of each, there is no conclusive evidence as to which method is best because, in part, parks provide such a myriad of economic benefits that no single method can measure them all. However, values obtained from the different methods cannot be arbitrarily combined without double counting of benefits.

To see this problem more clearly, it may be useful to think of a hypothetical urban park which produces a variety of benefits. In most cases, benefits can be divided into two categories: on-site and off-site. On-site benefits are those that accrue directly to the users of a park. The most obvious are the recreation benefits supplied to park users. Off-site benefits (or "externalities" as economists call them) are a bit more difficult to grasp because

they can accrue to people not actually using the park. These benefits may include the visual diversity provided by the parks, the preservation of recreation opportunities for people who are not now using the park but who may wish to do so in the future, preservation of wildlife habitat and, to a lesser extent, monumental, landmark and traffic control functions.

Although many of these externalities are legitimate benefits generated by parks, it can be difficult to assign them an economic value. How, for instance, does one compute the worth of wildlife habitat or the value of the park as a resource someone might use in the future (but just as possibly might not)?

(The problem is compounded because some benefits are "indivisible" in consumption ("public goods"). A scenic view (or visual diversity) is an example: many people can "consume" the view at the same time without reducing or in any way affecting the benefit received by others. By comparison, a tennis court is "divisible" in consumption (a "private good"); once the court is full, no one else can "consume" the benefit it provides at that same time. This distinction becomes important when aggregating benefits to obtain a measure of park benefits received by the community as a whole.)

One way to proceed is to examine the effect of urban parkland on the value of surrounding property. People may be willing to pay more for a house near a park than they would for a comparable house further away. Thus, the value of many of the benefits (and also some of the costs, such as noise, etc.) of living near a park may be captured

in the market value of the property surrounding the park, and examining the effects of parkland on property values provides one way to assign a dollar value to the benefits of urban parks.

The relationship between parks and property values has been studied often. For example, Kitchen and Hendon (1967) found that property values declined as distance from A.B. Davis Park in Lubbock, Texas, increased. A similar decline was found in Boulder, Colorado, where the sale price of single family houses dropped an average of \$4.20 for each foot that a house was located away from a greenbelt (Corrill, et al. 1978).

In Philadelphia, a 1974 study by Hammer, Coughlin and Horn estimated the aggregate real estate value generated by 1,300-acre Pennypack Park to be \$3,391,000. They, too, noted that property values tended to decline with increasing distance from the park. However, property abutting the park had somewhat depressed value, possibly due to noise and annoyance created by park users.

The relationship between parkland and property values is therefore more complicated than a simple decline with distance. For example, Weicher and Zerbst studied five parks in Columbus, Ohio, and found that properties facing open-spaced-type parks sold for \$1,130 more than comparable properties one block away, while properties facing parks with intensively used recreation facilities sold for \$1,150 less. Thus, the effects of parkland on

property values actually depend on park characteristics. More, Stevens and Allen (1982) suggest that many of the negative impacts of high-use facilities can be reduced by visual screening and control of access points.

From a conceptual perspective, the "property value" technique captures the value of both on and off-site benefits. There are a number of practical problems, however, and some studies suggest that this method may actually underestimate park benefits substantially (Stevens, Allen and More, 1985). Perhaps the most important of these practical problems is that of "distant users," since proximity to a park is usually only one small component of property value, and its effect can become statistically lost within a few hundred yards from most parks.

For example, in one recent study (Stevens, Allen and More, 1985) our results showed that parks do indeed affect the value of surrounding property and as expected, this value varied from park to park depending on park characteristics. In each case, however, the effect was lost after about 2,000 feet. Yet, when we conducted on-site interviews, we found that most park users lived beyond the 2,000-ft. radius and therefore would not be represented in the benefit calculations. The property value approach clearly underestimated park benefits substantially.

There are several possible ways an economist might deal with this problem. First, the travel cost

method might be used to measure the benefits received by "distant users." In this approach, travel cost is a proxy for the "price" paid to visit a park. Park visitors are surveyed to determine where they live and how far they traveled to reach the park. Statistical analysis is used to relate visitation rate to travel cost and to various socioeconomic variables like income. A demand curve for park visits can then be derived.

Unfortunately, travel cost measures only the value of benefits accruing to people who actually use the park; the value of the external benefits is not captured. Moreover, although it has been used occasionally in urban settings (see Peterson et al. 1983), it is usually unworkable in situations involving limited travel, as with most city parks.

Another alternative is the hypothetical (or contingent) valuation technique in which people are surveyed and asked to state the amount they would be willing to pay for park services. This method captures both on and off-site benefits; it does not suffer from the "distant user" problem, and it can measure the value of the park to someone who does not use it now but who may want to in the future. Unfortunately, serious questions have been raised about the validity and accuracy of this method because of problems with people's ability to recall and because expressed attitudes do not always correspond with behavior.

Benefits can also be measured

by the opportunity or alternative cost concept. Here, the value of the benefits produced by a park is defined to equal the market (or development) value of the land that would be realized if the park were sold or used for another purpose. This measure provides a lower bound on the value of park benefits because it represents the amount of money that society actually foregoes to have parkland. However, it does not necessarily measure the amount that society would be willing to forego because the parks may well produce benefits in excess of this minimum. In a benefit/cost framework, this method is usually unsatisfactory since, by definition, benefits equal opportunity costs.

Finally, when the information needed to measure the dollar values of benefits is unobtainable, a bio-social impact analysis can be performed. This kind of impact analysis attempts to measure the effects of parks, but makes no attempt to convert these effects into dollar values. Bio-social impact analysis may be particularly useful in capturing visual, cultural and wildlife habitat effects which are very difficult to measure in dollar terms.

## Conclusion

In an era of tightening budgets, documentation of the benefits (and costs) of urban parks is becoming increasingly important. Benefit estimation is imprecise at best, however, and the value of

actual estimates may reflect the technique by which they were obtained. In theory, property value differentials reflect park benefits as perceived by the purchasers of homes. However, most property value studies understate benefits since, beyond a certain distance, the impact of the park accessibility on property values is too small to be measured by this approach.

In other words, the property value approach fails to pick up significant relationships beyond a relatively small zone of influence. The travel cost approach performs better with greater distance, but it does not capture the value of parks to nonusers. Respondents in a willingness-to-pay survey, unless it is very carefully formulated, may fail to provide accurate information.

A word of caution is also in order. The economic valuation of non-market goods is still in its infancy. Not all economists agree on the concepts involved and there is much yet to be discovered. Consequently, it is advisable to accept estimates cautiously; the actual numbers will, at best, be approximations.

Also, values are dynamic—parks have value because we look to them to produce services that are important to us. Yet the services that are valuable to us today may not be quite as valuable (or may be more so) in the future. We have a long way to go and much to do in understanding the economic valuation of these resources. Benefit/cost analysis is

valuable in decision-making, but unless we recognize its shortcomings, we are likely to force superficial measurement of issues that are not measurable in numbers. As Douglas Costle put it, "We shall be guided by a bright light shining in a wrong place."

Yet, one need not be overly pessimistic either. Economic analysis, properly applied and cautiously interpreted, can provide valuable insight and an important basis for making and supporting decisions about park management and development. As we come to better understand the components that create value in urban parks, we will be in a better position to maximize these values to city residents.

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# Implementing Equity in the Urban Recreation and Park Context

by Bruce E. Wicks and John L. Crompton

"Who gets what?" or in normative terms, "Who ought to get what?" is the central concern of political debate and recreation and park administrators are increasingly being required to directly address it. This article identifies eight different answers to this question in the form of a taxonomy of equity models, each of which is likely to be considered by some to be a fair, just and appropriate basis for equitably allocating recreation and park resources. The article then illustrates how these eight equity models relate to development of a strategic policy used to guide the allocation of operational and capital resources that is currently being implemented in Austin, Texas.

Urban leisure service providers are increasingly being challenged to make resource allocations that are demonstrably equitable. They are being required to define what constitutes a "fair" or equitable distribution of park and recreation resources. Five factors have contributed to the growth in awareness of equity's central role in park and recreation administration.

First, over the past decade many cities have experienced fiscal retrenchment which has resulted in an increased scrutiny of service allocation decisions. As a result, efficiency, effectiveness and equity are now pre-eminent concerns of governmental organizations.

Second, a plethora of citizen action groups are now willing

and mobilized to fight for maintenance of quality of life services such as recreation and parks. When resources are reduced or reallocated, these groups are increasingly likely to protest reallocations they feel are detrimental to their lifestyle in the community.

Third, the means by which service benefits are measured have improved markedly in the past decade and such measures are now increasingly used as evaluation tools by government.

Fourth, increasing numbers of equity models are currently viewed as appropriate for the public sector. For example, reliance upon fees and charges, joint ventures, innovative capital financing mechanisms and the co-production of service has increased greatly. These techniques have supplemented the previous almost exclusive reliance on general-fund tax support for public recreation and park services.

Fifth, the threat of disaffected groups seeking legal redress through the courts has heightened awareness among administrators of the need to provide equitable levels of service delivery.

## Perceptions of Equitable Service Allocation

Perception of what constitutes equitable or fair recreation and park service delivery is derived from two highly individualistic factors. The first is an individual's personal values system. For

example, some feel strongly that it is government's responsibility to provide a broad array of recreational services for all citizens, while others believe such government involvement curtails personal initiative and acceptance of personal responsibility, and inhibits the efforts of private organizations in these areas. The second factor is perception of who are the winners and who are the losers in urban recreation and park allocation decisions. Residents' evaluation of an agency's fairness depends upon the interaction of their personal value structures and their perceptions of an agency's performance relative to those structures.

Residents' assessments of service allocation patterns are not always accurate. Often they do not know either who receives the most or least recreation and park services, or how a given service is funded. Two court cases relevant to public leisure service delivery (Burner versus Washington, D.C. and Midwest Community Coalition versus Chicago Park District) are illustrative of such inaccurate assessments. In both of these cases, court action was initiated because minority residents of low income areas felt they were receiving less than their fair share of recreation and park services. In each case, follow-up investigation showed that at least as many resources (inputs) were expended in the minority neighborhoods as were expended in upper income areas.

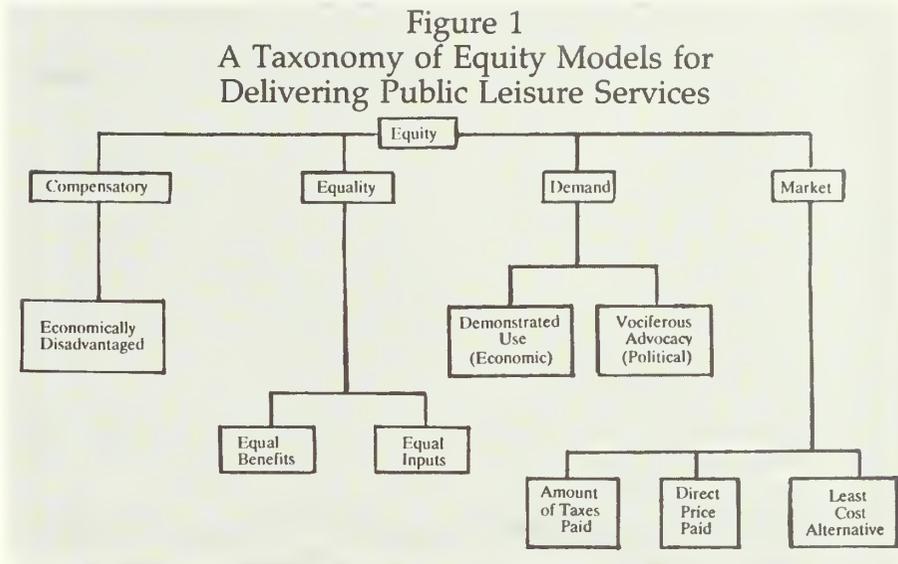
The value structures of residents may not be well developed

which compounds the difficulty of getting constituents to articulate equity preferences. Regrettably, many individuals "do not know" or "do not care" about local issues. Additionally, these individuals' value structures may change over time, thus altering their evaluation of the fairness of a service's distribution. Reviewing new and accurate information may also serve to change an individual's value system. Although equity preferences may be viewed as unstable among the general citizenry, nevertheless these opinions are the source that explains a wide range of behavior including levels of citizen activism, voting patterns, frequency of contacts with service providers and levels of facility/program use.

### Definitions of Equity

The answer to the question "what is fair" inevitably will be determined by who is asked. Service allocation preferences are likely to vary in a heterogeneous urban setting. Figure 1 proposes a taxonomy of eight equity models based upon four fundamental definitions of equity: compensation, equality, demand and market equity. The challenge facing managers, elected officials and residents in an urban area is to select the most appropriate model for directing the allocation of resources for a variety of publicly provided leisure services.

*Compensatory equity* involves allocating services so that economically disadvantaged groups,



individuals or areas receive extra increments of resources. The operational objective of this model is to increase the compensatory or redistributive role of public leisure services in order that opportunities for the economically disadvantaged may be improved.

The challenge with this model is to delineate who is disadvantaged. A number of authors have recognized need as a legitimate equity model but have not restricted it to the economically disadvantaged. Lineberry (1980:188) points out, "The concept of 'need' is a slippery one that, like beauty, tends to exist in the eyes of the beholder. All political issues are rhetorically wrapped in the raiment of 'need', which typically correlates with the advocate's self-interest." Without a qualifying economic criterion, need could be interpreted in a variety of contradictory ways.

*Equality* entails allocating resources so either all residents re-

ceive equal input allocations for leisure services or all residents receive equal benefits from leisure services, regardless of need, the amount of taxes contributed or the price paid (Figure 1).

Because much leisure participation is crucially dependent upon the availability of a facility or service, implementing the equality of inputs model would mean allocating most resources to those neighborhoods which had fewest existing recreational opportunities. Operational difficulties would include determining whether or not residential, private and/or commercial leisure opportunities should be considered in evaluating which areas were spatially disadvantaged.

However, equality of inputs has little to do with equity if it simply enables people with more income and better education to win out over the less fortunate, even when the allocation of resources itself is equal. The equal

benefits alternative is a response to these limitations recognizing that equal resource inputs may not be directly related to equal outputs. The pragmatic concern in adopting an equal benefits approach is the difficulty of measuring recreation benefits. Evaluating the relative merits of facilities and services is a challenging research task.

*Demand* as an equity model allocates resources on the basis of demonstrated use (consumption) or vociferous advocacy. Because of their administrative convenience and apparent fairness, the demand equity models have been widely adopted. These two manifestations of demand may be conceptualized as being economic and political models (Figure 1).

Economic demand is manifested through demonstrated use. If this allocation approach is adopted, the public by their use of a service will determine where agency resources will be expended. The rational appeal of this "Adam Smith" model is that the maximum number of citizens are likely to benefit if it is adopted.

Political demand is operationalized through the relative intensity of vociferous advocacy and frequency of citizen contacts. The neighborhood organization movement and the perceived desirability of citizen participation in public decision-making may have led to the belief that responsiveness to requests and complaints demonstrates accountability to constituents and is an appropriate basis for decision-making.

*Market equity* entails allocating services to groups or areas in proportion to the level of resources they contribute to fund those services. This approach draws from the prevalent allocation model used in the commercial sector, in that it is the market, not the agency, that determines the pattern of service distribution. Market equity may be operationalized in three different ways (Figure 1).

First, resources may be allocated on the basis of the amount of taxes paid. This would reverse prevailing income redistribution approaches through which it is intended that higher income groups help pay for basic services that lower income groups may not otherwise be able to afford. Wicks and Crompton (1988) found this option to be strongly disfavored by residents in Austin, Texas.

In response to demands to cut local taxes, many governments have imposed or substantially raised direct prices for a variety of leisure services. This second operationalization of market equity enhances the efficiency of resource allocation. Residents neither receive leisure services they do not want nor are they required to pay through the tax system for what other residents use.

The third operationalization of market equity is a least-cost approach. This model seeks to deliver a leisure service at the lowest cost, rationalizing that this is the most equitable use of tax dollars since it enables the great-

est level of a service to be offered for the least amount of money. It responds to market forces by seeking out sites where the costs of delivering leisure services is lowest.

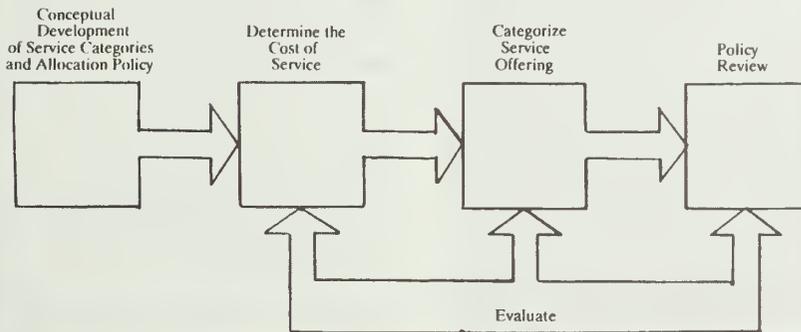
## A Model of Equity Implementation

Open discussion of the "winners and losers" of local public policy-making is likely to be controversial and to provoke disagreements. Nevertheless, if an agency's objectives are to be sensitive to the public's will, the resource allocation issue should be openly addressed. It has been stated that:

*Allocation issues should be confronted, since making no choice or leaving things as they are amounts to tacit acceptance of the prevailing equity model. In the context of marketing government and social services, the equity issue is pervasive. It intrudes into every marketing mix decision, and it is an important ingredient in differentiating marketing in the public and private sectors. (Crompton and Lamb, 1986, p. 173)*

Decisions regarding program development or elimination, pricing and regulatory concerns can only be rationally and justifiably made if they are guided by a strategic policy plan that incorporates equity concepts. In the discussion that follows a five-stage policy implementation model to guide the allocation of resources is proposed, together with suggestions for managing differing

Figure 2  
A Model for Implementing Equity  
into Public Policy-Making



equity preferences (Figure 2). Examples are provided from the experiences of park and recreation administrators in Austin, Texas.

*Stage 1. Conceptually Develop Equitable Service Categories*

The first step is to conceptually develop service allocation categories to which each recreation and park service can be subsequently assigned. Austin's development of these service categories was based upon a review of the service delivery literature, survey data pertaining to residents' equity preferences and the professional judgments of agency personnel.

In Austin three categories were employed to classify services. The first category was the *generic* services. This category includes those services that are considered basic to the park and recreation needs of the community and they are not expected to recover any proportion of the costs incurred. Services that fall into this class are allocated uniformly and follow the equality equity model.

The objective of this category of service delivery is to make the service available equally to all residents. However, some flexibility is permitted so that resource allocation reflects residents' wants and preferences.

The second service category was for *enhanced* services which defines those programs or facilities that exceed the generic level in quality or quantity. Deviation above the generic standard is the important criterion for an enhanced service. For example, additional amounts of a basic service or any special amenities are considered enhanced. These services are selectively allocated only when a special need is shown to be present. The equity models of political demand, economic demand and compensation may apply to this category.

*Enterprise* services comprised the third category. These are defined as those services which far exceed the minimum standard and that may be provided by other segments of the leisure service delivery system. The objec-

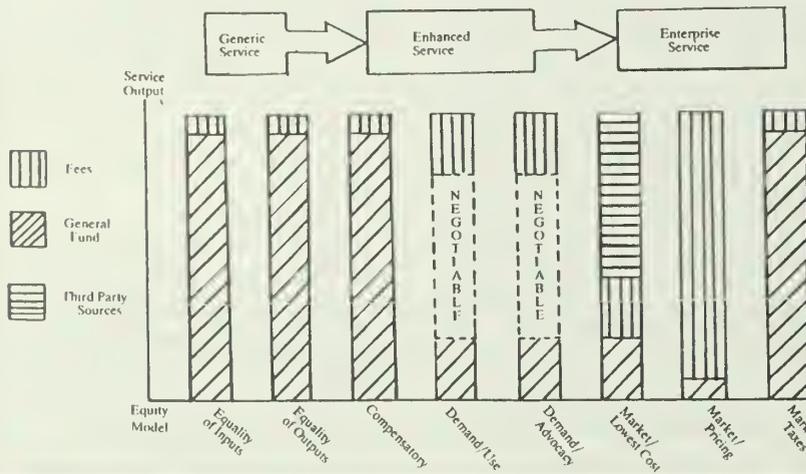
tives of enterprise services are to provide a recreation service but at the same time to recover a high proportion of the costs incurred. The market equity model is the dominant guideline for resource allocations in this category.

*Stage 2. Determine Cost of Services*

A central element in the definition of the three service categories described above is the degree to which services in each category are to be subsidized or, conversely, the price which is to be charged. The subsidy/price issue and ultimately the equity of service allocation cannot be rationally addressed without a knowledge of each service's costs. For example, a decision that an enterprise service should generate 100 percent of its costs, or that an enhanced service should not receive a subsidy greater than 50 percent, requires that service costs be determined.

Figure 3 shows the conceptual relationship between the eight equity models in the taxonomy described in Figure 1 and the service classification categories used in Austin. The equity models suggested for those services described as generic are equality of inputs and equality of outputs. Because the objectives of these equity models are to provide a minimum level or standard of service for all city residents, the primary source of funding is the general fund with minimal reliance upon fees or other market equity revenue sources.

Figure 3  
Relationship Between Sources of Revenue, Equity Models and Service Classification Framework



Those services assigned as enhanced may reflect one of three equity options; compensation, economic demand (use) and political demand (advocacy). The redistributive nature of compensatory equity requires that it be funded predominantly through general tax revenues. However, although the source of revenue is the same as that used in the two models of equality, the objective of the compensatory model is not to maintain equal standards of service but rather to provide an extra measure of that service to those who are economically disadvantaged. Sources of revenues for the demand models are likely to vary widely depending on the relative strength of the actors involved in the decision-making process.

For example, those strongly advocating development of a favored service may be expected to lobby for the greatest public sub-

sidy of that program. Although some form of price structure is likely to be imposed, the scenario of relying upon public debate to determine the acceptable price/subsidy ratio may be repeated for each service and by each interest group. The uncertainty associated with the decision-making process is reflected in the "negotiable" portion of these equity models shown in Figure 3.

Enterprise services may be distinguished from generic or enhanced services in that the sources of revenue are proportionately linked with levels of consumption. The equity model calling for allocation based strictly upon the least cost alternative relies upon third party inputs. Rather than allocating services to those paying the most fees or the greatest taxes, the low cost option requires that the greatest level of services should be allo-

cated to those areas in which joint ventures are possible or where residents are willing to co-produce the service through voluntary help. The distinctive criterion of this service classification is the direct linkage between the means of providing inputs to government (co-production, revenue from prices, taxes) and the market-oriented consumption of service benefits.

#### Stage 3. Categorize Service Offerings

Assigning services to the three categories—generic, enhanced or enterprise—is a critical step in the implementation process. To illustrate, assume that recreation centers were classified as enterprise services embracing the market equity model of revenue support from prices. This would require that the program offerings cover expenses, thus leaving only two options to resolve a discrepancy between revenue and expenditures—raising prices and/or reducing services. However, political pressures could force a different equity model to be used to direct allocation of that service and thus move recreation centers from the enterprise to the enhanced or even the generic category.

#### Stage 4. Policy Review Process

Political intervention is expected and may be viewed as an important part of the checks and balances system. Adjustments made to agency recommendations by elected officials, courts or other sources of intervention are viewed as temporal shifts in

the preferred equity preference. There is likely to be significant political wrangling over these issues until the "ground-rules" are established. Special interests will vigorously defend their position regarding favorite service offerings.

The first time through the process of determining the prevailing equity model by assigning services to allocation categories is likely to generate controversy because agency personnel will be dealing with irate residents and threatened elected officials. Only sound and persuasive justification for the requested policy changes will alter the value system of opponents, and accurate cost accounting data are essential for supporting these positions and negating false accusations.

#### *Stage 5. Implement Policy and Evaluate*

In this phase of the model, policy changes for service allocation and user pricing are put into effect. Resident user and non-user attitudes to the new policy(s) are monitored and, where appropriate, cost accounting is used to track the economic effect of the new policy. Should strong public sentiment emerge or participation rates change significantly, the policy may then be revised accordingly.

### **Implications**

Although the process of including equity considerations in public sector decision-making



*Social equity in urban parks: who gets the benefits, who pays the costs?*

appears fraught with opportunities for political infighting and public dissent, there are multiple benefits to the agency. For example, following the model described above may help provide a rationale for a meaningful pricing policy and a capital improvements program that reflects the long range needs of the city.

Implementing the proposed model provides a rare opportunity to develop a broad based policy that includes all of an agency's service offerings. Formulating service allocation policy on an ad hoc basis does not permit public decision-makers to adequately consider overall service allocation patterns, unique preferences of resident groups, or historical discrepancies in service distribution patterns. The negative effects of ad hoc decision-

making may be lessened and the influence of special interests diminished when equity-based strategic policies are adopted.

### **Acknowledgments**

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# The Public's Awareness of Urban Parks

by Daniel Stynes

Kevin Lynch's pioneering research on how people perceive the urban environment (*The Image of the City*. Cambridge, Mass: MIT Press, 1960) found that while most urban residents are aware of major landmarks and connecting pathways, they are largely unaware of many areas of the city. More recent studies of awareness of urban parks have found similar results. While most people are aware of the few "jewels" in their local park system, their awareness and knowledge of most local parks are often quite limited.

The recognition of consumer information and communication as important recreation research and management topics dates back at least to 1969. In that year, the National Academy of Sciences' report, *A Program for Outdoor Recreation Research*, listed the development of effective communication systems to inform recreation users of recreation services as one of their six principal recommendations. The topic reappears in the 1978 National Urban Recreation Study, the 1981 National Agenda for Recreation Research and the 1986 President's Commission on Americans Outdoors. Recent interest in the topic has surfaced within the broader context of marketing of leisure services, generally under the heading of promotion.

## Marketing Parks

Marketing involves understanding the needs and wants of the people you wish to serve and

designing products and services to meet these needs. While many urban park problems stem from failures to adjust to changing needs and wants, questions have also been raised about the extent to which non-use of urban parks is a result of inadequate efforts to inform the public and to promote urban park and recreation opportunities.

Consumer desire for better information about recreation opportunities is one of the needs that a marketing orientation should address. An important result of the diffusion of marketing concepts and techniques to recreation organizations is the increased attention being given to information and communication. Park departments need to effectively communicate with their publics, to inform as well as to stimulate interest in and support for the organization and its offerings.

Having acknowledged a need for information, a host of important questions arise regarding what information should be provided by whom, when, how and why. What kinds of messages should be directed at which population subgroups through which communications media? Before launching information programs, we must understand the market and its information needs. What is the level of consumer knowledge about urban parks and recreation programs? How does this vary across population subgroups and across communities? What kinds of information do people want? What is the best way to deliver information about parks?

How do changes in consumer information influence leisure choices and behavior? Limited research in these areas leaves us with many more questions than answers.

## Public Awareness of Local Parks

Some research has begun to document the levels and types of information that the public has about local parks. Less is known about public awareness of recreation programs, although we can expect program awareness to be lower than park awareness simply because programs are more intangible and change more often. We must be careful about generalizing from one situation to another, as public awareness and knowledge of local parks can vary widely across parks, individuals and communities. Recreation professionals tend to assume greater public awareness and knowledge of parks and recreation programs than exist. An individual's awareness and knowledge of a park is a function of (1) personal characteristics, (2) park characteristics and (3) promotional activity.

## Personal Characteristics

An individual's level of recreation activity and degree of interest in recreation and parks are the most important determinants of his or her park awareness. This is because most information about parks is obtained by visiting the park or at least passing

by. Interests dictate whether or not someone will notice a park or a public service announcement about parks, or a newspaper article about recreation programs. Urban residents cope with the daily overload of information by filtering out items that do not meet an immediate need or interest.

Other personal characteristics that have been found to be related to knowledge about parks and recreation programs include age, education and length of residence in the community. From a handful of studies of consumer familiarity with urban parks, we can begin to identify five possible targets for urban park information programs.



USDA Forest Service

Degree of development is one of the factors influencing public awareness of a particular park.

1. *Not-Interested*s are not actively engaged in recreation and in particular do not use local parks. Lack of interest, time or information are the most frequently stated reasons for inactivity. This group is the least well-informed about local recreation opportunities. It includes disproportionately higher numbers of economically and socially disad-

vantaged subgroups, such as minorities, the handicapped, the poor and the elderly.

2. *Specialists* are well-informed about a very small number of parks, based either upon an activity or park specialization. Activity specialists focus on a single recreation activity and are very familiar with those parks (or portions of parks) offering facilities or programs suitable to their special interest, be it tennis, softball or nature study. While quite familiar with the particular facilities they use, specialists are often ill-informed about other areas in the park system. Park specialists restrict their use to a single park, usually a nearby neighborhood park, while being largely unfamiliar with most other parks in the city. Specialists of both types include a high percentage of young people who may only visit one or two parks in the city, but do so on a regular basis.

3. *Generalists* are familiar with the most prominent city parks and have a general awareness of many other major parks in the community. Generalists have limited detailed knowledge of most parks and do not visit them frequently. This group consists of substantial numbers of older, lifelong residents of the community whose park knowledge has been accumulated over many years. Many members of this group have little recent contact with parks. They are aware of the names of parks and their general locations, but their knowledge of park characteristics is often out-of-date and fuzzy.

4. *Park devotees* have a detailed knowledge of most parks and recreation programs in the city. In most cities, particularly large ones, this is the smallest of the four resident subgroups. Cities lacking programs to recruit and foster park devotees may find this segment limited to park staff.

5. *Tourists* include all visitors to the city. Their park knowledge centers around major attractions or events. Parks are often key locational landmarks that help orient tourists to a city. Parks also play a major role in attracting tourists and in forming a tourist's image of a city. Most tourists have limited information about city parks. Tourists seek information before their trips, en route and at the destination. Their information needs and sources can be quite different from those of local residents. Park departments should cooperate with local tourist and visitor bureaus to reach tourists.

These five segments have quite distinct information needs and will respond differently to park information or promotional programs. Recent national surveys indicate that a quarter to a third of urban residents may fall into the *not-interested* segment. Special efforts are required to reach this segment as members of this group are not tuned in to park and recreation frequencies. At the other extreme, *park devotees* take notice of anything related to parks. Effective urban park departments nurture *devotees*, use them for support and seek their help in reaching other segments

of the community. *Tourists* are a quite distinct group that is increasingly a target for promotional efforts, particularly for revenue generating programs.

## Park Characteristics

Public awareness of individual parks also varies with the characteristics of the park. Knowledge of a park depends largely on the likelihood of an individual being exposed to the park, either directly through a visit, indirectly through the media, talking with friends and relatives or passing by. Park characteristics that are important determinants of exposure are:

1. Size and location
2. Degree of development
3. Popularity of activities and facilities
4. Age of the park
5. Media attention

Larger parks in more visible locations are better known than smaller parks in remote locations. Parks that are more intensively developed are better known than natural areas and relatively undeveloped parks. Since most park information is obtained by visiting the park or talking with someone who has visited it, parks offering facilities and programs catering to large segments of the population are better known than parks with programs aimed at a narrow segment.

Popularity of activities and programs at a park translates into both increased visits and more media exposure. People are gen-

erally more aware of older parks than newer parks, as it takes time for information about a park to diffuse through the population, particularly if we rely primarily on word-of-mouth.

The public will be aware of recent changes in parks if they have been widely publicized. Extensive publicity associated with park development programs or special events can rapidly inform citizens about new parks and programs.

## Promotional Activity and Public Information Programs

The fact that surveys consistently find word-of-mouth the most frequently cited source of information about parks and recreation, says something both about the nature of recreation and about recreation and park organizations. Few park organizations have historically used mass media and formal communications channels extensively or effectively. After word-of-mouth, consumers cite newspapers, particularly special weekend sections, as an important source of information about recreation opportunities.

Park and recreation professionals have traditionally been trained to manage lands, facilities and personnel, not information. Only recently have public park and recreation departments employed information or communication specialists of some type. As information is more widely

recognized as both a service and an effective planning, management and marketing tool, we should see promotional activities and public information programs playing a much stronger role in determining the public's knowledge, attitudes and behavior relative to parks and recreation programs.

## Recreation Information Services

Public recreation organizations are increasingly asking the question, "What business are we in?" While few park and recreation organizations consider themselves in the information business, most already provide many information services. Programs in arts and crafts, recreation skills, environmental education and interpretation are examples of park activities that are directed in part at consumer information needs and wants.

How far should park and recreation organizations go in providing information services? Most recognize some obligation to inform the public about their own offerings, but what about offerings of other providers in the area? What responsibilities do public park and recreation organizations have in leisure education and leisure counseling? The idea of park departments providing more extensive information services, while a worthy objective, is not the driving force behind the increasing attention communications is receiving.

## Information as a Management Tool

The primary motivation for attention to public information programs and promotion is the potential such programs have for solving park management, planning and marketing problems. Communication techniques are powerful and flexible tools. There are few park problems that information programs and communication techniques cannot help to solve. There are good examples of the use of information programs to reduce vandalism and littering, increase use, decrease use, redistribute use over space or time, increase visitor enjoyment, reduce user conflicts, solve circulation problems, increase compliance with rules, vote park millages and increase revenues and park budgets.

Like any other management action, decisions about what and how much information to provide must be based upon an understanding of the benefits and costs associated with information programs. The bottom line for public information programs is the extent to which they improve leisure choices and the quality of urban life. Private providers have made greater investments in promotion because of evidence that it increases sales and profits. Communication solutions to park problems must be evaluated based upon their efficiency and effectiveness relative to alternatives. We need many more examples of creative uses of information and communication

in parks and recreation. We also need much more research to evaluate the benefits and costs of these programs.

## Getting Started

I can offer a few suggestions to help improve the provision of park and recreation information services and to advance the use of communication strategies in park management.

1. Hire specialists in the communications area and set up departments to concentrate on information programs and communication. However, do not isolate these departments.

2. Measure the levels of awareness of residents of your community about parks and recreation offerings. Find out their sources of information and their information needs.

3. Systematically review the kinds of information you distribute. Evaluate the extent of your information programs, media, messages, costs, etc. Have any of these programs ever been evaluated?

4. Systematically evaluate the coverage of parks and recreation in the local media. Work with the media to get your messages across.

5. Formulate communication objectives for your information programs, identify target market segments and tailor messages and media to each segment.

6. Establish a budget for infor-

mation and promotion. Set aside a portion of this to evaluate your information programs.

7. Consider the information effects of all decisions. Don't ignore the powerful messages communicated by the level of park maintenance, the quality of facilities and programs, and the hospitality and professionalism of park staff.

8. In weighing different approaches to solving problems, always include at least one communication-oriented alternative. Avoid the tendency to only think of information programs in terms of promotion and increasing use.

9. Remember that managing information has a lot in common with traditional park management. Just as there are basic ecological principles that govern both the opportunities and limits of the biological and physical side of park management, and there are behavioral principles that govern the social side, so are there basic principles and patterns of human communication which dictate the potential and limits of communication-based approaches to park management and leisure service delivery.

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# Neighborhood Stands: An Analogy for Urban Environmental Management

by James F. Palmer

The past decade has seen enormous growth in interest about the role of the natural environment in urban areas. However, the predominate concerns have focused on maintenance systems (e.g., pest control, inventories and increasing tree tolerance) and documenting the benefits of vegetation as a moderating factor in the urban environment (e.g., subdue noise, screen unsightly views and improve microclimate). To date, we have not seen the development of an approach to urban areas that is suitable both to the capabilities of urban foresters and natural resource professionals, and to the realities of the urban context. The challenge is to integrate knowledge about the physical and biological aspects of the urban environment with the human dynamics of its urban context. This article suggests such an integrative concept by drawing an analogy between neighborhoods and forest stands. It then illustrates the potential power of this analogy by investigating areas in Syracuse, New York.

In order to develop a set of principles suitable for guiding the planning and management of the natural systems in urban areas, one must comprehend the urban fabric through which they are woven. Many of the biological and physical aspects of urban-nature fabric are easily recognized as the factors of traditional forestry with a new face. However, when placed in the urban milieu, they appear to lose the comprehensible and useful patterns that allow foresters to prescribe treatments.

## Management in Natural and Urban Forests

In many ways the current approach taken to managing the "urban forest" that includes all the trees, vegetation and other natural components found in an urban area is quite similar to that used for a national forest. In order to manage a whole national forest, it is subdivided into timber management compartments. The basis for each compartment is institutional, determined "for purposes of orientation, administration and silvicultural operations, and defined by permanent boundaries (either of natural features or artificially marked) which are not necessarily coincident with stand boundaries." (U.S. Forest Service, 1975-. Forest Service Manual, Section 2412.3. USGPO, Washington, DC.) While these areas frequently have some ecological basis, they can also be quite arbitrary.

Typically the natural environment in urban areas is also managed according to a system of institutionally convenient compartments: city parks, school yards, street trees, residential yards and vacant land. The management responsibility for each compartment resides with a different authority: the Department of Parks and Recreation supervises city parks; the School Board is responsible for the school yards; home owners care for their own yards; street trees are pruned by the Department of Public Works, except when they are in the way of phone or electric lines, and no one accepts responsibility for the vegetation on vacant land. This structure is or-

ganized around the arbitrary lines of budgets and bureaucracies. It does not have any ecological basis, at least not from the perspective of those trained in natural resource management.

James Byrne has seen this problem and suggests a direction to pursue in overcoming it:

*An urban forester told me you cannot establish specific goals for urban forestry. I would respond to that by saying, if you don't know where you are going, there is a good chance you won't recognize it if you get there.*

*However, often the urban forest is too diverse to have goals. The planning principle here is to remove the diversity by stratifying the area and developing goals for each relatively homogeneous area. The stratification process is based, not on vegetation, but on the character of the neighborhood or housing density or degree of commercialism. By these strata, you can project trends and develop strategies for implementing urban forestry programs.*

*You need to develop with each social, economic and cultural group the value of an urban forest in their area, in terms of human habitat or quality of life that they understand. These strata should provide the homogeneous groupings needed to formulate program goals and the public support necessary to carry them out. (Byrne, J., 1978. A planner's viewpoint on the urban forestry effort. In: H. Gerhold and L. Wood (eds.) Proc. National Urban Forestry Conference. ESF Publication 80-003. Syracuse: State Univ. of New York, Vol. II, pp. 672-675.)*

## Neighborhood Stands

When they are interested in ecological relationships, foresters traditionally use another unit to describe forest communities and prescribe appropriate treatments. The basic ecological unit is the *stand*, "a contiguous group of trees [and other vegetation] sufficiently uniform in species composition, arrangement of age classes and condition to be a homogeneous and distinguishable unit." (Smith, P.M., 1962. *The Practice of Silviculture*, 7th edition. New York: John Wiley, p. 18.) Foresters create a management plan to optimize benefits derived from the forest primarily by prescribing treatments appropriate to specific stands rather than uniform treatments to the whole compartment or forest. In the urban context, social and behavioral factors must also be incorporated for a successful transfer of this ecological concept to "urban forestry" management.

In urban planning and management, *neighborhoods* are the concept analogous to the stand in forestry. Suzanne Keller's definition of *neighborhood* is broadly conceived and stresses the same concept of relative homogeneity found in defining forest stands:

The term "neighborhood" most investigators agree, is not without ambiguities. . . . The distinctiveness of these areas stems from different sources whose independent contributions are difficult to assess:

geographical boundaries, ethnic or cultural characteristics of the inhabitants, psychological unity among people who feel that they belong together or concentrated use of an area's facilities for shopping, leisure and learning. Neighborhoods combining all four elements are very rare in modern cities. (Keller, S. 1968. *The Urban Neighborhood: A Sociological Perspective*. New York: Random House, 201 p.)

One of the distinctive attributes of a neighborhood is the character of its natural environment, for instance, city parks. In addition, the values, needs and uses of the urban-nature fabric will differ among neighborhoods. (Byrne, and J.R. Bassett. 1978. *Vegetation inventories: needs and uses*. In: H. Gerhold and L. Wood (eds.). *Proc. National Urban Forestry Conference*. ESF Publication 80-003. Syracuse: Univ. of New York, Vol. II, pp. 632-644.) A Director of Parks and Recreation can reasonably be expected to establish priorities for city parks that will make the department look good. If asked, neighborhood residents could be expected to have a different set of priorities for how, or even whether, parks should be developed and used.

It is proposed that principles of "urban forestry" can be greatly advanced by the synthesis of urban neighborhoods and forest stands into a new organizing unit. *Neighborhood stands* are operationally defined as:

A component of an urban area composed of loosely contiguous trees, along with associated vegetation and en-

vironmental components, that have relatively homogeneous physical, biological, social and perceived characteristics.

To illustrate the meaningfulness of the neighborhood stand concept, it is shown that a heterogeneous portion of a major city is composed of relatively homogeneous neighborhood units and that the environmental needs of city residents become most apparent at this scale.

**Three Neighborhoods** (Greater details of this study are in: Palmer, J.F. 1984. *Neighborhoods as stands in the Urban forest*. *Urban Ecology* 8:229-241.)

In June 1981, 22 representatives of community-oriented service groups, such as the police, parks department and realtors, were interviewed to determine the neighborhood boundaries for Syracuse, New York. During the remainder of the summer, face-to-face interviews were conducted with 261 randomly selected residents in three of the recognized neighborhoods: the Southside, Valley and Westside.

*Social profile.* These neighborhoods have very different social profiles, as seen in Figure 1. More than half of the Southside residents did not graduate from high school and are members of a racial minority. They have significantly lower incomes and are less likely to own their residence. In contrast, residents of the Val-

ley and Westside are more affluent, home owners and better educated. The Westside residents tend to be slightly older and living in smaller households than the Valley residents.

*Environmental condition.* In addition, the interviewers independently assessed the quality of the buildings and yards on the street where the interview was conducted. Again, the differences are readily apparent and significant. The Southside had the oldest buildings, none of which received the highest repair rating. Southside yards were also in poorer condition. Building and yard condition was similarly high in the Valley and Westside. The only apparent difference is that yards in the Westside tend to be more individualized.

*City-wide issues.* Each respondent was asked to evaluate a dozen city-wide issues on a scale from (1) not a problem through (4) a serious problem. Several relevant issues are shown in Figure 2. There is significant variation in the ratings for each issue. For instance, the quality of medical care is not perceived to be a problem, while the cost of living is a serious problem. The pattern for city-wide issues is very similar among all three neighborhoods.

Residents in all three neighborhoods also shared similar residential aspirations. When asked how important a list of residential attributes were, residents from all three neighborhoods

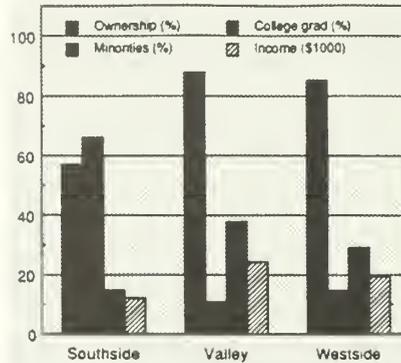


Figure 1. Social profile of three neighborhoods.

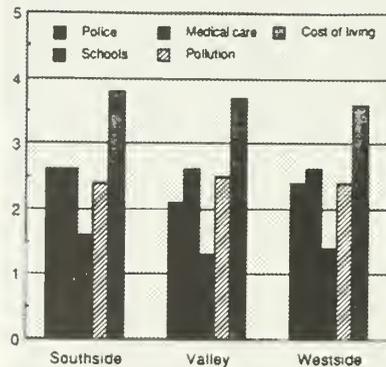


Figure 2. Ratings of city-wide issues from (1) not a problem to (4) a serious problem.

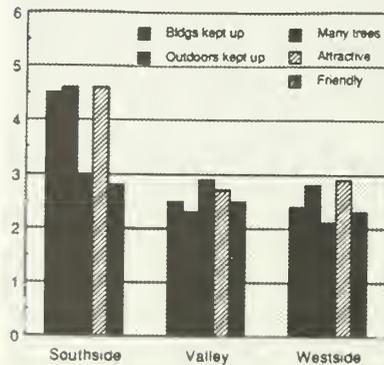


Figure 3. Ratings of neighborhood qualities from (1) highest to (7) lowest quality.

were in agreement about the high desirability of "large shade trees around the house," having "a place for a garden" and being "within walking distance of a major public park."

*Neighborhood qualities.* Respondents were also asked to evaluate the quality of their neighborhood along a dozen dimensions. Most respondents found their neighbors friendly and the number of trees sufficient. However, Southside residents were very sensitive to the poor quality of their neighborhood buildings, the surrounding open space and general attractiveness.

## Source of the Differences

In summary, the respondents in each neighborhood are in substantial agreement about the seriousness of city-wide problems and the desirability of certain residential characteristics. However, their evaluations of their own neighborhoods are significantly different.

There are at least two alternate explanations to these neighborhood differences. First, the neighborhood evaluations may be a function of the respondents' social situation. Or alternately, the difference may directly relate to the quality of the physical environment along the respondents' street. Statistical analysis can be used to identify whether knowledge about their social circumstance or physical environment would improve our prediction of a respondent's neighborhood

evaluation. The results indicate that a respondent's social situation does not help explain his or her neighborhood evaluation. Rather, it is primarily one's immediate street's condition and to a lesser extent one's location in a particular neighborhood that explains a respondent's evaluation.

In other words, people react intelligibly to the condition of their surroundings, and are not simply predisposed to react a certain way because of their social circumstances. Poor persons in an otherwise wealthy and attractive neighborhood will tend to appreciate the desirability of their physical environment even though they are poor. Likewise, wealthy persons in a poor and run-down neighborhood will tend to be critical of the environment. Also, the statistical results indicate that the poor and wealthy tend to be just as appreciative or critical of their surroundings.

These are important and encouraging findings for those responsible for the care of natural environments in the city. First, the variability of many aspects of the urban-nature condition seems to exhibit a geographic pattern related to neighborhoods. There is no reason for them to become overwhelmed because they must approach the urban environment as a monolithic, undifferentiated network of street trees, residential yards, utility rights-of-way and parks. It is perfectly reasonable, as James Byrne suggested, for a neighborhood's parks and street trees to be treated as a

stand in the urban forest. This neighborhood organization also appears to relate well to residents' experiences, since they have different opinions and attitudes towards different neighborhoods. Perhaps the basis of these differences are most important to urban foresters, who manage the physical environment and have little control over the social condition. The major reasons for variation in neighborhood evaluations seem to be related to the physical environment rather than the residents' social circumstance.

This study only suggests the possible importance of neighborhood stands. However, much remains to be done to make it an operational concept in urban planning and management. For instance, more effective criteria need to be developed to delineate stand boundaries. Neighborhoods for this study were determined through interviews with community representatives. Future efforts might benefit from more explicitly incorporating environmental conditions and residents' perceptions into the delineation process. There is also a need for case studies where neighborhoods are treated as stands. The effectiveness of these management plans needs to be evaluated in comparison to existing and alternative approaches. In addition, the priorities of residents concerning natural areas and features in the city need to be explored in greater detail and incorporated into management plans. In this way, residents may

become more willing to share the responsibility for implementing a plan. Such assistance would certainly be welcome by those urban programs which are experiencing shrinking financial resources.

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# Who Can You Turn To?

Bishop, R. C., and T. A. Heberlein. 1979. Measuring the values of extramarket goods: are indirect measures biased? *American Journal of Agricultural Economics*, 61:926-30.

Brush, R., and T. More. 1976. Some psychological and social aspects of trees in the city. In *Better Trees for Metropolitan Landscapes Symposium Proceedings*. USDA Forest Service, Gen. Tec. Rep. NE-22:25-29.

Byrne, J. 1978. A planner's viewpoint on the urban forestry effort. In H. Gerhold and L. Wood (eds). *Proceedings National Urban Forestry Conference*. ESF Publication 80-003, State University of New York, Syracuse, Vol. 11, pp. 672-675.

Byrne, J., and J. R. Bassett. 1978. Vegetation inventories: need and uses. In H. Gerhold and L. Wood (eds) *Proceedings National Urban Forestry Conference*. ESF Publication 80-003, State University of New York, Syracuse, NY, Vol. II, pp. 632-644.

Christensen, H. H., and R. N. Clark. 1983. Increasing public involvement to reduce depreciative behavior in recreation settings. *Leisure Sciences*, Vol. 5, pp. 359-379.

Clark, R. N., J. C. Hendee and F. L. Campbell. 1971. Values, behavior and conflict in modern camping culture. *Journal of Leisure Research*, Vol. 3, pp. 143-159.

Corrill, M., J. Lillydahl, and L. Single. 1978. The effects of greenbelts on residential property values: some findings on the political economy of open space. *Land Economics* 54:207-217.

Cranz, G. 1981. Women in urban parks. In: E. Stimpson, E. Dixler, and M. M. Nelson, (eds.) *Women and the American City*. Chicago, IL: University of Chicago Press.

Dee, N., and J. C. Liebman. 1970. A statistical study of attendance at urban playgrounds. *Journal of Leisure Research* 2(3):145-159.

Driver, B., D. Rosenthal, and G. Peterson. 1978. Social benefits of urban forests and related greenspaces in cities. In *Proceedings of the National Urban Forestry Conference*, Vol. 1:98-113. Syracuse, NY, College of Environmental Science and Forestry. Pub. No. 80-003.

Dwyer, J., J. Kelly and M. Bowes. 1977. Improved procedures for valuation of the contribution of recreation to national eco-

omic development. Water Resources Center Research Report No. 128. University of Illinois, Urbana-Champaign.

Dwyer, J., G. Peterson and A. Daragh. 1983. Estimating the value of urban forests using the travel cost method. *Journal of Arboriculture* 9(7):182-185.

Dwyer, J. F., H. W. Schroeder and R. L. Buck. 1985. Patterns of use in an urban forest recreation area. In *Proceedings 1985 National Outdoor Recreation Trends Symposium II*. Clemson University, Department of Parks, Recreation and Tourism Management: 81-89.

Dwyer, J. F. 1984. Summer use of the Ned Brown Forest Preserve. A report to the Forest Preserve District of Cook County, Illinois.

Emmons, H., et al. 1975. A market analysis for the Cleveland Zoological Park. In: S. P. Lodamy (ed). *Management Science Applications to Leisure Time Operations*. New York: American Elsevier, 340-359.

Fletcher, J. E. 1983. Assessing the impact of actual and perceived safety and security problems on park use and equipment. *Journal of Park and Recreation Administration*, Vol. 1, pp. 21-36.

Fridgen, J. D. 1980. Environment-behavior research: Implications for the study of leisure and recreation behavior. In: Iso-Ahola, S. E., (ed.) *Social Psychological Perspectives on Leisure and Recreation*. Charles C. Thomas: Springfield, IL.

Gibbs, K. C., and J. F. McGuire III. 1973. Estimation of outdoor recreation values. Economic Report 53, Food and Resource Economics Dept., Agricultural Experiment Stn., Institute of Food and Agricultural Science, University of Florida, Gainesville.

Godbey, G., and M. Blazey. 1983. Old people in urban parks: An exploratory investigation. *Journal of Leisure Research*, Vol. 15, pp. 229-244.

Godbey, G., and D. Dunn. 1978. A critique of "Public urban recreation: An investigation of spatial relationships by Lisle S. Mitchell and Paul E. Lovingood, Jr. *Journal of Leisure Research* 10(1):61-67.

Godbey, G., and F. Guadagnolo. 1987. Evaluating urban parks using a marketing technique: Does an ideal exist? In revision. (Final report to U.S. Forest Service submitted 1986.)

Godbey, G., A. Patterson and L. Szwak. 1979. The relationship of crime and fear of crime among the aged to leisure behavior

and use of public leisure services. NRTA-AARP Andrus Foundation, Washington, DC.

Gold, S. 1972. Non-use of neighborhood parks. *Journal of the American Institute of Planners* 38(5):369-378.

Gold, S. 1977. Social and economic benefits of trees in cities. *Journal of Forestry* 75(2):84-87.

Graefe, A. R., J. J. Vaske and F. R. Kuss. 1984. Social carrying capacity: An integration and synthesis of twenty years of research. *Leisure Science*, Vol. 6, No. 4.

Hagerty, J., T. Stevens, P. Allen and T. More. 1982. Benefits from urban open space and recreational parks: a case study. *Journal of the Northeastern Agricultural Economics Council* Vol XI(1):13-20.

Hammer, T. T., R. Coughlin and E. Horn. 1974. The effect of a large urban park on real estate value. *Journal of the American Institute of Planning*, July, 1274-277.

Hayward, D. G., and W. H. Weitzer. 1984. The public's image of urban parks: Past amenity, present ambivalence, uncertain future. *Urban Ecology*, 8:24-243-268.

Hecksher, A. 1977. *Open Spaces: The Life of American Cities*. New York: Harper and Row.

Howell, R. L. 1979. Estimating attendance and use in metropolitan area major parks. *Recreation Research Review* 7(2):21-27.

Jacobs, J. 1961. *The Death and Life of Great American Cities*. New York: Random House.

Joarder, S., and J. Neill. 1978. The subtle differences in configuration of small public spaces. *Landscape Architecture* 68(6):487-491.

Kaplan, R. 1984. Dominant and variant values in environmental preference. In: A. S. Devlin and S. L. Taylor (eds.), *Environmental Preference and Landscape Preference*, pp. 8-11. Connecticut College, New London, CT.

Kaplan, M. 1959. *Leisure: Lifespan and Lifestyle*. Philadelphia, PA: W. B. Saunders.

Keller, S. 1968. *The Urban Neighborhood: A Sociological Perspective*. New York: Random House.

Kitchen, J., and W. Hendon. 1967. Land values adjacent to an urban park. *Land*

Economics 43:357-360.

Knopf, R. 1983. *Recreation needs and behavior in natural settings*. I. Altman and J. F. Wohlwill, (eds.), *Behavior and the Natural Environment*. New York: Plenum Press.

Lee, R. 1972. The social definition of outdoor recreation places. In: W. Burch (ed). *Social Behavior, Natural Resources and the Environment*. New York: Harper and Row.

Lindsay, N. 1978. It all comes down to a comfortable place to sit and watch. *Landscape Architecture* 68(6):492-497.

Lovingood, P., and L. Mitchell. 1978. The structure of public and private recreational systems: Columbia, South Carolina. *Journal of Leisure Research* 10(1):21-36.

Lyle, J. 1970. People-watching in parks: A report from France and California. *Landscape Architecture* 61(1):31, 51-52.

Lynch, K. 1960. *The Image of the City*. Cambridge, MA: MIT Press.

McConnell, K. W. 1977. Congestion and willingness to pay: A study of beach use. *Land Economics* 53:185-195.

Mitchell, L., and P. Lovingood. 1976. Public urban recreation: An investigation of spatial relationships. *Journal of Leisure Research* 8(1):6-20.

More, T. 1984. Municipal forestry: Problems and prospects. *Journal of Forestry* 82(7):417-419.

More, T. 1985. Central city parks: A behavioral perspective. School of Natural Resources, University of Vermont, Burlington.

More, T. 1985. Evaluating and interpreting use data in urban park settings. In: *Outdoor Recreation Trends Symposium II*. Clemson University and National Park Service. p. 103-108.

More, T. Social functions of urban open space. Paper presented at the First National Symposium on Social Science In Resource Management. Oregon State University, Corvallis, June, 1985.

More, T. 1987. The productivity of urban parks. In *A Literature Review. Report to the President's Commission on Americans Outdoors*. Washington, DC, U.S. Government Printing Office p. Urban 45-54.

More, T., T. Stevens and P. Allen. 1982. The economics of urban parks: A benefit/cost analysis. *Parks and Recreation* 17(8):31-33.



USDA Forest Service

- More, T., T. Stevens and P. Allen. 1988. Valuation of urban parks. Paper forthcoming in *Landscape Planning*. In press.
- National Recreation and Park Association. 1974. *Open-Space and Recreation Opportunity in America's Cities*. U.S. Department of Housing and Urban Development, Office of Community Planning and Development, Evaluation Division, Washington, DC.
- Palmer, J. F. 1977. Neighborhoods as stands in the urban forest. *Urban Ecology* 8:229–241.
- Peterson, G., J. Dwyer and A. Darragh. 1984. A behavioral urban site choice model. *Leisure Science* 6(1):61–82.
- Promnitz, L. D., et al. 1976. A system for inventory of recreation use and facilities. Report prepared for the Illinois Department of Conservation, Division of Long-Range Planning by the Department of Forestry. Ames: Iowa State University.
- Robertson, D., and R. Rowntree. 1977. Behavioral significance of millieu: A consideration of two downtown settings. In: *Proceedings of the Conference on Metropolitan Physical Environment*, USDA Forest Service, Gen. Tech. Rep. NE-25:339–407.
- Rutledge, A. 1976. Looking beyond the applause. *Landscape Architecture* 66(1):55–59.
- Schroeder, H. W. 1982. Preferred features of urban parks and forests. *Journal of Arboriculture*, 8(12):317–322.
- Schroeder, H. W. 1983. Variations in the perception of urban forest recreation sites. *Leisure Sciences*, 5(3):221–230.
- Schroeder, H. W. 1986. Estimating park tree densities to maximize landscape esthetics. *Journal of Environment Management*, 23:325–333.
- Schroeder, H. W. 1986. Psychological value of urban trees: Measurement, meaning and imagination. In: *Proceedings, Third National Urban Forestry Conference*, pp. 55–60. Orlando, FL, December.
- Schroeder, H. W. 1987. Dimensions of variation in urban park preference: A psychophysical analysis. *Journal of Environmental Psychology*, 7(2):123–141.
- Schroeder, H. W. (in press). Environment, behavior and design research on urban forests. In E. H. Zube and G. T. More (eds), *Advances in Environment, Behavior and Design*, Vol. 2. New York: Plenum Press.
- Schroeder, H. W. (in press). The experience of significant landscapes at the Morton Arboretum. In *Proceedings, Society of American Foresters Annual Meeting*, Minneapolis, MN, October, 1987.
- Schroeder, H. W., and L. M. Anderson. 1984. Perception of personal safety in urban recreation sites. *Journal of Leisure Research* 16(2):178–194.
- Schroeder, H., and L. M. Anderson. 1984. Perception of personal safety in urban recreation sites. *Journal of Leisure Research*, Vol. 16, pp. 178–194.
- Schroeder, H. W., and L. M. Anderson. 1983. Fear in the parks: Perceived safety and the physical environment. Paper presented at American Psychological Association, Anaheim, CA, August, 1983.
- Schroeder, H. W., and T. L. Green. 1985. Public preference for tree density in municipal parks. *Journal of Arboriculture*, 11(9):272–277.
- Schroeder, T. 1982. The relationship of local park and recreation services to residential property values. *Journal of Leisure Research* 14(3):223–234.
- Smith, P. M. 1962. *The Practice of Silviculture*, 7th edition. John Wiley: New York, p. 18.
- Stevens, T., P. G. Allen and T. More. 1985. Measuring the economic value of urban parks: a cautionary note. *Leisure Science* 7(4):467–477.
- Tolley, G., et al. 1986. Establishing and valuing the effects of improved visibility in Eastern United States. Final report to the U.S. Environmental Protection Agency # 807768-01-0. University of Chicago.
- Tyre, G., and C. Siderelis. 1979. Instant-count sampling: A technique for estimating recreation use in municipal settings. *Leisure Sciences* 2(2):173–179.
- Ulrich, R. S., 1986. Human responses to vegetation and landscapes. *Landscape and Urban Planning*, 13:29–44.
- Ulrich, R. S., and D. L. Addoms. 1981. Psychological and recreational benefits of a residential park. *Journal of Leisure Research* 13(1):43–65.
- U.S. Bureau of Outdoor Recreation. 1974. *The Recreation Imperative*. Washington, DC: U.S. Government Printing Office.
- U.S. Bureau of Outdoor Recreation. 1977. *Natural Urban Recreation Study: Executive Report*. Washington, DC: U.S. Government Printing Office.
- U.S. Forest Service. 1975. *Forest Service Manual*, section 2412.3. Washington, DC: U.S. Government Printing Office.
- vanLier, H. N. 1973. *Determination of Planning Capacity and Layout Criteria of Outdoor Recreation Projects*. Agriculture Research Reports 795. Wageningen, the Netherlands: Centre for Agricultural Publishing and Documentation.
- Weicher, J., and R. Zerbst. 1973. The externalities of neighborhood parks: An empirical investigation. *Land Economics* 49(1):99–105.
- Westover, T. N. 1986. Park use and perception: Gender differences. *Journal of Park and Recreation Administration*, Vol. 4, No. 2.
- Westover, T. N. 1985. Perceptions of crime and safety in three midwestern parks. *Professional Geographer*, Vol. 37, No. 4.
- Westover, T. N. 1985. Perceptions of rule compliance and law enforcement in urban and suburban parks. *Recreation Research Review*, Vol. 12, No. 2.
- Westover, T. N., and J. R. Collins. 1987. Perceived crowding in recreation settings: An urban case study. *Leisure Sciences*, Vol. 9, pp. 87–90.
- Whyte, W. 1980. *The Social Life of Small Urban Spaces*. Washington, DC: The Conservation Foundation.

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Sunday	1st choice # _____ QTY _____	2nd choice # _____ QTY _____	\$ _____

**SPOUSE TOURS**

Thursday #1 America Discovers Columbus	QTY _____ x \$20.00	\$ _____
Thursday #2 "Please Touch"	QTY _____ x \$10.00	\$ _____
Friday #3 Spouse Orientation-Complimentary	QTY _____ x No Charge	\$ _____
Saturday #4 Indianapolis Highlights	QTY _____ x \$25.00	\$ _____
Sunday #5 Eagle Creek Park & Nature Preserve	QTY _____ x \$20.00	\$ _____

**ADDITIONAL TICKETS** (for guests, daily registrants, and full package registrants who wish to supplement their packages)

Additional Banquet (check choice(s))		
<input type="checkbox"/> AFRS <input type="checkbox"/> APRS <input type="checkbox"/> CBM <input type="checkbox"/> NSPR (BKFST) <input type="checkbox"/> NTRS <input type="checkbox"/> SPRE	QTY _____ x \$30.00	\$ _____
EMS Banquet	QTY _____ x \$25.00	\$ _____
Indiana State Fair Social (Oct. 7th)	QTY _____ x \$25.00	\$ _____
"Leisure on the Right Track" Indianapolis Motor Speedway Event (Oct. 11th)	QTY _____ x \$25.00	\$ _____
APRS Awards Breakfast	QTY _____ x \$15.00	\$ _____
Opening Exhibit Hall Reception	QTY _____ x \$15.00	\$ _____
Closing Exhibit Hall Reception	QTY _____ x \$10.00	\$ _____
Student Branch Luncheon	QTY _____ x \$15.00	\$ _____
Historic Hoosier Train Tour	QTY _____ x \$40.00	\$ _____

**SUB-TOTAL THIS SECTION \$ \_\_\_\_\_**

**SUB-TOTAL FROM TOP SECTION \$ \_\_\_\_\_**

**TOTAL ENCLOSED \$ \_\_\_\_\_**

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\_\_\_\_\_ Check Enclosed \_\_\_\_\_ Purchase Order or Payment Authorization Enclosed

\_\_\_\_\_ Master Card or Visa # \_\_\_\_\_ Exp. Date \_\_\_\_\_

Signature (Credit card only) \_\_\_\_\_

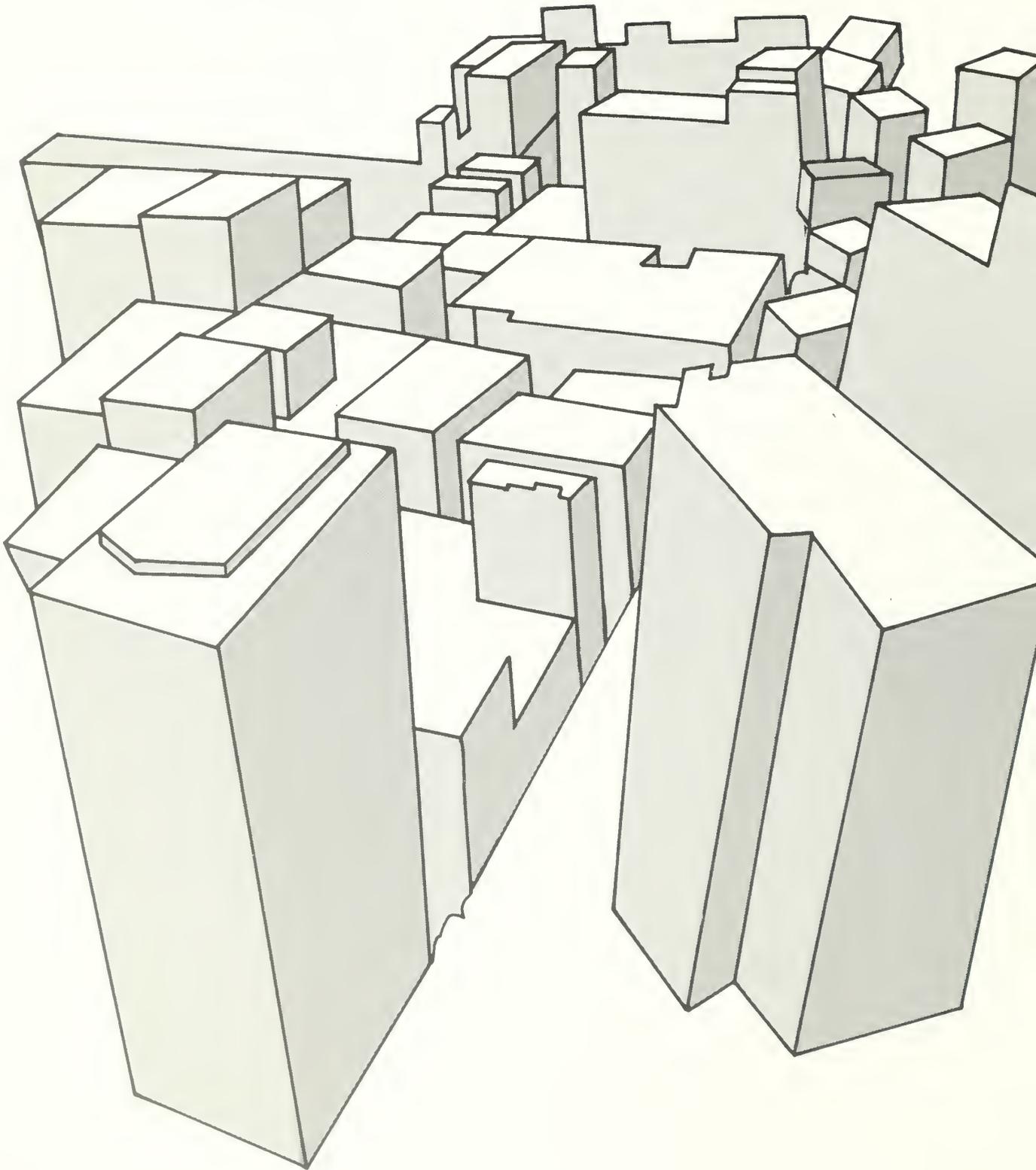
**SPECIAL NEEDS/DIET REQUIREMENTS** (indicate self, spouse or guests)

Special needs/Disability \_\_\_\_\_

VEGETARIAN  CHICKEN & FISH  SALT-FREE  DIABETIC

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# Trends

Volume 25, Number 4, 1988

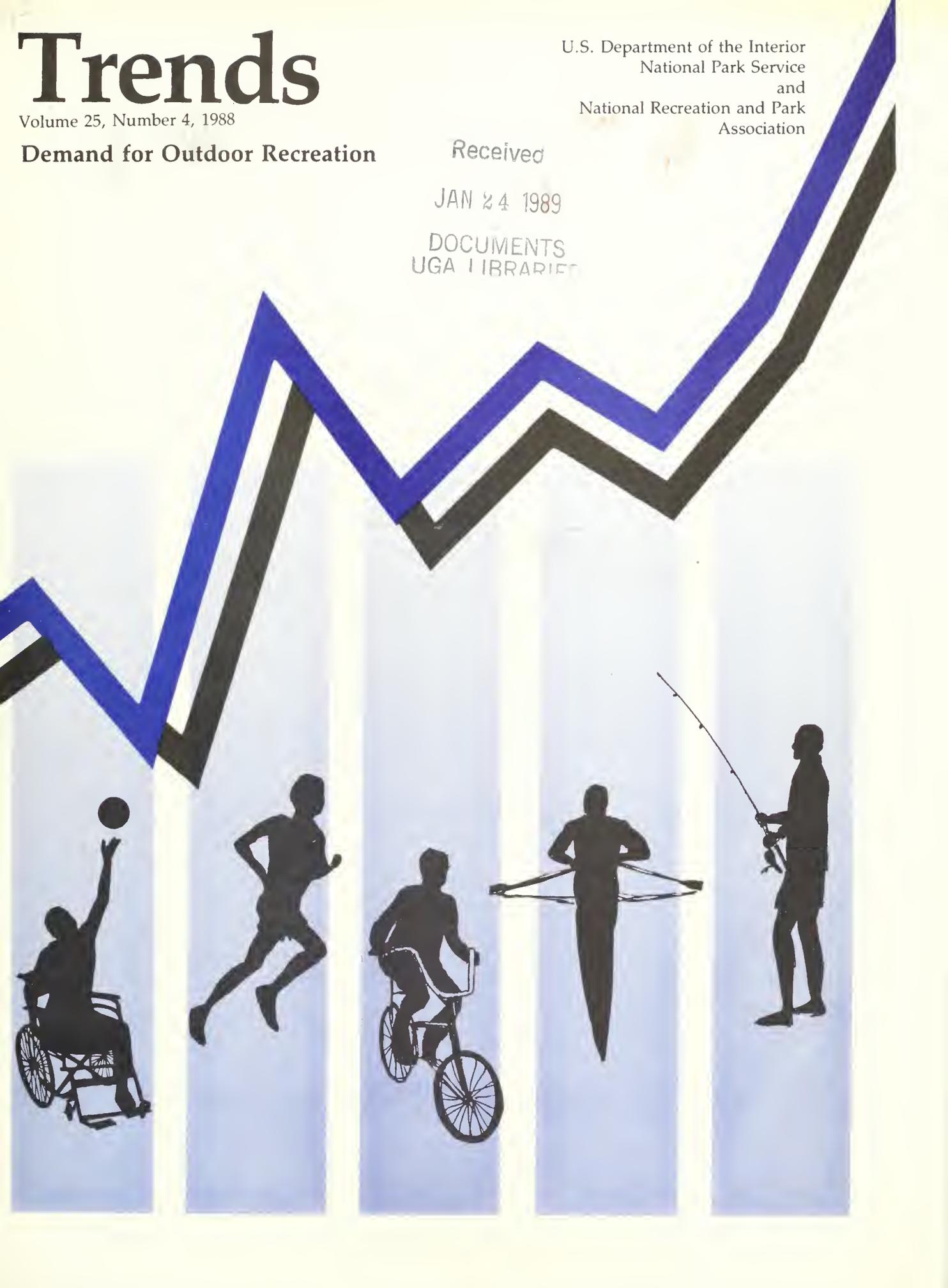
**Demand for Outdoor Recreation**

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## Trends

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The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

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National Park Service

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National Recreation and Park Association

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The character of outdoor recreation in America is changing. In the past two years, considerable activity by recreation professionals has generated new and detailed information on outdoor recreation in the United States. The President's Commission on Americans Outdoors (PCAO) published their reports in late 1986. Those reports were a compilation of information from literally hundreds of sources, including public testimony, literature reviews by experts in specific topic areas and special studies conducted for the Commission.

Earlier this year, "Benchmark 1988: A National Outdoor Recreation and Wilderness Forum," provided an outlet for recreation researchers and planners to present their latest research findings and discuss implications with policy makers. Additionally, the U.S. Forest Service's Resources Planning Act (RPA) Assessment of Outdoor Recreation and Wilderness provides a large amount of new information from many sources on trends, the current status and likely future of outdoor recreation in the United States.

Results of these major efforts are becoming available to recreation managers and the public. To aid this process, two special issues of TRENDS are being produced. The authors contributing to these issues have been influential in providing information for PCAO, the Benchmark Forum and the RPA Assessment. This issue is focused on current and

likely future public participation in outdoor recreation; the Spring 1989 issue of TRENDS will focus on recreation resources available in the United States.

While considering the articles, readers should remember that outdoor recreation opportunities and individuals' recreation patterns do not and should not survive in a world unto itself. They are affected by much broader social changes and concerns. In general, all the articles in this issue reflect broader societal trends, even when not explicitly stated. Among the trends, many of which are discussed by John Naisbitt in his widely acclaimed book *Megatrends* are:

1. *Changes in Demographics*: Not only is the nation's population growing older, but an increasing percentage of the expanding retired population is healthy and vigorous, permitting travel and active lifestyles for many of the over-60 age group. Projections show that 18 percent of the U.S. population will be over 65 years old by the year 2030, as compared with 4 percent in 1900 (Anon 1987a). The post-WWII baby boomers, the largest single segment of the U.S. population, are reaching ages 35-45. Their family and life cycle patterns are much different from those of their predecessors. As a group, they are having fewer children and having them later in life. Larger numbers of them have higher incomes than their predecessors. More of them are divorced or remaining single. Together, these trends result in a smaller average family size (2.75 persons/family in 1980 as compared with 3.11 persons/family in 1970) and more single-parent families, 90 percent of which are headed by females.
2. *Changes in Lifestyles and Cultural Values*: The percentage of women in the workforce continues to grow, as does the percentage of dual-career families. Though there is continued migration to major urban centers, with three-

quarters of the population living in or near metropolitan areas, there is a newer outmigration of some to smaller towns. These people are attracted by new jobs (often high tech or light industry) and a perceived higher quality of life. Though there have been recent economic renewal and population growth in the northeast, a general shift in population to the south and southwest United States continues. Foreign immigration continues at high rates, thus increasing the percent of the non-Caucasian, non-black urban population, particularly persons of Asian and Hispanic descent.

In the marketplace, as well as in other facets of life, Americans are faced with a broad array of multiple options in everything from the cars they drive and the clothes they wear, to their food brands and the restaurants where they dine. These options are provided to meet the needs and desires of diverse sectors of the population. Mitchell (1983) has identified nine general lifestyle categories, indicative of the current U.S. population. Each is characterized by certain value systems as well as behavior and purchasing habits. Marketing specialists further segment Americans into clearly defined groups, each courted by a carefully designed, sophisticated line of products and services. Consequently, it might be suggested that the U.S. population almost identifies the opportunity to select from a variety of options, including outdoor recreation opportunities, as a "right."

3. *Changes in Technology and Information Systems*: Generation of information, speed of its transmission and access to information are expanding at enormous rates. Increased sophistication and use of technology and computers impinge on all facets of life. As discussed by Naisbitt (1982), this technological and information revolution is countered by an increasing need and concern for human interaction and attention to quality of life (labelled high tech/high touch by Naisbitt).
4. *Changes in Governmental Structures*: Current political leaders have encouraged a system whereby state and local governments assume many of the formerly federally-held jobs and responsibilities. Fiscal responsibility has been distributed to the private sector



*People demand to live and work where they also can play and raise children in a quality environment.*

Gail A. Vander Stoep

and telecommunications. The economic system is integrally intertwined with economies of other countries. Industrial production is global, with various natural resources and components of single items being produced in multiple countries. Waste disposal, air emissions, discharges into water systems and floral/faunal changes ultimately have global impacts. (Anon 1987b)

Against this backdrop of social change, the articles in this issue deal specifically with what we believe are currently the most critical topics related to participation in outdoor recreation.

In the lead article, Dr. Gina McLellan and George Siehl provide an interesting commentary on cyclical patterns of government emphasis on recreation, and describe where we are now in this swing of the pendulum.

The following articles describe meanings of and trends in outdoor recreation and use of wilderness areas. Dr. Richard Schreyer discusses what outdoor recreation experiences really mean to people, and presents five major issues that managers of outdoor recreation resources should recognize. Dr. Joseph O'Leary, Dr. F. Dominic Dottavio and Dr. Francis McGuire present shifts in outdoor recreation activity since the 1960s.

Dr. Lawrence A. Hartmann, Dr. H. Ken Cordell and Helen Freilich summarize important recent trends in recreation participation, and focus on the current status and likely future of recreation in the United States. Dr. Patrick Reed identifies other, non-recreational uses of outdoor resources, specifically of wilderness

areas, that supplement and complement recreational uses. Dr. Gail Vander Stoep discusses the renewed interest in and expansion of the roles of interpretive services beyond traditional program functions.

Authors of the final set of articles focus their comments on factors that influence outdoor recreation trends and on implications of these trends. Dr. James Kozlowski presents an important discussion of the major topics related to legal issues in recreation. Dr. John Bergstrom and Dr. H. Ken Cordell discuss the economic importance of recreation to regional economies. Finally, Dr. Dick Schafer, George Moeller and Dr. H. Ken Cordell provide some insight into broader-reaching trends that, though they often are overlooked, greatly influence recreation participation patterns and styles—technological advances.

We would like to thank the authors for their contributions to this issue of *TRENDS*. We hope that you, the reader, find this issue informative and enlightening.

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as well as to nonfederal government agencies. There is a general trend toward more cooperative ventures of all types, including inter-agency operations, public/private ventures and multi-level governmental cooperation. Networking becomes increasingly important in business as well as in government. The American public has been strongly encouraged to increase its volunteerism in a vast array of programs, many of which were previously government-funded operations. (Anon 1987b)

5. *Globalization*: The United States can no longer claim to be a self-contained system, politically, economically or environmentally. Increasingly the country is brought into the web of interconnectedness with countries all over the world. Information nets span the globe, aided by satellites

# Trends in Leisure and Recreation: How We Got to Where We Are

by Gina McLellan, Ph.D. and George H. Siehl

Trend identification and analysis can provide useful guidance to those who plan for, provide or approve and fund recreation areas, facilities and services in the public and private sectors. Consider these statements from a leading business publication:

*There seems to be a major trend away from passive, crowd amusements toward active pursuits that people can carry on independently.*

*What the average man has done has been to go out and find, with the aid of busy manufacturers and businessmen, more things to do than anyone dreamed of a couple of decades ago.*

*Just how much we spend for leisure is an unknown figure. . . . The problem is how to sort out that part of goods and services we buy for leisure use. . . . Perhaps the biggest lack of all is a figure for travel.*

*Longer rest periods could develop a new market for recreational equipment.*

*People don't always choose leisure. In this case, women have chosen to go to work to earn the money to keep up a standard of living that now includes an endless list of things . . .*

*The long weekend has had the most significant impact on our ways and our economy.*

These observations carry a message not only about trends, but about cycles as well, because they are taken from *Business Week* of Sept. 12, 1953, nearly five years before the Outdoor Recreation Resources Review Commission (ORRRC). While these statements are largely operational today in the wake of the President's Commission on Americans Outdoors, they were not so throughout the entire 35 years since they first were written. A principal difference in the situation is that while there was a boom in available leisure time when the article was written, today the amount of leisure time

continues to decline for many people.

## Seventy Years of Change

Dr. Marion Clawson reviewed the scope of change in resource and recreation concerns over the sweep of 70 years in a paper presented at the Benchmark 1988 Symposium in January 1988. He said:

*If love of the outdoors and desire for outdoor recreation have been constant in the two generations from 1900 to 1970, they have been almost the only constants. Nearly every other aspect of our social, economic and technological society has undergone major changes over these 70 years—changes which have directly affected present day outdoor recreation to a major degree.*

He then described the impacts on recreation of some of the most important shifts in five areas: population factors, per capita income, transportation technology, time off the job and recreation technology.

In all the changing years between 1900 and 1970, it was not the ORRRC report nor the federal government nor the outdoor recreation related legislation that dominated the outdoor recreation picture. It was the actions of millions of ordinary people pursuing happiness as an inalienable right through recreation—through individual decisions. The percentage of total population participating in outdoor recreation increased. Those participating in outdoor recreation did so with increasing frequency—they bought recreation clothing and equipment with ever-increasing real income, and they demanded to live and work where they also

could play. The strength of this public attitude led to increasing government involvement in providing recreation resources.

## Outdoor Recreation Resources Review Commission

In discussing the role of private and governmental organizations during this period, Clawson paid particular attention to the work of the Outdoor Recreation Resources Review Commission. He cited three principal consequences of ORRRC:

1. It enormously heightened public awareness of and concern about outdoor recreation.
2. It led to the creation of the Bureau of Outdoor Recreation, a federal agency *not* managing land, but directly involved in outdoor recreation.
3. It led to the creation of the Land and Water Conservation Fund, under which many billions of dollars were provided to federal, state and local agencies to acquire land and develop facilities for outdoor recreation.

The burst of activity following ORRRC included not only the opening of financial assistance to the states and the federal land managing agencies, but the establishment of national systems for wilderness, trails and wild and scenic rivers. This activity also included the initiation of a wide range of research into recreation and natural resource issues, so much so that by the time the President's Commission was es-

established in 1985, the situation faced by staff was the abundance of research information rather than the paucity of data which hindered the ORRRC staff a generation earlier. However, despite the research, we still cannot depict the economics of leisure much better than in 1953.

Dr. Clawson's review of the period from 1900 to 1970 led him to three conclusions. The first two of these speak to us as recreation professionals, but the third addresses us even more as citizens and as individuals. He said:

1. Outdoor recreation has been and will continue to be of great importance in our national life and in the American society.

2. Provision of outdoor recreation opportunity requires the use of many kinds and large tracts of natural resource areas.

3. Change has dominated the history of outdoor recreation in these two generations and surely will continue. The world has changed and will change; if you are to be a vital part of it, you must change also.

## Societal Changes

The variety and extent of change facing us at the present time has been portrayed by Laura Swzak in another paper prepared for Benchmark 1988 (Swzak, in preparation). Among the important changes noted were the 31 percent decline in leisure time over the past decade as measured by Louis Harris Associates, the change in perspective in many

workers who now prefer to work longer hours to receive the income rather than seek additional leisure time, and the shifts in family and household composition and functioning, occasioned by the presence of single parents, two working parents or single-person households. These departures from earlier patterns will have impacts on society generally as well as upon recreation choices and demand specifically.

An important component of change is the increased interest in health noted in her paper. This concern with fitness became visible with the blossoming of jogging, aerobic dancing and health clubs during the 1970s. A consequence of this activity may be a much healthier crop of older Americans in the years ahead. This will be important because we will have so many more older people overall.

Activity for fitness is not universal, however, particularly among the young. As noted in Swzak's paper, "Since 1965, obesity increased 54 percent for school-aged children (6-11 years old) and 39 percent for teenagers." She also noted that the teenagers are "smoking and drinking less than any previous age cohort," which provides some encouragement for the future.

## Environmental Overlays

If healthy individuals are an important component of change in the years ahead, so is the need for a clean and healthful environ-

ment. The environmental concern so evident today largely has evolved since the days of ORRRC. One of the early principals in the Congressional efforts to provide environmental protection legislation was then Senator Edmund Muskie. He recently has described the setting of the mid '60s as follows (Muskie, 1988):

*As we began our work in 1963, we inherited a virtually undeveloped regulatory scene. There was in place a rudimentary waste treatment program authorized at \$50 million a year. . . . Air pollution was widely perceived as strictly a Los Angeles smog problem.*

*Our concerns for the environment did not touch toxics, hazardous wastes, acid rain, the greenhouse effect or the vulnerability of the ozone layer. We did not focus on the deteriorating quality of the nation's groundwater . . . Desertification, deforestation, resource exhaustion, species extinction and climatic changes were not a part of our environmental work.*

As increasing attention focused on the environment during the 1960s, a broad coalition of outdoor groups supported bills to create the national systems for rivers, trails and wilderness. Many of the same organizations supported bills to clean up our air and water, and to establish the landmark National Environmental Policy Act, signed into law in 1970. As public concerns over environmental quality grew, a number of the old conservation groups shifted interests from broad recreation concerns to more specific environmental issues. More attention was paid to setting aside protective units, less to level of funding the states under the Land and Water Conservation Fund. Increasing attention was devoted to opposing new types of outdoor recreation made possible through technology,

even to fighting downhill ski development on national forest lands.

The 1970s shift for conservation organizations was clearly from an outdoor recreation and natural resource agenda to more technical and individual health issues such as nuclear power, the ozone hole, toxic wastes and carcinogens. Earon Davis (1984) noted changes in the public perception of "environment" since the late 1960s:

*First, the environment is moving from the national parks and scenic areas to the neighborhoods. Second, the environment is moving from the great outdoors and into our homes and work places. Third, the environment is moving from an engineering and legal focus to that of public health professionals and "victims" organizations.*

While all of us recognize the importance of addressing the issues on nuclear power, the ozone hole and so on, we must keep sight of the interrelationship of these issues and the need for a clean, healthful environment fundamental to quality outdoor recreation experiences. An awareness of our drift away from the recreation issues provides some of the basis to refocus on outdoor recreation through the President's Commission on Americans Outdoors.

## **PCAO and the Rockefeller Policy Review Group**

As the ORRRC report approached its 20th anniversary, individuals identified, and then organizations began to discuss, the need for a reassessment of outdoor recreation—an ORRRC II. The origins and history of

these efforts are detailed more fully by one of the authors (Siehl, in preparation) in a paper presented at the Benchmark 1988 Conference on Recreation. The eventual consensus was that the time had come to update the earlier findings and look at where recreation was headed into the year 2000.

The 1980 Conference on Renewable Natural Resources, sponsored by the American Forestry Association and other resource and environmental groups, provided the first public offering of the idea of a new ORRRC. Then, in 1982, Laurance Rockefeller, who had chaired the ORRRC, underwrote a reconnaissance of the situation by establishing an Outdoor Recreation Policy Review Group. Within six months the group completed its work and issued a report, with its main recommendation being "that a new Outdoor Recreation Resources Review Commission be created by act of Congress as was the original ORRRC."

When legislative efforts failed to pass a bill that would authorize a new ORRRC, in 1985 President Reagan signed Executive Order 12529 to establish the President's Commission on Americans Outdoors (PCAO). As a presidential commission, all 15 members were appointed by the President, including eight sitting members of Congress.

## **PCAO Results**

Five central themes of recommendations can be found in the

final report of the President's Commission on Americans Outdoors:

1. A sense of urgency for the state and local levels of government to adopt land protection measures, establish greenways, and provide more urban recreation opportunities;
2. Support for decentralization, stressing grass roots initiatives, to build a "prairie fire" of local action;
3. The need for continued federal funding through a Land and Water Conservation Fund (LWCF) trust fund, possibly of \$1 billion per year;
4. Suggested creation of an institution, to be a national broad-based supporter of recreation issues; and
5. Creation of partnerships to ensure public and private cooperative efforts.

A measure of the Commission's impact may be sought in reviewing what has been done with its work and recommendations. Initial delays in implementation were due to the lawsuit filed by the Center for the Defense of Free Enterprise, with later delays caused by uncertainty on the part of the Administration on how to treat the report and recommendations. The PCAO report has been reviewed by the interagency Domestic Policy Council in Washington, but with very little information on this review made public at the time of this writing.

Notwithstanding the lack of a

position on the PCAO recommendations from the Administration, the Congress is proceeding independently on several of the items requiring federal action. Specifically, Congress has enacted a permanent increase in National Park entrance fees and a 25-year extension of the LWCF. Also, bills have been introduced by Representative Udall and Senator Chafee with co-sponsors to convert the LWCF to a true trust fund as recommended by PCAO.

## State, Local and Non-Profit Reactions

State and local governments have moved aggressively since PCAO completed its work, particularly in the matter of securing increased funding for park and recreation land acquisition and facility development. The most noticeable of these efforts have been associated with bond referenda in 1986, 1987 and 1988, but also in funding initiatives by state legislatures.

In Maine, for instance, an outdoor recreation commission was formed, in part, in response to the PCAO request that each state establish a parallel commission to the national effort. The Maine commission recommended a \$50 million bond issue for land acquisition and open space preservation. The Maine legislature reviewed this proposal and agreed to place a \$35 million bond question on the ballot in 1987. The measure passed with 65 percent of the vote, approving a land-protection bond issue ap-

proximately 10 times the size of any single similar bond issue in the past.

Similarly, Rhode Island in November 1987, approved a \$65 million bond issue by a 4-1 margin at the same time that 34 communities in the state were approving an additional \$61 million for land protection and acquisition. The approval margins for these local efforts were also large.

The trail community was one of the most active and consistent participating interest groups in the work of the PCAO. A rails-to-trails coalition has been organized to support implementation of the trail expansion recommendations of the Commission, and to assist in getting local governments to create greenways. Reports indicate that state and local governments are already moving to establish greenways and similar corridors.

## The Future?

Much of what we see in the trends leads us to recommend that we consider the future in terms of "change, time and distance." Change seems to be the dominant factor in our personal and professional lives. Time, especially leisure time, is arguably becoming a scarcer commodity and the public perception is clearly that we have less leisure. The shorter distance traveled for recreation is a function of the perceived lessening of available time.

The interrelationship of these

three elements in the years ahead portends a growing emphasis upon "close to home" for many Americans in recreation and in other aspects of their lives. The "close to home" phenomenon may pose one of the greatest challenges in providing and managing public and private recreation opportunities close to the people in the years ahead. It may also allow an opportunity to better serve those who do visit the more distant resource lands, and to restore the natural qualities of those areas which have been heavily used, but underfunded for management and protection, in recent decades.

In the decade ahead, recreation managers, researchers and policy makers will find need to cope with rapid change; recreation resource concerns increasingly will be people issues and not resource issues alone. People and society change faster, and more erratically, than do the natural resources with which we are professionally concerned. If, through the growing efforts to identify and analyze trends, the recreation profession can look to the year 2000 and beyond with people in the forefront, proper care of the resources will surely follow.

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*Gina McLellan, Ph.D., is an Assistant Professor at Clemson University, Clemson, South Carolina. George Siehl is an analyst in environmental policy with the Library of Congress's Congressional Research Service in Washington, D.C.*

# Social Psychological Aspects of Outdoor Recreation

by Richard Schreyer, Ph.D.

## The Meaning of Outdoor Recreation

A few years ago the thought of understanding psychology for purposes of recreation resource management would have seemed somewhat bizarre. As a result, we have turned out cadres of technically proficient managers who have a strong understanding of the biological and physical components of their resource, but who cannot figure out how to respond to all these demands from the public. In short, we have ignored the human component of the resource. This is ironic considering the fact that the fundamental definition of a resource is something that is of value to humans.

What can an understanding of psychological principles of human behavior do for recreation resource managers? Recreation consists of humans behaving—it is the very nature of the beast. But the significance of understanding recreation behavior is the realization that it is not the behavior itself which defines the resource, but the psychological meaning of that behavior to participants. In essence, this psychological meaning defines the product produced by recreation resource management.

The two basic questions we need to be able to answer in order to understand the nature of outdoor recreation are: 1) Why do people *behave* the way they do? 2) What is that behavior's *meaning*?

Behavior is everything that is



Kathleen L. Andereck

*The wilderness experience is more a matter of personal meaning and fulfillment of unmet needs than of the activity itself.*

pertinent to recreation. It can include the *activities* people engage in, the *environments* chosen for pursuit of those activities, the *social groups* with whom people desire to share their recreation, and behaviors seen as *problems* to management, whether in terms of unacceptable impacts, unsafe behavior, conflicts or depreciative acts.

Meaning is the psychological function of recreation, what the person "gets out of" the behavior. A knowledge of the link between behavior and meaning tells us what recreation is all about. The bottom line in recreation management is being able to make that connection. What are

people doing, and why are they in fact doing it?

## Needs and Outdoor Recreation

The best place to start is at the beginning. Since recreation is essentially a subset of human behavior in general, we need to know why people do what they do. Three principles summarize the points of interest (Tocher 1974):

1. *Human behavior is goal-directed.* All behavior is the result of a person making a decision that a particular course of action would lead to some desired outcome, or the attainment of a goal. These "goals" usually are referred to as the needs we seek to fulfill. The concept of need is a difficult one to handle, as there is no strict definition of just what a need is. We could say that virtually anything that causes us to act is a need, but that does not help us very much. However, for the purpose of this article, we will assume that need-fulfillment is the goal toward which all behavior is directed.

2. *Needs vary at different levels of organization.* Because the concept of need is plastic, it can cover a range of goals toward which people direct their actions. Some needs are basic to human survival, such as the need for food, while others are much more intangible, such as the need for status, and are not shared by everyone. Many needs may seem totally contrived, such as the

need for a VCR. Thus, if we are to understand the role of need in affecting human behavior, we must be careful how we organize the universe of needs we are studying, and we must keep in mind the distinction between the *process* of need—fulfillment (seeking food for purposes of survival) from the *content* of that process (the need for a pizza).

3. *Human behavior is "rational."* The word rational is in quotes because we are all aware of people we know who "act irrational," and we are continually reminded of the dumb things we ourselves do. However, rationality as used here has a specific meaning. In a situation in which a person has to make a decision about fulfilling a need, he or she will weigh the information at hand in assessing the probability that various behaviors known to the individual will actually fulfill the need. The person will then select the behavior which, given the information available, is seen to be the *most likely* to result in fulfillment of the particular need. The key here is that behaviors represent the result of a decision process, and when we see a particular behavior, it represents the course of action seen to be most likely to fulfill a specific need.

How do we know what needs a person is seeking to fulfill when we watch his/her behavior? As a general rule, we can say that if a person is in a situation of free choice, he/she will seek to act on those needs which are most pressing at that particular

point in time. Further, the person would be acting directly on that need, and we would know what the person was trying to do merely by watching his/her behavior. Of course, we are aware that we live in a world of high constraint, and there are few situations in which we can exercise totally free choice. In our highly constrained society, we are often not very sure about what needs a person is fulfilling by undertaking certain behaviors.

This leads to a consideration of recreation. While there is virtually no situation totally constraint-free in our society, we define the concept of recreation by the very fact that it represents time when we are free to choose our own behaviors. This has two implications. First, it suggests there will be a more direct correspondence in recreation between behaviors we observe and the needs people are seeking to fulfill through those behaviors than in other more constrained aspects of life. Thus, we can learn a lot about need-fulfillment by watching recreation behavior.

Second, it is useful to consider what needs will be acted on during recreation. Since it is a situation of relatively free choice, we assume people will act on those needs which are most pressing. What needs are those likely to be? In general, they will be needs that have not been met during the more constrained aspects of day-to-day life. This is significant as it suggests that recreation is the *opportunity to fulfill unmet needs*.

Rather than being a casual activity of little importance, recreation plays a potentially very important role in our lives in providing a medium for attainment of our unmet needs. This becomes even more important as our culture becomes ever more complex and constrained, as the itinerary of unmet needs likely becomes more pressing. Thus, recreation has the potential (which of course is not invariably taken advantage of by all people) to play a vitally important role in fostering the well-being of citizens.

In the long run, such behaviors may provide substantial benefits to the individual and to society. While we know that recreation is beneficial, we are only now beginning to document those benefits in any systematic way (Schreyer and Driver, 1988). A benefit may be considered an improved condition of the individual resulting from recreation participation. Some of the most important benefits are personal development, social bonding, therapeutic/healing benefits, physical fitness/health, stimulation and independence/freedom (Driver and Brown, 1987).

Recreation can fulfill a tremendous range of needs. This underscores the tremendous diversity with which persons are using leisure pursuits. Recreation is much more than relaxing or having a little fun. It can be a very serious and demanding pursuit. Further, more people are seeking to use our resources for pursuit of these diverse needs, suggesting that

demands for more specialized and non-traditional opportunities will be greater than ever before. Failure to respond to these needs can lead to serious questions concerning the equity, not to mention the rationality, of recreation management.

This issue of TRENDS suggests that we must be particularly careful as to how we respond to these demands in terms of our own biases and preferences. Recreation administrators are in the position of having to make the decision as to which opportunities will actually be provided. Obviously, it is not appropriate for recreation managers to respond to all demands; we truly cannot be all things to all people. However, we have to balance that with the recognition that resources are managed to provide benefits to the public, and we are responsible for seeing that management goals are in fact geared toward the public interest.

## Outdoor Recreation as an Experience

### *The Tyranny of Terms*

In order to understand the phenomenon of recreation from a psychological point of view, we need to clarify certain terms. We normally think of recreation as an *activity* such as hiking, fishing, picnicking, etc. However, a little thought immediately reveals that such a descriptor is not very useful for dealing with the "product" to be managed. The "activity" of fishing may be practiced in many different ways, from trolling for

marlin off the Florida Keys to sticking a worm on a hook and dunking it in a pond in search of crappies, to championship dry-fly fishing on a blue-ribbon trout stream.



Gail A. Vander Stoep

*Some people prefer solitude in their outdoor recreation experiences while others prefer a social experience.*

Further, when I go hiking, I may also be going camping, fishing, photographing and sightseeing. There is too much diversity in the things people do in recreation for using activity in anything more than a broadly descriptive

way. How do we get a better handle on the concept then? First, it is important to recognize that what goes on in recreation involves many behaviors which are beyond the immediate pursuit of hunting or skiing. One has to prepare for the trip, travel to the site, return home, etc. This is significant to realize because while the manager may only see the on-site behavior, the person considers *the whole set of behaviors* as part of the recreation. Thus, it is useful to think in terms of recreation *engagements*. The engagement is defined as anything the person does from the time he or she decides to participate in recreation until he or she goes off and does some other behavior (Drive and Tocher, 1974).

Perhaps the most important thing we can recognize about recreation is that it is an *experience*. We see the overt behaviors that we describe as participation, but the real significance lies in what is going on in the person's mind. The person selected to engage in that particular behavior because he rationally decided that it would be the best way to fulfill the needs that he wanted to act on.

### *Evaluation and Expectation*

That means the whole process of recreation is one of evaluation. We are continually gauging what we want to encounter with what we actually do encounter. Satisfaction is essentially the state of feeling good because things are going the way they should be. Thus, while we are participating in recreation, we are "experienc-

ing" it; that is, we are processing information in our minds to see if what is going on is meeting our expectations. The behavior and the environment have meaning only to the extent that they provide the opportunity for fulfillment of needs. The need fulfillment is thus the "product" of recreation resource management, not the participation itself. It is what the person experiences that participation to be.

In order to understand the process of management for recreation, we must understand *the experiences people are seeking* and the extent to which the recreation opportunity provided facilitates or hinders the attainment of the desired experience. If we do not do this, no professional recreation management is ever possible, because we are not dealing with the *product*. As an example, consider a situation in which two backpackers have entered separately a small alpine valley to camp. The first one came there because she wanted a solitude experience; and she can't have one because someone else is camping in the meadow. She is disappointed and vows never to return.

The second person came there because he was looking for a social experience and is disappointed because there is only one other camper in the valley who won't even talk to him! Thus, he sits there and grumbles, vowing never to return. At this point the resource manager comes by and says, "Ah, two visitor days of

recreation benefits for the public!"

### *Management for Experience*

It would be easy to argue in the above example that it was not the manager's fault that the people were unhappy, that he cannot control what people want and where they turn up. This is true in the sense that we cannot *guarantee* people a particular experience. The recreationist is ultimately in control of that. Rather, the manager is in the business of providing *opportunities* for experiences, managing the resource in such a way that it will maximize the likelihood that persons seeking a particular type of experience will actually get it (Driver and Brown, 1978). This is a particularly important notion, for it requires that managers define which experiences they are managing for. If they do not, then the process of recreation management will be self-defeating.

Managers can in fact have a lot of influence over people's capacity to attain desired experiences. Consider the previous example. The manager could have declared that the valley was to be managed to *provide the opportunity* for a solitude experience. In order to attain that, a use limit of one camping party per night is enacted. We cannot control the behaviors of others, of course. Thus, the person seeking the social experience could apply for and receive the permit for the valley. But he will do so knowing full well there will be no one else up there, and that his expecta-

tions most likely will not be met.

Alternatively, managers could decide that the valley is to be managed for a social experience. This could be facilitated by increasing access and information about the valley, and perhaps providing certain types of facilities. The person seeking the solitude experience could still go up there, but she would do so knowing she could expect to find lots of folks. The important point is the manager must make a decision to provide a certain type of experience. The previous example shows that managing for both types of visitors, while ostensibly the most democratic, really works toward the satisfaction of neither.

## **Basic Components of the Recreation System**

### *A Simple, Complex System*

The study of recreation behavior is tremendously complex, and its implications for recreation resource management and planning are extremely far-reaching and diverse. However, the basic relationships concerning the way the whole set of pieces we have been talking about fit together is basically simple. Figure 1 provides a very simple illustration of these pieces.

People make decisions to engage in a certain set of behaviors in a particular environment when they recreate. The environment is selected because it is perceived by the person to possess setting attributes which will allow the

desired behaviors to be pursued. By engaging in those behaviors in that environment, the person will have a certain experience, which represents the fulfillment of needs which motivated the behavior in the first place. Different behaviors in different environments will work to fulfill different needs.

#### *Behavior and Management*

The process of recreation resource management and planning becomes one of inventorying the environment with the question "Given what we have, what types of behaviors are possible, and what needs can we fulfill through the provision of recreation opportunities?" This must be carried out in light of looking in the other direction and asking "What are the needs for pursuit of which particular behaviors that exist out there in the public, and to what extent is our resource capable of maximizing public benefit through the provisions of those various opportunities?"

One piece of the puzzle which we have not touched on is understanding the link between need fulfillment and behavior. That is, how do we know just what behaviors fulfill just which needs? This could become an overwhelmingly difficult task when we consider all the different types of needs people are seeking to fulfill in recreation, and all the different behaviors possible. We need to find some useful way to reduce the complexity out there.

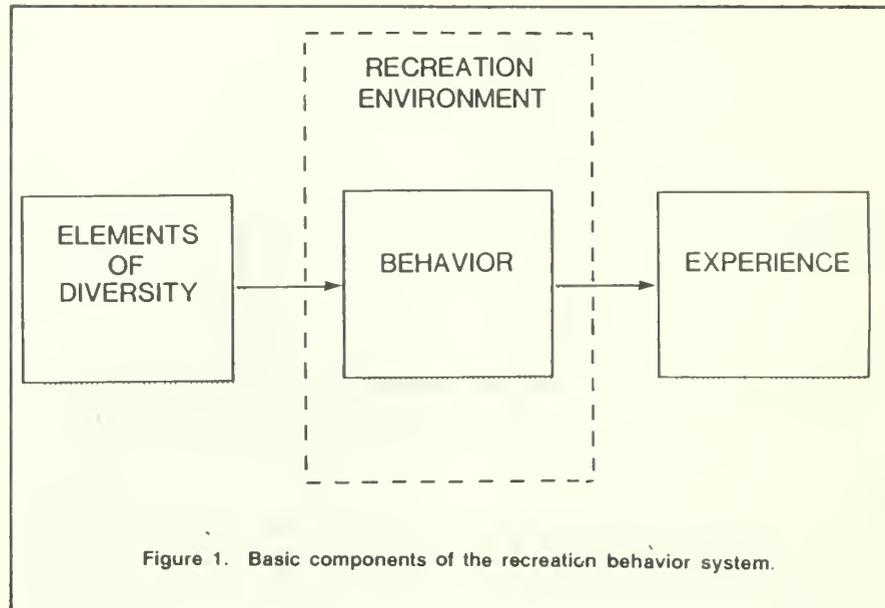


Figure 1. Basic components of the recreation behavior system.

#### *Understanding Diversity*

While it is true that people are different, we are fortunate in the realization that people are different in similar ways. Thus, we tend to reflect certain values with behaviors that are shared by members of our own particular social group. People develop identities with certain values, and the behaviors associated with those values we tend to describe as *lifestyles*. Thus, while the potential for differentiation is infinite, people tend to share attitudes, values and behaviors. This means that when certain needs are to be fulfilled, there will be a more or less predictable set of activities chosen to fulfill those needs, and those activities will be defined in terms of the behaviors seen as appropriate to that segment of society.

The box in Figure 1 labelled "elements of diversity" repre-

sents this focus. Our goal as planners and managers is to seek those elements "out there" that affect the different behaviors which will be selected to fulfill various needs. We need to find the groupings or clusterings of people, such as by lifestyle, which will be most useful in representing that diversity. In so doing, we are tapping the true nature of demand for recreational opportunities, for we are seeking to understand 1) who is out there, 2) what are the unmet needs they will most likely want to act upon in leisure settings, 3) what behaviors will they select to fulfill those needs, and 4) what attributes of the setting are necessary to provide opportunities to engage in those behaviors? When we understand these relationships, we will truly understand the recreation resource.

Of course, we are just begin-

ning to describe these relationships, so our ability to go out and put them into operation is severely limited. However, it is the understanding of the whole, and the necessity to carry out this process, which becomes increasingly important as time goes on.

## Social Psychological Issues in Outdoor Recreation

There are many substantial challenges that are increasingly confronting outdoor recreation planners and managers. These challenges are not subject to easy resolution. However, an understanding of the social psychological forces underlying recreation participation can help us become more sensitive to dealing with these issues. Some of the issues are:

1. *Diversity.* Perhaps the biggest challenge we face in the public provision of recreational opportunities in the future is to meet the diversity of demand that exists and will continue to grow. We are fortunate to have a very diverse resource base with which to meet the challenge; the only question is how. The diversity in demand is coming from many different directions, from non-traditional users, from formerly disenfranchised populations, and from newly emerging ethnic and other minorities. It is also coming from the greater variety of types of recreational pursuits being sought, and from a higher degree of specialization within activities. This diversity is

likely to increase.

2. *Equity.* The provision of recreational opportunities involves the provision of human benefit. Closely linked to the above issue is the challenge of being able to design our recreational opportunities to be fair to the various segments of our society. People do not have equal access to opportunities, or equal capacities to engage in them. However, a commitment to effective recreation planning and management must be vitally concerned with fairness and with a concern for ways of overcoming barriers to participation.

3. *Conflict.* Given an increasing diversity, it is inevitable that different needs will clash, and that these will likely grow in the future. We cannot avoid conflict. However, we must increasingly pay attention to both the causes and outcomes of conflict. Recreation managers must be sensitive conflict managers as well.

4. *Change.* We exist in a rapidly changing socio-cultural climate. Our population structure is changing, the composition of society is changing and our values are evolving. Technology is having a tremendous impact on the types of toys people are bringing with them to the outdoors. This suggests a particular challenge for future planning to be able to be *flexible* and *adaptable* to that change.

5. *Long-term benefits.* We have been focusing on immediate need fulfillment and recreation. How-

ever, it is likely that continued opportunities to engage in satisfying recreational pursuits provide substantial long-term benefits to the individual and to society as well: greater physical and mental health, better productivity, family stability, cultural pride and identification. While we can say these things intuitively, we have no real sense of the true value of providing recreational opportunities to our culture. Perhaps one of the most important things we can do is to attempt to more systematically examine and document what those benefits are. Recreation too often gets trivialized as merely "fun and games." Yet it very likely in the long run is the stuff that keeps us afloat.

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# Participation Shifts in Outdoor Recreation Activities

by Joseph T. O'Leary, Ph.D., F. Dominic Dottavio, Ph.D. and Francis A. McGuire, Ph.D.

At the 1985 National Outdoor Recreation Trends Symposium, the importance of looking at recreation change was underscored. A persistent upward trend (but at a decreasing rate) in visitation to public recreation areas (Clawson, 1985), a democratization of leisure travel and increase in the role of the private sector (Van Doren, 1985), alteration in leisure ethic and lifestyle, worklife and attitudes, a rise in dual income households, aging of the population, budget and funding constraints, and technological change (Hornback, 1985; O'Leary, 1985) were examples of issues identified that would impact recreation and leisure opportunities. Since the form of recreation in the future will partially resemble the inheritance of the past, it will be useful to examine how that inheritance has been changing by looking at one measure of recreation involvement—recreation activities.

During the past 25 years, there have been several attempts to monitor the outdoor recreation participation of Americans. In this article we will compare nationwide data collected since 1960 to identify relative changes in important outdoor recreation activity participation.

Most recently, the 1982-83 Nationwide Outdoor Recreation Survey (NRS) was completed under the guidance of the National Park Service in cooperation with the U.S. Forest Service, Bureau of Land Management and the Administration on Aging. Questions dealing with activity partici-

pation were designed to be as comparable as possible to the 1960 Outdoor Recreation Resources Review Commission participation surveys to ascertain change over the approximately 25 years between surveys.

In 1986, another survey dealing with recreation participation was conducted by Market Opinion Research for the President's Commission on Americans Outdoors. Extensive surveys also have been conducted by the U.S. Fish and Wildlife Service describing in great detail the hunting, fishing and non-consumptive participation of Americans. Finally, the Gallup Survey has been asking basic questions about outdoor recreation activity participation since 1959, providing some basis for examining change through the '80s.

## Observations About the NRS Survey

The 1982-83 Nationwide Recreation Survey showed that almost 90 percent of Americans participated in some form of outdoor recreation. For those activities that are comparable with the 1960 ORRRC survey, almost all indicate that the rate of participation has increased. However, there are a few activities in which a small decline (2-4 percent) or no change in the rate has occurred. Care must be taken in thinking about this decline in the period since 1960, since there has been a substantial increase in the nation's population in the interim. A 10 percent national participa-

tion rate in 1960 and again in 1982-83 translates to a change of five to six million in the number of participants involved in that pursuit. This same interpretation underlines the impact on resources when both a rate increase and population change are factored into the deliberation.

A second issue, the emergence of new activities, must also be considered. If we look at the activities in the 1982-83 survey that were not considered in 1960, we are talking generally about opportunities that are "new" or which were so limited in 1960 they were unimportant. The observation we must make interpreting the results from the recent surveys is that there are many more activities that people identify, and our deliberations of the future should recognize that these will continue to emerge.

## Market Opinion Research Survey

The results from the Market Opinion Research Survey done for the President's Commission on Americans Outdoors appear to show high participation rates for most outdoor recreation activities. In the reports that were prepared by the firm for presentation (Market Opinion Research, 1986), much of the focus for displaying participation was on those participants who reported participation "often" or "very often." In those cases where a direct comparison could be made between activities in the three surveys, the MOR data were



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Several recent national surveys have provided insights into changes in outdoor recreation participation

high (Table 1). If the analysis had also included those who reported participating “somewhat,” the values would have been even higher. Perhaps the most important information to be garnered from these participation values is that the relative ranks of the activities are the same as that seen in the NRS information.

Another important finding from the MOR survey is that activities cluster together and can be interpreted as a “bundle” rather than as individual activities. Five of the six activity groups identified in the data analysis are of interest—spectator outings (76 percent participate often); fishing, hunting and horsepower (37 percent participate often); observing nature (31 percent participate often); water and golf (48 percent participate often); and winter sports (11 percent participate often). In addition, the survey used motivational factors to identify five types of peo-

ple participating in outdoor recreation. They included excitement-seeking competitiveness (16 percent); get-away actives (33 percent); fitness driven (10 percent); health conscious sociables (33 percent); unstressed and unmotivated (8 percent).

Although market research firms commonly use these kinds of grouping strategies, it is unusual to see them in studies describing the public sector recreation environment, particularly in surveys at the national level. Although somewhat of an oversimplification, the excitement seeking competitiveness and the get-away actives (40 percent) are probably most susceptible to those kinds of recreation found on lands managed by the land managing federal agencies like the Forest Service, BLM and some components of the National Park System. The other recreation groups could seek opportunities closer to home. This

emphasizes the role of the local park and recreation department or a private sector firm.

The key observation here is that 92 percent of Americans appear to seek some type of outdoor recreation opportunity. The firm concluded that the data pointed out some important findings that had implications for the future. First, Americans consider themselves to be outdoor people. They report using parks a great deal. The people of the “baby boom” generation appear to have active outdoor lives, can be found overrepresented in the “get-away active” motivational group and report great interest in 2-3 day and long weekend vacations. These persons are not the same as those who have gone ahead of them, but they are particularly interested in park usage and participation during the parent life cycle stages. While their activities may change with age, there is every indication that

what they do will occur at higher levels than those of their predecessors.

If adult participation affects the things their children do, then the children of these groups should also be expected to participate at high levels. However, what the baby boomers choose to do may not necessarily include all the same activities their parents did, and if the activity is the same, the way it is done may not be. This issue will become extremely important in the years to come.

## Gallup Leisure Activities Index

The Gallup Poll has been involved since 1959 in asking Americans what "sports" they have been involved with during the past year. For at least some of the activities that were described in the surveys discussed above, Gallup describes trends in participation. In general, the rate of participation is very similar to the rates from the NRS survey (comparing 1982-83 NRS data with 1983 Gallup data) and the 1960 ORRRC survey (comparing ORRRC with the 1959 Gallup). When the 1986 Gallup is compared with the MOR survey, the Gallup data tends to show much lower participation, and the participation rates are very similar to those identified in the NRS.

The findings underline what was observed with the other surveys—there has been substantial growth in outdoor participation in the past 25 years, but the sharpest changes occurred during

the '60s and the '70s, with some levelling off since then. The most important factors affecting participation include age, income, college education and business or professional employment. The data reported reinforce the MOR results, suggesting that the baby boomer group is extremely active and will continue to be a major force in the future of outdoor recreation.

Perhaps the more important observations to be made from the contemporary Gallup results are that while there are some gender differences, the eight favorite activities identified separately by males and females tend to differ in rank rather than in type of activities done.

## 1980 and 1985 Fish and Wildlife Surveys

The 1980 and 1985 Fish and Wildlife surveys of Hunting, Fishing and Wildlife-Associated Recreation provide some additional information on the magnitude of the wildlife-related opportunities. Since the 1985 data have only recently been released, it is difficult to do more than report a few general changes. In general, comparison of the two surveys indicates that there has been a significant increase in the number of people fishing and in the rate of participation; a continuation in the decline of hunters; and growth (+19 percent) in the number of non-consumptive wildlife users (74 percent of the adult population indicating some degree of interest and 61 percent



*U.S. Fish and Wildlife surveys show a significant increase in the number of people fishing and in the rate of participation.*

Kathleen I. Andreck

having a primary interest) (Mangun, 1987).

Although non-consumptive use could almost be characterized as being pervasive because of the large number of Americans reporting interest, the group most highly represented are those in the 35-45 year age group. This is of particular interest since this was the same age group associated with the top end of the baby boomers that were identified as being so involved in outdoor recreation in the earlier discussions of participation. The highest participation rates for hunting were in the 16-24 year age group and for fishing it was 25-34 years of age.

## Looking to the Year 2000

From a historical perspective, people have always tried to guess or predict a favorite future. However, according to institutions that are quite involved with strategic planning, the real problem is not in selecting a favorite future, but in identifying the trends, events, factors, forces and other elements that will define alternative futures and impact the activities we've been looking at. Based on patterns that have been identified in the activity analysis, the following trends and major changes in lifestyles and basic demographics will substantially alter the demand for and effective supply of recreation opportunities.

1. *America is aging.* In 1910, the number of people in America over 65 years of age was less than 4 percent; in 1980 this proportion had risen to 11.2 percent. According to the U.S. Bureau of the Census, by the year 2030, 20 percent of the population will be 65 or older. Those 85 and older are the fastest growing part of the older generation—growing by 141 percent since 1960. Collesana (1984) suggests that by 1990 the life expectancy for women could increase from 84 to 92 years.

2. *Population growth is occurring most rapidly in the South and West and in rural communities.*

3. *Immigration into the United States will continue.* The immigrant population is growing faster and is younger than the

general population. It has been suggested that these new immigrants will not go the "melting pot" route; rather, cultural diversity may be the new "Americanization."

4. *We are in the throes of a demographic revolution of working women.* According to John Naisbitt, authority on global trends, we are moving to a day when virtually all women will work except for a few months or years when they are raising children full-time. Today's women workers are re-inventing both career patterns and motherhood—and etching their new lifestyles on all aspects of society. Some of the more revealing figures associated with this shift are:

a. In 1980, in 45 percent of couples, both spouses worked full time. By 2000 it will be 85 percent.

b. The number of married working women with children under age 6 is increasing rapidly. This constitutes an enormous experiment on the impact of reduced parental supervision on children.

c. According to the Bureau of Labor statistics, for the first time professional women outnumber professional men, even though women account for only 44 percent of the work force (*U.S. News & World Report*, 3/31/86).

5. *The basic family unit is in evolution.* According to the American Council of Life Insurance, over half of the young children alive today will spend some time in single parent families before age

18, and one in two will marry and divorce.

Another important change in the family unit is household size. The average household size is decreasing (3.11 people in 1970 to 2.75 people in 1980). In the last decade, there was a 93 percent increase in singles living alone and a 50 percent increase in divorced persons living alone.

6. *A major change is underway in the educational level of Americans.* The average employee retiring from private enterprise today has a ninth grade education, while 70 percent of those entering the job market have college backgrounds.

7. *Many Americans are more health conscious and may be able to participate in active recreational pursuits much later in life.* We should not assume that the elderly of the 21st century will have the same activity levels of today's elderly. In addition, the population about to retire are the first of a generation of Americans who have been thoroughly indoctrinated by a value of high nutritional and physical standards of health.

8. *The baby boomers (children born from 1946-1960) are entering middle age and becoming important consumers of recreation.* Between now and 1995 people in the 35-44 year old age bracket will increase 38 percent from 14.5 to 21.6 million people. By 1995 people aged 45-54 are projected to increase 47 percent, from 12.7 to 18.6 million people (Flanagan, 1984).

9. *Baby boomers have been delaying marriage and children.* The marriage rate is rising and the number of couples becoming first-time parents is increasing quickly, more quickly than normal because parents are older and thus will have less time in which to have children.

At the other end of the age spectrum are those people whose children have left or will soon leave home. There will be 10 million new "empty nesters" this decade as the population ages. However, when compared with the 16 million couples who will have new firstborns which tie them to home and hearth, there will be a net deficit in the travel market of about 6 million travelers by 1990.

10. *Economic changes will affect the recreation choices Americans make.*

a. The income distribution and occupational profile in the United States is changing. From World War II through the early '70s the distribution of household income has looked like a pyramid, broad at the bottom and tapering off toward the top. Now, however, service sector jobs are broadening the lower half, the new employment in a few growth industries is expanding the upper half. This is creating a dent in the middle of the pyramid because of a corresponding shift away from the middle class jobs in heavy industries, notably agriculture, manufacturing and mining.

b. Important trends are also

developing in major areas of consumer spending, like housing and personal transportation. Changes here are important because increases or decreases in their relative share of the household budget have massive impacts elsewhere. Hornback believes that if present indicators are what they seem, the house of the future will encourage tourism. Early '80s home buyers already have turned toward "villas," "duets," "patio homes," "townhomes" and other euphemisms for bungalows in order to cut housing costs. Square footage of new homes has dropped from the 1,700 square foot average of the 1970s to less than 1,000 square feet.

c. The personal wealth of Americans will increase in the next 20 years when compared with today. A person's real purchasing power, i.e., the amount of goods and services that one's income will buy after taxes are paid, will go up by 33 percent in the decade ahead.

The implications of these major social and demographic changes for recreation are potentially substantial. Two-income and dual-career families, while having perhaps more discretionary income, often have less free time. Such households must plan and structure vacation time and may choose different activities or do activities in a different way than similar cohorts have in the past. As both parents have entered the job market, the issues of child care and location of residence have become major concerns and

will directly impact access to recreational supply. While there is more emphasis on dual income households, the home will take on increased importance in the future. Cetron (1985) suggests that it will become the workplace for 25 percent of the labor force by 2000 and it will see more duty as a school, entertainment area and hospital as technology advances.

Additional scenarios could be added to those that have been outlined. However, what we do know is that the future will be exciting, providing more challenges and opportunities than we've ever seen.

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# The Changing Future of Outdoor Recreation

by Lawrence A. Hartmann, Ph.D., H. Ken Cordell, Ph.D. and Helen R. Freilich

Several recent studies have provided current information on the trends and current status of outdoor recreation patterns. New methods and data have produced better projections of likely futures for recreation. In this article, we will present these recently identified changes and predictions.

## Factors Influencing Recreation Participation

Many factors influence both the percent of the population participating in recreation activities and their frequency of participation in outdoor recreation, including of course, the available opportunities. Other factors include available leisure time, age, sex, income and education.

### *Leisure*

Free time is perhaps the most essential element needed for enjoying the outdoors. Some indicators show a possible recent decline in leisure in the United States. A recent poll reports that "over the past decade, for the average American, the amount of leisure time has shrunk 31 percent, a loss of eight hours per week" (Harris, 1984). In a report prepared for the recent President's Commission on Americans Outdoors (MOR, 1986), it was found that "The current pattern for three-fourths of American adults includes one to two vacations of a week or more and multiple numbers of mini-vacations." This survey also found that "three out of 10 adults took six or more long weekends or mini-vaca-

tions during 1985 and another one-fifth took four or five." It appears that the extended vacation of two or more weeks is becoming less common, losing out to long weekend trips or other short blocks of time taken more frequently throughout the year.

There are many reasons for the recent trend of a decline in leisure. These include more women in the work force, more two-income households, more single parent families, pressures of work, job security concerns and continuing re-education. The Harris Poll (1984) found considerable leisure differences depending on gender, age, ethnic group and family status. Men, the elderly and whites had more leisure than women, young adults, blacks or Hispanics. These leisure differences undoubtedly produce different outdoor recreation patterns among various social strata.

### *Age*

Age is perhaps the single demographic variable with the most conclusive relationship with recreation participation. As one gets older, one's physical abilities decline and participation in recreation changes, typically from the more physical to less physical pursuits; eventually all outdoor recreation participation declines with advanced age. Recent surveys show that age-related participation patterns of recreation differ with preferred activities, with some activities, such as walking for pleasure, actually increasing with advancing age (Hartmann and Cordell, in press).

### *Gender*

Overall, participation in outdoor recreation does not differ much by gender. However, some activities seem to show higher participation by either men or women. For example, all forms of hunting show much broader participation by men than women, but women more commonly participate in other activities such as walking for pleasure and horseback riding. The most strenuous activities seem to show higher participation rates by men than women (Hartmann and Cordell, in press).

### *Income*

In a review of the literature, O'Leary, Napier, Dottavio, Yoesting and Christensen (1982) concluded that income does not form tastes but rather limits their expression. In other words, lack of sufficient income can inhibit some people from participating in some forms of recreational activities, but not in others. Walking for pleasure is not dependent on income, but some activities such as sailing are definitely income-dependent. Other recent data indicate that individuals with higher incomes tend to travel further and stay longer at recreation areas once they reach them (Hartmann and Cordell, in press).

### *Education*

There is a definite relationship between level of education and the recreation patterns of individuals. Zuznek (1978) found that the rates of participation for most

leisure activities increased almost linearly with level of education, but that there may be a saturation point at the very highest levels. Some activities do not show this relationship—TV watching, radio listening, playing cards, attending sports events, and fishing and hunting. Hartmann and Cordell (in press) found that the college-educated are the most frequent adult users of public recreation areas. They also found that highly-educated visitors tend to travel further, while high school-educated visitors stay longer.

#### *Other Factors*

Several other factors have been shown to influence recreation participation patterns, such as the activities chosen, frequency of participation, the duration of participation, amount of money spent and other measures. Among these factors are urbanism (whether the individual lives in a city or rural area), race, occupation and the social group with whom one recreates (Hartmann and Cordell, in press).

With recently available data from the Public Area Recreation Visitor Study and other sources, we now have a better understanding of the factors influencing recreation behavior. However, we do not know for certain if these relationships will hold true in the future. For most influencing factors, the future is a matter of speculation. Will the trend of more women entering the work force and more non-traditional families lead to a decline in available leisure? Will the in-

creasing number of elderly and breakthroughs in technology yield increases in leisure? Will advances in health care allow older people to pursue more physically demanding activities? Will the equal rights movement ultimately yield equal gender ratios in hunting camps?

In the short term, it appears that existing trends will continue. In the longer term, it is impossible to say. Whatever happens, however, leisure will strongly influence participation in outdoor recreation and future recreation patterns will be different.

### **Long-Term Trends in Outdoor Recreation Participation**

Since 1959, more than 30 nationwide recreation surveys have been conducted by public agencies and private companies. Although technical differences between these studies make many of them difficult to compare, it is possible to make some general conclusions.

Participation data from the 1960, 1965 and 1982 National Recreation Surveys are similar in many respects. In all three surveys the respondents were 12 years and older and the interviews were conducted in the respondents' homes by the Bureau of the Census.

The participation rates for nine activities can be accurately compared across these three surveys. Among these nine activities, snow skiing and canoeing/kayak-

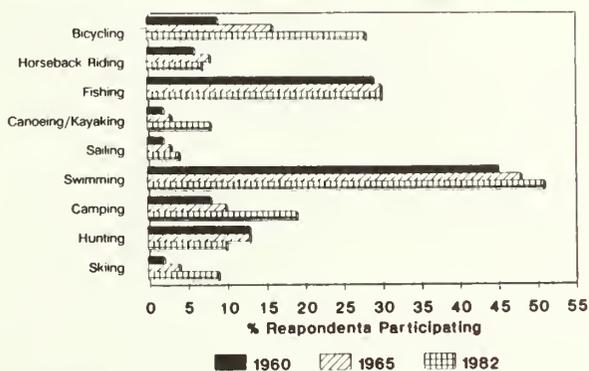
ing showed the most dramatic gains in reported participation in the 22 years—from 2 percent in 1960 to 8 percent by 1982. Bicycling was not far behind, more than tripling from 9 percent to a 28 percent adult participation rate.

Swimming was one of the most popular activities in 1960 and continued to be the most popular in 1982. But there was only a small increase, from 45 to 51 percent. Fishing and hunting both remained popular, but their participation rates have remained mostly stable since 1960, with hunting declining slightly to 1982.

In evaluating these participation percentages, it is important to recognize that during the 22 years covered by the surveys the U.S. population grew almost 30 percent. Increased population has meant more participants. When looking at the percentage change in *number* of participants, the growth in some activities appears more dramatic than growth in percentage of population participating. Of the nine activities in Figure 2 with the highest participation growth rates, more than half are physically demanding: canoeing, bicycling, water-skiing, walking and hiking/backpacking. While some of the activities with high, but less participant growth are more passive (e.g., attending outdoor cultural activities and sporting events), only camping is motor vehicle or energy dependent.

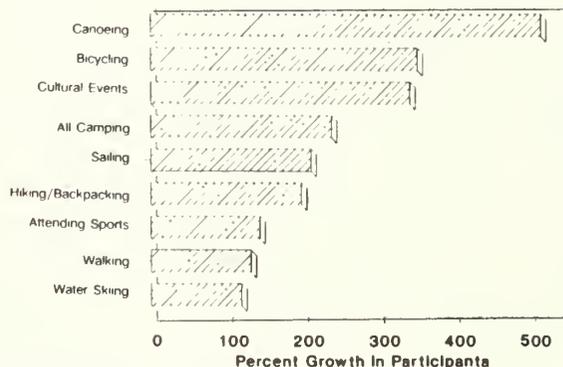
In a recent paper by Hartmann, Freilich and Cordell (in

Figure 1 - Activity Participation Trends 1960-1982 (summer seasons)



SOURCE: 1982-83 National Recreation Survey Final Report

Figure 2 - Percent Change in Number of Summer Participants in 9 Rapidly Growing Activities, 1960-1982



SOURCE: 1960, 82-83 National Recreation Survey

press), the rank order of popularity of several activities was compared across five major national surveys conducted between 1960 and 1982. Picnicking was the most popular activity in all the surveys except for the most recent. The most dramatic change was seen in bicycling which became more popular than boating between 1960 and 1982. Swimming and walking for pleasure became more popular than picnicking and driving for pleasure. This corresponds to the observed trend toward more active recreation for many Americans.

### Current Participation in Outdoor Recreation

The Public Area Recreation Visitor Study (PARVS) has recently been completed by a coalition of federal and state agencies to provide comparable and accurate information in the most cost-effective manner (Cordell, Hartmann, Watson, Fritschen, Propst

and Siverts, 1987). Interviewers for the PARVS project contacted visitors to public recreation areas to ask about their recreation patterns, trip characteristics, recreation expenditures and personal demographic information. This study was carefully designed so the results could be compared with past studies and other data (such as Census Bureau information). Almost 280 sites were selected for study and included national parks, national forests, Forest Service wilderness areas, Corps of Engineers projects and Tennessee Valley Authority sites, in addition to a large number of state parks. With almost 36,000 visitor contacts, PARVS represents the most detailed and accurate source of information on recreation users currently available. The information presented below comes primarily from PARVS.

The authors acknowledge the work of the PARVS Working Group—Forest Service, National Park Service, Corps of Engineers, Tennessee Valley Authority,

National Oceanic and Atmospheric Administration and state agencies in Georgia, Indiana, Kansas, Minnesota, Missouri, New Jersey, New Mexico, North Carolina, South Carolina, Tennessee and Virginia.

Hartmann, et al. (in press) compared data from the PARVS and the 1979 Federal Estate Visitor Survey and concluded that in the past ten years there had been relative increases in popularity ranking (percentage of sample participating at least once in the past 12 months) in downhill skiing, swimming outdoors, canoeing/kayaking, water skiing and cross country skiing.

Similarly, there had been relative decreases in "other boating," driving vehicles off road, sledging, ice skating, picnicking and pleasure driving. These results continue to show the pattern found by the 1982-83 National Recreation Survey that some of the more active recreational pursuits have become more popular and some of the more passive ac-

tivities have declined in relative popularity.

There are many measures of the popularity of outdoor recreation activities. Table 1 describes the percent of the population participating one or more times annually and the median number of days of annual participation by those who participate. Other measures of popularity are how long people stay at a recreation area and how far people travel to a recreation area.

The various measures of participation do not result in the same relative rankings of activities. Swimming outdoors, sightseeing, picnicking and walking for pleasure are the most "popular" activities in terms of the percent of the population. However, if one considers the number of times participants engage in the activities annually, the ranking of "popularity" changes dramatically.

By this second measure, the most "popular" activities are running/jogging, walking for pleasure, driving for pleasure, bicycling and swimming outdoors. A third measure of popularity is the length of stay on-site for the designated main activity. By this measure, the most "popular" activities are developed camping, big game hunting, primitive camping, backpacking and "general recreation."

A final participation measure is the total number of trips taken by the population. By this measure, the popularity order is walking, pleasure driving, sightseeing,

**TABLE 1.** Annual participation characteristics among selected outdoor recreation activities.

Activity	Percent of Population Participating One or More Times Annually	Median Number of Days of Participation Annually by Those People Who Participate
<b>Land-Based Activities</b>		
	(percent)	(days)
Sightseeing	46.9	12
Picnicking	46.2	6
Walking for Pleasure	41.3	29
Driving for Pleasure	38.4	19
Nature Study/Photography	36.2	13
Developed Camping	34.9	7
Day Hiking	23.8	5
Primitive Camping	14.2	5
Other Hunting	11.8	9
Backpacking	10.4	4
Big Game Hunting	9.9	7
Driving ORVs	9.2	10
Horseback Riding	8.6	2
<b>Water-Based Activities</b>		
Swimming Outdoors	50.3	17
Warm Water & Saltwater Fishing	30.9	10
Motorboating	22.2	7
Cold Water Fishing	16.7	7
Water Skiing	12.9	4
Canoeing/Kayaking	13.9	2
Sailing	7.5	2
<b>Snow and Ice-Based Activities</b>		
Downhill Skiing	9.8	4
Sledding	9.3	3
Cross-Country Skiing	6.5	4
Ice Skating	6.0	2
Snowmobiling	2.7	3

SOURCE: 1985-87 Public Area Recreation Visitor Study, compiled by the Outdoor Recreation and Wilderness Assessment Group, Athens, Georgia. Percent participation figures represent weighted percent of the American public who use federal and state recreation areas and participate in the activities listed one or more times annually. Days of participation figures are the median number of days of participation by those individuals in the sample who participate in the selected activity.

pool swimming, picnicking, biking, lake and stream swimming, warm water fishing, wildlife observation and running/jogging (Forest Service, in press).

### The Predicted Future of Recreation in the United States

By measuring the relationships

between current participation patterns, demographic characteristics and available recreation opportunities, predictions of possible future recreation patterns can be made. While such projections are based on a blend of science and art, they nevertheless provide a useful peek at the future.

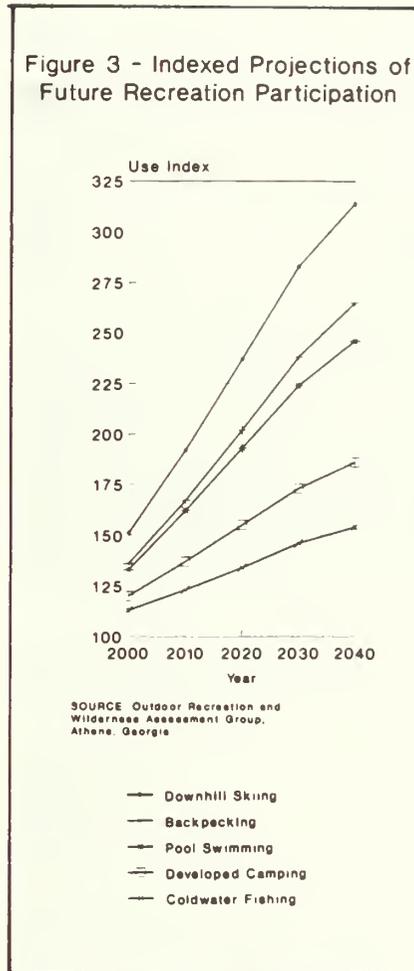
Some results from the most re-

cent projections are shown in Figure 3. This figure describes the most expected future change in total number of outings or trips for five representative activities. The base level of use for each recreation activity in 1987 was assigned an index value of 100. As can be seen, participation in all activities is expected to increase over the next 50 years, but there are considerable differences in the rate of projected increases. The activities with the greatest expected use increases are the physically demanding activities. Some activities, such as developed camping and cold water fishing, show considerably less relative growth. Other activities (not shown in this figure), including warm water fishing and small game hunting, showed a projected decline in participation.

## Conclusions

Declines in leisure and changes in social structures influence recreation patterns. Long weekends involving more close-to-home trips are replacing the extended vacation. There have also been changes toward recreation activities that are more physically active. Considering these and other changes, we offer three general observations or conclusions.

First, aside from considering the high rates of growth that exist among some activities, *the more simple and less specialized activities remain very popular.* Sight-seeing, picnicking, walking and swimming top the list. This means that opportunities for pursuit of these activities will con-



tinue to be needed in the future. Sometimes "hot spots" of interest and "fadism" attract more of the attention of the public recreation providers than do the persistently popular and more broadly sought activities. More benefit to society may be achievable by making sure that attractive rural settings, casual space and trails, and unpolluted water are available.

Second, the most rapidly growing activities represent rapid growth markets. Most of these—bicycling, canoeing/kayaking,

camping and snow skiing—are equipment and skill-oriented. These activities represent *opportunities for private sector involvement* in providing equipment, instruction, outfitting and guiding, and fee sites. Projections for growth of these activities indicate continued strong private market opportunities in the future.

Finally, change is occurring and it will likely continue at a quickening pace. At issue is how quick the pace and in which directions. A strong national *base of data and projection capabilities* is a must to both public and private sectors if we are to be responsive in a timely manner to these changes. Consumptive wildlife activities are on the decline, while appreciative uses of wildlife are rising. Travel distances are generally shorter, while the number of close-to-home trips is increasing. Across these and the total array of trends and changes, a call for action to provide for recreation needs arises. An appropriately responsive answer to that call demands solid information about trends and the future.

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# Non-Recreational Wilderness Use Comes of Age—Again

by Patrick C. Reed, Ph.D.

To many people the concept of "wilderness" has been fairly synonymous with primitive or back-country forms of outdoor recreation. More often than not the concern for recreation opportunities has been the principal force in the growth and management of our National Wilderness Preservation System. But now there are some indications that the dominance of recreational use of wilderness may be waning—and this change is not simply a reflection of the trends affecting recreation in general (see McLellan and Siehl, this issue).

In public perception as well as federal practice, knowledge and interest in "non-recreational" uses of wilderness are on the rise and with good reason. More properly, they are being re-established, for the historic roots of the wilderness movement were more concerned with non-recreational uses than with recreation as we think of it today.

Reliable information on the public demand for non-recreational wilderness uses is poor (as once it was for recreational uses). However, as the importance of non-recreational uses gains more recognition and as we develop more innovative ways to measure and value them, the demand for non-recreational benefits may be expected to eventually equal or surpass that of recreation as the principal reason for preserving many wilderness areas.

## What are Non-recreational Wilderness Uses?

Since the passage of the Wil-

derness Act in 1964, a number of non-recreational uses, values or benefits have been attributed to wilderness settings (see for example Davis, 1986; Douglas, 1965; Driver, et al., 1987; McCloskey, 1966; Nash, 1980; and Rolston, 1986). Some of the more commonly cited qualities of wilderness include the following:

- *Wilderness preserves life-sustaining systems at several different scales and may also protect other resources of special value to society.* Wilderness settings provide opportunities to protect diverse and representative natural ecosystems, many of which are of international significance. Within these ecosystems genetic diversity among plants and animals is also preserved, including the viability of threatened and endangered species and species with unrealized scientific importance. Wilderness may serve to protect important cultural and historic resources, such as Native American sites and artifacts, as well as scenic resources, from major impacts such as energy development and air pollution.

- *Wilderness is a laboratory for the study of natural processes and the interaction of human culture and nature.* Wilderness provides an opportunity for environmental research into how ecosystems function in the absence of human interference. Similarly, wilderness areas are very good places for monitoring, or measuring background changes in natural processes. And, because wilderness represents the natural environment in its most pure and unmodified form, it possesses

opportunities for social research into the study of the individual and collective human relationship with nature.

- *Wilderness is a repository for a number of resources and opportunities which directly enhance the mental and physical welfare of individuals and society as a whole.* The solitude and challenge of wilderness provide opportunities for human development, including the growth of personal identity and self-actualization. Wilderness offers opportunities for the therapeutic rehabilitation of individuals with various psychological and physical disorders. Some wilderness areas, especially those in Alaska, are used for subsistence purposes by native peoples. Other wilderness areas have particular cultural and personal spiritual significance, whether to Native Americans or more average users such as ourselves. And, recent research is confirming that people who don't directly use the wilderness themselves are "vicarious" users and nevertheless treasure its "option," "bequest" and "existence" values.

- *Wilderness may be a "classroom" for educating both the general public and resource managers about natural processes and the interaction of human culture and nature.* Wilderness areas are used by a number of private organizations for environmental education to learn about natural processes and proper land stewardship techniques. Several federal agencies have also developed programs for management training within

the wilderness setting.

- *Wilderness may produce certain commodity outputs of economic value which are consumed within or outside of its boundaries.* Wilderness may be used for livestock grazing and mining where they existed prior to wilderness designation. Commercial outfitting and guiding may be permitted, too, where it is necessary for the realization of recreational purposes of a wilderness. Wilderness may also produce commodity products of considerable importance which are eventually used outside the wilderness. Perhaps most important are the wilderness watersheds which produce water for domestic, agricultural, commercial and recreational purposes.

- *Wilderness lands may offer additional protection to other complementary preservation-oriented systems and may be a setting for important administrative and non-administrative functions.* Sections of national wild and scenic rivers, sections of national recreation and scenic trails, and research natural areas are often subject to even fewer impacts when they are located within the protective status of wilderness. A number of wilderness areas accommodate pre-existing developments such as dams and reservoirs, navigation or communications equipment, weather equipment and utility corridors.

It should be noted that some of these non-recreational uses are not necessarily exclusive to wilderness settings. Also, there may often be some overlap with recre-



*Wilderness may be a "classroom" for educating the general public about natural processes.*

Gail A. Vander Stoep

ation benefits, particularly in the area of human development.

### **The Demand for Non-recreational Wilderness Uses**

The importance of non-recreational uses of wilderness has been recognized for more than a century. Historically, interest in non-recreational benefits of wilderness probably preceded the consideration of recreational uses. Nineteenth century wilderness admirers such as Thoreau, Catlin and Marsh valued wilderness for aesthetic, spiritual and other non-utilitarian reasons. Later wilderness advocates like Muir, Marshall and Leopold similarly recognized the non-recreational opportunities inherent in wilderness much more than the recreational.

Given the historic interest and

apparent extent and value of non-recreational uses, how has recreational use risen to the forefront of recent public and agency attention in wilderness? Half a century before the 1964 Wilderness Act, the legislation that created two of the major public land management agencies, the U.S. Forest Service and especially the National Park Service, specified that recreation should be one of the primary uses of public lands. Subsequent acts then further defined the importance of recreation and extended that mission to the U.S. Fish and Wildlife Service and the Bureau of Land Management.

Wilderness designation, which is by definition a supplemental purpose for federal lands, was consistent with this general policy. The 1964 Wilderness Act (PL 88-577) describes one of the major characteristics of wilderness as having "outstanding oppor-

tunities for solitude and primitive and unconfined type of recreation" (78 STAT 891).

The act, however, states that a wilderness may also possess other non-recreational amenities, including "ecological, geological or other features of scientific, educational, scenic and historical values" (78 STAT 891). Nowhere in the act does it imply that recreation use is more important than these or other non-recreational uses. If anything, the act elsewhere lists all uses of designated wilderness without preference or priority.

Despite both historic interest and legislative equality, very little is known about many non-recreational uses of wilderness in comparison to recreational use for several reasons. To begin with, there is often little or no mention of non-recreational uses within the various agency manuals. Perhaps as a consequence, budget allocations are often based more on recreational use, with little budget allocated to the comprehensive study of many non-recreational uses.

Probably more important is that, although easy to conceptualize, many non-recreational wilderness uses are simply difficult to qualify, quantify and monitor under even the best circumstances. Compared with the demand for recreation, the demand for non-recreation uses has been less visible and more difficult to measure. As a consequence, neither the federal agencies nor the non-governmental groups who monitor the wilder-

ness system have systematically collected much information about non-recreational uses or the long-term trends for those uses.

Still there are indications that non-recreational wilderness use is beginning to receive more attention than it has over the past several decades. One example is a recent national conference focused exclusively on the subject of non-recreational uses of wilderness in an attempt to document their extent and value for the U.S. Forest Service's 1989 RPA Assessment. In January of 1988, the National Wilderness Colloquium brought together more than two dozen experts in wilderness and the various non-recreational fields. Their common mission was to report on the nation's non-recreational use opportunities, the nature and extent of use, the value of these uses to society and nationwide trends in the supply and demand of these uses. In addition, they sought to identify pertinent allocation and management issues and to offer recommendations to protect and enhance non-recreational uses of wilderness.

Unfortunately, one of the principal findings of the Colloquium was a confirmation that little, if any, reliable information exists on the extent and value of the non-recreational wilderness uses. And, much of what information is available is not necessarily commensurate with data for other national forest outputs such as timber, range, water, wildlife and recreation. As a result it is not as easy to integrate concerns

for non-recreational wilderness uses into national planning programs such as the RPA Assessment.

Additional evidence of the current status of non-recreational wilderness uses was found in the results of a recent nationwide telephone survey of all wilderness areas conducted by Colorado State University in late 1987 especially for the National Wilderness Colloquium. While the survey dealt only with very broad qualitative questions, the results suggest two important points. First, many hitherto unacknowledged non-recreational uses of wilderness are actually quite widespread in the National Wilderness Preservation System. For example, of the more than 450 different wilderness units in 1987:

- Three-fourths had some type of known prehistoric or historic cultural site.
- One-half were home to one or more federally or state listed threatened and endangered species of plants and animals.
- One-third were used for scientific research, environmental education and livestock grazing.
- One-sixth had known spiritual sites, programs for human development, provided subsistence resources or contained water storage reservoirs.

Second, nearly all non-recreational wilderness had increased somewhat over the previous three years (1984 through 1987). Again, for example, the amount

of environmental research was increasing in more than 20 percent of the wilderness units, environmental education was increasing in 12 percent and outfitting-guiding services in 16 percent.

The implications of the survey are consistent with a recent Bureau of Land Management estimate that as much as one-third of the 10 million acres of wilderness it eventually expects to manage will be designated predominantly because of non-recreational use opportunities, including cultural and paleontological resources, unique geological features and ecosystem diversity.

Another more subtle yet more material indication of the growing recognition of the importance of non-recreational wilderness use is the explicit language in some recent wilderness designation acts. The acts state emphatically that certain non-recreational uses have special value in the wilderness areas. Notable among these acts have been the Central Idaho Wilderness Act of 1980 (96-312) which protects grazing and encourages cultural research; the 1980 Alaska National Interest Lands Conservation Act (PL 96-487) which insures subsistence and other traditional use opportunities for rural Alaska residents; and a 1987 act (PL 100-225) designating the two recent Bureau of Land Management wilderness units in New Mexico which describe water rights, cultural preservation and Native American religious rites.

Finally, Representative Bruce

Vento of Minnesota, Chairman of the Subcommittee on National Parks and Public Lands, recently commented at the National Meeting of Forest Service Recreation and Wildlife/Fisheries Directors that:

*"Congress does not designate wilderness for recreation. The foremost purpose of the National Wilderness Preservation System is to preserve the resource of wilderness with its natural ecosystems, wildlife populations and benefits to science."*

### **The Future of Non-recreational Wilderness Use**

We have much to learn about the non-recreational uses of wilderness. At the National Wilderness Colloquium it was recommended that basic and applied research into non-recreational uses, sensitivities and trends be expanded, including an initial baseline inventory and subsequent monitoring system. Additionally, research should be done to develop ways to better indicate the relative value of non-recreational wilderness uses compared to recreational uses.

In fact, we must begin to better understand the long-term benefits of these non-recreational uses to the whole of our nation if we are to accurately assess their nationwide supply and demand.

Attention to the many non-recreational uses of wilderness does not necessarily spell trouble for recreational users of wilderness. Many non-recreational uses can successfully co-exist with recreational use. However, as with the multiple-purpose management of

non-wilderness public lands, not all possible uses can or should be accommodated everywhere at once. We must, therefore, also begin to define explicitly the non-recreational uses for which wilderness is designated in legislation and agency policy. From there, it is possible to develop management plans which determine and protect the continued viability and compatibility of both non-recreational and recreational uses in wilderness.

Until these events become reality, we must be prepared to intuitively or logically understand and defend the need for non-recreational wilderness uses in the face of budget-driven allocation and management decisions. As long as land use decisions are based on short-term economic criteria, the benefits of preserving diversity of life forms, nurturing humans in need, understanding how nature works in the absence of humans and many others must be presumed for now. And although wilderness cannot (nor should) be the sole means of preserving these values, its outstanding capabilities to meet existing and future public demands for the same must nevertheless be respected and taken full advantage of.

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# Rumblings of Resurgence: Expanding Roles of and Techniques in Interpretation

by Gail A. Vander Stoep, Ph.D.

## Overview and Recent History

Educate, inspire, teach, reveal, provoke, create, art, skill, communication, management tool . . . This is just a sampling of the words and concepts that have been associated with interpretation since the idea of "nature guides" was brought to the United States from western Europe shortly after World War I (Russell, 1960). Since that time, the definitions of interpretation and the roles of interpreters have been many and varied. Nevertheless, all revolved around a central concept of communicating with the public about the cultural, natural and historical resources of the world in which they lived.

A current definition presents interpretation as a communications process of revealing meanings and relationships of natural, cultural, historical and recreational resources (AIN/WIA Consolidation Committee 1987). After the environmental movement swept the United States in the late 1960s and early 1970s, there was a general decline of interest in and provision of interpretive services. Social change and funding restrictions reinforced the waning support for such services. Recently, however, there have been rumblings of reawakening interest in and support for interpretive/communications services. Echoing through these resurgence rumblings are changes in the nature and scope of interpretive service provision.

In addition to traditional public

agency involvement in interpretive services, there is involvement by a myriad of private, private non-profit and commercial organizations such as museums, zoos, nature centers, historical landmarks and monuments, schools, industries, tour companies and cruise ships. Some call their communications programming interpretation; many do not.

For some, only a portion of the operations are, in fact, interpretation. For these and related reasons, it is difficult to assess adequately the variety, quantity, quality of and trends in interpretive services. Consequently, this article focuses on major trends and issues as experienced by major federal agencies involved with interpretive services, and those identified by national leaders in the field of interpretation (Vander Stoep, in press). Examples of the recent resurgence include:

- In the last five years, the U.S. Forest Service has made efforts to revitalize its environmental education program, allowing each forest to select relevant issues and subsequently develop its own instructional or interpretive packets.
- In 1983 the U.S. Army Corps of Engineers formalized for the first time its interpretive/educational mission statement, developing a formal philosophy and general guidelines as well as an interpretive training course.
- The National Park Service has refocused attention on interpretive programming, broadening its roles and incorporating

its functions in many of the action plans listed in Director William Penn Mott, Jr.'s "12-Point Plan" (1985). Mott (Anon, 1987b) has stated that "Rapidly changing socio-demographics continue to strain traditional park services. Environmental education and environmental interpretation [are] efficient and cost effective tool[s] that can alleviate that strain . . . [They are] the link between the American public and this heritage. . . . Through creative environmental education and environmental interpretation programming, state park systems can continue to maintain a leadership role in balancing the human and resource needs of a future society." To further highlight the need and support for interpretation, Mott has created a new, federal level National Park Service position, that of Associate Director of Interpretation. Publication of a "goal statement for interpretation," called the Interpretive Challenge, was distributed in May 1988.

Though interpretation's mission and core definition have remained stable, its face and character have changed drastically. The shift has not been one of major, rapid change but rather a slow, steady process of evolution, characterized by self-assessment and redirected focus. Despite previous resistance, many traditional interpreters are recognizing changes occurring in the world around them and are beginning to acknowledge that interpretive services must change accordingly to remain effective.

Evolution in any organization

is an ongoing process, but currently there appear to be major shifts in the field of interpretation, making this a particularly timely and important opportunity to assess the current trends.

## The Resurgence—A Peek at Changes

Based on a synthesis of information gathered from several sources (for details see Vander Stoep, in press), the current trends and issues in interpretation reflect many of the broader social changes discussed in the introduction of this issue. Current trends can be classified into five general categories: changes in funding, shifts in providers of interpretation, changes in techniques, expansion of interpretation's roles and shifts in the population and where interpretation is done. Realizing there are interrelationships between categories, each category will be discussed individually.

### *Changes in Funding*

Changes in funding underlie many of the other trends. Reduction at all levels in government funds available for interpretation seems to be the most commonly expressed trigger for the decline in numbers of interpreters and interpretive programs. Related problems are: 1) increases in environmental damage and in environmentally non-sensitive behavior such as littering and wastefulness; 2) failure of this country to foster a critical mass sufficient to change lifestyles in a



*There is an increase in living history, special events and other participatory interpretation.*

*Gail A. Vander Stoep*

way to ensure healthy living conditions; and 3) a reduction in related research efforts.

It is believed that, in many cases, reductions in funding have occurred because interpreters have failed to justify adequately their roles and effectiveness. When budgets shrink, programs perceived as "fluff" or "icing on the cake" are the first to be cut. Therefore, more attention currently is being given to formal justification of the importance and impacts of interpretive services. Often this requires more careful monitoring and formal evaluation than previously conducted. Efforts are being expanded in these areas, particularly on assessing economic impacts of interpretive program implementation.

There is a strong need for organizations to secure alternative funding sources. Alternative strategies include 1) contracting of private services for interpretive training, exhibit development and visitor center operations; 2) cooperative ventures; 3) involvement with cooperating associations and "friends" organizations; 4) solicitation of corporate donations; 5) development of institutes and cooperation with university programs; 6) use of gift catalogues and mandatory dedication practices with public land lessees; and 7) concessioning of interpretive services. User fees are implemented more often as public demand and visitor willingness-to-pay are expressed. Users who pay for programs expect quality in exchange. This in-

creases external demand for accountability and program quality.

#### *Shifts in Staffing, Training, Providers; Loss of Professionalism*

Government funding reductions also have increased the need for changes in who provides interpretive services. One major change, consistent with a broader social shift toward privatization, is the increasing role of the private sector in providing such services. Outfitters, guides, resort owners and other recreation entrepreneurs are incorporating interpretive programming in their offerings. Information increases their attractiveness, gives them a competitive edge and enhances the experiences of clients. Cooperative ventures allow pooling and sharing of resources, and in many cases reduces duplication of efforts. In many cases, federal agencies work cooperatively with private businesses to train interpreters.

Cooperating associations and "friends" organizations often provide staffing as well as funding assistance. Use of volunteers, interns and seasonal staff to replace or supplement full-time, paid interpretive staff is increasing.

Fewer students are interested in professional interpretation careers because the availability of positions in traditional agencies has decreased, opportunities for professional advancement are minimal, salaries are traditionally low and general shifts in attitudes of today's youth are away from human services and low-

pay professions.

Changes in interpretation providers and the threat of loss of professionalism demand changes in interpretive training programs. There is concern that entry level people do not have an adequate balance of technical knowledge, communications skills and management/planning skills. Many agencies are moving toward holistic, interdisciplinary training in contrast with traditional job-specific training.

#### *Changes in Techniques*

In efforts to meet the demand and expectations of a population accustomed to computers, sophisticated high-tech equipment and flashy productions, interpreters increasingly are incorporating technological advances and gimmicks into their programs. Computers are used to catalogue data and artifact collections, to animate models and to present interactive teaching programs to users. Games, theatrics, interactive videos, "furry folks" and other gimmicks are used more often to attract and maintain the attention of audiences accustomed to a barrage of sensory stimuli through television, music, videos and computers.

Though there still is strong emphasis on the importance of personal interpretation, non-personal interpretation is being used more frequently to meet the needs of non-traditional users and to offset staff reductions. Seemingly contradictory to reductions in personal interpretation, there is an increase in the use of

living history, folk skill and craft demonstrations, drama, storytelling, special events and other first-person, participatory interpretation. However, this is consistent with the dichotomous high-tech/high-touch trend in society (Naisbitt 1982).

Because many sites now are visited by larger numbers of non-English speaking guests, and because foreign immigration to the U.S. continues to grow, multi-lingual programs are being offered in some parts of the country.

#### *Changes in the Uses and Roles of Interpretation*

A major change, partially in response to the need to justify resource expenditures for interpretation, is the increased use of interpretation as a management tool. Interpretive messages are being used to modify visitor behavior in accordance with management policies, and as a public relations tool to improve agency image with local constituencies.

The scope of interpretation's responsibility has expanded to deal with policy issues, to present environmental (e.g., bio-diversity, encroachment, acid rain) and safety issues (e.g., water safety), to aid in issue management and conflict resolution, and to conduct public meetings. The scope of interpretation has been stated clearly to include historical/cultural sites and issues. Interpretive messages are being integrated into therapeutic programs, especially for the mentally and emotionally disabled.

### *Changes in Audiences and Presentation Locations*

Associated with the expansion of interpretation's roles are changes in audiences and where programming is presented. Major shifts in population demographics dictate changes in potential audiences. A major change is the aging of the population (including more retired adults who are healthy, mentally alert, who have substantial amounts of discretionary time and money, and are eager to learn and participate). This group is particularly appropriate for tourism-associated interpretation.

In some areas, environmental education is integrated more frequently with outdoor education and outdoor skills programs. Agency/nature center programs are developed specifically to meet school districts' curriculum guidelines. Some school districts are contracting with nature centers to teach the science/environmental education components of the curricula. Also, there appears to be a renewal of interest in the outdoors and in traditional "park ranger" roles.

Government agencies are involved in more outreach programs, taking their programs to schools, civic groups, youth groups, "Good Samaritans," campers and hikers associations, state fairs and boat shows. Posters, publications and radio public service announcements are being used more often to address public safety issues. The NPS is using more teaching packets and videotapes in its outreach pro-



Gail A. Vander Stoep

*A cooperative venture between private, public and university sectors has permitted training and deployment of urban rangers in a major city park in Philadelphia.*

grams, particularly with urban clientele. More programming in urban parks is being devoted to outdoor skills how-to programs.

### **A Resurgence Raises Many Issues**

#### *Training*

Many of the issues raised re-

flect the trends discussed above. The most frequently mentioned issue involved the need for a general re-evaluation of the training needed by interpreters, particularly in light of the many changes and trends in interpretation today. The most often identified need is for expanded training in traditional areas and additional training in new areas. Though not new, the issue regarding the need for accreditation of training programs to improve image, skills and professionalism is raised once again. Should we be educating or simply training interpreters? Skills and knowledge suggested for inclusion in training programs include:

- Increased coursework in basic information in natural and cultural history, focusing on field-based education.
- Solid internship programs involving role-playing and hands-on experiences.
- Improved teaching, retention, learning effectiveness (including open peer critiquing).
- Clarity in identification of interpretive and leadership skills.
- Environmental psychology.
- Problem-solving, critical thinking and coping.
- Economics.
- Identification of and methods for working with special needs of disabled populations.
- Public speaking.
- Management, supervision and business training.

- Volunteer management.

#### *Cooperative Ventures*

Because it is unlikely in the foreseeable future that we will return to a heyday of lavish public funding, there is strong need for a variety of cooperative ventures to link interpreters with constituencies, to share resources and to develop understanding of and support for interpretive services. Expanded and improved linkages of interpreters with a variety of sectors are suggested, including:

- Tourism and hospitality industries, many of which already incorporate information and interpretive services, though they may label it something else.
- Other components of the private/commercial sector.
- Schools, environmental education programs, science programs.
- Other public agencies (similar and different government levels).
- Media.
- Recreation programs, both public and private.
- Professional organizations with similar missions and functions.

#### *Accountability*

The need for accountability is increasing. This should involve frequent and adequate evaluation and documentation of programming effectiveness. Implementation of user fees and emphasis on marketing techniques demand

identification of user needs and demands, development of specific program objectives (using MBO approaches) and development of programs to address those needs and objectives. Improved accountability should lend support for justifying interpretive programs to managers and in developing broader support for programming.

#### *Issue Orientation*

Moving boldly away from the traditional hands-off approach to controversial issues, there is a current move to develop more timely and issue-oriented programs, including discussion of contemporary environmental and cultural problems. Conservation efforts should be encouraged as should political involvement in relevant issues. Interpreters should take the lead by developing, teaching and setting examples for outdoor/environmental ethics.

#### *Professionalism*

There is rising concern over the weakening of professionalism. Contributory conditions and issues that must be addressed if professionalism is to be enhanced include:

- the low priority often given interpretation by managers.
- lack of a well-defined career path.
- burn-out of interpreters at the field level.
- decreasing numbers of people entering the field as professionals.

- general need for professionalism, ethics, values and feelings of self-worth by interpreters.

- unequal, inequitable pay for interpreters.
- lack of certification or accreditation.
- need to build academic respectability, especially at the major research institutions in the United States.
- conflicts of interest and unethical activities by some interpreters (such as personal dealing and violations of deaccessioning guidelines).

#### *Management Concerns*

Identified earlier as a major trend, the need for interpretation to be used as a management tool is a controversial issue. It involves convincing managers of interpretations' effectiveness (as well as limitations) in addressing specific managerial concerns. Additionally, interpretation can be used more frequently to communicate management objectives to the public.

### **What Does This Mean for the Future?**

Because many current shifts in the direction of trends in interpretation are relatively recent, it is probable that most of them will continue well into the future. Even if no current barriers at the federal level are removed, or if new barriers are erected, similar patterns probably will continue at non-federal levels and with pri-

vate and private/non-profit interpretive operations.

The recent merger of two national professional interpreters organizations caps a relatively rapid self-assessment of functions, goals and future directions of interpretation. It has dealt smoothly with a variety of controversial internal issues that have been the source of major debate for at least a decade. New leadership in the organization, combined with more openness by interpreters as a whole to accept and work with change rather than to fight it, is providing the impetus for effective organizational growth as well as successful implementation of new operations strategies.

### **Identifying and Working Around Current Barriers to Interpretive Services Delivery**

Because current barriers often dictate changes needed to facilitate some function or operation, these two issues will be discussed in tandem. Public funding levels probably never will reach levels capable of supporting unlimited, high quality interpretive programming to achieve all of the potential goals that have been identified. This requires that alternative funding sources and innovative strategies for programming be found or developed. However, several legislatively imposed barriers exist that effectively block the use of some strategies and funding sources.

- **Federal regulations often**

**block an agency's ability to accept certain types of funds or gifts.** Often donations and other externally obtained funds must be returned in whole or in part to the U.S. Treasury. This effectively removes any incentive for sites or agencies to expend time and energies on fund-raising. It can, in fact, have negative psychological effects on already overworked and underpaid employees.

- **Under the new tax structure, many former financial incentives for individuals or corporations to donate land, money, buildings, in-kind gifts or bequests have been removed,** effectively extinguishing a major source of external support.

- **Other disincentives for external donations are restrictions imposed by Internal Revenue Service policies.** Many tax deductions are either restricted or no longer allowable; therefore, individuals and corporations are discouraged from making charitable contributions.

In such cases, friendly tax laws and enabling legislation could encourage future donations. Suggestions include:

- **Legislative changes that would allow management agencies to retain a large portion of their external earnings either at the site where they were generated or at least within the respective agency.**

- **Legislation that would mandate a minimum budget allocation for land management agencies, either for development**

**of interpretive operations or to be dispersed as deemed appropriate by the agency administration.** (Such legislation would permit smoother planning and use of funds over the long term to achieve clearly defined goals. Haphazard and frequent changes in allocations, particularly when there also exists a two to three-year time lag between allocation and receipt of funds, can play havoc with planning and operations.)

- **Legislation either to ensure allocation of some government funds, or to facilitate the raising and use of external funds, for evaluation and research.** (Over the years there has been a decrease in funds available for research. Lack of evaluation monies often leaves managers in a position to make managerial decisions based on hunches rather than documented evidence. This is just as true for evaluating the effectiveness of interpretive programs as it is with other management practices.)

- **Availability of funds to properly preserve and catalogue existing collections and artifacts.** (Such collections, many of which will not survive unless protective measures are taken, form the basis for our understanding of the world, which is then shared with the public through interpretive programs.)

- **Legislation that would reinstate, or create a funding source similar to the Land and Water Conservation Fund that could be used as seed or challenge grant money for agency projects.**

- **Amendments to enabling legislation to clearly provide for interpretive and educational services.** (Current enabling legislation for some agencies merely implies the provision of educational or interpretive programs. Amendments could help stabilize support for and upgrade the image of interpretation's role.)

Other barriers involve staff training and career paths, agency policies and traditional perceptions and attitudes:

- **Lack of a well-defined career path** (including opportunities for advancement) for interpreters can cause field level interpreters to feel trapped in a position. This contributes negatively to inherent problems of burnout at the field level. Much of the advancement bottleneck is due to broader demographic patterns. Some associated problems will resolve themselves in the next few years through processes of attrition and retirement. However, a structured career path and more incentive and award programs encouraging growth and outstanding performance are needed.

- **Interpreters' lack of skills to deal with the many major changes in interpretive program implementation** can impede implementation of new strategies and can frustrate current staff. Opportunities for refresher courses and new skills training must be expanded. On a broader scale, pre-professional training programs and educational curricula must begin to incorporate these new skills.



*A wayside exhibit at a raptor sanctuary is typical of traditional, non personal interpretation.*

- **The increased imposition of fee structures** for many agency-operated sites and interpretive programs will invariably prevent some segments of the population from participation. In order to address equity issues and to provide opportunities for participation by these people, creative strategies for funding or otherwise facilitating their participation, while simultaneously preserving their self-respect, must be developed. Potential strategies could be developed at the national or regional levels, then provided to individual sites as suggested procedures.

- **Traditional attitudes and perceptions of interpretation and interpreters**, both by managers and by interpreters themselves, can be a major barrier to implementation of new programs. Interpreters must be convinced of the need to expand interpreta-

tion's roles and to break away from traditional programs and techniques. Concurrently, managers must be educated (not forced) about the roles and importance of interpretation. This will require carefully planned, slow education of managers by demonstrations of direct and indirect results of effective interpretive programs. This includes monitoring and evaluation of their economic impacts, demand by users and effectiveness in achieving clearly defined management goals.

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# The Discretionary Function Immunity Trend in Federal Recreation Liability

by James C. Kozlowski, J.D., Ph.D.

As outdoor recreation participation increases in frequency and diversity, as resource management agencies have increasing acreage and facilities to operate, as more technologically sophisticated toys are used in recreation, and as society becomes more litigious, the potential for injury and lawsuits increases. The recreation resource manager must stay abreast of these changes as well as changes in legislation affecting litigation.

Prior to the enactment of the Federal Tort Claims Act (FTCA), the federal government enjoyed sovereign immunity against negligence liability, including liability for injuries sustained on federal recreation sites. With the enactment of the FTCA, the federal government and its agencies became liable for negligence like a private individual under the law of the jurisdiction where the injury occurred. However, the FTCA retained immunity for negligent discretionary functions.

Discretionary functions are the policy, planning judgmental decisions of an agency. While these functions are immune from negligence liability under the FTCA, the federal government and its agencies remain liable like a private individual for negligent ministerial or operational decisions. In other words, the *deciding* is immune, but the *doing* is not. Once the federal government or its agencies adopt a policy to provide a service, it must implement this policy in a non-negligent fashion to avoid liability.

Consequently, the federal gov-



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Are the resource manager and the managing agency liable for swimming accidents if no lifeguard is provided?

ernment and its agencies can limit potential liability under the FTCA by adopting clearly stated policies which define the burdens of precaution to be taken in guarding or making the premises reasonably safe for recreational use. In so doing, the government can continue to expand outdoor recreational opportunities on federal lands without necessarily increasing the exposure to and incidence of negligence liability under the FTCA. The *Wysinger* and *Schieler* cases described herein are fairly recent examples from the federal courts which nicely illustrate discretionary function immunity under the FTCA.

Both of these case reports are drawn from the *Recreation and Parks Law Reporter* (RPLR), a quarterly publication of the National Recreation and Park Association which provides descriptions of recently reported court decisions in the area of recreational injury liability. One of

the recurring themes throughout the RPLR case reports has been the scope of federal immunity under the discretionary function exception to the FTCA. As we approach the 21st century, there is every indication that this topic will continue to play a significant role in the courts as federal agencies try to reverse the trend toward increased liability for recreational injuries.

*Wysinger v. United States*, 621 F.Supp. 773 (D.C.La. 1985)

In this case, plaintiff Isie Wysinger sued the United States under the provisions of the Federal Tort Claims Act (FTCA) after her son, Lewis Wysinger, drowned in a lake in a federal recreation area. The incident occurred on May 29, 1983, at Red Hill Lake, a recreational area within the Sabine National Forest. This area was maintained by the Forest Service, an agency of the United States Department of Agriculture.

Wysinger alleged that the

United States was negligent in its “failure to provide adequate supervision and safeguards at a swimming facility open to the public.” In pertinent part, the FTCA, 28 U.S.C. § 1346 (b), provides exclusive jurisdiction to the federal courts for civil action claims against the United States for money damages based upon the following:

[F]or injury or loss of property, or personal injury or death caused by the negligent or wrongful act or omission of any employee of the government while acting within the scope of his office or employment, under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred.

On the other hand, the FTCA would not apply to any claim based upon an act or omission of an employee of the government “based upon the exercise or performance or the failure to exercise or perform a discretionary function or duty on the part of a federal agency or an employee of the government, whether or not the discretion involved is abused.” This provision is referred to as the discretionary function exception to the FTCA.

As noted by the federal district court, claims based upon any alleged act of negligence which fall within the discretionary function exception to the FTCA should be dismissed. While there is no “formal definition” of a discretionary function, the court provided the following description:

The discretionary function or duty that cannot form a basis for suit under the Tort Claims Act includes more than the

initiation of programs and activities. It also includes determinations made by executives or administrators in establishing plans, specifications or schedules of operations. Where there is room for policy judgment and decision there is discretion. It follows that acts of subordinates in carrying out operations of government in accordance with official directions cannot be actionable.

In addition, the court listed the following factors in determining whether an act is discretionary, and therefore immune from negligence liability under the FTCA:

First, it is the nature of the conduct, rather than the status of the actor, that governs whether the discretionary function exception applies in a given case. Thus the basic inquiry concerning the application of the discretionary function exception is whether the challenged acts of a government employee—whatever his or her rank—are of a nature and quality that Congress intended to shield from tort liability. Second, whatever else the discretionary function exception may include, it was intended to encompass the discretionary acts of the government acting in its role as a regulator of the conduct of private individuals.

Wysinger maintained that the discretionary function exception to the FTCA did not apply under the circumstances of this case. Wysinger argued that “when the government voluntarily assumes a duty it must be carried out in a non-negligent manner.” Specifically, Wysinger contended that “the decision not to have lifeguards at Red Hill Lake is an actionable tort because it was an operational [as opposed to a discretionary] decision made by the Forest Service concerning a revenue-generating program.” The federal district court rejected this argument.

The Forest Service Manual sets forth regulations regarding the designation, design, administration and operation of swimming sites in the national forests. The Forest Service Manual lists guidelines to be followed by forest supervisors in determining the need for lifeguards at a particular swim site. (Forest Service Manual § 2335.21.) Applying these factors, the forest ranger in charge of the Sabine National Forest made the decision not to provide lifeguards at Red Hill Lake in fiscal year 1983. The plaintiff [Wysinger] concedes that the failure to provide a lifeguard at Red Hill Lake in 1983 was a result of a decision made by the district ranger. This decision not to employ lifeguards is the gravamen of Wysinger’s allegation of negligence on the part of the United States. Because the plaintiff’s complaint is based on the allegation of negligence in a policy choice not to provide lifeguards, it must be dismissed . . . The district ranger of the U.S. Forest Service made the decision not to employ lifeguards at Red Hill Lake. This court has no jurisdiction to second-guess the propriety of that decision . . . The United States has not waived its sovereign immunity [through the FTCA] in such a manner as to allow federal courts the opportunity (or the jurisdiction) to review the discretionary decisions of federal agencies or employees.

Wysinger also argued that the discretionary function exception was inapplicable to the circumstances of this case because a user fee was charged at Red Hill Lake. The federal district court rejected this argument. “Plaintiff cites no authority to support this proposition and this court has found none.” The federal district court, therefore, granted the motion of the United States to dismiss Wysinger’s claim.

*Schieler v. United States*, 642 F.Supp. 1310 (E.D.Cal. 1986)

In this case, plaintiff Eddie Lee Schieler was injured when struck

by lightning while standing on Moro Rock in Sequoia National Park on August 20, 1975. At the time of the incident, visitors were not warned of the danger of lightning strikes. Schieler alleged that the National Park Service “negligently and carelessly failed to provide any warning, guidance or supervision at all in respect of the danger of being struck by lightning atop Moro Rock or of the fact that such a storm was impending and in any event, failed to provide and maintain reasonable or any safety devices to de-electrify the observation area.”

According to the federal district court, the issue was whether the United States’ alleged failure to warn was immune from negligence liability under the discretionary function exception to the Federal Tort Claims Act (FTCA). In pertinent part, this provision of the FTCA (28 U.S.C. § 2608a) read as follows:

Any claim based upon an act or omission of any employee of the government, exercising due care, in the execution of a statute or regulation, whether or not such statute or regulation be valid, or based upon the exercise or performance or failure to exercise or perform a discretionary function or duty on the part of a federal agency or an employee of the government, whether or not the discretion involved be abused.

Schieler argued that his claim was not barred by the discretionary function exception to the FTCA. Specifically, Schieler maintained that “failure to warn does not fall within the exception.” According to Schieler, “the act or

omission must be based upon an affirmative decision by the government that it will act or refrain from acting.”

The United States maintained that the discretionary function to the FTCA was applicable because “the presence or absence of any warnings or safety devices in the area of Moro Rock is a decision that is within the discretion of the National Park Service.” As described by the federal district court, the mission of the National Park Service is defined in 16 U.S.C. § 1, as follows:

To promote and regulate the use of the federal areas known as national parks . . . by such means and measures as to conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

According to the court, this mission statement of the National Park Service “gives very broad discretionary power to the agency to promote and regulate the parks in such a manner that the scenery and natural and wildlife in the parks are preserved unimpaired so that they may be enjoyed presently and in the future.”

A document entitled “Management Policies” issued by the National Park Service in 1975 provided: “Signs of all types should be held to the minimum number, size and wording required to serve the intended function without loss of scale or

readability.” To comply with this policy, the superintendent of Sequoia National Park established a sign committee. This sign committee determined that “as a prerequisite to the placing of a sign within the park a manifest need for it must be demonstrated.” The sign committee found no such need “had been shown for Moro Rock because there was no prior record of lightning striking it.”

In determining whether the discretionary function exception to the FTCA applied to this particular determination by the sign committee, the federal district court described the purpose of this statutory immunity as follows:

In providing the discretionary function exception, it was the intention of Congress to prevent judicial second-guessing of legislative and administrative decisions grounded on social, economic and political policy through the medium of an action in tort. To accomplish their policy objectives, the agencies must balance these objectives against such practical considerations as staffing and funding. Judicial second-guessing of decisions arrived at through the balancing process is what is protected by the discretionary function.

Applying this reasoning to the facts of the case, the court found “the conduct here involved requires a decision, and that decision calls for the exercise of judgment and discretion by administrators and officers of the Park Service.”

The conduct involved here is the failure to warn of the danger of lightning strikes at Moro Rock or provide reasonable safety devices. This conduct involves a decision by park administrators or executives which presents many al-

ternatives: Whether or not to warn; if warning is decided upon, the type of warning; and in this case, would warning of possible lightning strikes be placed where lightning had struck before or only on or near those objects considered to be good conductors of lightning of which there are many in Sequoia National Park. Schieler suggests a general warning be printed in the handout given to all persons entering the park. If this should be done, would it not require a decision by a park administrator or officer as to which areas should be included in the warning? That in turn could entail the hiring of an expert to advise park personnel of the proper areas to include in the danger areas . . . Any attempt by the court to evaluate such a decision would require it to examine Park Service priorities in its administration of the park and question its decisions for policy reasons.

According to the court, the discretionary function exception to the FTCA applies to such decisions "made pursuant to the activities and decisions of the Park Service in carrying out the Congressionally-mandated mission of the park." In the opinion of the court, a review of the decision by park personnel in this instance not to provide any warning "would encroach into the decision-making process of the Park Service."

The government has shown that the National Park Service had formulated a policy of keeping signs in the parks to a very minimum, such policy having been arrived at after very high level debate. A sign committee had been appointed in Sequoia National Park, as required by national policy, which was to recommend to the superintendent of the park what signs should be posted. The committee had determined that no signs would be posted unless a manifest need had been demonstrated. While posting of warning of lightning strikes is but one manner of warning, it clearly demonstrates that any type of warning would require the exercise of



*Must a sign warning of possible lightning strikes be erected on exposed rocks in outdoor recreation areas?*

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judgment and discretion by the Park Service personnel, which requires considerations impacting the social and economic policy of the agency. Formulating and issuing warnings require the government to establish priorities for accomplishment of its policy objectives sought to be obtained against such practical considerations as staffing and funding . . . The discretionary function exception is intended to protect this process, and the courts are barred from reviewing the same in a tort action . . .

[T]he decision not to warn of potential safety hazards was clearly the type of decision of an agency which Congress sought to protect from judicial review under the Tort Claims Act. [I]f the act complained of falls within the discretionary function exception, plaintiff's action is barred, and it is irrelevant that the government was negligent.

Schieler argued that "the discretionary function cannot apply unless the National Park Service

made an affirmative decision not to warn of the dangers." The federal district court rejected this argument.

If the decision to issue or not to issue a "warning" is within the discretionary function exception, then logically the failure to consider whether to issue one necessarily falls within the exception as well. Any other interpretation of the statute would create insurmountable problems in its administration: What would constitute a "decision"? Would a decision to defer a decision be a "decision"? Would the government be subject to liability for failing to act where operational employees conducting the relevant research consider the evidence as yet insufficient for making a decision? . . . [O]ne must look to the nature of the conduct to determine whether the exception applies. In this case, the relevant conduct is the issuance of "warnings," not the decision-making process or the failure to make a conscious, explicit decision.

The federal district court, therefore, concluded that Schieler's allegations of negligence came within the discretionary function exception to the FTCA. As a result, the court dismissed Schieler's case against the United States.

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# The Future Supply and Demand of Outdoor Recreation in America

by John C. Bergstrom, Ph.D. and H. Ken Cordell, Ph.D.

The Renewable Resources Planning Act (RPA) requires that the U.S. Forest Service produce a comprehensive assessment of the demand and supply situations regarding forest and range resources. This assessment occurs every 10 years, with the next reporting due in 1989. As a required part of RPA, projections of future outdoor recreation demand and supply have been developed for a number of activities. These projections are summarized in this article using numbers of recreational trips and the costs of those trips to the recreation traveler. Reported projections represent the most current effort to estimate future changes in recreational trips taken by the American public and associated trip costs. These two pieces of information are useful planning and policy tools.

## Outdoor Recreation Demand and Supply: The Basis of the Approach

### *Demand*

Recreation *demand* refers to the total number of recreational trips people are willing and able to take at various direct trip costs to themselves. Trip costs refer to total travel costs which are a function of the *distance*, *time* and *fees* incurred while traveling to and entering a site. As total travel costs increase, people living in a community may take (demand) fewer trips. Conversely, if total travel costs decrease, a community can be expected to take (demand) more trips (Clawson and

Knetsch, 1980; Dwyer, Kelley and Bowes, 1977; Ward and Loomis, 1986).

### *Supply*

Outdoor recreational trips cannot be purchased, per se, but must be "produced" by recreators themselves. That is, recreators combine travel, time, knowledge, equipment, supplies and recreational sites and settings to produce a recreational trip. The price or cost of producing a trip is total travel costs which are determined by the monetary travel, time and fee costs of the trip (Bockstael and McConnell, 1981; Cicchetti, 1973).

The *supply* of outdoor recreational trips, therefore, refers to the total number of recreational trips people in a community are able to produce at various costs. The farther people in a community travel, the more trips they produce (supply) because increased recreation sites and opportunities are opened up to them. These increased opportunities, however, come at a higher cost per trip. Conversely, as the distance people travel and therefore trip costs decrease, a community is able to produce (supply) fewer recreational trips since more distant recreation sites and opportunities become unavailable.

The exact number of trips a community can produce at various trip costs is mostly dependent on the number and distribution of recreational facilities available to them. If the availability of recreational facilities

or opportunities within a given area is increased, a community will be able to produce more trips without increasing trip costs.

## Demand and Supply Trends and Implications

### *Trips Taken by the American Public*

The demand for recreational trips is determined by trip costs, characteristics of people such as income and age, and the availability of substitute recreational opportunities. Of course, population increases also tend to increase demand. The supply of recreational trips is determined by trip costs and the availability of recreational opportunities. The combined effect of demand (the number of trips a community desires to take at various costs) and supply (the number of trips a community is able to produce at various costs) determines the number of recreational trips people in a community will take or consume.

Demand and supply factors were used to project recreational trips taken by the American population. Data were from the Public Area Recreation Visitors Study and the National Outdoor Recreation Supply Information System (Cordell, Hartmann, Watson, Fritschen, Propst and Siverts, 1987). These data are housed by Forest Service Research in Athens, Georgia.

Future participation in recreation is uncertain and depends on

Table 1. Percentage Changes in Future Outdoor Recreational Trips Taken by American Public

Activity	Percentage Change in Trips by 2000 Under Alternative Public Recreational Opportunity Growth Scenarios			
	Decreased Growth	Zero Growth	Medium Growth	High Growth
<u>Land</u>				
Developed Camping	16	17	20	23
Picnicking	5	7	10	13
Sightseeing	15	16	17	18
Family Gathering	12	16	20	25
Pleasure Driving	12	13	15	17
Visiting Historic Sites	18	18	19	21
Attending Events	11	12	15	17
Visiting Museums	15	16	18	19
Off-road Driving	4	5	5	6
Biking	21	22	24	25
Running/Jogging	26	27	31	34
Walking	13	14	16	18
Cutting Firewood	10	11	12	14
Collecting Berries	10	12	14	16
Visiting Prehistoric Sites	28	29	31	32
Photography	18	20	25	29
Day Hiking	25	27	30	33
Horseback Riding	16	19	22	26
Small Game Hunting	-10	-8	-5	-2
Big Game Hunting	-7	-4	0	4
Nature Study	2	4	9	14
Backpacking	28	31	36	41
Primitive Camping	10	12	15	18
Wildlife Observation	11	14	20	26
<u>Water</u>				
Pool Swimming	30	31	33	35
Motorized Boating	3	5	7	10
Water Skiing	9	10	11	13
Rafting/Tubing	-2	8	34	67
Canoeing/Kayaking	7	10	16	22
Other Boating/Rowing	10	11	12	13
Stream/Lake Swimming	2	4	7	9
Saltwater Fishing	3	4	8	12
Warm Water Fishing	-10	-9	-8	-7
Cold Water Fishing	11	11	12	14
<u>Snow/Ice</u>				
Downhill Skiing	41	46	51	57
Cross-Country Skiing	32	37	47	57

changes in such factors as population size and characteristics, as well as government actions. Trends in recreational trips were, therefore, projected under four scenarios or possible futures. Changes in demand factors such as income, population and age were assumed to increase into the future at a moderate and widely accepted rate. The four scenarios reflected different assumed growth rates of recreational opportunities. The decreased growth scenario depicted public recreational opportunities as decreasing over time, perhaps by attrition of old sites. The zero growth scenario depicted growth of public recreational opportunities as unchanging over time. The moderate growth scenario assumed public recreational opportunities would increase at a moderate growth rate over time (about one-half of one percent per year). In the high growth scenario, recreational opportunities were assumed to increase at a high rate over time (equal to about one percent per year, or equal to expected population growth).

The four scenarios enabled measurement of the sensitivity of future recreational trip consumption to alternative growth rates of public recreational opportunities. All are viewed as feasible and possible. The scenarios are of potential interest to state and federal governments which must make decisions about national forests, state parks and other public lands in the future.

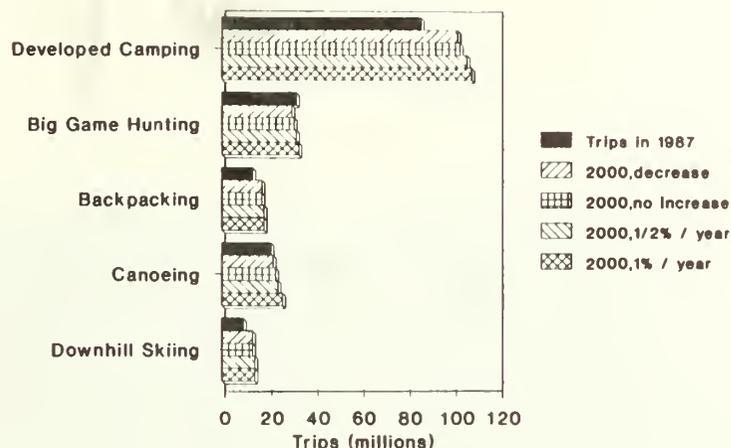
Percentage changes in recrea-

tional trips taken by the American public by the year 2000 under the four recreational opportunity growth scenarios are shown in Table 1. Percentage changes from Table 1 are shown graphically in Figure 1 for selected activities. Across the four alternative recreational opportunity growth scenarios, annual trips for most recreational activities are projected to increase by the year 2000. Notable exceptions are consumptive uses including big and small game hunting and warm water fishing. Under the assumption of either a decrease or zero growth of public recreational opportunities, hunting and fishing

trips are projected to decrease slightly by 2000. Small game hunting and warm water fishing also are projected to decrease by 2000 under the assumption of either medium or high growth of public recreational opportunities, indicating that these activities are decreasing in popularity.

Big game hunting is projected to increase under the assumptions of either medium or high growth of public recreational opportunities. All other activities besides big and small game hunting and warm water fishing show varying degrees of consumption increases by 2000. The magnitude

Figure 1 - Projected Change of Outdoor Recreational Trips 1987 - 2000 with Different Rates of Increasing Supply



of consumption increases is dependent on the particular activity in question and whether public recreational opportunities are assumed to decrease, or grow at zero, medium or high rates.

#### The Cost of Participating in Outdoor Recreation

The interaction between recreation demand and supply is summarized by the percentage change of future total trip costs (travel expenditures, time costs and fees). A zero percentage change suggests that recreation demand and supply are increasing at about the same rate. A negative percentage change means that trip costs are decreasing over time. The implication is that the recreation supply is growing faster than recreation demand. A positive percentage change means that trip costs are increasing, and that recreation demand is growing faster than recreation supply. Percentage changes in trip costs by the year 2000 under the four recreational opportunity growth scenarios are shown in Table 2.

The cost or price percentage changes in Table 2 provide a means for evaluating options the

public sector may take in providing increased recreational facilities or opportunities. For example, with either decreasing or zero growth of public recreational opportunities, trip costs are likely to increase over time for most activities. The implication of increasing trip costs is that finding recreational opportunities is becoming more and more difficult. People may have to travel greater distances and/or spend more time searching for uncrowded recreational facilities.

Under the assumption of medium growth of public recreational opportunities, trip costs remain constant over time for many activities. The implication is that the availability of recreational opportunities is remaining stable. Moderate facility growth is defined as about seven percent from base year 1987 to the year 2000. This represents an average of about one-half of one percent per year, and is about one-half of the expected growth percentage of persons 12 years and older.

Under the assumption of high growth of public recreational opportunities, trip costs decrease over time for many activities. The implication of decreasing trip

costs is that availability of recreational opportunities is increasing over time relative to demand growth. For example, people may not have to travel as far or spend as much time searching for recreational facilities. Thus, gains in the overall availability of opportunities will require a relatively high growth rate of public recreational facilities over time (a growth of about one percent per year). This increase may include the addition of new sites, improvement of access or better information about opportunities.

Some recreational activities appear to be more sensitive to public recreational opportunity growth than others. This sensitivity is indicated by the relative magnitude of trip cost changes across alternative public recreational opportunity growth rates. Activities that are highly dependent upon public recreational opportunities show a relatively large decrease in trip costs as public facilities are increased.

For example, under zero public recreational opportunity growth, trip costs for rafting are projected to *increase* seven percent by the year 2000. Under the assumption of high public recreational opportunity growth, however, rafting trip costs are projected to *decrease* by 20 percent by the year 2000. The relatively large decrease in trip costs caused by increasing public recreational opportunity growth from a zero rate to a high rate indicates that participation in rafting is highly sensitive to changes in rafting opportunities.

## Conclusions

Although subject to error caused by an uncertain future, projections reported in this article are well grounded and are the standard tools of the business world. An example is grain futures reflecting grain dealers' speculations about future grain demand and supply. Recreation demand and supply needs to be taken out of the realm of the mysterious and unmeasurable. Recreation demand and supply are heavily influenced by market behavior and forces. Recreation customers are the same ones who buy bread at the grocery store, and they decide to recreate or not in a manner very similar to how they choose which brand and what amount of bread to purchase.

The estimates in Tables 1 and 2 are the best available current estimates of outdoor recreation demand and supply futures. They offer an opportunity to be responsive, rather than reactive to the future. The estimates provide unique and useful planning and decision-making tools.

It is not suggested, however, that they are the only relevant informational input. These research results are offered as advancement of the understanding of recreation demand and supply. The results should be interpreted and applied using professional judgment, and with due consideration of social, political and other qualitative factors which impact outdoor recreation demand and supply.

Table 2. Percentage Changes in Future Costs of Participating in Outdoor Recreation

Activity	Market-Clearing Cost Per Day in 1987	Percentage Change in Costs by 2000 Under Alternative Public Recreational Opportunity Growth Scenarios			
		Decreased Growth	Zero Growth	Medium Growth	High Growth
<b>Land</b>					
Developed Camping	\$21	2	1	0	-2
Picnicking	40	1	1	-1	-2
Sightseeing	66	1	1	1	0
Family Gathering	67	3	1	-1	-2
Pleasure Driving	40	1	1	0	-1
Visiting Historic Sites	60	2	1	1	0
Attending Events	54	2	1	0	-2
Visiting Museums	57	2	1	0	0
Off-road Driving	34	1	0	0	0
Biking	41	2	2	1	0
Running/Jogging	12	3	2	1	-1
Walking	45	2	1	0	-1
Cutting Firewood	26	2	1	0	-2
Collecting Berries	30	3	1	-1	-3
Visiting Prehistoric Sites	14	3	3	2	0
Photography	31	3	2	-1	-4
Day Hiking	32	3	2	1	-1
Horseback Riding	33	3	2	0	-1
Small Game Hunting	33	2	1	-1	-2
Big Game Hunting	48	2	0	-1	-3
Nature Study	35	2	0	-2	-5
Backpacking	29	5	3	-2	-6
Primitive Camping	24	2	1	0	-1
Wildlife Observation	41	3	1	-2	-5
<b>Water</b>					
Pool Swimming	46	3	2	1	1
Motorized Boating	40	1	0	-1	-2
Water Skiing	41	1	1	0	-1
Rafting/Tubing	47	7	2	-9	-20
Canoeing/Kayaking	39	2	1	-1	-3
Other Boating/Rowing	40	1	1	0	-1
Stream/Lake Swimming	57	1	0	-1	-2
Saltwater Fishing	88	1	0	-1	-3
Warm Water Fishing	41	1	1	0	0
Cold Water Fishing	41	1	1	0	0
<b>Snow/Ice</b>					
Downhill Skiing	43	6	4	2	0
Cross-Country Skiing	28	7	4	0	-5

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# A Recreation Renaissance is Coming!

by Elwood L. Shafer, Ph.D., George Moeller and H. Ken Cordell, Ph.D.

Future scientific discoveries *outside* the normal realm of recreation research will dramatically affect recreation demand and supply patterns in the coming decades and create a kind of recreation renaissance. Some of these discoveries will emerge unexpectedly—creating entirely new recreation markets, or causing further segmentation of current ones. This article describes some of the events that will occur during the recreation renaissance. They were gleaned from over 100 popular and scientific articles involving video, transportation, medicine, recreation equipment, the natural sciences, the built environment and computers/robotics/space.

## Video

Just as the invention of movable type in the 1400s made mass literacy possible and changed Western society from an oral to a written culture, so the video science and technology (S&T) of the 20th and 21st centuries will revolutionize traditional patterns of supply and demand for recreation.

Breakthroughs in video S&T over the next 10-20 years will have countervailing effects on tourism demand and the need to supply natural environments for tourism activities. The following expected scientific advances will very possibly create a *decrease* in demand by taking various attributes of natural environments to the tourist, rather than generating a need for recreationists to

travel to actual environments.

- Videocycles—a combination of a stationary exercise bike and a TV/VCR complete with exciting background music—will be used extensively by bikers at home to tour scenic routes in forested and urban environments.

- Image libraries that will contain all the world's best art will be available for home viewing. Inexpensive flat panel-display devices will be available throughout the house. Such devices will have a resolution so good that viewing a projection will be like looking at the original oil painting.

- People will be able to create their own images and scenes on their TV screens, simulating just about anything. For example, if viewers want to enjoy a raft trip down the Grand Canyon of the Colorado River, they will be able to call up the image on a wall-size TV. With a raft at home, the viewers will experience the sensation of the trip.

- TV's will be wall-projection units with image quality rivaling that of 35 mm film. Digital TV will allow the viewer to participate in the actual production:

- As simulators become more realistic, people will be able to enjoy the breathtaking thrills of high-risk tourism experiences such as sky diving, mountain climbing or underwater explorations with scuba gear without leaving home.

Though such technology may decrease demand for outdoor recreation, a few examples of video

S&T will help to increase demand and create a greater need to supply on-site facilities. Included are:

- Video tapes will be used on location in specific recreational environments to train tourists to become more skilled at recreational activities—skiing, scuba diving or sailing, for example—so participants can almost instantly apply what they have seen on videotape to their activity.

- Rather than read about a tourist destination in a travel guide, the average consumer will view travel video tapes of several potential destinations prior to making a decision about which trip to take.

- Existing flight simulators generally place a person behind the controls of comparatively tame private planes. In the future, computer programs will not only teach basic flying skills, but also provide instructions on advanced maneuvers and stunts.

## Transportation

The overall effect of science and technology advances in transportation will be a greater increase in demand for recreation activities. Future transportation will be faster, easier and more comfortable.

- Cars will contain many of the sights, sounds and comforts of home: video map displays of the car's position, car phones, facsimile machines, lap-top computers that can send and receive

data, answering machines and sound systems for high-tech compact disc players.

- Magnetic trains—trains that literally fly between cities on cushions of electromagnetism—will be making short trips (for example, Los Angeles to Las Vegas) faster than airlines can manage today.

- An aerospace plane, about the size of a Boeing 727 and able to take off and land at regular airports, will fly coast to coast in about 12 minutes. Scheduled commercial flights from New York to Tokyo will take about two hours.

- A 25-passenger tilt-rotor aircraft will be used to provide short trips between major cities in Europe that are 600 or fewer miles apart. It will take off from downtown heliports and, when aloft, change to a conventional cruise plane. It will cost half as much to operate, but fly twice as fast as most helicopters.

- Vertical take-off and landing vehicles that cruise 225 mph above daily traffic will be used for everyday personal and commercial use.

## Medicine

Major medical advances will enable people to live longer, healthier lives as science discovers new treatments for major disorders and even pushes back the frontiers of aging itself. Consequently, the recreation population probably will be comprised of a greater proportion of more mature, physically active, health-

ier individuals who will seek greater levels of adventure and physical challenge than ever before. Some of those medical advances will include the following:

- Many of the diseases that plague humans today—cancer, arteriosclerosis, arthritis, diabetes and many infectious diseases—will fade from the scene in the next 20 years because effective ways to prevent or treat them will be found.

- Genetic manipulation will help dispose of congenital defects that have plagued society for so long.

- Research in combating AIDS will allow science to deal more effectively with problems of the immune system, and out of this will come, among other things, a dramatic increase in the success and number of transplant operations.

- In the next 20 years, there will be all kinds of transplants: heart, lung and brain-cell transplants.

- Non-addictive pain killers—more powerful than morphine—will be commonplace.

- There will be medicines that improve and restore memory, stave off senility, cure Parkinson's and Alzheimer's disease and heal spinal cords.

- Pills that cure fear of flying and fear of heights, and medicines that cure addictions to drugs and alcohol will be available.

- There will be hormones for

controlling weight, memory and growth, and artificial blood that can be given to a person with any blood type and that carries none of the risks that human blood can.

## Recreation Equipment

Here, as in the case with video, scientific advances in recreation equipment will cause both increases and decreases in recreation demand. The overall effect, however, probably will be more people spending more time, day and night, in recreation environments at all times of the year.

- Outdoor recreation clothing, although extremely lightweight and breathable, will be resistant to cold, rain, heat and tearing, allowing the user to wear just one outfit for all climates and conditions.

- Night-vision glasses will allow individuals to participate in outdoor recreation activities in the dark; off-road vehicles will be driven at night without headlights.

- Electronic and other devices will be worn by outdoor enthusiasts to improve hearing, touch, sense of smell, strength and coordination.

- Ultralight two-person aircraft will be popular for touring and soaring in the 1990s.

- Inflatable boats that can be stored in a closet, carried to the water in the smallest car and used in places that are not accessible by conventional boat will be

used extensively in the future.

- Because more people can be expected to participate in tourism and outdoor recreation activities if they can quickly learn and enjoy the skills required, sports equipment manufacturers will develop new equipment that enhances participant success.

- Innovations in equipment will allow all-road vehicles to be converted for wheelchair riders.

- Supersubs will be developed as a kind of undersea tour bus with oversized windows and interiors like passenger planes.

## The Natural Sciences

The overall impact of new S&T in the natural sciences will be to increase both demand and supply for forest tourism. Emerging technology will immensely improve the quality of natural environments, probably more so in the next several decades than in previous centuries. The resultant increase in environmental quality will stimulate demand and supply for leisure activities in natural environments.

- Rainbow trout weighing as much as 100 pounds and maturing five times faster than normal will be developed through genetics research. Similar achievements will be realized for salmon, tuna and other commercial fish.

- Techniques will be devised to communicate with one or more animal species that could eventually lead to the develop-

ment of a universal translator device.

- Science will develop a grass that is self-weeding, can be grown in almost any climate or soil, needs no watering or fertilizer, and only needs to be mowed two or three times per year.

- Biotechnology will develop waste-eating bacteria to reduce or eliminate water pollution and toxic waste.

- Marine biology research will provide a means to understand, predict and perhaps even control the behavior of more useful or commercially valuable species, not just for human use but also for the species' own good.

- Extended weather forecasts for two or more weeks will be possible.

- Science will develop a practical way to make drinking water from the ocean.

## The Built Environment

Science and technology in the built environment will cause both increases and decreases in the tourism demand-supply phenomena. Some of the items that will create increases include the following:

- Massive, multi-storied, floating hotels will be moored off shore and contain restaurants, shopping arcades, gymnasiums and glass-enclosed elevators that carry tourists directly to the seafloor.

- Underwater hotels will at-

tract the more adventurous leisure travelers who can peer at the undersea life through their bedroom window.

- One-molecule-thick glass that bends like Saran Wrap and can be molded into many shapes will be used to create tourism structures that blend esthetically in forest environments and have interiors with summer temperatures throughout the year.

- Geotextiles, a filament produced from a variety of sources to form a non-biodegradable fabric, will be used to stabilize erosion of scenic forest roads and trails.

- Energy efficient earth shelters—those that use soil and sod for insulation—will be used in outdoor recreation facilities in hostile climates.

On the other hand, certain kinds of S&T related to the built environment will cause recreation demand to decrease.

- Many homes of the future will become self-contained islands in terms of leisure lifestyle and entertainment potential. Developers will build homes that cater to the individual recreational appetites of the buyer.

- The theme parks of the future will be individual-experience centers where technology will let people role play . . . almost anything. For example, a Victorian-style high-tech house is presently being constructed that transports visitors back into a romantic version of the previous century. The house includes a three-dimen-

sional film theatre that employs vibrating chairs to simulate motion, a scent-projection device that is coordinated with images on the screen and a state-of-the-art sound system.

- Restaurants will use special image projections in which holograms in the shapes of mystical figures will magically appear beside customers' tables to take their orders.

## Computers, Robotics, Space

The coming revolution in computers, robotics and space will cause major changes in demand-supply conditions that stretch imagination to the limit.

- Fifty years from now, more of the world's surface may be used for farms, parkland and wilderness because considerable quantities of industry will be moved into space.

- Robots will be built in the form of buildings that provide most of the services of modern hotels and that are run by an administrative computer.

- Robots will eventually occupy a large part in planning many recreation and tourism-related facilities and services—such as restaurants, landscaping, park design and entertainment.

- Robots will be used to perform hazardous tasks such as rescue operations in remote environments.

- Artificial intelligence will be

used in educational courses designed to enhance human negotiation, management and leadership skills—these machines will instruct, counsel and evaluate the student's participation.

- Computer programs that can draw conclusions will be used by recreation and tourism managers to help formulate the best program mix for clientele and to manage vast natural resources for a multiplicity of uses.

- A pocket-sized, voice-activated computer will be available that translates English into two or three languages.

- Conflict-negotiation computer games will be used by recreation resource managers to define and choose alternative courses of action regarding recreation development versus non-development in wildland areas.

- Vandal-proof computers will be installed at trail-heads and along trails to better explain the value of the environment and interpret what is being observed.

- A passenger module will be developed for the space shuttle that will carry passengers to an orbiting space hotel or act as a hotel module itself.

## Summary

Essentially the whole process of recreation strategic planning boils down to planning on uncertainty. Uncertainty is the complement of knowledge—the gap between what is known and

what needs to be known to make correct decisions. Dealing sensibly with uncertainty is not a by-way on the road to responsible recreation management decisions—it is central to it.

To cope with future recreation planning, management and research, recreation professionals need to be renaissance-thinking women and men. The need to imagine, perceive and gauge the future are paramount professional attributes of recreation professionals of tomorrow. The recreation phenomena will be managed by today's professionals who look to the future and shape it into a strategic vision. The information presented in this article has been aimed at helping create a genesis of that vision.

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## Changing Future of Outdoor Recreation

Cordell, H.K., L.A. Hartmann, A.E. Watson, J. Fritschen, D.B. Propst and E.L. Siverts, 1987. The public area recreation visitor survey: a progress report. In: Cordell, Barbara McDonald (Ed). Proceedings, Southeastern Recreation Research Conference, Asheville, NC, February 1986.

Forest Service (in press). The 1989 Assessment of Outdoor Recreation and Wilderness.

Hartmann, L.A. and H.K. Cordell (in press). An overview of the relationship between social and demographic factors and outdoor recreation participation. In: Proceedings, Benchmark 1988: An Outdoor Recreation and Wilderness Forum. Tampa, Florida, January 13-15, 1988.

Hartmann, L.A., H.R. Freilich and H.K. Cordell (in press). Trends and current status of participation in outdoor recreation. In: Proceedings, Benchmark 1988: An Outdoor Recreation and Wilderness Forum. Tampa, Florida, January 13-15, 1988.

MOR (Market Opinion Research). 1986. Participation in outdoor recreation among American adults and the motivations which drive participation. In: Working Papers, President's Commission on Americans Outdoors.

O'Leary, J.T., T.L. Napier, F.D. Dottavio, D. Yoesting and J. Christensen (1982). Examining predictor variables used in outdoor recreation planning. In: Countryman, Chappelle and Webster (Eds.). *Guiding land use management*. Baltimore: Johns Hopkins University Press.

Zuznek, J. 1978. Social differences in leisure behavior: measurement and interpretation. *Leisure Sciences*, 1, 271-293.

## Future Supply and Demand of Outdoor Recreation in America

Bockstael, N.E. and K.E. McConnell. 1981. "Theory and Estimation of the Household Production Function for Wildlife." *Journal of Environmental Economics and Management* 8:199-214.

Cicchetti, C.J. 1973. *Forecasting Recreation in the United States*. Lexington Books, D.C. Heath and Co.

Clawson, M. and J. Knetsch. 1980. *Economics of Outdoor Recreation*. Baltimore, Maryland: John Hopkins University Press.

Cordell, H.K., L.A. Hartmann, A.E. Watson, J. Fritschen, O.B. Propst and E.L. Siverts. 1987. "The Background and Status of an Interagency Research Effort: The P A R V S (PARVS)". In: B.M. Cordell, ed., *1986 Southeastern Rec. Research Conference*. Asheville, NC.

Dwyer, J., J. Kelley, and M. Bowes. 1977. *Improved Procedures for Valuation of the Contribution of Recreation to National Economic Development*. Water Resources Report No. 128. University of Illinois at Urbana, Champaign, IL.

Ward, F.A. and J.B. Loomis. 1986. "The Travel Cost Demand Model as an Environmental Policy Assessment Tool: A Review of Literature" *Western Journal of Agricultural Economics* 11:164-178.

## Introduction

Mitchell, Arnold. 1983. *The Nine American Lifestyles*. New York: Warner Books.

Naisbitt, John. 1982. *Megatrends*. New York: Warner Books.

Anon. 1987a. Future trends: What lies ahead for environmental education and environmental interpretation—part 1. *Mason-Dixon By-Lines*, X(3) (as excerpted from "The Environmental Interpreter," published by the Pennsylvania State Parks, January 1987).

Anon. 1987b. Future trends: What lies ahead for environmental education and environmental interpretation—part 2. *Mason-Dixon By-Lines*, X(3) (as excerpted from "The Environmental Interpreter," published by the Pennsylvania State Parks, January 1987).

## Non-Recreational Wilderness Use Comes of Age—Again

Davis, George D. 1986. "Wilderness Characteristics and Values." In: Kulhavy, David L. and Richard N. Conner, eds. *Wilderness and Natural Areas in the Eastern United States: A Management Challenge*. Nacogdoches, Texas: Stephen F. Austin University.

Douglas, William O. 1965. *A Wilderness Bill of Rights*. Boston, Massachusetts: Little, Brown and Company.

Driver, B.L., Roderick Nash and Glenn E. Haas. "Wilderness Benefits: A State-of-Knowledge Review." In: Lucas, Robert C. Compiler. Proceedings—National Wilderness Research Conference: Issues, State-of-Knowledge, Future Directions. USDA, Forest Service General Technical Report INT-220.

McCloskey, Michael. 1966. "The Wilderness Act of 1964: Its Background and Meaning." *Oregon Law Review*, Volume 45, June.

Nash, Roderick. 1980. "The Value of Wilderness." *Wild America*, Volume 4, Spring.

Reed, Patrick, Glenn Haas, Lois Sherrick, and Frank Beum. 1988. "Non-recreational Uses of the National Wilderness Preservation System: A 1988 Telephone Survey." In: Proceedings of the 1988 National Wilderness Colloquium. In press. USDA Forest Service. Southeast Forest Experiment Station: Asheville, North Carolina.

Rolston, Holmes. 1986. *Philosophy Gone Wild*. Buffalo, New York: Prometheus Books.

## Participation Shifts in Outdoor Recreation Activities

Blackburn, McKinley L. and David E. Bloom. 1985. What Is Happening to the Middle Class? *American Demographics*, January, p. 19.

Bureau of Labor Statistics. 1982. 1980-81 Consumer Expenditure Survey, Washington, D.C.: U.S. Department of Commerce.

Cetron, Marvin. 1985. When Will America Excel in the Year 2000? Interview for *U.S. News & World Report*, September 23, 1985.

Cetron, Marvin and Thomas O'Toole. 1982. *Encounters with the Future: Forecast of Life into the 21st Century*. New York: McGraw Hill.

Collesano, Stephen. 1984. Forces for Change to the Social Development. Comments from 1984 Symposium, the Soap and Detergent Association.

Flanagan, J. Michael. Demographic Forecasts. *American Demographics*, August 1983, p. 50, and September 1983, p. 50.

Hornback, Kenneth H. Social Trends and Leisure Behavior. Paper presented at the 1985 National Outdoor Recreation Trends

Symposium II, February 24-27, 1985, Myrtle Beach, South Carolina.

John Naisbitt's Trend Letter. The Naisbitt Group, 1101 30th Street, N.W., Washington, D.C. 20007.

Shaber, Sandra. 1984. *Is the Middle Class Shrinking? Consumer Markets Long Term Outlook*. Bala Cynwyd, Pa.: Chase Econometrics.

Sivy, Michael. 1985. What We Don't Know. Presented at Approaching Tomorrow Today: A Home Care Symposium sponsored by Johnson Wax, October 23, 1985, Chicago, Illinois.

Sternleib, George and James W. Hughes. The Housing Locomotive (and the Demographics), March 1984, pp. 22-27.

U.S. Census Bureau. Silver Hill and Suitland Roads, Suitland, MD 20233-0000.

U.S. Travel Data Center, 1899 L Street N.W., Washington, D.C. 20036.

United Way of America. 1985. What Lies Ahead—a Mid-decade View. An Environmental Scan Report.

## Rumblings of Resurgence: Expanding Roles of and Techniques in Interpretation

AIN/WIA Consolidation Committee. 1987. Proposed Bylaws, submitted to memberships for a vote.

Anon. 1987a. Future trends: What lies ahead for environmental education and environmental interpretation—part 1. *Mason-Dixon By-Lines.*, X(3) (as excerpted from "The Environmental Interpreter," published by the PA State Parks, January 1987).

Anon. 1987b. Future trends: What lies ahead for environmental education and environmental interpretation—part 2. *Mason-Dixon By-Lines.*, X(3) (as excerpted from "The Environmental Interpreter," published by the Pennsylvania State Parks, January 1987).

Machlis, Gary, Sam Ham and Sarah Baldwin. 1985. *Evaluating National Park Service Interpretive Programs: Views from the 1985 AIN National Workshop*. Moscow, Idaho: Cooperative Park Studies Unit, University of Idaho.

McKendry, Jean. 1987. Personal notes for "National Park Service Interpretation: The Future is Now," presented at the National

Interpreters Workshop, St. Louis, Missouri, November 1987.

McKendry, Jean and Destry Jarvis. 1987. National Park Service interpretation: The future is now. 1987 National Interpreters Workshop Proceedings. AIN/WIA, 100-102.

Mott, William Penn, Jr. 1985. *12-Point Plan*. Washington, D.C.: National Park Service.

Naisbitt, John. 1982. *Megatrends*. New York: Warner Books.

Russell, Carl. 1960. A 40th anniversary. *Yosemite Nature Notes*. Yosemite, California: Yosemite National Park, 39(7).

Vander Stoep, Gail A. (in press) Interpretation: Benchmarking current status and trends, identifying issues and future needs. In: Proceedings. Benchmark 1988: A National Outdoor Recreation and Wilderness Forum. Tampa, Florida, January 13-15, 1988.

## Social Psychological Aspects of Outdoor Recreation

Driver, B.L. and P.J. Brown. 1978. The opportunity spectrum concept and behavioral information in outdoor recreation resource supply inventories: A rationale. *Integrated Inventories of Renewable Natural Resources*. USDA Forest Service General Tech Report RM-55. Rocky Mountain Forest and Range Expt. Stn., Ft. Collins, Colorado, pp. 24-31.

———. 1987. Probable personal benefits of outdoor recreation. *A Literature Review—President's Comm. on Americans Outdoors*. Washington, D.C.: U.S. Govt. Printing Office, pp. 63-70.

Driver, B.L. and S.R. Tocher. 1974. Toward a behavioral interpretation of recreation engagements with implications for planning. B.L. Driver, ed., *Elements of Outdoor Recreation Planning*. Ann Arbor, Michigan: University of Michigan Press, pp. 9-31.

Schreyer, R. and B.L. Driver. 1988. The benefits of outdoor recreation participation. Paper presented at Benchmark 1988: A National Outdoor Recreation and Wilderness Forum, Tampa, Florida.

Tocher, S.R. 1974. Lectures presented in course in Outdoor Recreation Management, School of Natural Resources, The

University of Michigan, Ann Arbor, Michigan.

## Trends in Leisure and Recreation

American Forestry Association. 1980. *Renewable Natural Resources: Key to the Future*. Washington, D.C. 56p.

Clawson, Marion. Two generations of history of outdoor recreation. In Proceedings: Benchmark 1988, a national outdoor recreation and wilderness forum. In preparation.

Cordell, H. Ken and John C. Hendee. *Renewable resources recreation in the United States: supply, demand, and critical policy issues*. 1980. American Forestry Association Washington, D.C., 88p.

Davis, Earon S. The environment is 'moving'. *Environmental Forum*, Vol. 3, No. 8 Dec. 1984. pp. 29-33.

Leisured Masses. *Business Week*, Sep. 12, 1953. pp. 142-152.

McLellan, Gina. The future of outdoor recreation: what the trends tell us. *Parks and Recreation*, 21 (5) 1986. pp.43-48, 63.

Muskie, Edmund. Reflection on a quarter century of environmental activism. *Environmental Law Reporter*, Vol. XVIII, No. 3. March 1988. pp.10081-10083.

Siehl, George H. Developments in outdoor recreation policy since 1970. In: Proceedings, Benchmark 1988, a national outdoor recreation and wilderness forum. In preparation.

Szwak, Laura B. Social and demographic trends affecting outdoor recreation. In: Proceedings, Benchmark 1988, a national outdoor recreation and wilderness forum. In preparation.

U.S. President's Commission on Americans Outdoors. *A Literature Review*. 1986. G.P.O. Washington, D.C. Various pagings.

———Report and Recommendations to the President of the United States. 1986. G.P.O. Washington, D.C. 210p.

———Working Papers. 1986. G.P.O. Washington, D.C. Various pagings.