# INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

**The quality of this reproduction is dependent upon the quality of the copy submitted.** Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

ProQuest Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600

UMI®

The Pennsylvania State University
The Graduate School
College of Health and Human Development

# THE URBAN RECREATION EXPERIENCE: AN EXAMINATION OF MULTICULTURAL DIFFERENCES IN PARK AND FOREST VISITATION CHARACTERISTICS

A Thesis in
Leisure Studies
By
Vinod Sasidharan



Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Doctor of Philosophy

August 2001

We approve the thesis of Vinod Sasidharan.

Date of Signature

Geoffrey C. Godbey — 7/24/01
Professor of Leisure Studies
Thesis Advisor
Chair of Committee

Alan R. Graefe — 7/24/01
Associate Professor of Leisure Studies

Robert D. Lee — 7.23.01
Professor of Hotel, Restaurant, and
Institutional Management and Public Administration

Deryck W. Holdsworth — 23rd July, 2001
Professor of Geography

Fern K. Willits — 7/23/01
Professor of Rural Sociology

William F. Elmendorf — 7/24/01
Instructor of Urban and Community Forestry
Special Member

Linda L. Caldwell — 23 July 01
Associate Professor of Recreation and
Park Management
In Charge of Graduate Program in
Leisure Studies

## ABSTRACT

The ethnic minority population of the U.S. continues to increase due to rising minority birth rates coupled with the influx of ethnic immigrants to America's cities, suburbs and towns. Current demographic trends indicate population growth for racial and ethnic minority groups is increasing considerably faster than the rate for the U.S. population as a whole. As part of a long-term plan for meeting public needs and building healthy urban parks and recreation services, it is important to assess and address the perceptions, values and needs of our nation's growing multi-cultural, diverse ethnic minority populations with respect to urban parks and forests and their management. Existing research has been inadequate in explaining how the recreational users' ethnic and sociocultural background affects their recreational experiences. This knowledge gap hinders a manager's ability to provide a high quality recreation experience for his/her recreation resource users by meeting their needs while managing the natural resources for recreational purposes.

The purpose of this study was to examine differences in outdoor recreation characteristics, relevant to urban parks and forests, both across and within selected population subgroups. Specifically, this study examined inter-ethnic variations in outdoor recreation characteristics across various population subgroups, the influence of acculturation on intra-ethnic variability in outdoor recreation characteristics within ethnic subgroups, and acculturation-related patterns of variations in outdoor recreation characteristics of ethnic subgroups in comparison with the Anglo or White population.

Household members belonging to five ethnic population subgroups - Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, Korean or Korean American, African American, and members of Anglo or White households residing in and around two greater metropolitan centers, namely Philadelphia, PA and Atlanta, GA were surveyed using Dillman's Tailored Design Approach. The survey instrument utilized by this study was a self-administered mail questionnaire in which subjects were asked about their park and forest-related outdoor recreation preferences, participation patterns, and activities.

Results indicated that the Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, and Korean or Korean American groups were similar to Anglos or Whites and African Americans with respect to visiting parks and forests in small groups of one or two other persons, during weekends, and for more than one hour; frequent participation in social activities during their visits; and high importance ratings for park management (litter control, maintenance, proper signage, etc.). Several differences in outdoor recreation characteristics were also observed among the subgroups. Compared to Anglos or Whites, ethnic individuals mostly visited parks and forests in larger groups and for longer durations of time and participated more frequently in group activities during their visits. An examination of linguistic acculturation-based differences in outdoor recreation characteristics within the ethnic subgroups (not including African Americans) indicated both, similarities and dissimilarities between the high acculturated ethnic individuals and the Anglos or Whites, in regard to outdoor recreation characteristics. Compared to lower acculturated ethnic individuals, higher acculturated respondents were less likely to visit parks and forests in groups and less likely to spend longer hours during their visits, indicating similarity to the Anglos or Whites. Higher acculturated individuals were also less likely to visit with others from the same racial/ethnic group, indicating dissimilarity to the Anglos or Whites. Overall, acculturation level played an important role in influencing park and forest visitation patterns of the ethnic individual, whereas recreational activity participation and preferences for park and forest features (except ethnic interaction) were mostly unaffected by acculturation levels.

The results of this study indicated that increasing or decreasing level of acculturation among the identified ethnic groups produced change in some outdoor recreation characteristics of these groups, in reference to Anglos or Whites. This finding suggests that although certain components of recreation resource management, such as site design, maintenance, and staffing, could be slightly impacted depending upon levels of acculturation of ethnic recreationists, overall, management guidelines, for an urban park or forest, are more likely to be determined by the ethnic makeup of its visitors, rather than the ethnic recreationists' levels of acculturation.

Owing to the existing inadequacy of explanations for ethnic differences in outdoor recreation patterns from broader sociopsychological perspectives, further theory-based research endeavors need to be undertaken to unravel reasons for such ethnic differences and/or similarities. Thus, the influence of cultural values and levels of acculturation on ethnic individuals' outdoor recreation participation patterns and preferences warrants in-depth examination in future research.

# TABLE OF CONTENTS

## TABLE OF CONTENTS (continued)

## LIST OF TABLES

## LIST OF TABLES (continued)

## LIST OF TABLES (continued)

## LIST OF TABLES (continued)

## ACKNOWLEDGEMENTS

"Until he extends his circle of compassion to include all living things, man will not himself find peace." – Albert Schweitzer

During the past twenty nine years, the 'true' meaning of 'peace,' in my life, has constantly evolved. I do not expect this emotional trend to change anytime soon in the foreseeable future. In fact, I look forward to experiencing new, different embodiments of peace in the years to come. In retrospect, my parents have brought fulfilling peace to my life at all times, both good and bad. I am eternally indebted to my parents, Radhamony and Sasidharan, for their everlasting love and affection given to me over the years. Thank you. Needless to say, I dedicate my work to my dear parents for the unfathomable knowledge and sense of understanding that they have imparted to me. You have helped me find peace whenever my hopes of finding it have waned.

Whilst I've been away from my parents I have found peace in the midst of several, honest and sincere people. Trust, I believe, is the lifeblood of any peaceful relationship. I am fortunate to have had the guidance, support, encouragement and, above all, the trust of my mentor, Dr. Geoffrey Godbey, who I see foremost as my father figure. His insightful advice has never faltered. I extend my deepest appreciation and gratitude to Dr. Godbey. Words cannot quantify the amount of respect that I hold for him. Without his expertise and willingness to give prompt advice, this work would never become a reality.

Very special thanks are extended to my committee members, Dr. Fern Willits, who has instilled in me a strong sense of perseverance, determination and heightened standards for research excellence; Dr. Alan Graefe, who has shown me the true meaning of the word 'humility' through his accommodating nature; Dr. Robert Lee, Jr., who has provided continuous support during my academic efforts; Dr. Deryck Holdsworth, who has given me a new perspective for viewing natural landscapes, that from a sociocultural standpoint; and William Elmendorf, who has offered his invaluable time and energy to introduce fresh thoughts and ideas toward the conceptualization of my

dissertation. Without the relentless support, commitment, encouragement and advice of my committee, this work would have been much less enjoyable.

Two very special people, Charlene and Jerry Witherite, deserve a very special thanks. Charlene and Jerry have been my parents away from home and have brought peace in my life whenever I have been faced with personal challenges beyond the scope of academia. They have also taught me, besides the importance of parenthood, family life and other rememberable (and remarkable) things, a simple recipe for great outdoor cooking – mountain pies and hotdogs. Thank you for being there for me and believing in me during my difficult times.

My sincere thanks also goes to Drs. Albert and Lorraine Kligman from the University of Pennsylvania for the 2001 Kligman Graduate Fellowship, bestowed upon me by the College of Health and Human Development, The Pennsylvania State University. The Fellowship award has helped me, in terms of meeting my academic goals at Penn State.

I would like to acknowledge the USDA Forest Service (and the National Urban and Community Forestry Advisory Council) for providing grant money to support this study.

Finally, I would like to thank everyone involved in providing me with support and encouragement as this dissertation progressed. May you all find peace with your loved ones.

**The Sun of the First Day**

by
Rabindranath Tagore

The sun of the first day
Put the question
To the new manifestation of life-
Who are you?
There was no answer.
Years passed by.

The last sun of the last day
Uttered the question
on the shore of the western sea
In the hush of evening-
Who are you?
No answer came again.

# CHAPTER 1

# INTRODUCTION

## Ethnic and Racial Diversity In Urban Parks and Forests

The ethnic minority population of the U.S. continues to increase, due to rising minority birth rates coupled with the influx of ethnic immigrants to America's cities, suburbs and towns (Parrillo, 1994). Current demographic trends indicate population growth of racial and ethnic minority groups is increasing considerably faster than the rate for the U.S. population as a whole. If race and ethnic definitions remain the same, and so do immigration, fertility, and mortality patterns, minority groups will continue to grow faster than the non-minority population (Riche, 2000). According to current projections, non-Hispanic Whites will make up barely one-half of the total population by 2050 and will lose their majority status by 2060. The U.S. population is presently comprised of 72 % non-Hispanic Whites, 12% non-Hispanic African Americans, 12% Hispanics, and 4% Asian and Pacific Islanders, and the share of the minority population in the U.S. will rise from 28% in 1999 to 47 % in 2050 (Riche, 2000). Over the next 30 years, 82 % of the nation's growth will come primarily from Hispanic, Asian, African American, and other ethnic minorities (Dwyer, 1994; Murdock, Backmann & Coldberg, 1990, USDA Forest Service, 1994). Based on present immigration trends, by the year 2050, 25% of the US population will be Hispanic, 15% African American and 10% will be Asian (U.S. Department of Commerce, 2000).

Most of the ethnic population in the U.S. resides in urban and metropolitan areas – almost 95% of Asian Americans, more than 91% of all Hispanics, and more than 85% of African Americans are urban residents. Non-Hispanic Whites account for 50% or less of the urban population (Frey, 1998). Moreover, in many urban areas, these ethnic and racial "minority" groups outnumber the traditional "White" majority. Indeed, nationwide, ethnic and racial "minority" groups constitute an important and growing user segment of urban parks and forests. These parks and forests not only can provide diverse opportunities for recreation, leisure, and cultural activities (Chicago Park District, 1989; More, 1985), but they also serve as alternative access routes to shop or work and connectors between neighborhoods and

foster diversity of social relationships (Shafer and Floyd, 1997). To better manage urban parks and forests, a heightened understanding of the values, attitudes and behaviors of the ethnic minorities they serve is important.

Much of the research examining leisure behavior, including recreation participation rates and patterns of participation, of the US population has relied predominantly on general population samples, consisting usually of a larger proportion of White than non-White respondents (Ewert, Gramann & Floyd, 1991). Despite the undeniable significance of such studies and their contribution to leisure research, they have not been highly effective in sufficiently providing an in-depth examination of the recreation participation rates and participation patterns of specific ethnic minority groups (Carr & Williams, 1993). Besides examining the probability and frequency of an individual recreationist's participation in a particular recreation activity, it is vital for leisure and recreation researchers to understand the meanings attributed to a specific recreation activity and the significance of participation or lack of participation in a given recreation activity to the individual or (ethnic) group. In order to contribute to the body of existing literature on ethnic recreation, this study will attempt to investigate differences in outdoor recreation characteristics (patterns, activity participation, and preferences) across six population subgroups, i.e., Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, Korean or Korean American, African American, and Anglo or White groups.

## Growth of Ethnic and Racial Groups

According to Riche (2000), U.S. racial and ethnic origin groups generally grow in three ways: from *natural increase* (the excess of births over deaths), *net immigration* (immigration minus emigration), and *evolving identities* (self-identification of race and ethnicity). Natural increase is largely responsible for the changes in the absolute numbers and percentage share of the White, Black, and American Indian populations. In 1998, racial and ethnic minorities contributed 40% of all U.S. births, even though they represented only 28% of the total population. Fertility rates are generally higher for minority populations for two reasons. First, recent immigrants tend to maintain the relatively higher fertility rates of the

countries from which they came. Second, minority populations tend to be relatively younger - the product of both immigration (young adults are more likely to migrate) and fertility. Although immigration keeps adding to the number of foreign-born Hispanics and Asians, the number of U.S.-born Hispanics and Asians is projected to increase at an even faster rate. This natural increase will eventually reduce the percentage of these populations that is foreign-born. Minority populations also have higher mortality rates, due in part to lower socioeconomic status and more limited access to health care, but the gaps between life expectancy for different populations groups has been narrowing since the early 1990s and Census Bureau projections suggest that this trend will continue.

Immigration, along with natural increase, has driven the rise in the number of Hispanics and Asians. Current projections suggest that immigration will keep these U.S. minority groups growing briskly with approximately one million immigrants per annum. The U.S. Census Bureau estimates that immigration will add 468,000 Hispanics, 229,000 Asians, 161,000 non-Hispanic Whites and 93,000 non-Hispanic blacks annually to the U.S. until 2025. Hispanic immigration is expected to ease over the next 25 years, while that of non-Hispanic Whites and Blacks and especially Asians, is projected to increase.

A third source of growth is change in self-identification of race and ethnicity. The concept of race is relatively fluid and a product of a social construction, depending in part on how people perceive themselves, and how they are perceived by the society in which they live. The United States census, starting with Census 2000, allows residents to self-identify their race/ethnicity based on 'Hispanic origin' and 'race.' Within the 'Hispanic origin' option, individuals can choose one or more of the following categories: Spanish/Hispanic/Latino, Mexican/Mexican American/Chicano, Puerto Rican, Cuban, other Spanish/Hispanic/Latino, and not Spanish/Hispanic/Latino, while the 'race' option allows individuals to choose one or more of the following options: White, Black/African American/Negro, American Indian or Alaska Native (with tribe identification), Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Native Hawaiian, Guamanian or Chamorro, Samoan, Other Asian, Other Pacific Islander, and Other race.

Although Americans choose the race and ethnic groups with which they identify, patterns of identification are often driven by the political context. Recent patterns reflect the decisions of people who

wanted to gain power and political representation by joining with under-represented groups beneath one large umbrella. Additionally, socioeconomic status could make racial definitions more important to certain minority groups than national origin, especially as the groups' growing numbers make them less a "minority." Furthermore, increased intermarriage between Americans of different racial and ethnic groups is resulting in more children of mixed racial heritage, with multiple ethnic identities, thereby creating a new minority of multiracial people.

## Ethnic Recreation Research in the U.S.

Ethnic diversity will impact the social landscape of urban areas, including the ways in which residents use urban parks and forests for recreational purposes. In the past, only a few scholars have examined the relationship between ethnicity and urban recreation participation (e.g., Jones, 1970; Marans & Fly, 1981). The occurrence of civil unrest in major U.S. cities and culmination of the U.S. Civil Rights movement during the 1960s generated heightened public awareness regarding the widespread existence of racial inequality in societal institutions. Consequentially, recreation and leisure services inequality became the focus of several government initiated research studies examining differences in participation patterns, and the causes of such variations, between Anglo or White majority and ethnic minority groups (Kraus and Lewis, 1986; Johnson et al., 1997; Floyd, 1998). The following discussion synthesizes Johnson et al. (1997) and Floyd's (1998) summarizations of race and ethnic studies conducted in the U.S. since the 1960s.

Most studies undertaken in the 1960s and 1970s suggested that differences in cultural norms and socioeconomic status (education, income, employment) between the Anglo or White and ethnic minority groups were the key factors responsible for differences in recreation and leisure participation. Lee (1972) furthered the ethnic research status quo of the 1960s and 1970s by proposing the sociocultural-meaning theory. According to this theory, recreation behavior and participation patterns of population subgroups are related to social psychological variables and are products of place- and activity-specific meanings and everyday norms and habits. Two other theories - opportunity or demographic theory and compensation

theory - also emerged during this time; both emphasized socioeconomic causes as being the determinants of recreation participation or non-participation. Opportunity theory suggested that demographically related inaccessibility to recreation resources was the primary cause of nonparticipation among ethnic groups. According to the compensation theory, contrary to general belief that ethnic minority groups underparticipated in recreation activities, ethnic minority groups occupied relatively marginal status in society and therefore their recreation participation levels were, in fact, higher than that of Anglos or Whites of similar socioeconomic status (Johnson et al., 1997). Washburne (1978) classified ethnic recreation theories into two categories - marginality and ethnicity. While the marginality perspective underscored the relevance of social structural and economic constraints (lack of adequate information, lack of transportation, financial incapacity) in explaining differences in recreation behavior (Washburne, 1978), from the ethnicity perspective, differences in cultural norms and values were considered to be the primary determinants of differences in recreation behavior (Carr & Williams, 1993; Woodard, 1988).

Ethnic recreation researchers have recently proposed additional theories based on advanced conceptual applications - class identification theory, multiple hierarchy stratification theory, and class polarization theory. The class identification theory describes social class rather than ethnicity as the primary determinant of differences in recreation behavior both among and within population subgroups (Floyd et al., 1994). According to the multiple hierarchy stratification theory, people who occupy certain marginal status (based on race, class, gender, and age) within society differ from other sociodemographic groups (Shinew et al., 1995). The class polarization theory proposed by Shinew et al. (1995) suggests that "there is a widening class difference between upper- and lower-class black males than between upper- and lower-class black females, due in large part to two labor related trends (Wilson, 1980): (1) decline in jobs for unskilled, physical labor typically performed by males; and (2) the growing availability of professional occupations for educated black males" (Johnson et al., 1997; p. 5).

Overall, marginality and ethnicity perspectives have been inadequate for furthering ethnic recreation research due to several reasons. Floyd (1998) identified five drawbacks to the marginality theory. First, researchers have not adequately defined the concept of marginality and the construct fails to

consider the effects of racial stratification through institutionalized racism and discrimination (p. 5). Second, the marginality concept assumes a homogeneous class structure among minority groups and fails to explain recreation behavior patterns based on socioeconomic differentiation within ethnic groups (p. 5). Third, the impact of historical and contemporary racism and discrimination on recreation behavior and patterns has been largely overlooked by the concept (p.6). Fourth, the marginality concept has been limited to a "class-based" explanation of ethnic differences in recreation behavior, as opposed to focusing on "race-based" discrimination (p.6). Finally, the marginality concept is inadequate in providing a clear explanation for the influences of behavioral and cognitive constructs such as preferences, attitudes, and meanings of recreation participation (p.6). Floyd (1998) also highlighted the flaws associated with the ethnicity perspective. First, researchers have used racial and ethnic classifications as proxy measures for culture (and subculture) without attempting to provide clear definitions and elaborations for these groupings (p.6). Second, rather than treating the concept of ethnicity from an evolutionary and dynamic standpoint, the ethnicity perspective projects ethnic groups as being static and monolithic in nature (p.6). Third, although recent studies have incorporated variables such as assimilation, acculturation, and ancestry (Carr & Williams, 1993; Floyd & Gramann, 1993) to examine differences within ethnic groups, such differentiations may be applicable only to recent immigrants and would be unsuitable for ethnic groups, such as African Americans and Native Americans, with longer historical connections in the U.S. (p.7).

Finally, both perspectives are based on the common ideological assumption that ethnic and racial minority groups will eventually exhibit the leisure styles of the dominant Anglo or White group with the elimination or reduction of socioeconomic barriers (in the case of marginality) or with cultural assimilation (in the case of ethnicity). This assumption addresses merely racial and ethnic variations in recreation and leisure patterns, but fails to provide reasoning for the causes of such differences (p.7). Overall, existing literature on race and ethnic recreation has not adequately addressed issues related to the measurement of racial and ethnic determinants and fails to provide a satisfactory explanation for the

influence of socioeconomic status on the recreation and leisure patterns of racial and ethnic groups (Floyd, 1998).

Johnson et al. (1997) suggested that future racial and ethnic recreation research should incorporate interdisciplinary theories and alternative methods in order to gain a holistic understanding of the specific issue and the groups or individuals being studied (p.13). Furthermore, future studies should also concentrate their focus on place-related racial and ethnic differences in recreation and leisure behavior (regional/geographical variations and differences between rural and urban ethnic communities) as well as differences both within and among ethnic communities in relation to their interactions with natural resources (p.13). Most importantly, future research should a) avoid over-reliance on the marginality and ethnicity theories for explaining ethnic recreation behavior; b) recognize and include the dynamic and emergent properties of race and ethnicity within their framework; c) investigate the impacts of racial stratification and subordination on leisure choices and constraints; d) identify and examine additional dependent variables for explaining ethnic recreation behavior; and e) investigate the role of leisure as an explanatory variable for the maintenance and expression of racial and ethnic identity (Floyd, 1998, p.18).

## Multiculturalism Initiatives in Urban Parks and Forests

Development of effective urban outdoor recreation services requires intensified efforts by urban parks and recreation managers to meet the needs and interests of America's growing multi-cultural, diverse ethnic minority communities (NUCFAC, 2000). Further, cultivation of public understanding and appreciation of the economic, environmental, social, and psychological benefits of maintaining and managing urban parks and forests and related resources within ethnic minority communities is essential for the development of effective, self-sustaining municipal and volunteer urban parks and forestry programs in urban areas with substantial ethnic minority populations.

As part of a long-term plan for meeting public needs and building healthy urban parks and recreation services, it is important to assess and address the perceptions, values and needs of our nation's

growing multi-cultural, diverse ethnic minority populations with respect to urban parks and forests and their management (USDA Secretary of Agriculture, 1998). Urban parks and recreation services can effectively meet existing needs of urban populations by recognizing and incorporating the diverse set of values, perceptions and needs of ethnic minority communities regarding urban parks and forests, and by involving ethnic minority communities in planning, decision making, and implementation of urban outdoor recreation initiatives (Grove et al., 1993).

Local community involvement and participation in urban parks and recreation services is important for the development and preservation of healthy urban parks and forests (Talbot, 1993). Assessing ethnic minority populations' values and perceptions of the environment, (including trees and wildlife) in their cities and towns, educating them about the importance and value of urban parks and forests, and meeting their needs in this area should lead to their increased feelings of ownership and responsibility for urban parks, forests, trees, wildlife, and related resources (Sklar & Ames, 1985).

Community involvement in the management of parks and forests in urban areas requires additional research to help parks and recreation program planners and managers better understand the relationship between urban parks and forestry resources and ethnic minority populations: What are ethnic minority populations' values and perceptions of the environment, of trees and wildlife in their cities and towns? Are there underlying differences among and within ethnic minority communities that could have implications for planners and managers trying to meet the needs of an increasingly diverse clientele (Gobster & Delgado, 1993; Jeong, 1999)? What can be learned to help managers understand more clearly the meaning of the urban parks and forests to ethnic minority citizens (Westphal, 1993)? What kinds of educational programs should be developed to reach ethnic minority communities with an urban parks and forestry message?

## Ethnic and Racial Variations in Outdoor Recreation Characteristics

Past research has shown that ethnic minority groups, in general, differ in their urban park and open space landscape, and natural setting preferences (Kaplan & Talbot, 1988; Talbot & Kaplan, 1993;

Zhang & Gobster, 1998), park needs and interests (Gobster & Delgado, 1993; Zhang & Gobster, 1998), urban park use and leisure participation (Dwyer, 1993; Gobster, 1998; Hutchinson, 1993; Jeong, 1999; Taylor, 1993), recreation experiences (Carr & Williams, 1993; Keefe & Padilla, 1987), park visitation patterns and attitudes (Carr & Chavez, 1993), and environmental attitudes (Floyd & Noe, 1993; Noe & Snow, 1990). Overall, these and other studies have investigated urban park use and outdoor recreation preferences of ethnic minority populations by categorizing Hispanics and Asian Americans as homogenous, monolithic segments. Thus, less seems to be understood about the perceptions, values and needs of the largest, fastest-growing segments within urban Hispanic (Cuban, Mexican, Puerto Rican, Dominican, etc.) and Asian American (Chinese, Korean, Japanese, Filipino, etc.) populations (Hutchinson, 1993), with respect to urban parks, forests, trees, wildlife and their management.

Since intra-ethnic differences are likely to influence site use and preference, style and meaning of recreational use may also be influenced by such differences (Carr & Williams, 1993). For example, differences may be observed in size and composition of the recreation group, reasons for participation, or values toward nature. Studies examining intra-ethnic differences would be invaluable to managers of parks, forests or recreational areas which receive high levels of visitation from ethnic minority groups, with little or no use from Anglo-visitors. Since patterns of participation may vary within a specific recreation activity as well as within and among population subgroups, studies employing large-scale general population surveys for comparing the leisure and recreation participation rates of ethnic groups cannot be generalized to ethnic minorities and immigrants to the U.S. A more rigorous treatment of the ethnicity concept may add more depth to the understanding of the leisure behavior of the U.S. population (and population subgroups).

The findings from studies concerning leisure behavior of general populations are often non-generalizable to ethnic sub-population groups, since general samples usually consist largely of Anglo or White respondents who were born in the US. Additionally, studies often assume ethnic groups to be homogenous, without accounting for intra-ethnic or within-group variability in recreation and leisure behavior. According to Carr and Williams (1993), three significant dimensions of intra-ethnic variability

can potentially influence leisure and outdoor recreation behavior: 1) ancestral group membership, 2) generational status, and 3) levels of acculturation.

1. *Ancestral group membership* - this dimension can contribute to similarities and differences in recreation preferences and behavior among ethnic groups depending upon both whether an individual is of ethnic or Anglo descent as well as the individual's country of origin (Carr & Williams, 1993, p.24). If the individual identifies himself or herself to be of Anglo descent, then he or she is more likely to exhibit recreation behavior similar to that of the dominant White population. Those individuals who are of ethnic descent and/or who were born and raised outside the U.S. are likely to exhibit recreational characteristics of their respective ethnic groups.
2. *Generational status* - this dimension can be interpreted as a good indicator of individuals' and/or their families' relationship to the U.S. (Carr & Williams, 1993, p.24). Since generational status is highly correlated with socioeconomic status, size of household, educational level, and other aspects of an individual's life, it can significantly influence the individual's recreation behavior (Keefe, 1980).
3. *Levels of acculturation* - this dimension includes the loss of traditional cultural characteristics and the acceptance of new cultural traits or vice versa (reinforcement and retention of native cultural traits). Acculturation takes place at the individual level and changes take place at varying rates. While some native cultural characteristics are rapidly replaced by host traits, others happen gradually, while some are maintained, reinforced and strengthened (Keefe, 1980). The multifaceted effects of acculturation can possibly influence an individual's or ethnic group's recreation behavior (Carr & Williams, 1993, p.24).

Another factor which can be considered to have a significant influence on both intra- and inter-ethnic variability is *discrimination*, both perceived and actual. Although historical and current discrimination are contributory factors to low ethnic minority participation in outdoor recreation activities, they are under-reported (Gobster, 1998) and theoretical and empirical support for these factors has been inadequate. According to Gobster and Delgado (1993), discrimination decreases levels of

satisfaction associated with a recreation experience by making the recreationist feel uncomfortable, and, in extreme cases, can result in antagonistic behavior (overt anger and violence) leading to the displacement of the user and sometimes non-use by the recreationist. Discrimination can stem from the lack of sensitivity of park personnel toward certain groups, inequities in the quality of park facilities, programs, and services in areas with high proportions of ethnic users (Gobster & Delgado, 1993), and anti-racial actions of non-ethnic users.

Existing research has been inadequate in explaining how the recreational users' ethnic and sociocultural background affects their recreational experiences. This knowledge gap hinders a manager's ability to provide a high quality recreation experience for his/her recreation resource users by meeting their needs while managing the natural resources for recreational purposes.

This study will attempt to investigate inter-ethnic differences in outdoor recreation characteristics (patterns, activity participation, and preferences) across various population subgroups. Additionally, this study will also examine the influence of levels of acculturation on intra-ethnic variability in outdoor recreation characteristics across various population subgroups.

## Statement of Problem

The purpose of this study was to examine differences in outdoor recreation preferences and participation patterns, relevant to urban parks and forests, both across and within selected population subgroups. More specifically, this study explored: a) inter-ethnic variations in outdoor recreation characteristics (patterns, activity participation, and preferences) across six population subgroups, i.e., Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites, b) the influence of acculturation on intra-ethnic variability in outdoor recreation characteristics (patterns, activity participation, and preferences) within four ethnic subgroups, i.e., Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans and c) acculturation-related patterns of variations in outdoor recreation characteristics (patterns, activity

participation, and preferences) of the four ethnic subgroups, i.e., Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans, in comparison with the Anglo or White group. Subsequently, three research questions were developed to examine these variations.

## Research Questions

**Research Question 1:** Are there differences in outdoor recreation characteristics (recreation patterns, activity participation, and preferences) among the six population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) while controlling for (or adjusting for) socioeconomic status (educational level and household income)?

To conduct this analysis, three hypotheses were developed:

1a) There are differences in patterns of park and forest visitation among the identified population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) when differences in socioeconomic status (educational level and household income) are adjusted for.

1b) There are differences in recreational activity participation in parks and forests among the identified population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) when differences in socioeconomic status (educational level and household income) are adjusted for.

1c) There are differences in preferred characteristics of parks and forests among the identified population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or

Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) when differences in socioeconomic status (educational level and household income) are adjusted for.

**Research Question 2:** Are there differences in outdoor recreation characteristics (recreation patterns, activity participation, and preferences) within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon the respondent's level of acculturation, while controlling for (or adjusting for) socioeconomic status (educational level and household income)?

To conduct this analysis, three hypotheses were developed:

2a) There are differences in patterns of park and forest visitation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation when differences in socioeconomic status (educational level and household income) are adjusted for.

2b) There are differences in recreational activity participation in parks and forests within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation when differences in socioeconomic status (educational level and household income) are adjusted for.

2c) There are differences in preferred characteristics of parks and forests within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation when differences in socioeconomic status (educational level and household income) are adjusted for.

**Research Question 3:** Is acculturation, by members within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese

Americans, and Korean or Korean Americans), associated with increasing similarity in outdoor recreation characteristics (patterns, activity participation, and preferences) of these subgroups to the Anglo or White population?

To conduct this analysis, three hypotheses were developed:

3a) Increasing levels of acculturation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) is associated with increasing similarity in regard to patterns of park and forest visitation reported by the Anglo or White group.

3b) Increasing levels of acculturation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) is associated with increasing similarity in regard to recreational activity participation in parks and forests reported by the Anglo or White group.

3c) Increasing levels of acculturation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) is associated with increasing similarity in regard to preferred characteristics of parks and forests reported by the Anglo or White group.

## Delimitations

This study was limited to a sample of Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, Korean or Korean American, African American and Anglo or White respondents residing in and around the greater metropolitan areas of Philadelphia, PA and Atlanta, GA, respectively.

## Limitations

This study was, to a great extent, exploratory in nature. Hence, some of the findings of the study would need to be verified through additional research before definitive conclusions are drawn. The following limitations should be considered before subsequent research is undertaken:

1. The findings may not be generalizable to the general population of ethnic groups residing in U.S. cities and urban centers since only six population subgroups residing in and around the greater metropolitan areas of Philadelphia, PA and Atlanta, GA, respectively, were sampled.
2. While the survey instrument employed in this study was not a photoquestionnaire, it utilized a set of color photos of parks and forests to establish a broad frame of reference to set the stage for consideration by the subject while responding to the questions included in the survey. These photos were not site-specific with respect to Philadelphia, PA and Atlanta, GA. This technique had the advantage of standardizing the images of parks and forests while providing a broad frame of reference for the questions responded to by the subjects, but it also meant that subjects were not encouraged to visualize and respond in terms of parks and forests that might have been either most familiar or accessible to them.
3. The study sample consisted of a large proportion of highly educated individuals who indicated their preference for the English-language version of the questionnaire. The high levels of education of these individuals could have meant that diversity in levels of acculturation was comparatively minimal.

4. The term 'forest' was used in this study in order to meet the grant criteria of the funding agency. The researcher recognizes the lack of a single, comprehensive definition (notion) of a 'forest.'
5. The findings from this study do not reveal respondents' behavioral intentions relating to outdoor recreation in parks and forests, rather they provide a descriptive assessment of differences in respondents' recreation participation patterns and preferences for specific park and forest features.
6. In this study, levels of acculturation of the respondents were determined on the basis of respondents' language use and preference, which captures only one of the several dimensions possibly influencing acculturative change. A more holistic measure of acculturation might incorporate other variables such as the respondents' length of residence in the U.S., generational status, and/or the extent to which everyday activities (work and leisure) are carried out predominantly with others in the same ethnic group.
7. The English version of the survey instrument used in this study was translated into five different languages, including Spanish, traditional Chinese, simplified Chinese, Japanese and Korean and the appropriate non-English version of the questionnaire was then sent to the respondent on request. Some differences in responses between English and non-English speakers could be attributed to differences in how the questions and options were translated or were interpreted (Carr & Williams, 1993).
8. In this study, socioeconomic status was used as the control variable although the causes for socioeconomic differences, e.g., historical and contemporary racism and discrimination, were not accounted for (Floyd, 1998). Additionally, ethnic differences in outdoor recreation characteristics based on socioeconomic status were not examined in detail.
9. The term 'Hispanic/Latino or Hispanic American' was used to categorize the Spanish-origin groups surveyed in this study. This did not allow for an examination of differences based on national origins of the Spanish-origin groups (Floyd & Gramann, 1993).

10. Data from areas in and around greater metropolitan Philadelphia, PA and Atlanta, GA, were combined in order to obtain a reasonable sample size for the analyses conducted in this study. Thus, this study did not test differences between the two study sites with respect to the variables used in the analyses. Neither urban-suburban differences nor differences between the two regions were analyzed for purposes of this study. Although the data from these two sites were combined for the analyses, the researcher recognizes that the two greater metropolitan areas are both, geographically and socio-demographically different from each other.
11. The study respondents were residents of areas in and around greater metropolitan Philadelphia, PA and Atlanta, GA. Hence, the sample consisted of residents from areas outside these cities, in addition to those from the cities themselves.

## Definitions

The following terms were used and defined within the context of this study:

**Acculturation** – A resocialization process (Taft, 1985; 1986) during which immigrants incorporate the new, non-traditional values, language, and patterns of behavior of the dominant culture of the host community into their personal culture (Miyares, 1997).

**Back-Translation** – A translation procedure during which the text in the original or source language is translated into the target language, followed by translation of text in the target language back to the original language in order to check for inconsistencies that could have occurred during the translation process.

**Ethnicity** – Membership in a subcultural group primarily on the basis of cultural characteristics (country of origin, language, religion, and/or cultural tradition). Race refers to the appearance or self-perception of a person in response to racial socialization (Helms & Talleyrand, 1997).

**Forest** – Non-wilderness type natural areas and settings (e.g., urban parks, community forests, state parks, state forests, natural resource based recreational areas, etc.) with trees, undergrowth and some wildlife, which allow visitors to engage in land and/or water-based outdoor recreational activities.

**Level of Acculturation** – The level of linguistic acculturation (language use and preference) of the respondent based on Marín et al.'s (1987) Language Use subscale.

**Patterns of Visitation** – Respondent's reported park and forest visitation patterns related to group composition (group size, ethnic identity of companions), days of visitation (weekends, weekdays) and length of visitation (duration of visit in hours).

**Preferred Characteristics** – General visitor preferences for parks, forests and outdoor recreation areas, including preference for natural resources and wildlife (streams, lakes, animals, birds, etc.), recreational facilities (picnic areas, family recreation areas, outdoor cooking facilities, game fields, etc.), park management (recycling, accessibility for disabled, signage, facility maintenance, etc.), landscaping (open forests, shade trees, paved paths, etc.), and ethnic interaction (presence of others from same racial/ethnic group, availability of information in ethnic language, presence of culturally-sensitive staff, etc.).

**Recreational Activity Participation** – Respondent's reported participation in outdoor recreation activities during visits to parks and forests. Types of outdoor recreation activities include solitary activities, social activities, outdoor land/water activities, food-related activities, team activities, community activities, etc.

**Socioeconomic Status** – Respondent's socioeconomic standing based on his/her educational level and household income.

# CHAPTER 2

# REVIEW OF LITERATURE

This chapter presents the literature related to the examination of the relationship between ethnicity, acculturation and outdoor recreation. The review of literature is divided into the following major sections:

1. Ethnicity and culture
2. Acculturation
3. Ethnicity, acculturation, and outdoor recreation

## Ethnicity and Culture

The foci of race and ethnic studies in the United States have predominantly converged toward the examination of discrimination and prejudice faced by members of racial or ethnic minority groups, frequently drawing upon Marxist class theory to postulate race and ethnicity as "categories of material exclusion," while de-emphasizing issues related to racial and ethnic meaning (Smaje, 1997). The discussion presented in this section will not attempt to enter the debate about the difference between 'race' and 'ethnicity,' but it is worth noting that ethnicity refers to cultural characteristics whereas race refers to the appearance or self-perception of a person in response to racial socialization (Helms & Talleyrand, 1997). The problems associated with race, ethnicity and cultural representation (or description) have surfaced through studies focusing on the construction of taxonomies and discourses of the Other. Such studies have an important value because they point to the fact that the construction of racial and ethnic classifications and categorizations always involves power relations and is influenced by historically changing institutional and class structures and unverified, taken-for-granted, historical accounts and scientific assumptions. They highlight the need to recognize the limits of such ethnocentric (and self-congratulatory) perspectives from which academic and journalistic accounts arise. While such recognition does not allow the researcher to totally overcome ethnocentrism, it helps in critically

evaluating his/her own categories and prepares the way for alternative histories and cultural categorizations. According to Anderson (1988), the pressures which have made the Other into our designated image are not unchallenged, rather, they are always reversible. Thus, our racial categories are open to challenge and scrutiny, and not inherently self-confined.

The evolutionary nature of racial and ethnic identity is emphasized by Jackson (1989), who drew upon the metaphoric use of 'maps of meaning' to state that culture is both 'socially constructed and geographically expressed'. The geographical totality (and place-specificity of culture), organized as landscape, or 'solid appearance' (Inglis, 1977) arising from the complex relationships that shape cultural action and meanings, is neither monolithic nor static, but a multiplicity of expressions that overlap and shift along several (including spatial and temporal) dimensions. The cultural studies approach suggests that culture is at one pole a 'history of common life' (Williams, 1961) where 'social groups develop distinct patterns of life and exhibit their social and material life-experience in expressive forms' (Clark, Kaufman & Pierce, 1976), and, at the other, represents the collective expression of an historical epoch (Gramsci, 1971). This duality in cultural definition is further supported using Sartre's 'retrogressive-progressive' method which connects existing, pre-given theory to emerging social conditions, while forming the basis for understanding the conditions upon which cultural representations are hauled forward in mediation between individual experience and social process (Kobayashi, 1989).

According to Jackson (1992), race and ethnic classifications are made, not given; they are a product of racism rather than biology. Despite the well-established fact that human populations cannot be divided into a discrete number of races and ethnic groups according to scientific criteria, the conceptualization of race and ethnicity as naturally occurring categories is persistent and recurring. Racism (including racial and ethnic categorizations) may be understood as an ideology which ascribes negatively evaluated characteristics to a group of people who are additionally defined as biologically distinct, creating an inseparable connection between physical features (such as skin color or facial characteristics) and social characteristics (such as docility or aggression). Racism refers to the consciously or unconsciously held notion that people can be categorized into a distinct number of discrete

races and ethnic groups based on physical and biological criteria and that systematic social differences systematically follow the same lines of physical differentiation (Jackson, 1989). Additionally, the definition of racism can also include the belief in inherent cultural difference (Jackson, 1987). Ideologically, racism frequently works on a "repertoire" of racist images, which according to Stuart Hall refers to as - a set of "already available languages", each with its own respective history (Jackson, 1987). But racial and ethnic categorizations do not disappear with the passage of time, rather it is actively reproduced through daily practice and it can be challenged and resisted on the same basis. Social science researchers can contribute to its general dissolution by tracing its specific constitution and variable effects in particular historical and geographical circumstances.

According to Anderson (1988), it is important to examine the process by which racial and ethnic categories are constructed and transmitted beyond recognizing the issue of race as being something which is problematic in nature rather than axiomatic. Such a concern with the etiology of systems of racial and ethnic classifications has not been widely developed in the social sciences. Race and ethnicity have more often been taken for granted than made objects of explanation. Indisputably, this can be attributed to the long liberal tradition of segregation studies in the geography, sociology, and history of race relations which have predominantly focused on the consequences or negative aspects of racial and ethnic classifications (Banton, 1977), with little emphasis on the race- and ethnicity-definition process itself. The cognitive leap that has been made in many Western societies from mere physical differences to the more fundamental aspect of race and ethnicity has been sufficiently long-standing and politically significant to warrant more rigorous investigation by social scientists. According to Anderson (1988), the only reality that race has possessed is that which has been socially assigned to color distinctions. Furthermore, the roots of racial and ethnic distinctions can be traced back to the production process adopted by capitalist nations and their need for cheap and dispensable labor force (Gabriel & Ben-Tovim, 1978; Greenberg, 1980; Warburton, 1981). Racial and ethnic distinctions were rigidified and systemized during the development of capitalist labor markets.

Considering the power and resilience of racial and ethnic representations within society and the far-reaching effects of cultural representations, efforts should be directed towards examining the contribution of race- and ethnic-relations to societal systems of inequality, on its own terms rather than simply 'read off' from putatively deeper causes. Race and ethnicity have not been just social constructions - besides being cultural and historical representations, racial and ethnic classifications have also evolved as a result of political phenomena. In Gramsci's (1971) words, racial ideology has been a "critical unifying principle" in consolidating and justifying the White European historical bloc's rise to hegemony. The term "hegemonic" can be used to define culture as not only a way of life, but also as a "social process relating to the distribution of power and influence" (Williams, 1977). Therefore, a hegemonic culture is not simply manifested as a set of cultural values or activities, but is a combined system of ideas, practices, and social relations that permeate the institutional and private elements of society.

Racial and ethnic classifications should be based on analyses of the forms and roots of cultural representations as well as the dialectical relationship between (racial) consciousness and structure. In his book, *Primitive Culture*, Tylor advanced a definition of culture which is still regarded as a bench-mark in the development of anthropological theory (Jackson, 1989). According to Tylor, culture can be defined as 'that most complex whole which includes knowledge, belief, art, morals, law, custom, and many other capabilities and habits acquired by individuals within a society' (Jackson, 1989). Despite the holistic and inclusive nature of this definition, acknowledging both the breadth and complexity of culture together with its fundamentally social nature, its strengths could be considered to be its weaknesses. It is too inclusive for analytical purposes, since it does not provide any means for distinguishing cultural elements from political, economic or other elements of society. Moreover, Tylor's definition does not provide appropriate ways of examining the complex, expressive forms of cultural representation. Unlike Tylor's perspective on the development of culture, several social science researchers have adopted a 'culturalism' approach to explain social behavior. According to this approach (Jackson, 1989), culture is a self-evident and unproblematic category that can be used to explain people's behavior (e.g., Hispanic populations'

cultural preference for 'over-crowded housing', association between Rastafarianism and crime, etc.). Culture is given casual powers, and people are said to do things because of their culture. In most cases, a culturalist point of view seeks to explain ideas and practices with respect to culture, rather than seeing culture as something to be explained.

Inadequacies in the conventional definitions of culture, race and ethnicity within the social sciences have resulted in the adoption of materialistic approaches to the definition of these concepts (Jackson, 1989). According to Williams (1981), culture can be defined as 'a realized signifying system' or a set of signs and symbols that are embedded in a whole range of activities, relations, and institutions - some being 'cultural', others being overtly political, economic or generational (Jackson, 1989). Most of Williams' case studies have interpreted the cultural in terms of a wider set of relations that include aesthetics and morals as well as economics and politics. While Bentley (1991) describes ethnicity as 'a claim to common identity based on putative shared descent' (p. 169), Fuchs (1992) considers the concept of race and ethnicity to be a series of more or less self-conscious strategies employed by subordinate groups to 'handle' or contest their structural subordination. Smaje (1997) emphasizes that the theory of race and ethnic studies should move beyond the contention that racial and ethnic categories are socially constructed, 'imagined communities,' and argues in favor of ontologically grounded conceptualizations of race and ethnicity. Jackson (1989) states that 'ethnicity' should be avoided because it implies minority status without recognizing the centrality of power to the social relations implied by such a status. The case for retiring the concept of ethnicity becomes even stronger when it is used merely as a polite synonym for 'race.' For the purpose of conviction, racial and ethnic studies should approach ethnicity from the dual perspectives of in-depth historical meaning and contemporary functionality (Smaje, 1997).

The term 'ethnicity' which was first used by sociologists and anthropologists less than half a century ago to describe the people they studied, has become a significant part of the general discourse (Gans, 1992). In the United States, the upheaval of ethnic movements since the 1960s and the increasing adoption of ethnicity as a source of group identity and unity have led to growing research interest in understanding ethnicity as a manifestation of human collectivity (Conzen et al., 1992). While definitions

of ethnicity have stemmed from various disciplines such as sociology, anthropology and geography, most studies on ethnicity have theorized the concept by adopting one or more of four approaches - primordial, symbolic, interest group, and invented. The primordial approach constitutes ethnicity as an ancient and unchanging, socially structured principle that provides identity to a group, based on 'shared ancestry and culture' (Conzen et al., 1992). The primordial character of ethnicity generates meanings that overcome the contextual social environment (Smaje, 1997). The symbolic approach views ethnicity as the consumption of symbols including products of ethnic establishments (food, music, etc.), events, and places of ethnic interest while being free from group and cultural affiliation (Alba, 1990; Gans, 1994; Waters, 1990). The interest group ethnicity concept largely disregards cultural aspects and considers ethnic groups to be interest groups or organizations that serve the socioeconomic interests of certain populations within the larger society (Gans, 1992). The invented ethnicity approach describes ethnicity as a contextually-sensitive and socially-responsive concept that constantly recreates itself through "a process of construction or invention which incorporates, adapts, and amplifies preexisting communal solidarities, cultural attributes, and historical memories" (Conzen et al., 1992, pp. 4-5).

Barth (1989) views ethnicity as 'the production, reproduction and transformation of the social boundaries of ethnic groups' resulting from a two-way interaction between 'us' and 'them.' The study of ethnicity and ethnic change has tended to follow two main concepts: ethnic identification and acculturation (Laroche et al., 1998). (The concept of acculturation will be discussed in detail in the following section). Ethnic identification refers to the process by which a group or an individual identifies with and maintains the original ethnic identity (Laroche et al., 1996). Ethnic identity is created by the amalgamation of two mutually interdependent social transactions or processes - internal definition and external definition. While internal definition and group identification is seen as a self-defined nature or identity conveyed by a person or set of persons to in- or out-group members, external definition and categorization is a process involving the exercise of power and authority during which one person or a set of persons defines the other(s) (Jenkins, 1994). Jenkins suggests that ethnic identity results from the longitudinal interaction between internal and external definition:

> Whereas social groups define themselves, their name(s), their nature(s) and their boundary(s), social categories are identified, defined and delineated by others. Most social collectivities can be characterized as, to some extent, defined in both ways. Each side of the dichotomy is implicated in the other and social identity is the outcome of the conjunction of processes of internal and external definition. Whether, in any specific instance, one chooses to talk about a group or a category will depend on the balance struck between internal and external processes in that situation. It is a question of degree. (1994: 201)

Ethnic identity can be described as a strong ascription to certain feelings and associated actions (e.g., African American Black Power movement of the 1960s) related to some aspect of ethnicity (Gans, 1997). The production and reproduction of ethnic identity can be attributed to contextual processes of social categorization ranging from informal to formal - routine public interaction, sexual relationships, communal relationships, membership of informal groups, marriage and family relations, market relationships, employment, administrative allocation, organized politics, and official classification (see Jenkins, 1994 for elaborate discussion). Furthermore, contemporary ethnic structure can be traced back to subjectively-held individual beliefs of being or identity through 'reflexive processes mediated by knowledge of the historical processes constitutive of relevant social orders' (Smaje, 1997). According to Jenkins, ethnic categorization contributes to group identity in several ways:

> First, the external categorization might be more or less the same as an aspect of existing group identity, in which case they will simply reinforce each other. Second, there is incremental cultural change that is likely to be a product of any long-standing but relatively harmonious inter-ethnic contact. Third, the external category might be produced by people who, in the eyes of the original group, have the legitimate authority to categorize them, by virtue of their superior status, knowledge, or whatever. Fourth, external categorization is imposed by the use of physical force or its threat, i.e., the exercise of power. Finally, there are the oppressed who resist, who reject imposed boundaries and/or their content(s). However, the very act of defying categorization, of striving for an autonomy of self-identification, is, of course, an effect of being categorized in the first place. (1994: 216-217)

The definition of ethnic identity follows two dimensions - identification with one's original ethnic group and identification with other relevant ethnic groups - corresponding with the endorsement or rejection of the original culture and the host culture (Clément & Noels, 1992). Ethnic identity is a non-static, dynamic concept that is situationally dependent (Clément & Noels, 1992) as people can shift their affiliation from one group to another in response to immediate contextual demands (Damji, Clément & Noels, 1996). The ethnic and cultural composition of immigrants undergoes change following their

migration, resettlement, and integration in a host culture (Laroche et al., 1998). Cultural or ethnic change models that describe the relationship between participation in the original culture and participation in the host culture can be classified into two competing types - linear-bipolar and two-dimensional. According to the linear-bipolar model, ethnic change is described as a continuum ranging from strong ethnic ties at one end to strong mainstream ties at the other (Andujo, 1988) with the assumption that the strengthening of one is accompanied by the weakening of the other (Laroche et al., 1998). Thus, "a strong ethnic identity is not possible among those who become involved in mainstream society, and acculturation is inevitably accompanied by a weakening of ethnic identity" (Phinney, 1990, p. 501). The two-dimensional model explains ethnic change as a process by which ethnic groups or individuals preserve their original culture in varying degrees while adapting to the host culture (Keefe & Padilla, 1987; Laroche et al., 1996). Based on existing empirical evidence for both bipolar (e.g., Elizur, 1984; Keefe, 1980; Laroche et al., 1996; Laroche et al., 1997) and two-dimensional models (e.g., Der-Karabetian, 1980; Keefe & Padilla, 1987; Rosenthal & Feldman, 1992), neither model can be readily dismissed or construed as being entirely accurate or inaccurate. In order to resolve the validity of the competing models, the multidimensional relationship between acculturation and ethnic identification should be explored in addition to investigating the determinants of ethnic identification and acculturation (Laroche et al., 1998).

## Acculturation

Historical studies indicate that, although immigrants to the United States cease to be foreigners and become ethnic Americans as their traditional cultures change with the passage of time, they do not become completely Americanized (Conzen et al., 1992). Several theories of acculturation, examining the adjustment of immigrants and minority groups to the dominant culture in the United States, have emerged from anthropological and sociological studies (Sodowsky, Lai & Plake, 1991). The Chicago School of ethnic studies has played a lead role in laying the foundations for models of acculturation and assimilation, originally based on the experiences of Anglo-immigrants from the nineteenth to early

twentieth century (Miyares, 1997). The process of acculturation, whereby immigrants and their descendants learn to function within the norms of the new cultural environment, is a resocialization process (Taft, 1985; 1986) involving changes along several dimensions including identification, social skills, attitudes, values, and behavioral norms (Rosenthal & Feldman, 1990) that develop through involvement and interaction within the new cultural system (Tropp et al., 1999).

As immigrants and minorities settle in the United States and live in different cultures and values of the American society, it is likely that they will more or less transform themselves, thereby moving through varying degrees of acculturation (Kang & Kim, 1998). Celano and Tyler (1991) emphasize that "individual acculturation is a learning process through which at least some of the cultural patterns of the host country are adopted" (p. 374). During the process of acculturation, immigrants incorporate the new, non-traditional values, language, and patterns of behavior of the dominant culture of the host community into their personal culture (Miyares, 1997). While some researchers (e.g., Stephenson, 2000) view acculturation as 'degree of immersion in dominant and ethnic societies,' others describe the concept as a cultural-level phenomenon in which change occurs in two autonomous cultural groups as a result of contact between the two groups, with a higher degree of change occurring in the nondominant group than in the dominant group (Georgas et al., 1996). According to Georgas et al. (1996), acculturation could also occur at the individual level when individuals of both the dominant society and the acculturating groups (immigrants and minorities) develop new forms of routine relationships. Negy (1993) describes acculturation as the transfer of cultural indicators from one set of individuals to another:

> Acculturation refers to the transferring of culture from one group of people to another group in response to contact with one another. However, the term more often refers to a process of change experienced by minority group members towards the adoption of a majority group's culture. This process of change is viewed as a form of adaptation. Within the context of the United States where Anglo-Americans constitute the majority group, those of non-Anglo-American backgrounds are said to have become acculturated to the American lifestyle when they have acquired the language, customs, values, and so on of the Anglo-American culture. One should note that acculturation is not a categorical phenomenon but should be viewed as a continuum along which people vary. Moreover, acculturation can vary from trait to trait within any individual. (p. 1212)

In response to the changing demographics in the United States, there has been an accelerated increase in the number of studies focusing on acculturation (Negy & Woods, 1992a). The following

discussion will attempt to identify and describe the various theoretical models that have been used to explain the acculturation process.

According to Warner and Srole's (1945) work, 'The Social Systems of American Ethnic Groups,' with the entry of several native-born generations of ethnic and immigrant groups into the American society, the downward and straight line trend of acculturation and assimilation would ultimately terminate with the total loss of all traces of ethnicity. Gans (1992) challenges Warner and Srole's straight line approach by advocating a bumpy-line theory, an unpredictably endless line with bumps standing for various types of adaptations to acculturation-related changes:

> Warner and Srole had only two generations available for study and were probably extrapolating the great changes they saw between the immigrant and second generation. Nonetheless, further and not very different changes have taken place among later generations, for whatever the indicator of ethnicity under study, the numbers continue to decline - be it language use, endogamy, religious attendance, organizational activity, donations to charity, knowledge of invented or real traditions, etc. Those researchers who emphasize the fluid and innovative elements in ethnicity often ignore these data as if they did not exist, but the decision to study only the latest adaptations and the occasional innovations cannot make them disappear. Acculturating generations are once more being partly replaced by new immigrants from many countries that fed the 1880-1925 influx who then have an impact on the overall ethnic culture. (p. 44)

Gerber, Morawska, and Pozzetta (1992) claim that since neither straight line nor bumpy line theories have adequately determined the "differences between consciousness and behavior, public and private realms, and civic culture and ethnic culture" in their respective discussions, both approaches are insufficient for explaining the past and present of ethnicity and acculturation. Acculturation has been theoretically conceptualized from unidirectional as well as bidirectional perspectives. The unidirectional models describe acculturation as the change in cultural patterns during which the values and modes of behavior common among the host community are acquired by the members of minority or immigrant groups (Buriel, 1975; Garcia & Lega, 1979; Gordon, 1978). Following this approach would also be the acculturation of successive generations of immigrants or minority groups to the 'norms of a barrio' where some characteristics of the traditional culture are maintained (Buriel, 1975).

Although the unidirectional model may explain some patterns of acculturation, it leaves little room for alternative patterns of acculturation. On the other hand, the bidirectional perspective allows for

the inclusion of "acculturation options that indicate the levels and degrees of adaptation to the dominant group that are chosen by the minority group" (Sodowsky & Plake, 1992, p. 53). According to the bidirectional approach, immigrant and minority groups may be committed to their traditional culture and the host culture in varying degrees ranging from low, equal, and high commitment resulting in the relinquishment or retention of the characteristics of cultural origins depending upon the degree of support from the ethnic community and domination of the host culture (LeVine & Padilla, 1980; Szapocznik & Kurtines, 1980). Thus, acculturation of a minority person can be assessed by examining two dimensions: the degree of assimilation to the majority culture and the degree of retention of the minority culture (Sodowsky, Lai & Plake, 1991). Berry (1980) and Berry and Kim (1988) describe acculturation as a process consisting of a series of phases - precontact, contact, conflict, crisis, and adaptation. According to Berry (1986), immigrant and minority groups gradually adopt the cultural attributes of the host community until conflict occurs between the values, customs, behaviors, and psychological characteristics of the host culture and those of the minority culture. Under increasing pressure to change, the minority group attempts to reduce, stabilize or adapt to the conflict situation in four ways: a) assimilation or continuous move toward the dominant culture, b) integration or synthesis of the two cultures, c) rejection or reaffirmation of the traditional culture, and d) marginalization or alienation from both cultures (Berry, 1986). Stephenson (2000) elaborates that the changes highlighted in Berry's conceptualization of individual-level acculturation are stabilized by various acculturation options:

> These changes result in a variety of acculturation positions determined according to how individuals deal with two central issues. The first issue addresses retention of, or immersion in, an ethnic society other than the dominant society. The second addresses adoption of, or immersion in, the dominant society. The negotiation of these two central issues results in four distinct acculturation positions or modes of acculturation: assimilation, integration, separation, or marginalization. Assimilation entails moving away from one's ethnic society and immersing fully in the dominant society. Integration entails immersion in both ethnic and dominant societies. Separation entails withdrawal from dominant society and complete immersion in ethnic society, a process that may be self-imposed or societally imposed (e.g., segregation). Marginalization entails a lack of meaningful immersion in either ethnic or dominant societies. (p. 77)

Most studies on ethnicity and acculturation emphasize change as a result of cultural contact (Penaloza & Gilly, 1999) between cultural groups that have common attributes while varying remarkably

in terms of their culturally driven beliefs, values, knowledge, attitude, and practices (Kar et al., 1998). Considering the complexity of the changes resulting from either contact between two autonomous cultural systems or as a consequence of direct cultural transmission, acculturation studies need to be supplemented with the examination of the moderating effects of sociocultural variables that cause differences within a cultural group (Atkinson, 1983; Casas, 1985; Sue & Zane, 1987). According to Berry's ecological-cultural-behavioral theory of acculturation (Berry & Annis, 1974), extracultural factors such as education, employment, urbanization, settlement patterns, population densities, changes in socialization practices, and the pressures to change under the impact of these conditions could influence the traditional culture by altering the behavior of minority members and their interaction with the environment (Sodowsky & Plake, 1992).

Research indicates that acculturation and sociodemographic variables are intricately intertwined (Negy 1993; Negy & Woods, 1992a; Negy & Woods, 1992b). Members of minority groups can vary in terms of their acculturation levels and options depending on sociocultural and demographic variables such as sex, age, ethnicity, religion, occupation, education, income, resident status in the United States, generational status in the United States, years of residence in the United States, voluntary immigration versus political asylum or refugee status, age at entry into the United States, geographic location, ethnic density of neighborhood, rural versus urban residence, English-speaking versus non-English-speaking immigrants and refugees, family structure, and family size (Garcia & Lega, 1979; Mercer, 1976; Miyares, 1997; Sodowsky & Carey, 1988; Sodowsky & Plake, 1992; Szapocznik & Kurtines, 1980). The research on the moderating influence of sociocultural and demographic variables on acculturation options and levels have been summarized by Sodowsky, Lai, and Plake (1991) as follows:

1. Generational status (Burnam et al., 1987; Clark, Kaufman & Pierce, 1976; Lang et al., 1982; Olmedo & Padilla, 1978; Padilla, 1980; Padilla, Wagatsuma & Lindholm, 1985)

2. Education and income and employment (Burnam et al., 1987; Burr & Mutchler, 1993; Celano & Tyler, 1991; Cuellar, Arnold & Maldonado, 1995; Lang et al., 1982; Kranau, Green & Valencia-Weber, 1982; Olmedo & Padilla, 1978; Padilla, 1980; Sodowsky & Carey, 1988; Sodowsky, Lai & Plake, 1991)

3. Age (Burnam et al., 1987; Celano & Tyler, 1991; Cuellar, Arnold & Maldonado, 1995; Garcia & Lega, 1979; Kranau, Green & Valencia-Weber, 1982; Magana et al., 1996; Matsuoka, 1990; Miyares, 1997; Sodowsky & Carey, 1988; Sunberg, 1981; Szapocznik et al., 1978; Torres-Matrullo, 1980)

4. Years of residence in the United States (Burr & Mutchler, 1993; Celano & Tyler, 1991; Garcia & Lega, 1979; Kang & Kim, 1998; Lang et al., 1982; Magana et al., 1996; Sodoswky & Plake, 1992; Szapocznik et al., 1978)

5. Ethnic density of neighborhood (Burr & Mutchler, 1993; Celano & Tyler, 1991; Garcia & Lega, 1979; Marin et al., 1987; Sodowsky, Lai & Plake, 1991)

6. Country of birth (Burnam et al., 1987; Burr & Mutchler, 1993; Sodowsky & Plake, 1992)

7. Job skills, religion, kinship structures, and purposes of immigration (Olmedo & Padilla, 1978; Sodowsky & Plake, 1992; Wong-Rieger & Quintana, 1987)

The sociocultural and demographic variables listed above have the potential to produce differential acculturation both among and within ethnic minority and immigrant groups. The extent to which the traditional culture of the origin country differs from that of the dominant culture in the new host country can result in differential acculturation (Miyares, 1997). The confluence of sociocultural and demographic factors such as differences in cultural beliefs, values, knowledge, attitudes and practices, religious practices, immigration status and class background of the family of origin have also found to create high levels of collectivism (tightly knit social framework and high importance rating for the rights and needs of the group) among certain ethnic groups (e.g., Chinese and Korean Americans) (Hui & Triandis, 1986; Rosenthal & Feldman, 1990; Wink, 1997). Non-Anglo ethnic groups are also less likely than Anglo-Americans to express individualistic orientation emphasizing personal growth and achievement and individual rights (Feather, 1986; Hofstede, 1983; Rosenthal & Feldman, 1990; Wink, 1997).

Sociocultural characteristics of ethnic groups produce differential acculturation among minority people (Sodowsky & Plake, 1992). For example, Sodowsky and Carey's (1988) study suggested that preference for ethnic clothing at home, preference for ethnic food at home, and marital status were negatively correlated to high acculturation among Asian Indian people. Results from Naidoo and Davis' (1988) study indicated that the richness of philosophic and religious heritage was negatively correlated to high acculturation among South Asian women. Besides being different from members of other groups,

ethnic groups may also exhibit significant within-group cultural variations, thereby varying in the extent of acculturation (Kang & Kim, 1998; Negy, 1993). For example, children of Hmong immigrants tend to adopt behavioral characteristics of the new culture more readily and quickly than their parents, resulting in intergenerational differences (Rick & Forward, 1992). This intergenerational difference in the degree of acculturation may be explained by the high level of importance given by Hmong parents and community leaders to education and independence within the community (Gross, 1983; Rick & Forward, 1992). Additionally, studies reveal that socioeconomic status variables (such as standard of living and education) are positively related to acculturation levels (Celano & Tyler, 1991); higher socioeconomic status facilitates higher levels of acculturation (Negy & Woods, 1992a; Negy & Woods, 1992b).

While the acculturation responses and options of ethnic groups will be different depending on the characteristics of their respective cultures, common experiences may be identified across acculturating groups (Stephenson, 2000). According to Marín (1992), minority groups may experience acculturation at three levels - the superficial, the intermediate, and the significant. As described by Stephenson (2000),

> The superficial level involves, for example, the learning and forgetting of historical facts and traditions, and changing diet to include foods from the dominant society. The intermediate includes more central behaviors such as language use and preference, degree of interaction with ethnic and dominant societies, and environmental preferences such as media. The significant level involves beliefs, values, and norms. (p. 78).

Berry (1980) has proposed that, upon contact with a new culture, minority individuals experience change in any or all of six areas of psychological functioning: language use, cognitive style, personality traits, identity characteristics, attitudes and stress. Common measures of acculturation include variables that are most reflective of acculturation-related change (Negy & Woods, 1992a) and those that are easy to measure. Acculturation measures used in existing research are listed below:

1. Language preference (Burr & Mutchler, 1993; Celano & Tyler, 1991; Cuellar, Arnold & Maldonado, 1995; Cuellar, Harris & Jasso, 1980; Damji, Clément & Noels, 1996; Floyd & Gramann, 1993; Kang & Kim, 1998; Laroche et al., 1998; Magana et al., 1996; Negy, 1993; Negy & Woods, 1992a; Padilla, 1980; Sodowsky & Plake, 1992; Sodowsky, Lai & Plake, 1991; Stephenson, 2000; Tropp et al., 1999; Tsai, 2000; Yu & Berryman, 1996)

2. Generational status (Georgas et al., 1996; Negy, 1993; Negy & Woods, 1992a; Sodowsky, Lai & Plake, 1991)

3. Cultural heritage (Padilla, 1980; Streltzer, Rezentes & Arakaki, 1996; Yu & Berryman, 1996)

4. Ethnic pride (Magana et al., 1996; Padilla, 1980; Sodowsky, Lai & Plake, 1991; Yu & Berryman, 1996)

5. Self-reported ethnicity (Burr & Mutchler, 1993; Damji, Clément & Noels, 1996; Floyd & Gramann, 1993; Laroche et al., 1998; Magana et al., 1996; Padilla, 1980; Sodowsky, Lai & Plake, 1991; Yu & Berryman, 1996)

6. Cultural practices, orientation, and interaction (Burr & Mutchler, 1993; Cuellar, Arnold & Maldonado, 1995; Kar et al., 1998; Magana et al., 1996; Negy, 1993; Negy & Woods, 1992; Sodowsky, Lai & Plake, 1991; Stephenson, 2000; Tsai, 2000)

7. Inter-ethnic difference (Padilla, 1980; Tropp et al., 1999 ; Yu & Berryman, 1996)

8. Spatial patterns of settlement and use of space (Miyares, 1997)

9. Family and household values and dynamics (Georgas et al., 1996; Rick & Forward, 1992; Rosenthal & Feldman, 1990)

10. Immigration history, i.e., year of immigration, place immigrated to/from, etc. (Kang & Kim, 1998; Kar et al., 1998; Sodowsky & Plake, 1992; Sodowsky, Lai & Plake, 1991; Tropp et al., 1999)

11. Customs, habits, and lifestyle (Celano & Tyler, 1991; Stephenson, 2000)

12. Media consumption (Kang & Kim, 1998; Stephenson, 2000)

Language use and preference, followed by generational status and history, remain the two most widely used measures for studying acculturative change in ethnic populations within the United States as well as other countries with predominant Anglo-populations. Level of ethnic identification is considered to be sensitive to the level of linguistic acculturation; increasing linguistic acculturation is accompanied by an increasing marginal loss of ethnic identification (Laroche et al., 1998). Studies focusing on Hispanic populations have used language use as a major acculturation indicator following the assumption that an individual's understanding of the English language facilitates interaction with the English-dominant culture (Kang & Kim, 1998). Acculturation scales for other ethnic populations have also extensively relied on language use and preference as an indicator of acculturation (Marín & Marín, 1991). Studies that have established the generational status and history of ethnic individuals, by identifying the birthplace of the individuals as well as their parents and grandparents and the years of residence in the United States, have advocated its usefulness in developing a better understanding of their cultural characteristics.

Several criticisms have surfaced regarding the use of language preference and generational status as proxy measures whereby one's level of acculturation is inferred instead of being assessed more specifically. According to Negy (1993), ethnic individuals' mastery of the English language need not necessarily indicate their adoption of Anglo-American beliefs, behavior and attitudes; this assumption may hold true for some individuals and is likely to vary within the ethnic population. The positive correlation between increases in generational status and increases in acculturation should be treated cautiously. The generational status-acculturation correlation may not necessarily be applicable to ethnic groups residing in areas where the ethnic language is the predominantly used language within the community and where the majority of residents often share similar sociocultural values and characteristics common to the traditional ethnic culture. Thus, second- and later-generation ethnic members may not necessarily exhibit acculturative changes in the direction of the Anglo-American culture (Negy, 1993). According to Negy and Woods (1992a), the use of language and generational status as the primary indices of acculturation may yield inconsistencies in research findings associated with acculturation among ethnic populations.

The measurement of acculturation is important for delineating the relative contributions of dominant and ethnic society experiences in observed differences between groups in research and assessment (Dana, 1993). Further, acculturation is an important construct for making sense of differences within ethnic groups (Stephenson, 2000). Although the importance of understanding the correlates and consequences of acculturation is being increasingly recognized, assessment tools for measuring acculturative change across ethnic groups are currently limited in terms of availability (Stephenson, 2000).

## Ethnicity, Acculturation, and Outdoor Recreation

The increasing degree of ethnic diversity and the growth of ethnic groups of non-Anglo ancestry in the United States will continue to be a fact of American life in the foreseeable future (Chametzky, 1990). With the escalating migration of Hispanics, Asians, and African Americans to the suburbs of the

United States, the changing demographic characteristics of such metropolitan areas and the experiences of 'new' urban residents from diverse ethnic backgrounds has been the focus of a growing body of research (Phelan & Schneider, 1996). Chametzky (1990) notes the importance of growing ethnic diversity in the United States, having unpredictable consequences for several facets of American life:

> We must remain open to change and "the dialectic of real life." The ever expanding ideological horizon presents us undeniably with a heterogeneous world of competing constituencies and demands - peoples, nations, groups at differing points of need, development, values and aspiration. The days of enforced and artificial homogeneity are ending all over the world. Nothing less is happening, indeed always has been, though not always recognized, in our country. The recognition of our heterogeneity is necessary to our future, the willingness to work within it and perhaps through it, is our destiny. With a respect for historical realities and human needs, a tough resilience in the face of conflicting claims of groups and selves and a commitment to the best ideals of this country, it could be our great opportunity as well. (pp. 15-16).

As immigrants and ethnic minority groups get immersed in the dominant culture of their host community, they experience acculturation as the values and modes of behavior of the new host culture are gradually incorporated into their traditional culture. In response to the sociocultural and environmental changes experienced by immigrant and ethnic minority groups as a consequence of acculturation, leisure and recreational settings are oftentimes used by such groups to establish or engage in activities which can be used to cope and deal with (acculturative) changes (Field & O'Leary, 1973). Assuming that the more inclusive culture has the potential to shape leisure and recreation patterns (Goodale & Witt, 1985; Kelly, 1983) and that one's recreation and leisure style is influenced, in varying degrees, by interactions arising from the relationships with and socialization by co-workers, friends, and family (Burch, 1969; Carr & Williams, 1993; Kelly, 1987), differences in recreational preferences, behavior and participation patterns may be observed both among and within ethnic minority groups depending on the varying levels of acculturation experienced by the groups.

In their study of residents in the Phoenix area, Floyd and Gramann (1993) found significant relationships between acculturation among Mexican Americans and their participation in recreational activities and use of the Tonto National Forest. Floyd and Gramann measured acculturation as the degree to which Mexican Americans preferred and used English over Spanish. Both, English and Spanish comprehension were measured by having the residents indicate their ability to understand, speak, and

read in that language, with responses ranging from "not at all," "poor," "fair," "good," and "excellent." The actual use of Spanish was measured by asking the respondents to indicate their language of preference for home use, radio listening and television watching, and reading newspapers and magazines; response categories were "English only," "Mostly English, some Spanish," "Both English and Spanish equally," "Mostly Spanish, some English," and "Mostly Spanish." When age and education were statistically controlled, highly acculturated Mexican Americans were found to be very similar to Anglos in the number of activities and types of activities they participated in; no such relationships were observed for use of recreation locations. Understanding the high correlation between acculturation and primary structural assimilation, the degree to which friendship is developed outside one's ethnic group, it was observed that higher primary structural assimilation corresponded with greater Mexican American similarity to Anglo levels of participation in recreational activities and use of the Tonto National Forest. Overall, Floyd and Gramann's study provided support for distinguishing between Mexican American recreationists along dimensions of acculturation and structural assimilation. In another study, Gramann, Floyd, and Saenz (1993) observed that family-related recreation benefits was of highest importance to the established Mexican Americans relative to Anglos or immigrant individuals, even when education, age, and number of children were statistically controlled. This finding reflects the potential of recreation and leisure to become culturally expressive and suggests that selective acculturation, rather than Anglo-conformity, is practiced in some cases of Mexican American assimilation.

Using a telephone survey of households in an 18-county region of Central and Southern California, Shaull and Gramann (1998) attempted to examine the influence of selective acculturation of Hispanic-Americans on the family-related and nature-related benefits of outdoor recreation activity. Acculturation was measured using a similar construct identified in Floyd and Gramann's (1993) study. Bicultural Hispanics as well as lesser-assimilated Hispanic respondents rated family-related benefits as being most important while the most-assimilated Hispanics and Anglo respondents rated them as being the least important. Additionally, a high degree of Anglo-conformity was found in the importance ratings for the nature-related benefits of outdoor recreation participation; the higher the degree of acculturation of

the Hispanic respondents, the more likely they were to be similar to Anglos in terms of rating the importance of nature-related benefits. Through this study, Shaull and Gramann highlight the importance of understanding inter-ethnic and intra-ethnic variations in the perceptions of benefits derived from outdoor recreation participation.

Carr and Williams (1993) conducted a study of Hispanic recreationists in two neighboring national forests in Southern California in order to examine the influences of ancestral, generational, and acculturational differences on meanings and preferences related to outdoor recreation experiences and forest use. Besides incorporating questions about the respondent's social structural background, Carr and Williams established the ancestral origins and generational status of the respondents by asking them regarding the country and state where they and each of their parents and grandparents were born. Marin and Marin's (1991) four item language skill and preference scale was used to measure acculturation levels. Carr and Williams found that the most homogeneous sties, with an equal number of Anglo- and Hispanic recreationists, had the highest proportion of immigrant individuals of Hispanic descent, the lowest proportion of second generation individuals, and the lowest acculturation levels while sites with a majority of Anglo-recreationists had the lowest proportion of immigrant individuals of Hispanic descent, the highest proportion of second generation individuals, and the highest acculturation levels compared to Hispanic recreationists at other forest sites. Carr and Willaims' study emphasized the lack of a monolithic Hispanic group using the forests of Southern California.

The Chinese community in New York City was the focus of Yu and Berryman's (1996) study investigating the relationships between acculturation and recreation participation among recently arrived Chinese immigrant adolescents. Levels of acculturation were identified by employing a revised version of the Suinn-Lew Asian Self-Identity Acculturation Scale which has 20 questions on a 5-point Likert scale (see Yu & Berryman, 1996 for elaboration). Study results suggested that individuals with high levels of acculturation participated significantly more often in recreational and sports activities, and were more likely to be affiliated with clubs and organizations for recreation. The findings of Yu and Berryman's study revealed that the lifestyle and recreation patterns of immigrant Chinese adolescents

were harmonious with those of the Chinese community, in general. Additionally, the researchers also proposed the possibility of acculturating the Chinese immigrant adolescents to the new society by using recreation as a facilitator or tool to catalyze the process.

In a more recent study of the contributions of acculturation to the perception of leisure constraints of Chinese immigrants in Australia, Tsai (2000) used a combination of Mendoza's (1989) Cultural Lifestyles Inventory, Cuellar, Harris, and Jasso's (1980) Acculturation Rating Scale for Mexican Americans and Floyd and Gramann's (1993) acculturation scale to assess the acculturation levels of the immigrants. Findings from this study suggested that highly acculturated Chinese immigrants tended to perceive lower levels of sociocultural, interpersonal, and access-related constraints regardless of their education and financial status; higher levels of acculturation were always associated with lower levels of perceived leisure constraints.

It may be summarized that varying levels of acculturation in association with other sociocultural and demographic factors create differences both among (inter-ethnic) and within (intra-ethnic) ethnic and immigrant groups in terms of recreation activity participation, use and preference for recreation areas, as well as meanings and values attributed to outdoor recreation. The growing ethnic diversity in the suburbs and urban areas of the United States poses several, previously unencountered, challenges to professionals in the area of recreation resource management. Although studies conducted in urban areas indicate that racial and ethnic groups exhibit both among-group and within-group differences in their recreational preferences, behavior and participation patterns (Dwyer, 1993; Gobster, 1998; Gobster & Delgado, 1993; Hutchinson, 1993; Jeong, 1999; Kaplan & Talbot, 1988; Talbot & Kaplan, 1993; Taylor, 1993; Zhang & Gobster, 1998), explanations for the reasons for such differences are currently inadequate (Zhang & Gobster, 1998). While 'ethnicity' and 'marginality' theories have offered standardized viewpoints of how differences in racial and ethnic leisure patterns should be addressed, additional theoretical explanations are required to obtain a more objective assessment of their actual causes (Floyd & Gramann, 1993). Specifically, the relationship between acculturation and differences in the recreational preferences, behavior and participation patterns of ethnic minority groups warrants further investigation.

# CHAPTER 3

# PROCEDURES

This chapter discusses the procedures that were employed in the examination of the relationships between ethnicity, acculturation and outdoor recreation. The chapter is divided into the following sections:

1. Organizations
2. Selection of study populations
3. Selection of study sites
4. Preparation of survey instrument
5. Identification of study populations
6. Administration of survey instrument
7. Analysis of data

## Organizations

This study is part of a two-year project entitled, "Exploring Social-Structural & Social-Psychological Bases of Environmental Concern & Urban Wildlife Values In Ethnic Minority Populations" which was funded and sponsored by the United States Department of Agriculture's Forest Service in association with the National Urban and Community Forestry Advisory Council (NUCFAC) and The Pennsylvania State University as part of NUCFAC's 1999 Challenge Cost-Share Program.

Additional funds for the study were made available through the Seed-Grant Program provided by The Pennsylvania State University's College of Agricultural Sciences. It should be noted that the following procedures were developed after extensive consultation with the Methodology Center in the College of Health and Human Development at The Pennsylvania State University as well as with other experienced researchers, including experts in the field of demographics, statistics and outdoor recreation.

## Selection of Study Populations

Household members belonging to five ethnic population subgroups - Hispanic/Latino (e.g., Cuban, Mexican, Puerto Rican, Dominican, etc.) or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, Korean or Korean American, African American, and members of Anglo or White households were surveyed. These five ethnic population subgroups were selected on the basis of their prevalence among various ethnic minority subgroups in the eastern and southern United States. Furthermore, the inclusion of the five ethnic population subgroups in the study was instrumental for conducting cross-cultural analyses and comparisons leading to the generation of findings and results that could potentially be applicable to a range of ethnic population subgroups.

Asian Indians and Filipinos were excluded from the study despite their wide prevalence throughout the United States. Asian Indians were not included since the variety of languages and subcultures among Asian Indians would greatly complicate the data collection process. Filipinos were not included since they migrate mainly to the west coast of the United States and also because they represent a special case of Asian immigrants, most of who have English as their native language.

The African American population has been the focus of a few studies of this nature conducted in the past. Hence, findings pertaining to this subgroup would be used for comparisons with past studies. Finally, the Anglo or White population was included in order to establish an 'anchor' or 'base' population for the study. The data generated from the Anglo or White population were used as reference points for analytically describing and elaborating upon the findings related to the five ethnic population subgroups. The inclusion of an Anglo or White sample also provided a means to compare how the identified ethnic groups did or did not differ from the numerically dominant population. Additionally, data obtained from the Anglo or White population would be useful in generating findings and results that could be compared to past studies of a similar type involving Anglo or White populations.

## Selection of Study Sites

Ethnic minority households from areas in and around two greater metropolitan centers, one in the northeastern and a second in the southern United States - Philadelphia, PA and Atlanta, GA - were surveyed in this study. Greater metropolitan areas were selected as study sites on the basis of the United States Census Bureau population distribution figures. According to census statistics, over half of the total ethnic minority population residing in the United States is concentrated in urban, metropolitan areas (US Department of Commerce, 1994).

The greater metropolitan areas of Philadelphia, PA and Atlanta, GA were selected as study sites due to the following reasons - large proportions of Hispanic, Chinese, Korean, Japanese, and African American populations reside in these two areas (the availability of diverse minority populations was essential for conducting the survey); Hispanic, Chinese, Korean, Japanese, and African American population percentages of the greater metropolitan areas of Philadelphia, PA and Atlanta, GA match the national trend in terms of largest and fastest growing groups; urban parks and forestry programs and initiatives are wide-spread in these two greater metropolitan areas. In addition to these demographic reasons the two greater metropolitan areas were chosen as study sites based on several practical grounds. In addition to serving the interests of the funding agency (U.S. Forest Service), greater metropolitan Philadelphia, PA was selected as a study site owing to the long-standing affiliation of one of the study co-investigators to urban and community forestry programs in and around the greater metropolitan Philadelphia area. The cooperation of the U.S. Forest Service located in Atlanta, GA was requested (and received) by the researchers to offset costs associated with survey administration. Furthermore, recreationists and other users of parks and forests in and around greater metropolitan Philadelphia, PA and Atlanta, GA originate from a range of ethnic and racial backgrounds. Several ethnic enclaves, such as Chinatown, Koreatown, etc., have been well established in both greater metropolitan areas. The voluntary development of such ethnic enclaves is of vital importance in the adjustment process of immigrants and members of ethnic groups whereby choices are made to either retain or modify their

original cultural characteristics by preserving and maintaining ties with fellow ethnic members within the United States (Miyares, 1997). It should be noted that the areas surveyed were two greater metropolitan areas including core cities, suburbs and small towns.

## Preparation of Survey Instrument

The survey instrument utilized by this study was a self-administered questionnaire. This questionnaire consisted of thirty-one questions pertaining to social psychological and social demographic characteristics of ethnic minority communities in regard to their outdoor recreation preferences, behavior and participation patterns. The survey was conducted using self-administered questionnaires owing to several useful characteristics of this data collection method including its cost-effectiveness, ability to facilitate adequate sample control, as well the fact that the sensitive nature of information (especially, those related to socio-demographics) requested would necessitate ensuring anonymity on behalf of the respondents. A page containing twelve colored photographs of parks and forests was enclosed along with the questionnaire. The survey was not a "photoquestionnaire" in which respondents were specifically asked about the photos in question. Rather, this page was included with the intention that the color pictures would serve as a source of reference for the respondents, enabling them to think about areas with which they were familiar that were similar to those in the photos, while responding to the questions included in the survey.

The questionnaire was translated into four ethnic languages (including two different Chinese versions) - Spanish, simplified Chinese, traditional Chinese, Korean, and Japanese spoken by the respective ethnic subgroups residing in Philadelphia, PA and Atlanta, GA, respectively (Hispanic, Chinese, Korean, and Japanese) using a back-translation (double-translation) procedure. The back-translation process for each of the four languages involved at least two skilled, bilingual individuals who participated independently in the translation process (Marín & Marín, 1991). The back-translation approach can be summarized as follows: the version in the original or source language (English) was

translated by a bilingual translator (Translator A), fluent in both English as well as the ethnic language, into the target or ethnic language (e.g., Chinese); a second bilingual translator (Translator B) took the product of the previous step and independently translated it back into the original or source language (English); the investigator compared both versions in the original language and checked for inconsistencies; a second round of translations was necessary for sections with a large number of inconsistencies and discrepancies (Marin & Marin, 1991). The second round of translations involved a 'process of several iterations whereby the measures were pulled away from the idiosyncrasies of the source language (English)' (Tropp et al., 1999, p. 353). Adopting the back-translation method was important in maintaining the validity of the original English version of the questionnaire.

While utilizing the back-translation method for the study, the investigator recognized the fact that measurement equivalence could not be assumed or guaranteed via back-translation, regardless of the similarity between the original and back-translated versions, since ideas, concepts, wordings, and sentences for scale items originated from the source language (Bontempo, 1993; Olmedo, 1981; Tropp et al., 1999). Upon completion of the back-translation process, each final non-English or ethnic language version of the questionnaire was pilot-tested. Following the pilot-test, respective reviewers from Hispanic, Chinese, Korean, and Japanese backgrounds further checked each final ethnic language version of the questionnaire for content clarity and relevance. Finally, in accordance with the reviewers' suggestions, changes were made to the questionnaire as the concluding step towards finalization of the survey instrument.

The final survey instrument contained questions asking about the subject's patterns of park and forest visitation (group composition, days of visitation, and length/duration of visitation in hours), recreational participation in parks and forests (activities and frequency of participation), preferred characteristics of parks and forests (facilities, services, landscape, management), as well as questions concerning the subject's race/ethnicity, language preference, and selected socio-demographic characteristics.

## Identification of Study Populations

Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, Korean or Korean American, African American, and Anglo or White households residing in and around greater metropolitan Philadelphia, PA and Atlanta, GA, respectively, were identified using the Tract Density-Surname Methodology (above 56% tract density) developed by Survey Sampling, Inc., Fairfield, CT (http://www.ssisamples.com). This methodology identified individual households from the six groups residing in these areas, from the US Bureau of the Census' national household database. The sample of Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, Korean or Korean American, African American, and Anglo or White households residing in and around greater metropolitan Philadelphia, PA and Atlanta, GA, respectively, were obtained from Survey Sampling, Inc. A mailing address, name and telephone number were generated for each person identified by the Tract Density-Surname Methodology.

Five hundred households each of Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, Korean or Korean American, African American, and Anglo or White origin were identified from each of the two areas producing an initial sample of 6000 households (500 households X 6 population subgroups X 2 areas). These respondents (households) were residents of areas in and around greater metropolitan Philadelphia, PA and Atlanta, GA, which included residents from neighboring areas (outside these cities) as well as those from the cities themselves (see Appendix). Hence, the Philadelphia, PA and Atlanta, GA respondents ranged from rural residents to residents from highly urbanized areas.

## Administration of Survey Instrument

The focus of this research on ethnic minority groups posed a significant challenge to the study - that of obtaining an adequate response rate for the survey. Members of ethnic minority groups are often concerned about the risks associated with the disclosure of personal information (e.g., income,

immigration status, employment status, etc.) and feel that they could be exploited or used as guinea pigs by non-minority individuals conducting social science research (Marin & Marin, 1991). Such feelings could have dire consequences for this study in terms of low participation and response rates resulting in unsatisfactory sampling and non-sampling error. Also, in some countries from which respondents immigrated, mail questionnaires are not commonly used.

Several options for survey administration were considered and evaluated for cost-effectiveness and reliability of results. On-site administrations of the survey at ethnic enclaves and/or ethnic community associations and/or organizations or by adoption of a 'snow-ball' approach were not considered to be appropriate methods. The use of respondents from ethnic enclaves would result in the generation of a locationally-skewed sample and such a sample would not include ethnic respondents who reside outside the boundaries of ethnic enclaves. A sample generated through the administration of surveys at ethnic community associations, organizations or meetings would not include ethnic individuals who are not affiliated with such agencies. The 'snow-ball' approach would not provide a cross-section of ethnic respondents, rather, such an approach is most likely to 'hit' ethnic members sharing similar sociocultural characteristics. Furthermore, all three approaches would be cost- and time-intensive, requiring a wider range of research personnel.

In order to overcome the aforementioned challenges, the Tailored Design Method recommended by Dillman (2000) was implemented for this study. Following Dillman's Tailored Design Approach, each phase of the survey was tailor-made for the respective ethnic group being contacted. It should be noted that all elements of the survey (letters, postcards, questionnaires, stationery, etc.) were made available to the respondent in his or her desired language version - English or non-English; Chinese respondents had the option of choosing one of three versions - English, Simplified Chinese, and Traditional Chinese. The back-translation method was adopted to produce each ethnic language version of the survey element. All survey letters were hand-signed in blue ink, and all out-going envelopes (containing the survey materials) were hand-stamped with first-class, stick-on stamps. The Tailored

Design Method consisted of five contact stages. Dillman (2000) summarizes the advantages of adopting the Tailored Design Method as follows:

> Our goal in designing each aspect of the implementation system from prenotice letter to return envelope is to create positive salience. We want each element to be noticeable, but in a way that creates a positive impression; that is, increases a sense of reward (this questionnaire looks interesting and important), reduces perceived costs (it looks easy to do), and creates trust (it came with two dollars tat could be kept without sending back the questionnaire). The overall impression that is created, and thus the balance between rewards and costs, depends not only on individual elements but also on the consistency among those elements. Thus, each item should not be thought of as self-standing, but as part of an overall implementation system for which a change in one part is likely to have unintended consequences for another. (pp. 155-156)

The first contact was a brief, personalized prenotice letter which notified the recipient that he or she was selected at random to be part of an important study. This letter also requested the household member to help the researchers by participating in the study. The entire body of the prenotice letter was tailor-made for the respective population subgroup of the household member and his or her city of residence. For example, a prenotice letter sent to a Chinese household member in greater metropolitan Philadelphia included the following header - "Parks in and around Philadelphia: A survey of the Chinese community." In addition, the focus of the body of the prenotice letter converged towards the interests of the population subgroup. For example, sentences such as "This study concerns the experiences and opinions of Chinese residents regarding parks and natural areas in and around Philadelphia" were included in the prenotice letter. The Anglo or White population subgroup was simply addressed as residents.

The body of the prenotice letter for all population subgroups, except African Americans and Anglos or Whites, included two language versions - English and non-English (worded in the ethnic language); three versions for Chinese households. The non-English version was included for the benefit of the respondents who preferred the ethnic language version. A non-English version postage-paid postcard with a header similar to the prenotice letter, providing the respondent with the option of receiving the ethnic language version of the questionnaire, was enclosed with the prenotice letter. For example, a postcard sent to a Hispanic household was worded in Spanish and included the statement "Please send me a questionnaire in Spanish." For the Chinese household members, two ethnic language

options were offered - Simplified Chinese or Traditional Chinese. The respondent was also notified that if his or her name and address were received in error and if no adult member of the household was of the respective ethnic descent (e.g., Hispanic), then this could be indicated on the postcard and mailed back to the investigator. The prenotice letter and postcard were mailed out in a tailor-made or custom-designed envelope with first-class postage. In addition to the aforementioned objectives of this mailing, the precontact phase was important for identifying addresses that were deemed undeliverable by the post-office.

All returned prenotice letters were duly recorded and the corresponding addresses were eliminated from the next contact phase. The returned postcards were classified into two types - the ones indicating language preference and others indicating incorrect ethnic identification or no-ethnic identification. All addresses corresponding to incorrect ethnic identification or no-ethnic identification were eliminated from the second contact phase.

The second contact was the mailout of the first questionnaire within two weeks after the first contact mailout. This mailing consisted of a cover letter, the questionnaire, a page containing color photos of parks and forests, a token of appreciation (each respondent was randomly assigned to receive one of four incentive types - $1.00, $2.00, opportunity to enter drawing for $100.00, and a 'simple' thank you with no incentive), and a return envelope. [The four different types of incentives were used as part of an in-built study that examined differences in response rates based on incentive types and/or amounts offered to the respondents.] The appropriate ethnic language version (in place of the English version) of the cover letter and questionnaire were mailed out to the respondents who had sent in the precontact postcard indicating a language preference. Once again, all second contact materials were tailor-designed, keeping the ethnic group and city in mind. An envelope containing a pre-stamped envelope (return-addressed to the Penn State University) and questionnaire was mailed to each address generated by the Tract Density-Surname Methodology. This envelope also contained a cover letter providing the name of the investigator, purpose of the study, a summary of what was expected of the participants in the study, the token of appreciation and details regarding the way in which household was chosen (Marin & Marin,

1991). To help randomize respondents in the household, the letter requested that the questionnaire be completed by any adult member of the household, and mailed back using the pre-stamped envelope. The respondent was also notified that if his or her name and address were received in error and if no adult member of the household was of the respective ethnic descent (e.g., Hispanic), then this could be indicated on the enclosed letter and mailed back to the investigator. All completed and returned questionnaires were duly recorded. All undeliverable addresses and those corresponding to incorrect ethnic identification or no-ethnic identification were eliminated from the third contact phase.

The third contact involved the mailing out of a postcard reminder to all households who failed to respond to the second contact within two weeks of the second contact. According to Dillman (2000), the reminder postcard is a valuable form of contact for several reasons: the postcard establishes contact with those respondents who may not have received the original questionnaire due to postal error; the previous mailout may have been incorrectly addressed, whereas the postcard was correctly addressed; the original questionnaire could have been misplaced or not opened at all, in which case the postcard may stimulate the household member to find, complete, and return the completed questionnaire. Overall, the objective of this contact was to remind the non-respondents to return the completed questionnaire, as well as to thank those who have already done so. Similar to the previous contacts, the reminder postcard was also tailor-designed, keeping the ethnic group and city in mind. The body of the reminder postcard for all population subgroups, except African Americans and Anglo-Americans, included two language versions - English and non-English (worded in the ethnic language); three versions for Chinese households. All undeliverable addresses were eliminated from the fourth contact phase.

The fourth contact phase consisted of a mailout similar to the one implemented in the second contact phase, except for the exclusion of the token of appreciation in the fourth contact. The cover letter accompanying the questionnaire in this contact phase reflects a sense of insistence and urgency in terms of returning the completed questionnaire. In addition to conveying a high degree of individual attention and personalization to the respondent as well as reinforcing the statements made in the three previous contacts, the cover letter also emphasizes the importance of the respondent's involvement towards the

success of the study. Once again, all completed and returned questionnaires were duly recorded and all undeliverable addresses and those corresponding to incorrect ethnic identification or no-ethnic identification were eliminated from the fifth contact phase.

The fifth and final contact adopted by this study was similar to the mailout implemented in the fourth contact phase. This contact differed from the fourth contact in the packaging and wording of the request. A larger envelope containing unfolded survey materials, different in (textual) appearance was used in this phase. The cover letter accompanying the questionnaire in this contact phase contained words different from those used in the previous contacts and repeated the 'now familiar messages of social importance and individual importance' (Dillman, 2000, p 184). All completed and returned questionnaires, undeliverable addresses (or bad addresses), addresses corresponding to incorrect ethnic identification, other language requests, mail refusals, and addresses of deceased respondents were duly recorded.

Tables 1 and 2 provide descriptions of the sample based on completed and returned questionnaires, undeliverable addresses (or bad addresses), addresses corresponding to incorrect ethnic identification, other language requests, mail refusals, and addresses of deceased respondents from areas in and around greater metropolitan Atlanta and Philadelphia, respectively. After accounting for all bad addresses, the final usable sample from the two areas consisted of a total of 4088 households (final sample for the greater metropolitan Atlanta and Philadelphia areas were 2026 and 2062 households, respectively). In total, 1269 questionnaires were completed and returned from both areas. From the greater metropolitan Atlanta area sample, 674 questionnaires were completed and returned, while 595 completed questionnaires were obtained from the greater metropolitan Philadelphia area sample. The overall response rate for the total sample was approximately 31%, i.e., approx. 33% response rate for the greater metropolitan Atlanta area sample and approx. 29% response rate for the greater metropolitan Philadelphia area sample.

**Table 1. Sample Status for Areas In and Around Greater Metropolitan Atlanta**

| | *Hispanic or Hispanic American* | *Chinese or Chinese American* | *Japanese or Japanese American* | *Korean or Korean American* | *African American* | *Anglo or White* |
|---|---|---|---|---|---|---|
| 1. Original Sample | 500 | 500 | 500 | 500 | 500 | 500 |
| 2. Post Office Rejects | 217 | 104 | 146 | 134 | 137 | 55 |
| 3. Incorrect Ethnicity | 13 | 47 | 48 | 29 | 33 | 1 |
| 4. Removed Before Mailing (Business Listing) | 1 | 0 | 1 | 3 | 5 | 0 |
| 5. Bad Addresses (2+3+4) | 231 | 151 | 195 | 166 | 175 | 56 |
| 6. Final/Actual Sample (1-5) | 269 | 349 | 305 | 334 | 325 | 444 |
| 7. Other Language Request | 9 | 28 | 28 | 21 | NA | NA |
| 8. Completed Questionnaires | 82 | 118 | 91 | 87 | 93 | 203 |
| 9. Deceased | 0 | 0 | 1 | 0 | 3 | 1 |
| 10. Mail Refusal | 4 | 3 | 5 | 0 | 3 | 8 |
| 11. Unaccounted | 193 | 238 | 218 | 257 | 236 | 251 |
| 12. Response Rate (%) | 30.48 | 33.81 | 29.83 | 26.04 | 28.61 | 45.72 |

**Table 2. Sample Status for Areas In and Around Greater Metropolitan Philadelphia**

| | *Hispanic or Hispanic American* | *Chinese or Chinese American* | *Japanese or Japanese American* | *Korean or Korean American* | *African American* | *Anglo or White* |
|---|---|---|---|---|---|---|
| 1. Original Sample | 500 | 500 | 500 | 500 | 500 | 500 |
| 2. Post Office Rejects | 106 | 88 | 126 | 136 | 80 | 64 |
| 3. Incorrect Ethnicity | 41 | 45 | 157 | 38 | 52 | 3 |
| 4. Removed Before Mailing (Business Listing) | 0 | 0 | 1 | 0 | 1 | 0 |
| 5. Bad Addresses (2+3+4) | 147 | 133 | 284 | 174 | 133 | 67 |
| 6. Final/Actual Sample (1-5) | 353 | 367 | 216 | 326 | 367 | 433 |
| 7. Other Language Request | 8 | 43 | 1 | 35 | NA | NA |
| 8. Completed Questionnaires | 77 | 101 | 61 | 97 | 83 | 176 |
| 9. Deceased | 0 | 0 | 1 | 0 | 1 | 3 |
| 10. Mail Refusal | 1 | 1 | 1 | 2 | 0 | 16 |
| 11. Unaccounted | 285 | 275 | 163 | 237 | 293 | 256 |
| 12. Response Rate (%) | 21.81 | 27.52 | 28.24 | 29.75 | 22.61 | 40.64 |

## Analysis of Data

This section addresses three areas. The first part presents the profile of study subjects. The second section discusses the operationalization and description of variables - patterns of park and forest visitation, recreational activity participation in parks and forests, preferred characteristics of parks and forests, acculturation index, and socioeconomic status index. The third section describes the procedures followed for testing the research questions and hypotheses.

### Profile of Subjects

Of the 1269 respondents, males comprised about 55% of the total sample while 45% were females (See Table 3). Respondents belonging to the 40 to 49 age category represented 27% of the total sample, followed by the 30 to 39 age category which accounted for 25% of the total sample. Respondents age 50 or over (50 to 59 and 60 and Over) comprised 37% of the total sample while those below the age of 30 (20 to 29 and Under 20) represented 11% of the total sample. The sample was extremely heterogeneous in terms of ethnicity. White or Anglo respondents formed the largest group with 29% of the total sample, followed by Chinese or Chinese Americans who comprised 20% of the total sample. The remainder of the sample consisted of 14% African Americans, 13% Korean or Korean Americans, 12% Hispanic/Latino or Hispanic Americans, and 12% Japanese or Japanese Americans. Since all ethnic groups were equally represented in the original sample, differences in the number of cases among groups represents differences in the incidence of bad (invalid) addresses and response rates. While 52% of the respondents were born in the United States, the rest (48%) were born in other countries. Respondents' whose fathers were born in the United States accounted for 43% while the majority (57%) indicated their fathers' place of birth was outside the United States (born in other countries). A similar percentage distribution was observed in terms of the place of birth of the respondent's mother. Respondents' whose mothers were born outside the United States (born in other countries) formed a sizeable majority (56%), while 44% of the respondents indicated the United States was their mothers' place of birth.

**Table 3. Socio-Demographic Profile of Respondents**

| Socio-demographic Characteristics | Frequency | Percentage (%) |
|---|---|---|
| Gender (n=1269) | | |
| Male | 697 | 55 |
| Female | 572 | 45 |
| Age (n=1230) | | |
| Under 20 | 6 | 1 |
| 20 to 29 | 121 | 10 |
| 30 to 39 | 307 | 25 |
| 40 to 49 | 337 | 27 |
| 50 to 59 | 228 | 18 |
| 60 and Over | 231 | 19 |
| Ethnicity (n=1268) | | |
| White or Anglo | 367 | 29 |
| African American | 181 | 14 |
| Hispanic/Latino or Hispanic American | 157 | 12 |
| Chinese or Chinese American | 250 | 20 |
| Japanese or Japanese American | 146 | 12 |
| Korean or Korean American | 167 | 13 |
| Place of Birth of Respondent (n=1259) | | |
| United States | 649 | 52 |
| Other Country | 610 | 48 |
| Place of Birth of Respondent's Father (n=1229) | | |
| United States | 525 | 43 |
| Other Country | 704 | 57 |
| Place of Birth of Respondent's Mother (n=1246) | | |
| United States | 550 | 44 |
| Other Country | 696 | 56 |
| Highest Educational Level (n=1241) | | |
| Less Than High School Graduate | 57 | 5 |
| High School Graduate | 189 | 15 |
| Some Post-Secondary Education | 236 | 19 |
| Bachelor's Degree | 341 | 28 |
| Some Post-Graduate Education | 127 | 10 |
| Advanced College Degree | 291 | 23 |
| Current Work Situation (n=1257) | | |
| Employed Full Time | 817 | 65 |
| Employed Part-Time | 121 | 10 |
| Unemployed | 57 | 4 |
| Homemaker | 102 | 8 |
| Retired | 134 | 11 |
| Other | 26 | 2 |

**Table 3 (continued). Socio-Demographic Profile of Respondents**

| Socio-demographic Characteristics | Frequency | Percentage (%) |
|---|---|---|
| Length of Residence at Present Address (n=1261) | | |
| Less Than 1 Year | 67 | 5 |
| 1 to 4 Years | 430 | 34 |
| 5 to 9 Years | 295 | 24 |
| 10 or More Years | 469 | 37 |
| Annual Household Income, Before Taxes (n=1138) | | |
| Less Than $5,000 | 41 | 4 |
| $5,000 to $14,999 | 70 | 6 |
| $15,000 to $24,999 | 113 | 10 |
| $25,000 to $34,999 | 134 | 12 |
| $35,000 to $49,999 | 205 | 18 |
| $50,000 to $74,999 | 232 | 20 |
| $75,000 to $100,000 | 142 | 12 |
| Over $100,000 | 201 | 18 |

Note: The valid percentages have been rounded to equal 100%
Number of cases varies due to missing data

While 37% of the sample had lived at their present address for 10 or more years, 34% had lived at their current residence for 1 to 4 years, 24% indicated 5 to 9 years length of residence, and 5% reported less than 1 year of residence at their current address. With respect to education, 28% of the respondents held Bachelor's degrees, 23% had Advanced College Degrees, 10% had some Post-Graduate Education, while the remaining 39% consisted of respondents with some Post-Secondary Education (19%), High School Graduates (15%), and Less Than High School Graduates (5%). An overwhelming majority of the respondents, almost 65%, reported their current work situation as being Employed Full-Time followed by 10% Employed Part-time, and 8% Homemakers. About 4% of the respondents indicated that they were unemployed, and 2% fell within the 'Other' category. However, 11% were retired (see Table 3).

A large proportion of the respondents had an annual household income, before taxes, of $35,000 or more. Respondents falling within the $35,000 to $49,999 annual household income category represented 18% of the total sample, 20% had an annual household income of $50,000 to $74,999, 12% had an annual household income of $75,000 to $100,000, 18% had an annual household income of over $100,000. The remaining respondents reported lower household income brackets - 12% had an annual household income of $25,000 to $34,999, 10% had an annual household income of $15,000 to $24,999, 6% had an annual household income of $5,000 to $14,999, and the remaining 4% had an annual household income of less than $5,000.

## Operationalization and Description of Variables

### *Patterns of Park and Forest Visitation*

This construct was used to assess the frequency with which the respondent exhibited certain visitation patterns, related to nine items, in the preceding twelve months. The first four items were related to *group composition* (alone, with 1 or 2 other people, with 3 or more other people, with others from your own racial/ethnic group), the next two items addressed *days of visitation* (during weekdays, during weekends), and the last three items measured *lengths of visitation* (for less than 1 hour, for 1 to 2 hours, for more than 2 hours). The items within *group composition*, *days of visitation*, and *length of visitation*

were measured by using a 3-pt Likert Scale format ('None,' 'Some,' and 'Almost All.') by asking the respondent, "Of your visits in the last twelve months to park areas similar to those in the photos, how many of these visits were undertaken sub-item ?" Frequency distributions for the 9 items of this construct are presented in Table 4.

Group composition patterns relating to the respondents' visits to parks and forests indicated that the most respondents usually visited parks and forests, with one or more other persons. Almost 83% of the respondents indicated that *some* or *almost all* of their visits to parks and forests occurred in groups of 1 or 2 other persons and approximately 72% reported that *some* or *almost all* of their visits were in groups of 3 or more persons. Less than 39% of the respondents indicated that *some* or *almost all* of their visits to parks and forests were undertaken alone. Almost 75% of the respondents reported that *some* or *almost all* of their visits to parks and forests were undertaken in groups consisting of members who were from the respondent's racial or ethnic background. Overall, respondents reported that they generally visited parks and forests in groups rather than by themselves, and these groups were usually comprised of members who belonged to the same ethnic or racial group as that of the respondent.

Most respondents visited parks and forests mostly during weekends rather than on weekdays. Almost 93% of the respondents indicated that *some* or *almost all* of their visits to parks and forests were made during weekends and approximately 62% reported that *some* or *almost all* of their visits to parks and forests took place during weekdays.

Most respondents usually spent 1 or more hours at the parks and forests that they had visited. Approximately 79% of the respondents reported that *some* or *almost all* of their visits to parks and forests were undertaken for a time duration of 1 or 2 hours, while almost 72% indicated that *some* or *almost all* of their visits lasted for more than 2 hours. Less than 51% of the respondents indicated that *some* or *almost all* of their visits involved a stay of less than 1 hour. Overall, most respondents indicated that their visits to parks and forests, generally, extended beyond and hour or two.

**Table 4. Frequency Distributions (percentages) for Patterns of Respondents' Park and Forest Visitation**

**Of your visits in the last 12 months to park areas similar to those in the photos, how many of these visits were undertaken ... ?**

| | None | Some | Almost All | # of Cases |
|---|---|---|---|---|
| | | (percent) | | |
| Alone | 61.2 | 28.7 | 10.1 | 842 |
| In groups of 1 or 2 other persons | 17.6 | 45.5 | 37.0 | 860 |
| In groups of 3 or more persons | 28.0 | 43.6 | 28.5 | 833 |
| With others from your own racial/ethnic group | 25.3 | 33.0 | 41.7 | 854 |
| During weekdays | 38.2 | 47.5 | 14.2 | 850 |
| During weekends | 7.0 | 47.0 | 46.0 | 873 |
| For less than 1 hour | 49.4 | 39.6 | 11.1 | 814 |
| For 1 to 2 hours | 20.7 | 52.6 | 26.7 | 854 |
| For more than 2 hours | 28.4 | 41.6 | 30.0 | 848 |

***Recreational Activity Participation in Parks and Forests***

This construct was used to assess the frequency with which the respondent participated in outdoor recreation activities in parks and forests, in the preceding twelve months. This construct consisted of thirteen items that represented various types of recreational activities - *solitary activities* (being alone, reading, etc.), *social activities* (playing with children, talking with friends, etc.), *food-related activities* (picnicking, eating, etc.), *team activities* (soccer, basketball, etc.), *outdoor land activities* (backpacking/hiking, pleasure driving, etc.), *outdoor water activities* (boating/canoeing, fishing, etc.), *physical exercises* (running/jogging, bicycling, etc.), *experiential activities* (aerobics, Tai Chi, etc.), *subsistence activities* (collecting plant/animal materials, hunting/trapping, etc.), *community activities* (festivals, parties, etc), *educational activities* (animal/birdwatching, nature study, etc), *gardening* (vegetables, fruits, etc.), *photography* (still photos, videos, etc.) and other activities (open-ended). The frequency of participation in the recreational activities was measured by using a 3-pt Likert Scale format ('None,' 'Once or Twice,' and 'Three or More Times') by asking the respondent, "How many times have you done the following activities during your visits to park areas similar to those in the photos in the last 12 months?" Frequency distributions for the 13 items, representing various types of recreational activities, are presented in Table 5.

Recreational activity participation patterns relating to the respondents' visits to parks and forests indicated that most respondents participated in social activities, physical exercises, and food-related activities during their visits to parks and forests. Almost 82% of the respondents reported (*once or twice* combined with *three or more times*) that their visits to parks and forests involved participation in social activities, such as playing with children, talking with friends, playing board games, etc. Approximately 70% of the respondents indicated participation (*once or twice* combined with *three or more times*) in running, jogging, walking, bicycling, rollerblading, skateboarding, and other types of physical exercises during their visits to park areas. Almost 67% of the respondents indicated participation (*once or twice* combined with *three or more times*) in food-related activities such as picnicking and barbecuing during their visits to parks and forests. Combining the *once or twice* and *three or more times* frequency

**Table 5. Frequency Distributions (percentages) for Respondents' Recreational Activity Participation in Parks and Forests**

**How many times have you done the following activities during your visits to park areas similar to those in the photos in the last 12 months?**

| | None | Once or Twice | Three or More Times | # of Cases |
|---|---|---|---|---|
| | | (percent) | | |
| Solitary activities (*Being alone, Reading, Commuting through park, Walking the dog, etc.*) | 50.2 | 28.7 | 21.1 | 872 |
| Social activities (*Playing with children, Talking with friends, Playing board games, etc.*) | 18.2 | 39.2 | 42.6 | 885 |
| Food-related activities (*Picnicking, Eating, Barbecuing, etc.*) | 33.0 | 43.5 | 23.5 | 888 |
| Team activities (*Soccer, Basketball, Softball/Baseball, Frisbee, etc.*) | 60.3 | 24.6 | 15.1 | 870 |
| Outdoor land activities (*Backpacking/Hiking, Pleasure driving, Camping, etc.*) | 50.7 | 34.9 | 14.4 | 877 |
| Outdoor water activities (*Boating/Canoeing, Fishing, Swimming, etc.*) | 60.4 | 29.1 | 10.5 | 873 |
| Physical exercises (*Running/Jogging/Walking, Bicycling, Rollerblading/Skateboarding, etc.*) | 29.8 | 36.7 | 33.6 | 884 |
| Experiential activities (*Aerobics, Tai Chi, Qigong, Yoga, etc.*) | 92.2 | 6.2 | 1.6 | 869 |
| Subsistence activities (*Collecting plant/animal materials, Hunting/Trapping, etc.*) | 90.7 | 6.8 | 2.5 | 870 |
| Community activities (*Festivals, Parties, etc.*) | 51.3 | 42.0 | 6.7 | 876 |
| Educational activities (*Animal/Birdwatching, Nature Study, etc.*) | 69.6 | 25.1 | 5.3 | 871 |
| Gardening (*Vegetables, Fruits, Flowers, etc.*) | 89.0 | 8.3 | 2.8 | 869 |
| Photography (*Still photos, Videos, etc.*) | 62.0 | 30.9 | 7.1 | 873 |

categories, almost 50% of the respondents reported that their visits to parks and forests involved participation in solitary activities such as being alone, reading, commuting through park, and walking the dog; 49% indicated participation in community activities such as parties and festivals; 49% indicated participation in outdoor land activities such as backpacking, hiking, pleasure driving, and camping; about 40% indicated participation in team activities such as soccer, softball, baseball, and Frisbee; almost 40% indicated participation in outdoor water activities such as boating, canoeing, fishing, and swimming; 38% reported involvement in photography (including still photos and videos); and nearly 30% had participated in educational activities such as animal- and bird-watching and nature study. Involvement in experiential activities (aerobics, tai chi, qigong, yoga, etc.), subsistence activities (collecting plant and animal materials, hunting and trapping, etc.), and gardening activities were not very common among the respondents during their visits to parks and forests.

***Preferred Characteristics of Parks and Forests***

In order to examine the preferences of the identified population subgroups, thirty-five items relating to general visitor preferences for parks, forests and recreation areas were employed. The preference items addressed various themes, such as litter control (e.g., trash containers for garbage disposal, containers for recycling, well-maintained litter-free facilities), visitor-contact (e.g., lack of interference from other visitors, non-crowded areas), facilities (recreational facilities and programs, parking spaces, outdoor cooking facilities), ethnic-presence (presence of other visitors from same ethnic/racial group, availability of information in racial/ethnic language), landscape (short, evenly mowed grass, shade trees), and natural resources (lake or lakes, animals, fish). The level of preference for these items was measured by using a 3-pt Likert Scale format ('Not Important,' 'Somewhat Important,' and 'Very Important') by asking the respondent, "When you visit a park, how important is it for the area to have each of the following?" Frequency distributions for the 35 items, identifying preferences for various kinds of park, forest and recreation area characteristics are presented in Table 6.

**Table 6. Frequency Distributions (percentages) for Respondents' Preferred Characteristics of Parks and Forests**

**When you visit a park, how important is it for the area to have each of the following?**

| | Not Important | Somewhat Important | Very Important | # of Cases |
|---|---|---|---|---|
| | | (percent) | | |
| Recreational facilities and programs | 17.8 | 45.4 | 36.9 | 1226 |
| Trash containers for garbage disposal | 1.6 | 14.7 | 83.7 | 1255 |
| Containers for recycling | 12.0 | 39.4 | 48.7 | 1235 |
| Lack of interference from other visitors | 21.8 | 47.1 | 31.1 | 1204 |
| Proper signs and instruction boards | 5.1 | 33.0 | 61.8 | 1247 |
| Parking spaces | 2.5 | 17.4 | 80.1 | 1247 |
| Well-maintained/litter-free facilities | 1.4 | 10.1 | 88.5 | 1246 |
| Safety and security at the area | 1.8 | 9.7 | 88.4 | 1246 |
| Outdoor cooking facilities | 23.1 | 46.1 | 30.8 | 1242 |
| Accessibility for those with disabilities | 12.3 | 39.4 | 48.3 | 1242 |
| Non-crowded areas | 8.5 | 40.9 | 50.6 | 1235 |
| Presence of other visitors from your racial/ethnic group | 48.2 | 35.9 | 15.9 | 1227 |
| Availability of information in your racial/ethnic language | 50.5 | 31.1 | 18.3 | 1227 |
| Closeness to home | 11.1 | 44.7 | 44.2 | 1244 |

**Table 6. (continued) Frequency Distributions (percentages) for Respondents' Preferred Characteristics of Parks and Forests**

**When you visit a park, how important is it for the area to have each of the following?**

| | Not Important | Somewhat Important | Very Important | # of Cases |
|---|---|---|---|---|
| | | (percent) | | |
| Concession stands selling food and beverages | 52.0 | 35.0 | 13.0 | 1240 |
| Picnic areas | 11.6 | 43.8 | 44.6 | 1244 |
| Game fields/courts (baseball, volleyball, tennis, etc.) | 23.0 | 45.0 | 31.9 | 1246 |
| Drinking water/water fountains | 7.5 | 30.4 | 62.1 | 1244 |
| Family/group recreational areas and facilities | 10.9 | 42.9 | 46.2 | 1243 |
| Restroom/toilet facilities | 2.8 | 12.9 | 84.2 | 1244 |
| Staff who know the cultures/customs of visitors | 34.1 | 43.2 | 22.7 | 1235 |
| Alcoholic beverages permitted | 73.1 | 19.1 | 7.7 | 1239 |
| Pets allowed | 41.2 | 39.6 | 19.2 | 1240 |
| Short, evenly mowed grass | 18.5 | 45.1 | 36.4 | 1246 |
| Open forests with visibility through trees | 15.2 | 49.4 | 35.4 | 1239 |
| Dense forests with little visibility through trees | 42.6 | 43.2 | 14.2 | 1231 |
| Shade trees | 5.1 | 35.5 | 59.4 | 1245 |

**Table 6. (continued) Frequency Distributions (percentages) for Respondents' Preferred Characteristics of Parks and Forests**

**When you visit a park, how important is it for the area to have each of the following?**

| | Not Important | Somewhat Important | Very Important | # of Cases |
|---|---|---|---|---|
| | | (percent) | | |
| Lake or lakes | 10.5 | 48.6 | 40.9 | 1248 |
| River or rivers | 17.2 | 51.2 | 31.6 | 1234 |
| Stream or streams | 13.9 | 52.1 | 31.6 | 1234 |
| Animals | 30.2 | 47.4 | 22.3 | 1240 |
| Birds | 15.7 | 48.9 | 35.4 | 1242 |
| Fish | 23.0 | 51.0 | 26.0 | 1241 |
| Paved paths | 14.7 | 45.9 | 39.4 | 1245 |
| Gravel or dirt paths | 16.9 | 55.9 | 27.3 | 1233 |

Preference ratings for most park and forest characteristics fell within the *somewhat important* to *very important* range. Park and forest characteristics such as availability of drinking water/water fountains, restroom/toilet facilities, shade trees, trash containers for garbage disposal, proper signs and instruction boards, parking spaces, well-maintained/litter-free facilities, safety and security, and non-crowded areas were rated as being *somewhat important* or *very important* by more than 90% of the respondents. Between 80% and 90% of the respondents gave importance ratings of *somewhat important* or *very important* for park and forests characteristics such as the availability of recreational facilities and programs, containers for recycling, accessibility for those with disabilities, picnic areas, family/group recreational areas and facilities, short and evenly mowed grass, open forests with visibility through trees, lake or lakes, stream or streams, birds, fish, paved paths, and gravel or dirt paths. Between 70% and 80% of the respondents provided importance ratings of *somewhat important* or *very important* for park characteristics such as lack of interference from other visitors and availability of outdoor cooking facilities and game fields/courts. Park and forest characteristics that received a high percentage of *not important* ratings, compared to other characteristics, included presence of other visitors from same racial/ethnic group (almost 48%), availability of information in own racial/ethnic language (50%), permission to consume alcoholic beverages (73%), permission to bring pets (41%), and the availability of densely forested areas with little visibility through trees (42%). Overall, respondents generally considered most park and forest characteristics to be either *somewhat important* or *very important*.

After the initial analysis (frequencies) was conducted, the preferred characteristics of parks and forests were subjected to a principal components analysis using varimax rotation (the response categories to all items were scored from 1 = Not Important to 3 = Very Important). Seven factors were generated by the principal components analysis (See Table 7). The first five factors were retained, while the last two factors were excluded from further analyses.

The first factor was named *Natural Resources and Wildlife* because the items within this factor generally reflected respondents' preferences for natural resources (stream or streams, river or rivers, fish, lake or lakes, animals, and birds). The second factor was named *Recreational Facilities* because the

**Table 7. Factor Loadings for Respondents' Preferred Characteristics of Parks and Forests**

| Questionnaire Statements[a] | Factor 1 | Factor 2 | Factor 3 |
|---|---|---|---|
| **Natural Resources and Wildlife** | | | |
| Stream or streams | .794 | | |
| River or rivers | .782 | | |
| Fish | .755 | | |
| Lake or lakes | .737 | | |
| Animals | .734 | | |
| Birds | .731 | | |
| **Recreational Facilities** | | | |
| Picnic areas | | .712 | |
| Family/group recreational areas and facilities | | .701 | |
| Outdoor cooking facilities | | .669 | |
| Game fields/courts (baseball, volleyball, tennis, etc.) | | .655 | |
| Drinking water/water fountains | | .584 | |
| Recreational facilities and programs | | .573 | |
| Restroom/toilet facilities | | .477 | |
| Concession stands selling food and beverages | | .402 | |
| **Park Management** | | | |
| Containers for recycling | | | .665 |
| Trash containers for garbage disposal | | | .607 |
| Accessibility for those with disabilities | | | .555 |
| Proper signs and instruction boards | | | .505 |
| Well-maintained/litter-free facilities | | | .385 |
| Parking spaces | | | .354 |
| Number of items | 6 | 8 | 6 |
| Eigen value | 6.59 | 3.43 | 2.08 |
| Percentage of variance explained | 18.84 | 9.80 | 5.94 |
| Cumulative variance explained | 18.84 | 28.64 | 34.58 |

**Table 7. (continued) Factor Loadings for Respondents' Preferred Characteristics of Parks and Forests**

| Questionnaire Statements[a] | Factor 4 | Factor 5 | Factor 6 |
|---|---|---|---|
| **Landscaping** | | | |
| Open forests with visibility through trees | .633 | | |
| Short, evenly mowed grass | .601 | | |
| Paved paths | .581 | | |
| Shade trees | .543 | | |
| **Ethnic Interaction** | | | |
| Presence of other visitors from your racial/ethnic group | | .741 | |
| Availability of information in your racial/ethnic language | | .721 | |
| Staff who know the cultures/customs of visitors | | .519 | |
| **Factor 6** | | | |
| Lack of interference from other visitors | | | .634 |
| Non-crowded areas | | | .551 |
| Safety and security at the area | | | .400 |
| Number of items | 4 | 3 | 3 |
| Eigen value | 1.54 | 1.49 | 1.29 |
| Percentage of variance explained | 4.40 | 4.28 | 3.70 |
| Cumulative variance explained | 38.98 | 43.26 | 46.97 |

**Table 7. (continued) Factor Loadings for Respondents' Preferred Characteristics of Parks and Forests**

| Questionnaire Statements[a] | Factor 7 |
|---|---|
| **Factor 7[b]** | |
| Alcoholic beverages permitted | **.746** |
| Pets allowed | **.635** |
| Dense forests with little visibility through trees | **.589** |
| Number of items | **3** |
| Eigen value | **1.23** |
| Percentage of variance explained | **3.51** |
| Cumulative variance explained | **50.49** |

[a]Items coded on 3-pt scales ranging from not important (1) through very important (3)
[b]Excluded from further analysis

items within this factor reflected respondents' preferences for recreational facilities (picnic areas, family/group recreational areas, outdoor cooking facilities, game fields/courts, drinking water/water fountains, recreational facilities and programs, restroom/toilet facilities, and concession stands selling food and beverages). The third factor was named *Park Management* because the items within this factor reflected respondents' preferences for general park and forest management characteristics (containers for recycling, trash containers for garbage disposal, accessibility for those with disabilities, proper signs and instruction boards, well-maintained/litter-free facilities, and parking spaces) which are not directly related to recreation management.

The fourth factor was named *Landscaping* because the items within this factor reflected respondents' preferences for (manicured) landscaping at parks (open forests with visibility through trees, short and evenly mowed grass, paved paths, and shade trees). The fifth factor was named *Ethnic Interaction* because the items within this factor reflected respondents' preferences for ethnic characteristics (presence of other visitors from same racial/ethnic group, availability of information in own racial/ethnic language, and presence of staff who knew the cultures/customs of visitors) related to their visit to parks and forests.

The sixth factor included three items including lack of interference from other visitors, non-crowded areas, and safety and security at the area, while the seventh factor included three items including alcoholic beverages permitted, pets allowed, and dense forests with little visibility through trees. Overall, almost 50% of the total variance was explained by the seven factors. Only factor loadings of more than 0.35 are reported. The seventh factor was dropped from further analysis since the items within the factor structure did not highlight a specific theme in terms of respondents' preferences. The remaining six factors accounted for a total variance of almost 47%.

Reliability analysis using Cronbach's alpha was conducted to check the internal consistency of the items within each of the six factor structures (Table 8). The first factor registered 6 items with a Cronbach's alpha reliability of .87. The second factor had 8 items with a Cronbach's alpha reliability of .80. The third factor consisted of 6 items and recorded a Cronbach's alpha reliability score of .69. The

**Table 8. Reliability Analysis for Respondents' Preferred Characteristics of Parks and Forests**

| Questionnaire Statements[a] | Mean | SD[a] | Corrected Item Total Correlation | Alpha If Item Deleted |
|---|---|---|---|---|
| **Natural Resources and Wildlife** | | | | |
| Stream or streams | 2.19 | .66 | .72 | .83 |
| River or rivers | 2.14 | .68 | .68 | .84 |
| Fish | 2.02 | .69 | .68 | .84 |
| Lake or lakes | 2.30 | .64 | .65 | .85 |
| Animals | 1.92 | .71 | .63 | .85 |
| Birds | 2.19 | .68 | .64 | .85 |
| **Overall Index (N=1211)** | **2.13** | **3.18** | | **.87** |
| **Recreational Facilities** | | | | |
| Picnic areas | 2.32 | .67 | .61 | .77 |
| Family/group recreational areas and facilities | 2.35 | .66 | .63 | .77 |
| Outdoor cooking facilities | 2.07 | .73 | .55 | .78 |
| Game fields/courts (baseball, volleyball, tennis, etc.) | 2.08 | .73 | .59 | .77 |
| Drinking water/water fountains | 2.54 | .63 | .52 | .78 |
| Recreational facilities and programs | 2.18 | .71 | .49 | .79 |
| Restroom/toilet facilities | 2.81 | .45 | .39 | .80 |
| Concession stands selling food and beverages | 1.60 | .70 | .39 | .80 |
| **Overall Index (N=1189)** | **2.25** | **3.49** | | **.80** |
| **Park Management** | | | | |
| Containers for recycling | 2.36 | .68 | .42 | .62 |
| Trash containers for garbage disposal | 2.81 | .42 | .46 | .62 |
| Accessibility for those with disabilities | 2.35 | .69 | .41 | .63 |
| Proper signs and instruction boards | 2.56 | .59 | .46 | .61 |
| Well-maintained/litter-free facilities | 2.87 | .36 | .33 | .65 |
| Parking spaces | 2.77 | .47 | .38 | .64 |
| **Overall Index (N=1202)** | **2.62** | **2.04** | | **.69** |

**Table 8. (continued) Reliability Analysis for Respondents' Preferred Characteristics of Parks and Forests**

| Questionnaire Statements[a] | Mean | SD[a] | Corrected Item Total Correlation | Alpha If Item Deleted |
|---|---|---|---|---|
| **Landscaping** | | | | |
| Open forests with visibility through trees | 2.19 | .68 | .46 | .55 |
| Short, evenly mowed grass | 2.17 | .71 | .51 | .51 |
| Paved paths | 2.24 | .69 | .41 | .59 |
| Shade trees | 2.53 | .59 | .33 | .64 |
| **Overall Index (N=1222)** | **2.28** | **1.88** | | **.64** |
| **Ethnic Interaction** | | | | |
| Presence of other visitors from your racial/ethnic group | 1.67 | .73 | .59 | .54 |
| Availability of information in your racial/ethnic language | 1.67 | .76 | .58 | .54 |
| Staff who know the cultures/customs of visitors | 1.87 | .74 | .41 | .74 |
| **Overall Index (N=1209)** | **1.74** | **1.78** | | **.70** |
| **Factor 6[b]** | | | | |
| Lack of interference from other visitors | 2.08 | .72 | .24 | .28 |
| Non-crowded areas | 2.42 | .64 | .29 | .16 |
| Safety and security at the area | 2.86 | .38 | .18 | .39 |
| **Overall Index (N=1187)** | **2.46** | **1.20** | | **.39** |

[a]Standard Deviation
[b]Excluded from further analysis

fourth factor registered 4 items with a Cronbach's alpha reliability of .64. The fifth factor, which consisted of 3 items, had a Cronbach's alpha reliability score of .70. The sixth factor registered 3 items with a Cronbach's alpha reliability score of 0.39. Owing to its low reliability score, the sixth factor was excluded from further analyses. Thus, out of the initial seven factors produced by the principal components analysis, the first five factors were retained and the last two were dropped. The final five factors accounted for a total variance of almost 43%. Based upon the reliability analysis, the mean values of the items within each factor were computed to devise a single composite index score for each of the final five factors. The final five indices included in further analyses were: *Natural Resources and Wildlife* (Cronbach's alpha reliability of .87), *Recreational Facilities* (Cronbach's alpha reliability of .80), *Park Management* (Cronbach's alpha reliability score of .69), *Landscaping* (Cronbach's alpha reliability of .64), and *Ethnic Interaction* (Cronbach's alpha reliability score of .70).

***Ethnicity***

To establish ethnic background, respondents were asked the ethnic category to which they belong. The options offered to the respondents included Chinese or Chinese American, Japanese or Japanese American, Korean or Korean American, Hispanic/Latino or Hispanic American, African American, White or Caucasian, and other (with specification). This question also served as a check-item to verify the ethnicity of each respondent, which was pre-identified by the sampling agency that provided the mailing list.

***Level of Acculturation***

The level of acculturation (*high*, *medium* or *low*) of the ethnic respondents (Hispanic/Latino or Hispanic American, Chinese or Chinese American, Korean or Korean American, Japanese or Japanese American, and African American) was computed from a composite acculturation index, which was created using four items from Marin et al's (1987) Language Use subscale. According to Marin and Marin (1991), this four-item language skill and preference scale exhibited good psychometric

characteristics and correlated highly with validity criteria such as respondent's generational status, length of residence in the United States, and age at arrival in the United States. A study of the acculturation levels of Hispanics conducted by Norris, Ford, and Bova (1996) presented data in support of the reliability and validity of the four-item measure of acculturation.

Carr and Williams (1993) used the four-item acculturation scale in their examination of the relationship between ethnicity and outdoor recreation behavior. The four-items measuring acculturation level were the following: 1) In general, what language do you read and speak? 2) What language do you usually speak at home? 3) In what language do you usually think? and 4) What language do you usually speak with your friends? The following response format was used for each question: (1) Only English, (2) English More than Other Language, (3) Both Equally, (4) Other Language More than English, (5) Only Other Language, and (6) Other (Please Specify). Since the questionnaire was custom-designed for each of the six population subgroups; the term 'Other Language' was replaced with Spanish, Chinese, Korean, and Japanese for the Hispanic, Chinese, Korean, and Japanese subgroups, respectively. For example, the response format for the Japanese subgroup questionnaire was: Only English, English More than Japanese, Both Equally, Japanese More than English, Only Japanese, and Other (Please Specify). The term 'Other Language' was retained in the response format for the African American and Anglo-American subgroups. Frequency distributions for the 4 items, relating to the ethnic respondents' language skill and preference, are presented in Table 9.

The ethnic respondents' language use scores pertaining to the language generally used for reading and speaking, language used for speaking at home, language used for thinking, and language generally used for speaking with friends ranged from 1 (*Only English*) to 5 (*Only 'Other Language'*). With respect to the language generally used for reading and speaking, among the ethnic (Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, and Korean or Korean American) groups, less than 13% of the respondents used *Only English*, less than 25% used *English More Than 'Other Language,'* less than 28% used *Both Equally* (*English and 'Other Language'*),

**Table 9. Frequency Distributions (percentages) for Ethnic Respondents' Language Use***

| Questionnaire Statement | Only English | English More than 'Other Language'** | Both Equally | 'Other Language'** More than English | Only 'Other Language'** | # of Cases |
|---|---|---|---|---|---|---|
| | | | (percent) | | | |
| In general, what language do you read and speak? | 12.5 | 24.4 | 27.6 | 33.3 | 2.2 | 718 |
| What language do you usually speak at home? | 21.0 | 12.5 | 14.5 | 32.5 | 19.5 | 718 |
| In which language do you usually think? | 19.2 | 19.0 | 21.1 | 26.8 | 13.7 | 714 |
| What language do you usually speak with your friends? | 23.6 | 19.7 | 20.9 | 27.1 | 8.6 | 719 |

*Marín et al's (1987) Language Use Subscale
**'Other Language' was replaced with 'Spanish,' 'Chinese,' 'Japanese,' and 'Korean' for Hispanic/Latino, Chinese, Japanese, and Korean respondents, respectively.

approximately 33% used *'Other Language' More Than English*, and approximately 2% of the respondents used *Only 'Other Language'* to read and speak.

With respect to the language used for speaking at home, among the ethnic groups, 21% of the respondents used *Only English*, less than 13% used *English More Than 'Other Language,'* less than 15% used *Both Equally (English and 'Other Language')*, approximately 33% used *'Other Language' More Than English*, and approximately 20% of the respondents used *Only 'Other Language'* to speak at home.

With respect to the language used for thinking, among the ethnic groups, approximately 19% of the respondents used *Only English*, 19% used *English More Than 'Other Language,'* approximately 21% used *Both Equally (English and 'Other Language')*, approximately 27% used *'Other Language' More Than English*, and approximately 14% of the respondents used *Only 'Other Language'* to think. With respect to the language used for speaking with friends, among the ethnic groups, less than 24% of the respondents used *Only English*, almost 20% used *English More Than 'Other Language,'* less than 21% used *Both Equally (English and 'Other Language')*, approximately 27% used *'Other Language' More Than English*, and approximately 9% of the respondents used *Only 'Other Language'* to speak with friends.

The four items from the Language Use subscale (Marin et al., 1987) or acculturation scale (the response categories to the four items were scored from 1 = Only English to 5 = Only 'Other Language') were subjected to reliability analysis using Cronbach's alpha in order to check the internal consistency of the items within the scale (see Table 10). The Cronbach's alpha coefficient for the ethnic sample was .92 and the overall mean for the four-item scale was 2.95 ($SD$ = 1.16). Based on the reliability analysis, the mean values of the items within the acculturation scale were computed to devise a single composite index to measure the ethnic respondents' levels of acculturation. A frequency analysis of the respondents based on acculturation level scores indicated that approximately one-third of the respondents indicated scores ranging from 1 to 2.25, 2.5 to 3.5, and 3.75 to 5, respectively. Hence, the ethnic respondents were categorized into three acculturation levels (*High*, *Medium* or *Low*) depending upon their mean scores on

**Table 10. Reliability Analysis for Ethnic Respondents' Language Skill and Preference***

| Questionnaire Statements[a] | Mean | SD[a] | Corrected Item Total Correlation | Alpha If Item Deleted |
|---|---|---|---|---|
| **Language Skill and Preference** | | | | |
| In general, what language do you read and speak? | 2.88 | 1.07 | .83 | .89 |
| What language do you usually speak at home? | 3.16 | 1.43 | .80 | .90 |
| In which language do you usually think? | 2.96 | 1.33 | .85 | .88 |
| What language do you usually speak with your friends? | 2.76 | 1.30 | .80 | .90 |
| **Overall Scale (Index)** | **2.95** | **1.16** | | **.92** |

*Marín et al's (1987) Language Use subscale
[a]Standard Deviation

the acculturation index (See Table 11). Ethnic respondents with mean scores ranging from 1 to 2.25 were categorized as *High* acculturated, 2.5 to 3.5 as *Medium* acculturated, and 3.75 to 5 as *Low* acculturated.

For the Hispanic/Latino or Hispanic American population subgroup, 42% of the respondents fell within the *High* acculturation level category, almost 38% registered *Medium* levels of acculturation, and approximately 20% fell within the *Low* acculturation category. For the Chinese or Chinese American population subgroup, approximately 30% of the respondents fell within the *High* acculturation level category, approximately 36% registered *Medium* levels of acculturation, and almost 33% fell within the *Low* acculturation category. For the Japanese or Japanese American population subgroup, almost 44% of the respondents fell within the *High* acculturation level category, approximately 25% registered *Medium* levels of acculturation, and almost 32% fell within the *Low* acculturation category. For the Korean or Korean American population subgroup, approximately 13% of the respondents fell within the *High* acculturation level category, approximately 32% registered *Medium* levels of acculturation, and almost 56% fell within the *Low* acculturation category. Among the ethnic groups, Japanese or Japanese American respondents were the most acculturated (*High* acculturation levels), followed by Hispanic/Latino or Hispanic American respondents and Chinese or Chinese American respondents. Korean or Korean American respondents were the least acculturated group (*Low* acculturation levels) followed by Chinese or Chinese American respondents. In subsequent analyses, patterns of acculturation-related variations in outdoor recreation characteristics of the Hispanic/Latino or Hispanic American, Chinese or Chinese American, Korean or Korean American, and Japanese or Japanese American respondents categorized into the three acculturation levels (*high*, *medium*, and *low*) were compared in juxtaposition with the Anglo or White respondents.

***Socioeconomic Status***

A composite socioeconomic status index was created using two variables relating to the respondent's socioeconomic status - educational level and household income. The educational level of the respondent was determined by asking the question, "What is the highest educational level you have

**Table 11. Frequency Distributions (percentages) for Ethnic Respondent's Level of Acculturation by Ethnicity**

| | Level of Acculturation[a] | | | |
|---|---|---|---|---|
| | **High** | **Medium** | **Low** | **# of Cases** |
| | | (percent) | | |
| **Ethnicity** | | | | |
| Hispanic/Latino or Hispanic American | 42.0 | 37.6 | 20.4 | 157 |
| Chinese or Chinese American | 30.4 | 36.4 | 33.2 | 250 |
| Japanese or Japanese American | 43.8 | 24.7 | 31.5 | 146 |
| Korean or Korean American | 13.2 | 30.5 | 56.3 | 167 |

[a] $\chi^2 = 370.9$; $p \leq .000$ for association between level of acculturation and ethnicity

attained?" The response categories for this question included: Less than High School Graduate, High School Graduate, Some Post-Secondary Education, Bachelor's Degree, Some Post-Graduate Education, Advanced College Degree, and Other (Please Specify). The respondent's annual household income was determined by asking the question, "Which of the following categories best describes your annual household income, before taxes?" The response categories for this question included: Less than $5,000, $5,000 to $14,999, $15,000 to $24,999, $25,000 to $34,999, $35,000 to $49,000, $50,000 to $74,999, $75,000 to $100,000, and Over $100,000.

Since the two variables were operationalized using different measures, the values corresponding to the two variables were first transformed into standardized scores or z-scores before computing the final socioeconomic status index. Next, the mean z-score values of the two variables were consolidated to devise a single composite index to measure the socioeconomic status for each respondent.

***Socioeconomic status and ethnicity***

Prior to conducting further analyses using the SES index, a one-way analysis of variance was conducted to determine the differences in means for socioeconomic status among the six population subgroups. The socioeconomic status index (mean z-scores) was used as the dependent variable, while ethnicity of the respondent was the independent variable. A higher mean value (in this case, a higher mean z-score value) indicated a higher socioeconomic status. A comparison of the mean z-score values of the socioeconomic status index indicated that there were significant differences in the socioeconomic statuses of the six population subgroups (See Table 12). Interpretation of the mean z-score values indicated that the Chinese or Chinese American respondents had higher socioeconomic statuses compared to the rest of the population subgroups while the African Americans held the lowest (See Table 13). The groups arranged in descending order of socioeconomic status were Chinese or Chinese Americans (Mean = .294), Japanese or Japanese Americans (Mean = .173), Korean or Korean Americans (Mean = .035), Anglo or Whites (Mean = .021), Hispanic/Latino or Hispanic Americans (Mean = -.283), and African Americans (Mean = -.496).

**Table 12. One-way ANOVA for Examining Differences in Socioeconomic Status Among Population Subgroups**

| | Sum of Squares | Df | Mean Square | F | P |
|---|---|---|---|---|---|
| Between Groups | 75.571 | 5 | 15.114 | 21.790 | .000 |
| Within Groups | 792.818 | 1143 | .694 | | |
| Total | 868.388 | 1148 | | | |

The test for the homogeneity of subsets using the SES index as the dependent variable and ethnicity as the independent variable classified African Americans and Hispanic/Latino or Hispanic Americans into one subset and Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, and Anglos or Whites into another single subset.

**Table 13. Comparison of Socioeconomic Status Among Population Subgroups**

| Population Subgroup (ethnicity) | Mean z-score value | (n) | Std. Dev |
|---|---|---|---|
| Chinese or Chinese American | .294 | 249 | .9009 |
| Japanese or Japanese American | .173 | 143 | .7844 |
| Korean or Korean American | .035 | 166 | .7685 |
| Anglo or White | .021 | 285 | .8026 |
| Hispanic/Latino or Hispanic American | -.283 | 157 | .8693 |
| African American | -.496 | 149 | .8459 |

The subset consisting of African Americans and Hispanic/Latino or Hispanic Americans was characterized by lower means for the socioeconomic index, compared to the means of the subset containing Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, and Anglos or Whites.

## Research Questions and Hypotheses Testing

Data were entered using SPSS, The Statistical Package for the Social Sciences, version 8.0. Significance measures of all hypotheses were at the 0.05 probability level.

***Research Question 1:***

Are there differences in outdoor recreation characteristics (recreation patterns, activity participation, and preferences) among the six population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) while controlling for (or adjusting for) socioeconomic status (educational level and household income)?

To conduct this analysis, three hypotheses were developed:

***Hypothesis 1a:*** There are differences in patterns of park and forest visitation among the identified population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) when differences in socioeconomic status (educational level and household income) are adjusted for.

***Hypothesis 1b:*** There are differences in recreational activity participation in parks and forests among the identified population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) when differences in socioeconomic status (educational level and household income) are adjusted for.

***Hypothesis 1c:*** There are differences in preferred characteristics of parks and forests among the identified population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) when differences in socioeconomic status (educational level and household income) are adjusted for.

Hypotheses 1a, 1b, and 1c were tested using analysis of covariance to determine the differences in means for patterns of park and forest visitation, recreational activity participation in parks and forests, and preferred characteristics of parks and forests, respectively, among the identified population subgroups (Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, Korean or Korean American, African American, and Anglo or White groups) while controlling for socioeconomic status. For the ANCOVA tests in relation to Hypothesis 1a, nine items relating to patterns of park and forest visitation - four items for group composition (alone, with 1 or 2 other people, with 3 or more other people, with others from your own racial/ethnic group), two items for days of visitation (during weekdays, during weekends), and three items for lengths of visitation (for less than 1 hour, for 1 to 2 hours, for more than 2 hours) - were used one at a time as dependent variables while ethnicity (Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American,

Korean or Korean American, African American, and Anglo or White) was the independent variable with socioeconomic status as the control variable. For Hypothesis 1b, similar ANCOVA tests were conducted with thirteen items relating to recreational activity participation in parks and forests - solitary activities, social activities, food-related activities, team activities, outdoor land activities, outdoor water activities, physical exercises, experiential activities, subsistence activities, community activities, educational activities, gardening, and photography - as the dependent variables. For Hypothesis 1c, five factors of the preferred characteristics of parks and forests, as determined by a factor analysis, were used as the dependent variables for the ANCOVA tests.

***Research Question 2:***

> Are there differences in outdoor recreation characteristics (recreation patterns, activity participation, and preferences) within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon the respondent's level of acculturation, while controlling for (or adjusting for) socioeconomic status (educational level and household income)?

To conduct this analysis, three hypotheses were developed:

***Hypothesis 2a:*** There are differences in patterns of park and forest visitation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation when differences in socioeconomic status (educational level and household income) are adjusted for.

***Hypothesis 2b:*** There are differences in recreational activity participation in parks and forests within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation when differences in socioeconomic status (educational level and household income) are adjusted for.

***Hypothesis 2c:*** There are differences in preferred characteristics of parks and forests within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation when differences in socioeconomic status (educational level and household income) are adjusted for.

Hypotheses 2a, 2b, and 2c were tested using analysis of covariance to determine the differences in means for patterns of park and forest visitation, recreational activity participation in parks and forests,

and preferred characteristics of parks and forests, respectively, within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation while controlling for socioeconomic status. For the ANCOVA tests in relation to Hypothesis 2a, nine items relating to patterns of park and forest visitation - four items for group composition (alone, with 1 or 2 other people, with 3 or more other people, with others from your own racial/ethnic group), two items for days of visitation (during weekdays, during weekends), and three items for lengths of visitation (for less than 1 hour, for 1 to 2 hours, for more than 2 hours) - were used one at a time as dependent variables while ethnicity (Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, and Korean or Korean American) combined with levels of acculturation (high, medium, and low) was the independent variable with socioeconomic status as the control variable. For Hypothesis 2b, similar ANCOVA tests were conducted with thirteen items relating to recreational activity participation in parks and forests - solitary activities, social activities, food-related activities, team activities, outdoor land activities, outdoor water activities, physical exercises, experiential activities, subsistence activities, community activities, educational activities, gardening, and photography - as the dependent variables. For Hypothesis 2c, five factors of the preferred characteristics of parks and forests, as determined by a factor analysis, were used as the dependent variables for the ANCOVA tests.

***Research Question 3:***

> Is acculturation, by members within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans), associated with increasing similarity in outdoor recreation characteristics (patterns, activity participation, and preferences) of these subgroups to the Anglo or White population?

To conduct this analysis, three hypotheses were developed:

***Hypothesis 3a:*** Increasing levels of acculturation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) is associated with increasing similarity in regard to patterns of park and forest visitation reported by the Anglo or White group.

***Hypothesis 3b:*** Increasing levels of acculturation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) is associated with increasing similarity in regard to recreational activity participation in parks and forests reported by the Anglo or White group.

***Hypothesis 3c:*** Increasing levels of acculturation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) is associated with increasing similarity in regard to preferred characteristics of parks and forests reported by the Anglo or White group.

Hypotheses 3a, 3b, and 3c were tested by examining the direction of change in means for patterns of park and forest visitation, recreational activity participation in parks and forests, and preferred characteristics of parks and forests, respectively, within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation, compared with the corresponding outdoor recreation characteristics indicated by the Anglo or White group. For Hypothesis 3a, the direction of change in means for nine items relating to patterns of park and forest visitation - four items for group composition (alone, with 1 or 2 other people, with 3 or more other people, with others from your own racial/ethnic group), two items for days of visitation (during weekdays, during weekends), and three items for lengths of visitation (for less than 1 hour, for 1 to 2 hours, for more than 2 hours) – were examined based on the acculturation levels within each of the four ethnic subgroups, in comparison with the Anglo or White group. Similarly, the direction of change in means for thirteen items relating to recreational activity participation in parks and forests - solitary activities, social activities, food-related activities, team activities, outdoor land activities, outdoor water activities, physical exercises, experiential activities, subsistence activities, community activities, educational activities, gardening, and photography – were examined for Hypothesis 3b. For Hypothesis 3c, the direction of change in means for five factors of the preferred characteristics of parks and forests were examined.

# CHAPTER 4

# RESULTS

This chapter presents the results of the research questions tested to examine inter-ethnic variations in outdoor recreation characteristics across the six population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites), the influence of acculturation on intra-ethnic variability in outdoor recreation characteristics within four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans), and acculturation-related patterns of variations in outdoor recreation characteristics of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) in comparison with the Anglo or White group.

## Results of Research Question Tested

***Research Question 1:***

> Are there differences in outdoor recreation characteristics (recreation patterns, activity participation, and preferences) among the six population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) while controlling for (or adjusting for) socioeconomic status (educational level and household income)?

To conduct this analysis, three hypotheses (Hypotheses 1a, 1b, and 1c) were tested using analysis of covariance to determine the differences in means for patterns of park and forest visitation, recreational activity participation, and preferred characteristics of parks and forests among the identified population subgroups (Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, Korean or Korean American, African American, and Anglo or White groups) while controlling for socioeconomic status.

***Hypothesis 1a:*** There are differences in patterns of park and forest visitation among the identified population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) when differences in socioeconomic status (educational level and household income) are adjusted for.

Four statistically significant differences pertaining to *group composition* were observed. The six population subgroups differed significantly in terms of the number of visits undertaken alone. On a scale ranging from 1 to 3 (1 = None, 2 = Some, and 3 = Almost All), the Anglo or White respondents were the most likely of the subgroups to undertake a visit to a park or forest on their own (Mean = 1.58), followed by African American respondents (Mean = 1.54), Hispanic/Latino or Hispanic American respondents (Mean = 1.52), Japanese or Japanese American respondents (Mean = 1.50), Korean or Korean American respondents (Mean = 1.39), and Chinese or Chinese American respondents (Mean = 1.36). A comparison of patterns of park and forest visitation between the six subgroups is presented in Table 14 (a higher mean value indicated higher frequency for the respective visitation pattern in the preceding twelve months).

The subgroups also differed significantly (.01 level of significance) in terms of the number of visits undertaken in groups of 1 or 2 other persons. The Anglo or White and African American (Mean = 2.28 for both groups) and Hispanic/Latino or Hispanic American respondents (Mean = 2.26) were the most likely of the subgroups to undertake a visit to a park or forest in groups of 1 or 2 other persons, followed by Chinese or Chinese American respondents (Mean = 2.17), Japanese or Japanese American respondents (Mean = 2.08), and Korean or Korean American respondents (Mean = 2.01).

Additionally, the subgroups also differed significantly (.01 level of significance) in terms of the number of visits undertaken in groups of 3 or more persons. The Hispanic/Latino or Hispanic American respondents were the most likely of the subgroups to undertake a visit to a park or forest in groups of 3 or more persons (Mean = 2.19), followed by Korean or Korean American respondents (Mean = 2.10), African American respondents (2.06), Chinese or Chinese American respondents (Mean = 2.05), Anglo or White respondents (Mean = 1.90), and Japanese or Japanese American respondents (Mean = 1.87).

**Table 14. Comparison of Patterns of Park and Forest Visitation Between Population Subgroups (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Patterns of Visitation | Anglo or White | | African American | | Hispanic/Latino or Hispanic American | | Chinese or Chinese American | | Japanese or Japanese American | | Korean or Korean American | | F for ANCOVA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | N | Mean | N | Mean | N | Mean | N | Mean | N | Mean | N | |
| **Group Composition** | | | | | | | | | | | | | |
| Alone | 1.58 | 251 | 1.54 | 100 | 1.52 | 104 | 1.36 | 150 | 1.50 | 102 | 1.39 | 122 | 2.630* |
| In groups of 1 or 2 other persons | 2.28 | 254 | 2.28 | 103 | 2.26 | 108 | 2.17 | 155 | 2.08 | 103 | 2.01 | 122 | 3.632** |
| In groups of 3 or more persons | 1.90 | 245 | 2.06 | 98 | 2.19 | 104 | 2.05 | 153 | 1.87 | 99 | 2.10 | 121 | 3.495*** |
| With others from your own racial/ethnic group | 2.40 | 252 | 2.40 | 103 | 1.91 | 106 | 1.99 | 154 | 1.79 | 101 | 2.26 | 125 | 15.733*** |
| **Day of Visit** | | | | | | | | | | | | | |
| During weekdays | 1.88 | 256 | 1.84 | 100 | 1.78 | 104 | 1.63 | 154 | 1.61 | 102 | 1.68 | 120 | 4.142** |
| During weekends | 2.38 | 258 | 2.30 | 101 | 2.48 | 110 | 2.40 | 159 | 2.41 | 106 | 2.41 | 125 | 1.016 |
| **Length of Visit** | | | | | | | | | | | | | |
| For less than 1 hour | 1.72 | 237 | 1.46 | 96 | 1.58 | 101 | 1.64 | 149 | 1.59 | 100 | 1.60 | 118 | 2.269* |
| For 1 to 2 hours | 2.18 | 253 | 1.99 | 101 | 2.07 | 108 | 2.02 | 154 | 1.90 | 104 | 2.03 | 120 | 3.067** |
| For more than 2 hours | 1.89 | 248 | 2.29 | 99 | 2.11 | 106 | 2.00 | 156 | 1.82 | 102 | 2.13 | 123 | 6.052*** |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Some, and 3=Almost All

The subgroups also differed significantly (.001 level of significance) in terms of the number of visits undertaken with others from the same racial/ethnic group. The Anglo or White and African American respondents were the most likely of the subgroups to visit a park or forest with others from the same racial/ethnic group (Mean = 2.40 for both groups), followed by Korean or Korean American respondents (Mean = 2.26), Chinese or Chinese American respondents (Mean = 1.99), Hispanic/Latino or Hispanic American respondents (Mean = 1.91), and Japanese or Japanese American respondents (Mean = 1.79).

One significant difference pertaining to *days of visitation* was observed. The subgroups differed significantly (.01 level of significance) in terms of visiting a park or forest during weekdays. On a scale ranging from 1 to 3 (1 = None, 2 = Some, and 3 = Almost All), the Anglo or White respondents were the most likely of the subgroups to undertake a visit to a park or forest during weekdays (Mean = 1.88), followed by African American respondents (Mean = 1.84), Hispanic/Latino or Hispanic American respondents (Mean = 1.78), Korean or Korean American respondents (Mean = 1.68), Chinese or Chinese American respondents (Mean = 1.63), and Japanese or Japanese American respondents (Mean = 1.61).

Three significant differences pertaining to *length of visit* were observed. The subgroups differed significantly (.05 level of significance) in terms of visiting a park or forest for a duration of less than 1 hour. On a scale ranging from 1 to 3 (1 = None, 2 = Some, and 3 = Almost All), the Anglo or White respondents were the most likely of the subgroups to undertake a visit to a park or forest for a duration of less than 1 hour (Mean = 1.72), followed by Chinese or Chinese American respondents (Mean = 1.64), Korean or Korean American respondents (Mean = 1.60), Japanese or Japanese American respondents (Mean = 1.59), Hispanic/Latino or Hispanic American respondents (Mean = 1.58), and African American respondents (Mean = 1.46).

The subgroups also differed significantly (.01 level of significance) in terms of visiting a park or forest for a duration of 1 to 2 hours. The Anglo or White respondents were more likely than the other groups to undertake a visit to a park or forest for a duration of 1 to 2 hours (Mean = 2.18), followed by Hispanic/Latino or Hispanic American respondents (Mean = 2.07), Korean or Korean American

respondents (Mean = 2.03), Chinese or Chinese American respondents (Mean = 2.02), African American respondents (Mean = 1.99), and Japanese or Japanese American respondents (Mean = 1.90).

Additionally, the subgroups also differed significantly (.001 level of significance) in terms of visiting a park or forest for a duration of more than 2 hours. The African American respondents were the most likely of the subgroups to undertake a visit to a park or forest for a duration of more than 2 hours (Mean = 2.29), followed by Korean or Korean American respondents (Mean = 2.13), Hispanic/Latino or Hispanic American respondents (Mean = 2.11), Chinese or Chinese American respondents (Mean = 2.00), Anglo or White respondents (Mean = 1.89), and Japanese or Japanese American respondents (Mean = 1.82).

Although there were differences among the subgroups in terms of these visitation patterns, there were also similarities. Five of the six groups, with the exception of the Koreans or Korean Americans, were more likely to visit parks and forests in groups of one or two other persons than they were to do so in either larger or smaller groups. All six groups were most likely to visit parks and forests on weekends than on weekdays and all six groups were more likely to report stays of one hour or more than they were to visit for a shorter length of time.

As socioeconomic status increased, reported frequency of visitation increased for groups of 1 or 2 other persons ($B = .068$, $p \leq .05$), visiting during weekends ($B = .113$, $p \leq .001$) visiting for less than 1 hour ($B = .069$, $p \leq .05$), and visiting for 1 to 2 hours ($B = .105$, $p \leq .001$). Socioeconomic status was negatively related to visiting with others from the same racial/ethnic group ($B = -.066$, $p \leq .05$) and visiting during weekdays ($B = -.064$, $p \leq .05$).

***Hypothesis 1b:*** There are differences in recreational activity participation in parks and forests among the identified population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) when differences in socioeconomic status (educational level and household income) are adjusted for.

The six population subgroups differed significantly (.01 level of significance) in terms of frequency of participation in *solitary activities* (being alone, reading, commuting through park, walking

the dog, etc) during their visit to parks or forests. On a scale ranging from 1 to 3 (1 = None, 2 = Once or Twice, and 3 = Three or More Times), the Anglo or White and African American respondents participated in *solitary activities* most frequently (Mean = 1.83 for both groups) than the other groups, followed by Hispanic/Latino or Hispanic American respondents (Mean = 1.71), Japanese or Japanese American respondents (Mean = 1.64), Korean or Korean American respondents (Mean = 1.59), and Chinese or Chinese American respondents (Mean = 1.54). A comparison of recreational activity participation in parks and forests between the six population subgroups is presented in Table 15 (a higher mean value indicated higher frequency of participation for the respective outdoor recreation activity in the preceding twelve months).

Although the subgroups did not differ significantly in regard to the frequency of participation in *social activities*, there were significant differences (.01 level of significance) in terms of frequency of participation in *food-related activities* (picnicking, eating, barbecuing, etc) during their visit to parks or forests. The Korean or Korean American respondents participated in *food-related activities* most frequently (Mean = 2.06) than the other groups, followed by African American respondents (Mean = 2.03), Hispanic/Latino or Hispanic American respondents (Mean = 2.00), Anglo or White respondents (Mean = 1.89), Chinese or Chinese American respondents (Mean = 1.83), and Japanese or Japanese American respondents (Mean = 1.69).

The subgroups differed significantly (.001 level of significance) in terms of frequency of participation in *team activities* (soccer, basketball, softball/baseball, Frisbee, etc) during their visit to parks or forests. The Hispanic/Latino or Hispanic American respondents participated in *team activities* most frequently (Mean = 1.78), followed by Korean or Korean American respondents (Mean = 1.73), African American respondents (Mean = 1.63), Chinese or Chinese American respondents (Mean = 1.48), Anglo or White respondents (Mean = 1.44), and Japanese or Japanese American respondents (Mean = 1.31).

Frequency of participation in *outdoor land activities* (backpacking/hiking, pleasure driving, camping, etc) during visits to parks or forests was also related to ethnicity (.001 level of significance),

**Table 15. Comparison of Recreational Activity Participation in Parks and Forests Between Population Subgroups (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Type of Activity | Anglo or White | | African American | | Hispanic/Latino or Hispanic American | | Chinese or Chinese American | | Japanese or Japanese American | | Korean or Korean American | | F for ANCOVA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | N | Mean | N | Mean | N | Mean | N | Mean | N | Mean | N | |
| Solitary activities | 1.83 | 258 | 1.83 | 101 | 1.71 | 109 | 1.54 | 159 | 1.64 | 106 | 1.59 | 126 | 3.762** |
| Social activities | 2.24 | 258 | 2.31 | 104 | 2.40 | 111 | 2.17 | 163 | 2.15 | 105 | 2.24 | 129 | 1.749 |
| Food-related activities | 1.89 | 261 | 2.03 | 106 | 2.00 | 110 | 1.83 | 163 | 1.69 | 105 | 2.06 | 128 | 4.052** |
| Team activities | 1.44 | 255 | 1.63 | 103 | 1.78 | 110 | 1.48 | 158 | 1.31 | 104 | 1.73 | 126 | 7.438*** |
| Outdoor land activities | 1.75 | 260 | 1.51 | 102 | 1.78 | 110 | 1.66 | 161 | 1.42 | 105 | 1.53 | 125 | 5.405*** |
| Outdoor water activities | 1.65 | 256 | 1.42 | 103 | 1.56 | 110 | 1.46 | 159 | 1.32 | 105 | 1.40 | 127 | 5.277*** |
| Physical exercises | 2.19 | 261 | 1.99 | 105 | 2.10 | 111 | 1.94 | 161 | 1.83 | 106 | 1.96 | 126 | 4.225** |
| Experiential activities | 1.07 | 253 | 1.11 | 104 | 1.08 | 108 | 1.15 | 160 | 1.02 | 104 | 1.11 | 126 | 2.279* |
| Subsistence activities | 1.15 | 255 | 1.10 | 104 | 1.07 | 109 | 1.13 | 159 | 1.07 | 105 | 1.10 | 124 | 1.054 |
| Community activities | 1.51 | 258 | 1.72 | 104 | 1.64 | 109 | 1.57 | 162 | 1.53 | 105 | 1.46 | 125 | 2.834* |
| Educational activities | 1.49 | 255 | 1.34 | 104 | 1.44 | 108 | 1.25 | 160 | 1.21 | 105 | 1.25 | 125 | 6.862*** |
| Gardening | 1.12 | 255 | 1.12 | 103 | 1.15 | 108 | 1.19 | 160 | 1.13 | 105 | 1.09 | 124 | 0.895 |
| Photography | 1.44 | 258 | 1.35 | 102 | 1.53 | 109 | 1.51 | 161 | 1.33 | 104 | 1.48 | 125 | 2.112 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Once or Twice, and 3=Three or More Times

with the Hispanic/Latino or Hispanic American respondents participating in *outdoor land activities* most frequently (Mean = 1.78) than the other groups, followed by Anglo or White respondents (Mean = 1.75), Chinese or Chinese American respondents (Mean = 1.66), Korean or Korean American respondents (Mean = 1.53), African American respondents (Mean = 1.51), and Japanese or Japanese American respondents (Mean = 1.42).

Frequency of participation in *outdoor water activities* (boating/canoeing, fishing, swimming, etc.) during visits to parks or forests was also related to ethnicity (.001 level of significance), with the Anglo or White respondents participating in *outdoor water activities* most frequently (Mean = 1.65) than the other groups, followed by Hispanic/Latino or Hispanic American respondents (Mean = 1.56), Chinese or Chinese American respondents (Mean = 1.46), African American respondents (Mean = 1.42), Korean or Korean American respondents (Mean = 1.40), and Japanese or Japanese American respondents (Mean = 1.32).

The subgroups differed significantly (.01 level of significance) in terms of frequency of participation in *physical exercises* (running/jogging/walking, bicycling, rollerblading/skateboarding, etc.) during their visit to parks or forests. The Anglo or White respondents participated in *physical exercises* most frequently (Mean = 2.19) than the other groups, followed by Hispanic/Latino or Hispanic American respondents (Mean = 2.10), African American respondents (Mean = 1.99), Korean or Korean American respondents (Mean = 1.96), Chinese or Chinese American respondents (Mean = 1.94), and Japanese or Japanese American respondents (Mean = 1.83).

Frequency of participation in *experiential activities* (aerobics, tai chi, qigong, yoga, etc.) during visits to parks or forests was related to the ethnicity of the respondent (.05 level of significance), with the Chinese or Chinese American respondents participating in *experiential activities* most frequently (Mean = 1.15) than the other subgroups, followed by Korean or Korean American and African American respondents (Mean = 1.11 for both groups), Hispanic/Latino or Hispanic American respondents (Mean = 1.08), Anglo or White respondents (Mean = 1.07), and Japanese or Japanese American respondents (Mean = 1.02).

Significant differences were observed among the subgroups (.05 level of significance) in terms of frequency of participation in *community activities* (festivals, parties, etc.) during their visit to parks or forests. The African American respondents participated in *community activities* most frequently (Mean = 1.72) than the other groups, followed by Hispanic/Latino or Hispanic American respondents (Mean = 1.64), Chinese or Chinese American respondents (Mean = 1.57), Japanese or Japanese American respondents (Mean = 1.53), Anglo or White respondents (Mean = 1.51), and Korean or Korean American respondents (Mean = 1.46).

The subgroups differed significantly (.001 level of significance) in terms of frequency of participation in *educational activities* (animal/birdwatching, nature study, etc.) during their visit to parks or forests. The Anglo or White respondents participated in *educational activities* most frequently (Mean = 1.49) than the other groups, followed by Hispanic/Latino or Hispanic American respondents (Mean = 1.44), African American respondents (Mean = 1.34), Korean or Korean American and Chinese or Chinese American respondents (Mean = 1.25 for both groups), and Japanese or Japanese American respondents (Mean = 1.21).

The analyses indicated that socioeconomic status of the respondent(s) was significantly related to frequency of participation for the following recreational activities: *food-related activities*, *outdoor land activities* and *photography*. As socioeconomic status increased, reported frequency of participation increased for *outdoor land activities* ($B = .082$, $p \leq .01$). Socioeconomic status was negatively related to frequency of participation in *food-related activities* ($B = -.087$, $p \leq .01$) and *photography* ($B = -.072$, $p \leq .01$).

For all six population subgroups, the park and forest activities reported as occurring most frequently were *social activities*, *physical exercises*, and *food-related activities*. *Solitary activities*, *outdoor land activities*, and those involving *teams* or other *community* members were among the next most frequently reported pastimes in park and forest locations. The frequency of participation in *experiential activities* (such as aerobics, tai chi, qigong, yoga, etc.), *subsistence activities*, and *gardening* was relatively low for all six population subgroups.

***Hypothesis 1c:*** There are differences in preferred characteristics of parks and forests among the identified population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) when differences in socioeconomic status (educational level and household income) are adjusted for.

The six population subgroups differed significantly (.01 level of significance) in terms of preference ratings for park and forest characteristics related to *natural resources and wildlife*. On a scale ranging from 1 to3 (1 = Not Important, 2 = Somewhat Important, and 3 = Very Important), the Hispanic/Latino or Hispanic American respondents gave the highest preference ratings for park and forest characteristics related to *natural resources and wildlife* (Mean = 2.23) than the other groups, followed by Anglo or White respondents (Mean = 2.19), Japanese or Japanese American respondents (Mean = 2.12), Chinese or Chinese American respondents (Mean = 2.11), Korean or Korean American respondents (Mean = 2.06), and African American respondents (Mean = 2.03). A comparison of preference ratings for the park and forest characteristics between the six population subgroups is presented in Table 16 (a higher mean value indicated higher preference rating for the respective park and forest characteristic).

Reported preference ratings for park and forest characteristics related to *recreational facilities* was related to ethnicity (.001 level of significance), with the African American respondents giving the highest preference ratings for these features (Mean = 2.45) than the other groups, followed by Hispanic/Latino or Hispanic American respondents (Mean = 2.42), Korean or Korean American respondents (Mean = 2.32), Chinese or Chinese American respondents (Mean = 2.21), Anglo or White respondents (Mean = 2.15), and Japanese or Japanese American respondents (Mean = 2.06).

In terms of preference ratings for park and forest characteristics related to *park management*, significant differences were observed among the subgroups (.01 level of significance), with the African American respondents giving the highest preference ratings for these characteristics (Mean = 2.70) than the other groups, followed by Hispanic/Latino or Hispanic American respondents (Mean =2.68), Anglo or White respondents (Mean = 2.61), Chinese or Chinese American and Korean or Korean American respondents (Mean = 2.59 for both groups), and Japanese or Japanese American respondents (Mean = 2.57).

**Table 16. Comparison of Preferred Characteristics of Parks and Forests Between Population Subgroups (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Preferred Characteristics | Anglo or White | | African American | | Hispanic/Latino or Hispanic American | | Chinese or Chinese American | | Japanese or Japanese American | | Korean or Korean American | | F for ANCOVA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | N | Mean | N | Mean | N | Mean | N | Mean | N | Mean | N | |
| Natural Resources and Wildlife | 2.19 | 357 | 2.03 | 171 | 2.23 | 151 | 2.11 | 244 | 2.12 | 142 | 2.06 | 165 | 3.834** |
| Recreational Facilities | 2.15 | 359 | 2.45 | 173 | 2.42 | 153 | 2.21 | 245 | 2.06 | 142 | 2.32 | 165 | 23.784*** |
| Park Management | 2.61 | 358 | 2.70 | 173 | 2.68 | 154 | 2.59 | 246 | 2.57 | 142 | 2.59 | 165 | 3.543** |
| Landscaping | 2.23 | 357 | 2.48 | 172 | 2.39 | 152 | 2.30 | 244 | 2.19 | 141 | 2.19 | 165 | 10.901*** |
| Ethnic Interaction | 1.66 | 353 | 2.07 | 170 | 1.80 | 149 | 1.65 | 244 | 1.53 | 141 | 1.84 | 166 | 18.839*** |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=Not Important, 2=Somewhat Important, and 3=Very Important

Reported preference ratings for *landscaping* characteristics were also related to the ethnicity of the respondent (.001 level of significance), with the African American respondents giving the highest preference ratings for these park and forest characteristics (Mean = 2.48) than the other groups, followed by Hispanic/Latino or Hispanic American respondents (Mean = 2.39), Chinese or Chinese American respondents (Mean = 2.30), Anglo or White respondents (Mean = 2.23), and Korean or Korean American and Japanese or Japanese American respondents (Mean = 2.19 for both groups).

The subgroups also differed significantly (.001 level of significance) in terms of preference ratings for park and forest characteristics related to *ethnic interaction*. The African American respondents gave the highest preference ratings for park and forest characteristics related to *ethnic interaction* (Mean = 2.07), followed by Korean or Korean American respondents (Mean = 1.84), Hispanic/Latino or Hispanic American respondents (Mean = 1.80), Anglo or White respondents (Mean = 1.66), Chinese or Chinese American respondents (Mean = 1.65), and Japanese or Japanese American respondents (Mean = 1.53).

Despite differences among the groups in terms of the importance given to the various park characteristics, there was also considerable agreement concerning these attributes that were viewed as 'very important.' Thus, all of the subgroups in the sample rated *recreational facilities* as 'very important.' *Ethnic interaction* received the lowest mean importance rating from all six groups. The remaining characteristics were all rated on the average as being between 'somewhat important' and 'very important.'

The analyses indicated that socioeconomic status was significantly related to important ratings for four of the five characteristics addressed in this study. Importance ratings for the park and forest characteristic decreased with increase in socioeconomic status in regard to *recreational facilities* ($B = -.112$, $p \leq .001$), *park management* ($B = -.047$, $p \leq .001$), *landscaping* ($B = -.066$, $p \leq .001$), and *ethnic interaction* ($B = -.155$, $p \leq .001$).

***Research Question 2:***

> Are there differences in outdoor recreation characteristics (recreation patterns, activity participation, and preferences) within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon the respondent's level of acculturation, while controlling for (or adjusting for) socioeconomic status (educational level and household income)?

To conduct this analysis, three hypotheses (Hypotheses 2a, 2b, and 2c) were tested using analysis of covariance to determine the differences in means for patterns of park and forest visitation, recreational activity participation, and preferred characteristics of parks and forests within each of four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation while controlling for socioeconomic status. Because acculturation was assessed in terms of language use, the African Americans and Anglos or Whites were excluded from this assessment.

***Hypothesis 2a:*** There are differences in patterns of park and forest visitation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation when differences in socioeconomic status (educational level and household income) are adjusted for.

Two significant differences pertaining to park and forest visitation patterns relating to acculturation levels were observed within the Hispanic/Latino or Hispanic American group (See Table 17). The *low* acculturated Hispanic/Latino or Hispanic American respondents were the most likely to visit parks and forests in groups of 3 or more persons (Mean = 2.75), followed by the *medium* acculturated (Mean = 2.23) and *high* acculturated (Mean = 1.96) respondents. Similarly, the respondents within this group differed significantly in terms of the number of visits undertaken with others from the same racial/ethnic group. The *low* acculturated Hispanic/Latino or Hispanic American respondents were most likely to visit parks and forests with others from the same racial/ethnic group (Mean = 2.30), followed by the *medium* acculturated (Mean = 2.15) and *high* acculturated (Mean = 1.59) respondents.

Within the Chinese or Chinese American group, level of acculturation was associated with the frequency of visits made in groups of 1 or 2 other persons(See Table 18). The *low* acculturated Chinese

**Table 17. Comparison of Patterns of Park and Forest Visitation Within Hispanic/Latino or Hispanic American Subgroup by Acculturation Level (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Patterns of Visitation | Hispanic/Latino or Hispanic American (Level of Acculturation) | | | | | | F for ANCOVA |
|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | |
| | Mean | N | Mean | N | Mean | N | |
| **Group Composition** | | | | | | | |
| Alone | 1.49 | 52 | 1.50 | 35 | 1.61 | 17 | 0.117 |
| In groups of 1 or 2 other persons | 2.45 | 50 | 2.12 | 40 | 1.97 | 18 | 2.568 |
| In groups of 3 or more persons | 1.96 | 49 | 2.23 | 36 | 2.75 | 19 | 6.157** |
| With others from your own racial/ethnic group | 1.59 | 50 | 2.15 | 37 | 2.30 | 19 | 8.284*** |
| **Day of Visit** | | | | | | | |
| During weekdays | 1.78 | 49 | 1.82 | 38 | 1.72 | 17 | 0.133 |
| During weekends | 2.40 | 53 | 2.54 | 37 | 2.50 | 20 | 0.330 |
| **Length of Visit** | | | | | | | |
| For less than 1 hour | 1.57 | 49 | 1.56 | 37 | 1.52 | 15 | 0.830 |
| For 1 to 2 hours | 2.11 | 53 | 2.01 | 37 | 1.97 | 18 | 0.451 |
| For more than 2 hours | 1.92 | 50 | 2.22 | 36 | 2.40 | 20 | 2.159 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Some, and 3=Almost All

**Table 18. Comparison of Patterns of Park and Forest Visitation Within Chinese or Chinese American Subgroup by Acculturation Level (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Patterns of Visitation | Chinese or Chinese American (Level of Acculturation) | | | | | | F for ANCOVA |
|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | |
| | Mean | N | Mean | N | Mean | N | |
| **Group Composition** | | | | | | | |
| Alone | 1.45 | 56 | 1.33 | 53 | 1.27 | 41 | 1.822 |
| In groups of 1 or 2 other persons | 2.38 | 55 | 2.21 | 57 | 1.90 | 43 | 4.740** |
| In groups of 3 or more persons | 1.86 | 56 | 2.07 | 54 | 2.23 | 43 | 3.720* |
| With others from your own racial/ethnic group | 1.70 | 57 | 2.12 | 56 | 2.15 | 41 | 6.666** |
| **Day of Visit** | | | | | | | |
| During weekdays | 1.72 | 56 | 1.69 | 56 | 1.48 | 42 | 1.602 |
| During weekends | 2.47 | 58 | 2.39 | 57 | 2.33 | 44 | 0.588 |
| **Length of Visit** | | | | | | | |
| For less than 1 hour | 1.81 | 54 | 1.58 | 55 | 1.50 | 40 | 2.533 |
| For 1 to 2 hours | 1.99 | 57 | 2.11 | 56 | 1.94 | 41 | 0.878 |
| For more than 2 hours | 1.81 | 58 | 2.13 | 56 | 2.02 | 42 | 2.816 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Some, and 3=Almost All

**Table 19. Comparison of Patterns of Park and Forest Visitation Within Japanese or Japanese American Subgroup by Acculturation Level (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Patterns of Visitation | Japanese or Japanese American (Level of Acculturation) | | | | | | F for ANCOVA |
|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | |
| | Mean | N | Mean | N | Mean | N | |
| **Group Composition** | | | | | | | |
| Alone | 1.61 | 44 | 1.39 | 22 | 1.37 | 36 | 1.234 |
| In groups of 1 or 2 other persons | 2.03 | 45 | 2.41 | 22 | 1.94 | 36 | 3.530* |
| In groups of 3 or more persons | 1.83 | 44 | 2.00 | 20 | 1.86 | 35 | 0.426 |
| With others from your own racial/ethnic group | 1.60 | 44 | 1.95 | 20 | 1.93 | 37 | 2.438 |
| **Day of Visit** | | | | | | | |
| During weekdays | 1.76 | 44 | 1.79 | 22 | 1.38 | 36 | 3.844* |
| During weekends | 2.23 | 45 | 2.53 | 24 | 2.52 | 37 | 3.286* |
| **Length of Visit** | | | | | | | |
| For less than 1 hour | 1.52 | 45 | 1.64 | 20 | 1.65 | 35 | 0.422 |
| For 1 to 2 hours | 1.90 | 45 | 2.07 | 23 | 1.76 | 36 | 1.511 |
| For more than 2 hours | 1.91 | 45 | 1.77 | 22 | 1.71 | 35 | 0.783 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Some, and 3=Almost All

**Table 20. Comparison of Patterns of Park and Forest Visitation Within Korean or Korean American Subgroup by Acculturation Level (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Patterns of Visitation | Korean or Korean American (Level of Acculturation) | | | | | | F for ANCOVA |
|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | |
| | Mean | N | Mean | N | Mean | N | |
| **Group Composition** | | | | | | | |
| Alone | 1.67 | 13 | 1.44 | 39 | 1.31 | 70 | 2.318 |
| In groups of 1 or 2 other persons | 2.28 | 14 | 2.21 | 37 | 1.83 | 71 | 5.165** |
| In groups of 3 or more persons | 1.46 | 15 | 1.97 | 36 | 2.30 | 70 | 11.348*** |
| With others from your own racial/ethnic group | 2.15 | 15 | 2.07 | 36 | 2.38 | 74 | 2.070 |
| **Day of Visit** | | | | | | | |
| During weekdays | 1.73 | 14 | 1.88 | 38 | 1.57 | 68 | 1.786 |
| During weekends | 2.50 | 15 | 2.17 | 39 | 2.50 | 71 | 3.393* |
| **Length of Visit** | | | | | | | |
| For less than 1 hour | 1.54 | 13 | 1.73 | 37 | 1.53 | 68 | 1.185 |
| For 1 to 2 hours | 2.11 | 14 | 2.05 | 37 | 1.99 | 69 | 0.384 |
| For more than 2 hours | 2.07 | 16 | 2.00 | 36 | 2.21 | 71 | 0.510 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Some, and 3=Almost All

or Chinese American respondents were least likely to visit parks and forests in groups of 1 or 2 other persons (Mean = 1.90), followed by the *medium* acculturated (Mean = 2.21) and *high* acculturated (Mean = 2.38) respondents. Similarly, the respondents within this group differed significantly (.05 level of significance) in terms of the number of visits undertaken with 3 or more persons. The *low* acculturated Chinese or Chinese American respondents were most likely to visit parks and forests in groups of 3 or more persons (Mean = 2.23), followed by the *medium* acculturated (Mean = 2.07) and *high* acculturated (Mean = 1.86) respondents. The respondents within this group also differed significantly in terms of the number of visits undertaken with others from the same racial/ethnic group. The *low* acculturated Chinese or Chinese American respondents were most likely to visit parks and forests with others from the same racial/ethnic group (Mean = 2.15), followed by the *medium* acculturated (Mean = 2.12) and *high* acculturated (Mean = 1.70) respondents.

Three significant differences in visitation patterns were associated with acculturation levels within the Japanese or Japanese American group (See Table 19). The *medium* acculturated Japanese or Japanese American respondents were most likely to visit parks and forests in groups of 1 or 2 other persons (Mean = 2.41), followed by the *high* acculturated (Mean = 2.03) and *low* acculturated (Mean = 1.94) respondents. The respondents within this group differed significantly (.05 level of significance) in terms of the number of visits undertaken during weekdays. The *medium* acculturated Japanese or Japanese American respondents were most likely to visit parks and forests during weekdays (Mean = 1.79), followed by the *high* acculturated (Mean = 1.76) and *low* acculturated (Mean = 1.38) respondents. The respondents within this group also differed significantly in terms of the number of visits undertaken during weekends. The *low* and *medium* acculturated Japanese or Japanese American respondents were most likely to visit parks and forests during weekends (Mean = 2.52 and 2.53, respectively) and the *high* acculturated respondents (Mean = 2.23) were least likely to do so.

Among Koreans or Korean Americans, *low* acculturated respondents were least likely to visit parks and forests in groups of 1 or 2 other persons (Mean = 1.83), followed by the *medium* acculturated (Mean = 2.21) and *high* acculturated (Mean = 2.28) respondents (See Table 20). The respondents within

this group also differed significantly in terms of the number of visits undertaken with 3 or more persons. The *low* acculturated Korean or Korean American respondents were most likely to visit parks and forests in groups of 3 or more persons (Mean = 2.30), followed by the *medium* acculturated (Mean = 1.97) and *high* acculturated (Mean = 1.46) respondents. In addition, *low* and *high* acculturated Korean or Korean American respondents were more likely to visit parks and forests during weekends (Mean = 2.50 for both acculturation levels) than were those with *medium* acculturation (Mean = 2.17).

***Hypothesis 2b:*** There are differences in recreational activity participation in parks and forests within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation when differences in socioeconomic status (educational level and household income) are adjusted for.

Two significant relationships between acculturation levels and recreational activity participation in parks and forests were observed within the Hispanic/Latino or Hispanic American group (See Table 21). The *medium* acculturated Hispanic/Latino or Hispanic American respondents were most likely to engage in *food-related activities* (Mean = 2.26), followed by the *low* acculturated (Mean = 2.24) and *high* acculturated (Mean = 1.75) respondents. Similarly, levels of acculturation were associated significantly with frequency of participation in *photography*. The *medium* acculturated Hispanic/Latino or Hispanic American respondents were most likely to engage in *photography* (Mean = 1.82), followed by the *low* acculturated (Mean = 1.65) and *high* acculturated (Mean = 1.31) respondents.

Within the Chinese or Chinese American group, the *low* acculturated Chinese or Chinese American respondents were the most likely to engage in *experiential activities* (Mean = 1.29), followed by the *medium* acculturated (Mean = 1.14) and *high* acculturated (Mean = 1.02) respondents (See Table 22).

One significant difference associated with acculturation levels was observed within the Japanese or Japanese American group's participation in recreational activities during their visits to parks and forests (See Table 23). Respondents who were rated as having *medium* acculturation were the most likely

**Table 21. Comparison of Recreational Activity Participation in Parks and Forests Within Hispanic/Latino or Hispanic American Subgroup by Acculturation Level (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Type of Activity | Hispanic/Latino or Hispanic American (Level of Acculturation) | | | | | | F for ANCOVA |
|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | |
| | Mean | N | Mean | N | Mean | N | |
| Solitary activities | 1.77 | 52 | 1.69 | 36 | 1.57 | 21 | .895 |
| Social activities | 2.28 | 52 | 2.52 | 38 | 2.45 | 21 | .483 |
| Food-related activities | 1.75 | 52 | 2.26 | 38 | 2.24 | 20 | 3.074* |
| Team activities | 1.63 | 51 | 1.97 | 39 | 1.74 | 20 | 1.063 |
| Outdoor land activities | 1.74 | 52 | 1.88 | 38 | 1.58 | 20 | 1.212 |
| Outdoor water activities | 1.52 | 51 | 1.61 | 39 | 1.59 | 20 | 0.940 |
| Physical exercises | 1.92 | 52 | 2.26 | 38 | 2.19 | 21 | 1.218 |
| Experiential activities | 1.07 | 51 | 1.11 | 38 | 1.06 | 19 | 0.210 |
| Subsistence activities | 1.05 | 51 | 1.10 | 38 | 1.08 | 20 | 0.101 |
| Community activities | 1.57 | 51 | 1.79 | 38 | 1.55 | 20 | 1.206 |
| Educational activities | 1.40 | 51 | 1.52 | 38 | 1.41 | 19 | 0.350 |
| Gardening | 1.04 | 51 | 1.23 | 38 | 1.31 | 19 | 1.981 |
| Photography | 1.31 | 52 | 1.82 | 38 | 1.65 | 19 | 4.675* |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Once or Twice, and 3=Three or More Times

**Table 22. Comparison of Recreational Activity Participation in Parks and Forests Within Chinese or Chinese American Subgroup by Acculturation Level (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Type of Activity | Chinese or Chinese American (Level of Acculturation) | | | | | | F for ANCOVA |
|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | |
| | Mean | N | Mean | N | Mean | N | |
| Solitary activities | 1.64 | 58 | 1.47 | 59 | 1.52 | 42 | .925 |
| Social activities | 2.17 | 57 | 2.14 | 60 | 2.14 | 46 | .030 |
| Food-related activities | 1.77 | 59 | 1.84 | 59 | 1.80 | 45 | .164 |
| Team activities | 1.41 | 56 | 1.50 | 59 | 1.49 | 43 | .257 |
| Outdoor land activities | 1.67 | 58 | 1.70 | 59 | 1.63 | 44 | .135 |
| Outdoor water activities | 1.44 | 57 | 1.42 | 58 | 1.55 | 44 | .590 |
| Physical exercises | 1.96 | 57 | 1.90 | 59 | 1.97 | 45 | .110 |
| Experiential activities | 1.02 | 56 | 1.14 | 59 | 1.29 | 45 | 3.939* |
| Subsistence activities | 1.14 | 57 | 1.14 | 59 | 1.07 | 43 | .373 |
| Community activities | 1.51 | 58 | 1.51 | 60 | 1.66 | 44 | .985 |
| Educational activities | 1.33 | 57 | 1.20 | 59 | 1.18 | 44 | 1.176 |
| Gardening | 1.15 | 57 | 1.16 | 59 | 1.23 | 44 | 0.397 |
| Photography | 1.37 | 57 | 1.58 | 59 | 1.49 | 45 | 1.772 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Once or Twice, and 3=Three or More Times

**Table 23. Comparison of Recreational Activity Participation in Parks and Forests Within Japanese or Japanese American Subgroup by Acculturation Level (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Type of Activity | Japanese or Japanese American (Level of Acculturation) | | | | | | F for ANCOVA |
|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | |
| | Mean | N | Mean | N | Mean | N | |
| Solitary activities | 1.66 | 45 | 1.75 | 24 | 1.54 | 37 | 0.535 |
| Social activities | 2.04 | 45 | 2.37 | 24 | 2.10 | 36 | 1.345 |
| Food-related activities | 1.73 | 45 | 1.74 | 23 | 1.59 | 37 | 0.583 |
| Team activities | 1.32 | 45 | 1.36 | 22 | 1.24 | 37 | 0.333 |
| Outdoor land activities | 1.46 | 45 | 1.51 | 23 | 1.28 | 37 | 1.015 |
| Outdoor water activities | 1.29 | 45 | 1.43 | 23 | 1.30 | 37 | 0.504 |
| Physical exercises | 1.76 | 45 | 1.95 | 24 | 1.79 | 37 | 0.347 |
| Experiential activities | 0.99 | 45 | 1.09 | 22 | 1.00 | 37 | 3.905* |
| Subsistence activities | 1.08 | 45 | 1.09 | 23 | 1.06 | 37 | 0.112 |
| Community activities | 1.53 | 45 | 1.56 | 23 | 1.51 | 37 | 0.058 |
| Educational activities | 1.22 | 45 | 1.22 | 23 | 1.19 | 37 | 0.058 |
| Gardening | 1.11 | 45 | 1.13 | 23 | 1.16 | 37 | 0.120 |
| Photography | 1.34 | 45 | 1.40 | 23 | 1.25 | 36 | 0.527 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Once or Twice, and 3=Three or More Times

**Table 24. Comparison of Recreational Activity Participation in Parks and Forests Within Korean or Korean American Subgroup by Acculturation Level (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Type of Activity | Korean or Korean American (Level of Acculturation) | | | | | | F for ANCOVA |
|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | |
| | Mean | N | Mean | N | Mean | N | |
| Solitary activities | 1.92 | 15 | 1.64 | 40 | 1.48 | 71 | 2.249 |
| Social activities | 1.97 | 16 | 2.24 | 41 | 2.29 | 72 | 1.267 |
| Food-related activities | 1.85 | 15 | 1.87 | 41 | 2.21 | 72 | 2.738 |
| Team activities | 1.40 | 14 | 1.68 | 40 | 1.81 | 72 | 1.919 |
| Outdoor land activities | 1.39 | 14 | 1.67 | 40 | 1.46 | 71 | 1.333 |
| Outdoor water activities | 1.33 | 15 | 1.37 | 40 | 1.43 | 72 | 0.289 |
| Physical exercises | 2.30 | 15 | 1.99 | 40 | 1.86 | 71 | 2.451 |
| Experiential activities | 1.07 | 14 | 1.12 | 41 | 1.11 | 71 | 0.116 |
| Subsistence activities | 1.08 | 14 | 1.06 | 39 | 1.14 | 71 | 0.681 |
| Community activities | 1.42 | 14 | 1.33 | 39 | 1.53 | 72 | 1.197 |
| Educational activities | 1.22 | 14 | 1.21 | 39 | 1.28 | 72 | 0.269 |
| Gardening | 1.07 | 14 | 1.02 | 39 | 1.13 | 71 | 1.466 |
| Photography | 1.29 | 14 | 1.42 | 39 | 1.57 | 72 | 1.522 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Once or Twice, and 3=Three or More Times

to engage in *experiential activities* (Mean = 1.09) with the *low* and *high* acculturated respondents (Mean = 1.00 and 0.99, respectively) least likely to do so.

No significant differences among the three acculturation categories in regard to recreational activity participation in parks and forests were observed within the Korean or Korean American group (See Table 24).

***Hypothesis 2c:*** There are differences in preferred characteristics of parks and forests within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation when differences in socioeconomic status (educational level and household income) are adjusted for.

Level of acculturation was significantly related to preference ratings for park and forest characteristics within the Hispanic/Latino or Hispanic American group (See Table 25). For respondents within this group, the *medium* and *low* acculturated Hispanic/Latino or Hispanic American respondents reported the highest preference ratings for *ethnic interaction* (Mean = 1.99 and 1.98, respectively) and the *high* acculturated respondents (Mean = 1.62) reported the lowest ratings for this characteristic.

Within the Chinese or Chinese American group, the three levels of acculturation differed significantly in terms of reported preference ratings for *recreational facilities* (See Table 26). The *medium* acculturated Chinese or Chinese American respondents reported the highest preference ratings for *recreational facilities* (Mean = 2.28), followed by the *low* acculturated (Mean = 2.24) and *high* acculturated (Mean = 2.10) respondents. The respondents within this group also differed significantly by acculturation level in terms of reported preference ratings for *ethnic interaction*. The *low* acculturated Chinese or Chinese American respondents reported the highest preference ratings for *ethnic interaction* (Mean = 1.84), followed by the *medium* acculturated (Mean = 1.64) and *high* acculturated (Mean = 1.42) respondents.

Within the Japanese or Japanese American group, there were significant differences associated with acculturation levels in terms of reported preference ratings for *park management* (See Table 27). The *medium* acculturated Japanese or Japanese American respondents reported the highest preference

**Table 25. Comparison of Preferred Characteristics of Parks and Forests Within Hispanic/Latino or Hispanic American Subgroup by Acculturation Level (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Preferred Characteristics | Hispanic/Latino or Hispanic American (Level of Acculturation) | | | | | | F for ANCOVA |
|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | |
| | Mean | N | Mean | N | Mean | N | |
| Natural Resources and Wildlife | 2.25 | 65 | 2.30 | 57 | 2.08 | 29 | 1.741 |
| Recreational Facilities | 2.36 | 65 | 2.53 | 57 | 2.41 | 31 | 2.336 |
| Park Management | 2.71 | 65 | 2.67 | 59 | 2.66 | 30 | 0.149 |
| Landscaping | 2.40 | 65 | 2.40 | 57 | 2.41 | 30 | 0.088 |
| Ethnic Interaction | 1.62 | 64 | 1.99 | 56 | 1.98 | 29 | 4.682* |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=Not Important, 2=Somewhat Important, and 3=Very Important

**Table 26. Comparison of Preferred Characteristics of Parks and Forests Within Chinese or Chinese American Subgroup by Acculturation Level (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Preferred Characteristics | Chinese or Chinese American (Level of Acculturation) | | | | | | F for ANCOVA |
|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | |
| | Mean | N | Mean | N | Mean | N | |
| Natural Resources and Wildlife | 2.08 | 76 | 2.09 | 90 | 2.14 | 78 | 0.003 |
| Recreational Facilities | 2.10 | 76 | 2.28 | 90 | 2.24 | 79 | 4.317* |
| Park Management | 2.56 | 76 | 2.66 | 90 | 2.56 | 80 | 2.454 |
| Landscaping | 2.26 | 76 | 2.32 | 90 | 2.32 | 78 | 0.408 |
| Ethnic Interaction | 1.42 | 76 | 1.64 | 90 | 1.84 | 78 | 8.405*** |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=Not Important, 2=Somewhat Important, and 3=Very Important

**Table 27. Comparison of Preferred Characteristics of Parks and Forests Within Japanese or Japanese American Subgroup by Acculturation Level (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Preferred Characteristics | Japanese or Japanese American (Level of Acculturation) | | | | | | F for ANCOVA |
|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | |
| | Mean | N | Mean | N | Mean | N | |
| Natural Resources and Wildlife | 2.05 | 62 | 2.30 | 35 | 2.06 | 45 | 3.026 |
| Recreational Facilities | 2.02 | 62 | 2.15 | 35 | 2.04 | 45 | 1.566 |
| Park Management | 2.59 | 62 | 2.72 | 35 | 2.48 | 45 | 5.571** |
| Landscaping | 2.21 | 62 | 2.27 | 34 | 2.12 | 45 | 1.067 |
| Ethnic Interaction | 1.42 | 62 | 1.60 | 34 | 1.60 | 45 | 2.587 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=Not Important, 2=Somewhat Important, and 3=Very Important

**Table 28. Comparison of Preferred Characteristics of Parks and Forests Within Korean or Korean American Subgroup by Acculturation Level (Controlling for Socioeconomic Status) Using Adjusted Means[a]**

| Preferred Characteristics | Korean or Korean American (Level of Acculturation) | | | | | | F for ANCOVA |
|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | |
| | Mean | N | Mean | N | Mean | N | |
| Natural Resources and Wildlife | 2.04 | 22 | 2.08 | 51 | 2.05 | 92 | 0.423 |
| Recreational Facilities | 2.14 | 22 | 2.31 | 51 | 2.38 | 92 | 4.441* |
| Park Management | 2.61 | 22 | 2.62 | 51 | 2.58 | 92 | 0.046 |
| Landscaping | 2.27 | 22 | 2.14 | 51 | 2.20 | 92 | 0.771 |
| Ethnic Interaction | 1.68 | 22 | 1.71 | 51 | 1.96 | 93 | 3.550* |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=Not Important, 2=Somewhat Important, and 3=Very Important

ratings for *park management* (Mean = 2.72), followed by the *high* acculturated (Mean = 2.59) and *low* acculturated (Mean = 2.48) respondents.

Two significant acculturation differences pertaining to preference ratings for park and forest characteristics were observed within the Korean or Korean American group (See Table 28). The *low* acculturated Korean or Korean American respondents reported the highest preference ratings for *recreational facilities* (Mean = 2.38), followed by the *medium* acculturated (Mean = 2.31) and *high* acculturated (Mean = 2.14) respondents. The respondents within this group also differed significantly in terms of reported preference ratings for *ethnic interaction*. The *low* acculturated Korean or Korean American respondents reported the highest preference ratings for *ethnic interaction* (Mean = 1.96), followed by the *medium* acculturated (Mean = 1.71) and *high* acculturated (Mean = 1.68) respondents.

***Research Question 3:***

> Is acculturation, by members within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans), associated with increasing similarity in outdoor recreation characteristics (patterns, activity participation, and preferences) of these subgroups to the Anglo or White population?

To conduct this analysis, three hypotheses (Hypotheses 3a, 3b, and 3c) were tested by examining the direction of change in means for patterns of park and forest visitation, recreational activity participation, and preferred characteristics of parks and forests within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation, compared with the corresponding outdoor recreation characteristics indicated by the Anglo or White group.

***Hypothesis 3a:*** Increasing levels of acculturation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) is associated with increasing similarity in regard to patterns of park and forest visitation reported by the Anglo or White group.

For the Hispanic/Latino or Hispanic American group, increasing acculturation levels was associated with higher frequencies and increasing similarity in reference to the Anglo or White group, in terms of visiting parks and forests in groups of 1 or 2 other persons, for less than one hour, and for 1 to 2 hours (See Table 29). Higher levels of acculturation within this group was associated with lower frequencies and increasing similarity in reference to the Anglo or White group, in terms of visiting parks and forests in groups of 3 or more persons, during weekends, and for more than 2 hours. Increasing acculturation levels within this group was associated with lower frequencies and decreasing similarity in reference to the Anglo or White group, in terms of visiting parks and forests alone and with others from the same racial/ethnic group. Increasing acculturation levels within this group did not reveal any clear patterns in reference to the Anglo or White group, in terms of visiting parks and forests during weekdays.

For the Chinese or Chinese American group, increasing acculturation levels was associated with higher frequencies and increasing similarity in reference to the Anglo or White group, in terms of visiting parks and forests alone, in groups of 1 or 2 other persons, during weekdays, during weekends, and for less than 1 hour (See Table 30). Higher levels of acculturation within this group was associated with lower frequencies and increasing similarity in reference to the Anglo or White group, in terms of visiting parks and forests in groups of 3 or more persons and for more than 2 hours. Increasing acculturation levels within this group was associated with lower frequencies and decreasing similarity in reference to the Anglo or White group, in terms of visiting parks and forests with others from the same racial/ethnic group. Increasing acculturation levels within this group did not reveal any clear patterns in reference to the Anglo or White group, in terms of visiting parks and forests for 1 to 2 hours.

For the Japanese or Japanese American group, increasing acculturation levels was associated with higher frequencies and increasing similarity in reference to the Anglo or White group, in terms of visiting parks and forests alone, during weekdays, and for more than 2 hours (See Table 31). Higher levels of acculturation within this group was associated with lower frequencies and increasing similarity in reference to the Anglo or White group, in terms of visiting parks and forests during weekends. Increasing acculturation levels within this group was associated with lower frequencies and decreasing similarity in

**Table 29. Comparison of Patterns of Park and Forest Visitation Between Hispanic/Latino or Hispanic American (by Acculturation Level) and Anglo or White Subgroups[a]**

| Patterns of Visitation | Hispanic/Latino or Hispanic American (Level of Acculturation) | | | | | | Anglo or White | |
|---|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| **Group Composition** | | | | | | | | |
| Alone | 1.49 | 52 | 1.50 | 35 | 1.61 | 17 | 1.59 | 189 |
| In groups of 1 or 2 other persons | 2.45 | 50 | 2.12 | 40 | 1.97 | 18 | 2.29 | 191 |
| In groups of 3 or more persons | 1.96 | 49 | 2.23 | 36 | 2.75 | 19 | 1.89 | 184 |
| With others from your own racial/ethnic group | 1.59 | 50 | 2.15 | 37 | 2.30 | 19 | 2.44 | 192 |
| **Day of Visit** | | | | | | | | |
| During weekdays | 1.78 | 49 | 1.82 | 38 | 1.72 | 17 | 1.94 | 194 |
| During weekends | 2.40 | 53 | 2.54 | 37 | 2.50 | 20 | 2.37 | 195 |
| **Length of Visit** | | | | | | | | |
| For less than 1 hour | 1.57 | 49 | 1.56 | 37 | 1.52 | 15 | 1.76 | 179 |
| For 1 to 2 hours | 2.11 | 53 | 2.01 | 37 | 1.97 | 18 | 2.20 | 192 |
| For more than 2 hours | 1.92 | 50 | 2.22 | 36 | 2.40 | 20 | 1.86 | 187 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Some, and 3=Almost All

**Table 30. Comparison of Patterns of Park and Forest Visitation Between Chinese or Chinese American (by Acculturation Level) and Anglo or White Subgroups[a]**

| Patterns of Visitation | Chinese or Chinese American (Level of Acculturation) | | | | | | Anglo or White | |
|---|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| **Group Composition** | | | | | | | | |
| Alone | 1.45 | 56 | 1.33 | 53 | 1.27 | 41 | 1.60 | 189 |
| In groups of 1 or 2 other persons | 2.38 | 55 | 2.21 | 57 | 1.90 | 43 | 2.30 | 191 |
| In groups of 3 or more persons | 1.86 | 56 | 2.07 | 54 | 2.23 | 43 | 1.88 | 184 |
| With others from your own racial/ethnic group | 1.70 | 57 | 2.12 | 56 | 2.15 | 41 | 2.43 | 192 |
| **Day of Visit** | | | | | | | | |
| During weekdays | 1.72 | 56 | 1.69 | 56 | 1.48 | 42 | 1.93 | 194 |
| During weekends | 2.47 | 58 | 2.39 | 57 | 2.33 | 44 | 2.40 | 195 |
| **Length of Visit** | | | | | | | | |
| For less than 1 hour | 1.81 | 54 | 1.58 | 55 | 1.50 | 40 | 1.76 | 179 |
| For 1 to 2 hours | 1.99 | 57 | 2.11 | 56 | 1.94 | 41 | 2.23 | 192 |
| For more than 2 hours | 1.81 | 58 | 2.13 | 56 | 2.02 | 42 | 1.86 | 187 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Some, and 3=Almost All

**Table 31. Comparison of Patterns of Park and Forest Visitation Between Japanese or Japanese American (by Acculturation Level) and Anglo or White Subgroups[a]**

| Patterns of Visitation | Japanese or Japanese American (Level of Acculturation) | | | | | | Anglo or White | |
|---|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| **Group Composition** | | | | | | | | |
| Alone | 1.61 | 44 | 1.39 | 22 | 1.37 | 36 | 1.60 | 189 |
| In groups of 1 or 2 other persons | 2.03 | 45 | 2.41 | 22 | 1.94 | 36 | 2.29 | 191 |
| In groups of 3 or more persons | 1.83 | 44 | 2.00 | 20 | 1.86 | 35 | 1.88 | 184 |
| With others from your own racial/ethnic group | 1.60 | 44 | 1.95 | 20 | 1.93 | 37 | 2.43 | 192 |
| **Day of Visit** | | | | | | | | |
| During weekdays | 1.76 | 44 | 1.79 | 22 | 1.38 | 36 | 1.94 | 194 |
| During weekends | 2.23 | 45 | 2.53 | 24 | 2.52 | 37 | 2.38 | 195 |
| **Length of Visit** | | | | | | | | |
| For less than 1 hour | 1.52 | 45 | 1.64 | 20 | 1.65 | 35 | 1.75 | 179 |
| For 1 to 2 hours | 1.90 | 45 | 2.07 | 23 | 1.76 | 36 | 2.22 | 192 |
| For more than 2 hours | 1.91 | 45 | 1.77 | 22 | 1.71 | 35 | 1.86 | 187 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Some, and 3=Almost All

**Table 32. Comparison of Patterns of Park and Forest Visitation Between Korean or Korean American (by Acculturation Level) and Anglo or White Subgroups[a]**

| Patterns of Visitation | Korean or Korean American (Level of Acculturation) | | | | | | Anglo or White | |
|---|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| **Group Composition** | | | | | | | | |
| Alone | 1.67 | 13 | 1.44 | 39 | 1.31 | 70 | 1.59 | 189 |
| In groups of 1 or 2 other persons | 2.28 | 14 | 2.21 | 37 | 1.83 | 71 | 2.29 | 191 |
| In groups of 3 or more persons | 1.46 | 15 | 1.97 | 36 | 2.30 | 70 | 1.88 | 184 |
| With others from your own racial/ethnic group | 2.15 | 15 | 2.07 | 36 | 2.38 | 74 | 2.44 | 192 |
| **Day of Visit** | | | | | | | | |
| During weekdays | 1.73 | 14 | 1.88 | 38 | 1.57 | 68 | 1.94 | 194 |
| During weekends | 2.50 | 15 | 2.17 | 39 | 2.50 | 71 | 2.38 | 195 |
| **Length of Visit** | | | | | | | | |
| For less than 1 hour | 1.54 | 13 | 1.73 | 37 | 1.53 | 68 | 1.75 | 179 |
| For 1 to 2 hours | 2.11 | 14 | 2.05 | 37 | 1.99 | 69 | 2.21 | 192 |
| For more than 2 hours | 2.07 | 16 | 2.00 | 36 | 2.21 | 71 | 1.86 | 187 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Some, and 3=Almost All

reference to the Anglo or White group, in terms of visiting parks and forests with others from the same racial/ethnic group and for less than 1 hour. Increasing acculturation levels within this group did not reveal any clear patterns in reference to the Anglo or White group, in terms of visiting parks and forests in groups of 1 or 2 other persons, in groups of 3 or more persons and for 1 to 2 hours.

For the Korean or Korean American group, increasing acculturation levels was associated with higher frequencies and increasing similarity in reference to the Anglo or White group, in terms of visiting parks and forests alone and for 1 to 2 hours (See Table 32). Higher levels of acculturation within this group was associated with lower frequencies and increasing similarity in reference to the Anglo or White group, in terms of visiting parks and forests in groups of 3 or more persons and for more than 2 hours. Increasing acculturation levels within this group was associated with lower frequencies and decreasing similarity in reference to the Anglo or White group, in terms of visiting parks and forests with others from the same racial/ethnic group. Increasing acculturation levels within this group did not reveal any clear patterns in reference to the Anglo or White group, in terms of visiting parks and forests during weekdays, during weekends and for less than 1 hour.

***Hypothesis 3b:*** Increasing levels of acculturation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) is associated with increasing similarity in regard to recreational activity participation in parks and forests reported by the Anglo or White group.

For the Hispanic/Latino or Hispanic American group, increasing acculturation levels was associated with higher frequencies and increasing similarity in reference to the Anglo or White group, in terms of participation in *solitary activities* and *outdoor land activities* (See Table 33). Higher levels of acculturation within this group was associated with lower frequencies and increasing similarity in reference to the Anglo or White group, in terms of participation in *social activities*, *food-related activities*, *team activities*, and *gardening*. Increasing acculturation levels within this group did not reveal any clear patterns in reference to the Anglo or White group, in terms of participation in the remaining activities.

**Table 33. Comparison of Recreational Activity Participation in Parks and Forests Between Hispanic/Latino or Hispanic American (by Acculturation Level) and Anglo or White Subgroups[a]**

| Type of Activity | Hispanic/Latino or Hispanic American (Level of Acculturation) | | | | | | Anglo or White | |
|---|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| Solitary activities | 1.77 | 52 | 1.69 | 36 | 1.57 | 21 | 1.85 | 194 |
| Social activities | 2.28 | 52 | 2.52 | 38 | 2.45 | 21 | 2.20 | 194 |
| Food-related activities | 1.75 | 52 | 2.26 | 38 | 2.24 | 20 | 1.91 | 197 |
| Team activities | 1.63 | 51 | 1.97 | 39 | 1.74 | 20 | 1.43 | 192 |
| Outdoor land activities | 1.74 | 52 | 1.88 | 38 | 1.58 | 20 | 1.74 | 196 |
| Outdoor water activities | 1.52 | 51 | 1.61 | 39 | 1.59 | 20 | 1.67 | 193 |
| Physical exercises | 1.92 | 52 | 2.26 | 38 | 2.19 | 21 | 2.18 | 197 |
| Experiential activities | 1.07 | 51 | 1.11 | 38 | 1.06 | 19 | 1.06 | 190 |
| Subsistence activities | 1.05 | 51 | 1.10 | 38 | 1.08 | 20 | 1.15 | 192 |
| Community activities | 1.57 | 51 | 1.79 | 38 | 1.55 | 20 | 1.53 | 194 |
| Educational activities | 1.40 | 51 | 1.52 | 38 | 1.41 | 19 | 1.48 | 191 |
| Gardening | 1.04 | 51 | 1.23 | 38 | 1.31 | 19 | 1.09 | 192 |
| Photography | 1.31 | 52 | 1.82 | 38 | 1.65 | 19 | 1.44 | 194 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Once or Twice, and 3=Three or More Times

**Table 34. Comparison of Recreational Activity Participation in Parks and Forests Between Chinese or Chinese American (by Acculturation Level) and Anglo or White Subgroups[a]**

| Type of Activity | Chinese or Chinese American (Level of Acculturation) | | | | | | Anglo or White | |
|---|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| Solitary activities | 1.64 | 58 | 1.47 | 59 | 1.52 | 42 | 1.85 | 194 |
| Social activities | 2.17 | 57 | 2.14 | 60 | 2.14 | 46 | 2.22 | 194 |
| Food-related activities | 1.77 | 59 | 1.84 | 59 | 1.80 | 45 | 1.91 | 197 |
| Team activities | 1.41 | 56 | 1.50 | 59 | 1.49 | 43 | 1.43 | 192 |
| Outdoor land activities | 1.67 | 58 | 1.70 | 59 | 1.63 | 44 | 1.76 | 196 |
| Outdoor water activities | 1.44 | 57 | 1.42 | 58 | 1.55 | 44 | 1.66 | 193 |
| Physical exercises | 1.96 | 57 | 1.90 | 59 | 1.97 | 45 | 2.21 | 197 |
| Experiential activities | 1.02 | 56 | 1.14 | 59 | 1.29 | 45 | 1.06 | 190 |
| Subsistence activities | 1.14 | 57 | 1.14 | 59 | 1.07 | 43 | 1.15 | 192 |
| Community activities | 1.51 | 58 | 1.51 | 60 | 1.66 | 44 | 1.54 | 194 |
| Educational activities | 1.33 | 57 | 1.20 | 59 | 1.18 | 44 | 1.48 | 191 |
| Gardening | 1.15 | 57 | 1.16 | 59 | 1.23 | 44 | 1.10 | 192 |
| Photography | 1.37 | 57 | 1.58 | 59 | 1.49 | 45 | 1.4 | 194 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Once or Twice, and 3=Three or More Times

**Table 35. Comparison of Recreational Activity Participation in Parks and Forests Between Japanese or Japanese American (by Acculturation Level) and Anglo or White Subgroups[a]**

| Type of Activity | Japanese or Japanese American (Level of Acculturation) | | | | | | Anglo or White | |
|---|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| Solitary activities | 1.66 | 45 | 1.75 | 24 | 1.54 | 37 | 1.85 | 194 |
| Social activities | 2.04 | 45 | 2.37 | 24 | 2.10 | 36 | 2.21 | 194 |
| Food-related activities | 1.73 | 45 | 1.74 | 23 | 1.59 | 37 | 1.90 | 197 |
| Team activities | 1.32 | 45 | 1.36 | 22 | 1.24 | 37 | 1.42 | 197 |
| Outdoor land activities | 1.46 | 45 | 1.51 | 23 | 1.28 | 37 | 1.75 | 196 |
| Outdoor water activities | 1.29 | 45 | 1.43 | 23 | 1.30 | 37 | 1.66 | 193 |
| Physical exercises | 1.76 | 45 | 1.95 | 24 | 1.79 | 37 | 2.19 | 197 |
| Experiential activities | 0.99 | 45 | 1.09 | 22 | 1.00 | 37 | 1.06 | 190 |
| Subsistence activities | 1.08 | 45 | 1.09 | 23 | 1.06 | 37 | 1.15 | 192 |
| Community activities | 1.53 | 45 | 1.56 | 23 | 1.51 | 37 | 1.53 | 194 |
| Educational activities | 1.22 | 45 | 1.22 | 23 | 1.19 | 37 | 1.48 | 191 |
| Gardening | 1.11 | 45 | 1.13 | 23 | 1.16 | 37 | 1.09 | 192 |
| Photography | 1.34 | 45 | 1.40 | 23 | 1.25 | 36 | 1.43 | 194 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Once or Twice, and 3=Three or More Times

**Table 36. Comparison of Recreational Activity Participation in Parks and Forests Between Korean or Korean American (by Acculturation Level) and Anglo or White Subgroups[a]**

| Type of Activity | Korean or Korean American (Level of Acculturation) | | | | | | Anglo or White | |
|---|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| Solitary activities | 1.92 | 15 | 1.64 | 40 | 1.48 | 71 | 1.85 | 194 |
| Social activities | 1.97 | 16 | 2.24 | 41 | 2.29 | 72 | 2.20 | 194 |
| Food-related activities | 1.85 | 15 | 1.87 | 41 | 2.21 | 72 | 1.90 | 197 |
| Team activities | 1.40 | 14 | 1.68 | 40 | 1.81 | 72 | 1.42 | 192 |
| Outdoor land activities | 1.39 | 14 | 1.67 | 40 | 1.46 | 71 | 1.74 | 196 |
| Outdoor water activities | 1.33 | 15 | 1.37 | 40 | 1.43 | 72 | 1.66 | 193 |
| Physical exercises | 2.30 | 15 | 1.99 | 40 | 1.86 | 71 | 2.19 | 197 |
| Experiential activities | 1.07 | 14 | 1.12 | 41 | 1.11 | 71 | 1.06 | 190 |
| Subsistence activities | 1.08 | 14 | 1.06 | 39 | 1.14 | 71 | 1.15 | 192 |
| Community activities | 1.42 | 14 | 1.33 | 39 | 1.53 | 72 | 1.53 | 194 |
| Educational activities | 1.22 | 14 | 1.21 | 39 | 1.28 | 72 | 1.48 | 191 |
| Gardening | 1.07 | 14 | 1.02 | 39 | 1.13 | 71 | 1.09 | 192 |
| Photography | 1.29 | 14 | 1.42 | 39 | 1.57 | 72 | 1.43 | 194 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=None, 2=Once or Twice, and 3=Three or More Times

For the Chinese or Chinese American group, increasing acculturation levels was associated with higher frequencies and increasing similarity in reference to the Anglo or White group, in terms of participation in *solitary activities*, *social activities*, *subsistence activities*, and *educational activities* (See Table 34). Higher levels of acculturation within this group was associated with lower frequencies and increasing similarity in reference to the Anglo or White group, in terms of participation in *experiential activities*, *community activities*, and *gardening*. Increasing acculturation levels within this group did not reveal any clear patterns in reference to the Anglo or White group, in terms of participation in the remaining activities.

For the Japanese or Japanese American group, increasing acculturation levels was associated with higher frequencies and increasing similarity in reference to the Anglo or White group, in terms of participation in *food-related activities*, *team activities*, *outdoor land activities*, and *educational activities*. and *gardening* (See Table 35). Higher acculturation levels within this group was associated with decreasing frequencies and increasing similarity in reference to the Anglo or White group, in terms of participation in *gardening*. Increasing acculturation levels within this group did not reveal any clear patterns in reference to the Anglo or White group, in terms of participation in the remaining activities.

For the Korean or Korean American group, increasing acculturation levels was associated with higher frequencies and increasing similarity in reference to the Anglo or White group, in terms of participation in *solitary activities* and *physical exercises* during their visits to parks and forests (See Table 36). Higher levels of acculturation within this group was associated with lower frequencies and increasing similarity in reference to the Anglo or White group, in terms of participation in *food-related activities*, *experiential activities*, and *team activities*. Increasing acculturation levels within this group was associated with lower frequencies and decreasing similarity in reference to the Anglo or White group, in terms of participation in *social activities*, *outdoor water activities*, *educational activities*, and *photography*. Increasing acculturation levels within this group did not reveal any clear patterns in reference to the Anglo or White group, in terms of participation in the remaining activities.

***Hypothesis 3c:*** Increasing levels of acculturation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) is associated with increasing similarity in regard to preferred characteristics of parks and forests reported by the Anglo or White group.

For the Hispanic/Latino or Hispanic American group, increasing acculturation levels was associated with higher ratings and increasing similarity in reference to the Anglo or White group, in terms of reported preference ratings for *natural resources and wildlife* characteristics related to parks and forests (See Table 37). Higher acculturation levels within this group was associated with higher ratings and decreasing similarity in reference to the Anglo or White group, in terms of reported preference ratings for *park management* characteristics. Increasing acculturation levels within this group was associated with lower ratings and increasing similarity in reference to the Anglo or White group, in terms of reported preference ratings *ethnic interaction* characteristics. Increasing acculturation levels within this group did not reveal any clear patterns in reference to the Anglo or White group, in terms of preference ratings for the remaining park and forest characteristics.

For the Chinese or Chinese American group, increasing acculturation levels was associated with lower ratings and increasing similarity in reference to the Anglo or White group, in terms of reported preference ratings for *recreational facilities, landscaping*, and *ethnic interaction* characteristics related to parks and forests (See Table 38). Higher levels of acculturation within this group was associated with lower ratings and decreasing similarity in reference to the Anglo or White group, in terms of reported preference ratings for *natural resources and wildlife* characteristics related to parks and forests. Increasing acculturation levels within this group did not reveal any clear patterns in reference to the Anglo or White group, in terms of reported preference ratings for *park management* characteristics.

For the Japanese or Japanese American group, increasing acculturation levels was associated with higher ratings and increasing similarity in reference to the Anglo or White group, in terms of reported preference ratings for *park management* and *landscaping* characteristics related to parks and forests (See Table 39). Higher acculturation levels within this group was associated with lower ratings and decreasing similarity in reference to the Anglo or White group, in terms of reported preference ratings for *ethnic*

**Table 37. Comparison of Preferred Characteristics of Parks and Forests Between Hispanic/Latino or Hispanic American (by Acculturation Level) and Anglo or White Subgroups[a]**

| Preferred Characteristics | Hispanic/Latino or Hispanic American (Level of Acculturation) | | | | | | Anglo or White | |
|---|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| Natural Resources and Wildlife | 2.25 | 65 | 2.30 | 57 | 2.08 | 29 | 2.19 | 278 |
| Recreational Facilities | 2.36 | 65 | 2.53 | 57 | 2.41 | 31 | 2.15 | 280 |
| Park Management | 2.71 | 65 | 2.67 | 59 | 2.66 | 30 | 2.61 | 279 |
| Landscaping | 2.40 | 65 | 2.40 | 57 | 2.41 | 30 | 2.24 | 278 |
| Ethnic Interaction | 1.62 | 64 | 1.99 | 56 | 1.98 | 29 | 1.68 | 276 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=Not Important, 2=Somewhat Important, and 3=Very Important

**Table 38. Comparison of Preferred Characteristics of Parks and Forests Between Chinese or Chinese American (by Acculturation Level) and Anglo or White Subgroups[a]**

| Preferred Characteristics | Chinese or Chinese American (Level of Acculturation) | | | | | | Anglo or White | |
|---|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| Natural Resources and Wildlife | 2.08 | 76 | 2.09 | 90 | 2.14 | 78 | 2.21 | 278 |
| Recreational Facilities | 2.10 | 76 | 2.28 | 90 | 2.24 | 79 | 2.14 | 280 |
| Park Management | 2.56 | 76 | 2.66 | 90 | 2.56 | 80 | 2.60 | 279 |
| Landscaping | 2.26 | 76 | 2.32 | 90 | 2.32 | 78 | 2.23 | 278 |
| Ethnic Interaction | 1.42 | 76 | 1.64 | 90 | 1.84 | 78 | 1.68 | 276 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=Not Important, 2=Somewhat Important, and 3=Very Important

**Table 39. Comparison of Preferred Characteristics of Parks and Forests Between Japanese or Japanese American (by Acculturation Level) and Anglo or White Subgroups[a]**

| Preferred Characteristics | Japanese or Japanese American (Level of Acculturation) | | | | | | Anglo or White | |
|---|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| Natural Resources and Wildlife | 2.05 | 62 | 2.30 | 35 | 2.06 | 45 | 2.20 | 278 |
| Recreational Facilities | 2.02 | 62 | 2.15 | 35 | 2.04 | 45 | 2.14 | 280 |
| Park Management | 2.59 | 62 | 2.72 | 35 | 2.48 | 45 | 2.61 | 279 |
| Landscaping | 2.21 | 62 | 2.27 | 34 | 2.12 | 45 | 2.23 | 278 |
| Ethnic Interaction | 1.42 | 62 | 1.60 | 34 | 1.60 | 45 | 1.68 | 276 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=Not Important, 2=Somewhat Important, and 3=Very Important

**Table 40. Comparison of Preferred Characteristics of Parks and Forests Between Korean or Korean American (by Acculturation Level) and Anglo or White Subgroups[a]**

| Preferred Characteristics | Korean or Korean American (Level of Acculturation) | | | | | | Anglo or White | |
|---|---|---|---|---|---|---|---|---|
| | High | | Medium | | Low | | | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| Natural Resources and Wildlife | 2.04 | 22 | 2.08 | 51 | 2.05 | 92 | 2.20 | 278 |
| Recreational Facilities | 2.14 | 22 | 2.31 | 51 | 2.38 | 92 | 2.14 | 280 |
| Park Management | 2.61 | 22 | 2.62 | 51 | 2.58 | 92 | 2.61 | 279 |
| Landscaping | 2.27 | 22 | 2.14 | 51 | 2.20 | 92 | 2.24 | 278 |
| Ethnic Interaction | 1.68 | 22 | 1.71 | 51 | 1.96 | 93 | 1.68 | 276 |

* Significant at $p \leq .05$, ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

[a]Variable coded on a 3-point scale where 1=Not Important, 2=Somewhat Important, and 3=Very Important

*interaction* characteristics. Increasing acculturation levels within this group did not reveal any clear patterns in reference to the Anglo or White group, in terms of preference ratings for the remaining park and forest characteristics.

For the Korean or Korean American group, increasing acculturation levels was associated with higher ratings and increasing similarity in reference to the Anglo or White group, in terms of reported preference ratings for *park management* and *landscaping* characteristics related to parks and forests (See Table 40). Higher acculturation levels within this group was associated with lower ratings and increasing similarity in reference to the Anglo or White group, in terms of reported preference ratings for *recreational facilities* and *ethnic interaction* characteristics. Increasing acculturation levels within this group did not reveal any clear patterns in reference to the Anglo or White group, in terms of reported preference ratings for the park and forest characteristics related to *natural resources and wildlife.*

The analyses conducted in relation to Research Question 1 indicated that race/ethnicity of the respondent influenced some, but not all outdoor recreation characteristics. An examination of acculturation-based differences in outdoor recreation characteristics, through analyses of Research Questions 2 and 3, revealed differences within ethnic groups, relating, mostly to park and forest visitation patterns and, to a lesser extent to reported preference ratings for park and forest characteristics. Furthermore, several similarities were observed among the high acculturated ethnic individuals in reference to the Anglo or White population.

# CHAPTER 5

# SUMMARY AND CONCLUSIONS

This chapter presents a summary of the methodology used and findings of this study, which examined the relationship between ethnicity, acculturation and outdoor recreation. The chapter is divided into the following sections: (1) summary of purpose, (2) summary of literature review, (3) summary of procedures, (3) summary of findings, (4) discussion, (5) conclusions and implications, and (6) recommendations for further study.

## Summary of Purpose

Current demographic trends indicate population growth of racial and ethnic minority groups is increasing considerably faster than the rate for the U.S. population as a whole. Ethnic diversity will impact the social landscape of urban areas, including the ways in which residents use urban parks and forests for recreational purposes. Studies examining intra-ethnic differences in outdoor recreation characteristics would be invaluable to managers of parks, forests or recreational areas which receive high levels of visitation from ethnic minority groups. The purpose of this study was to examine differences in outdoor recreation characteristics, relevant to urban parks and forests, both across and within selected population subgroups. Specifically, this study examined: 1) inter-ethnic variations in outdoor recreation characteristics across six population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites); 2) the influence of acculturation on intra-ethnic variability in outdoor recreation characteristics within four of these subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans); and 3) acculturation-related patterns of variations in outdoor recreation characteristics of these four subgroups in comparison with the Anglo or White group.

## Summary of Literature Review

Prior studies have shown that ethnic minority groups, in general, differ in their urban park and open space landscape, and natural setting preferences (Kaplan & Talbot, 1988; Talbot & Kaplan, 1993; Zhang & Gobster, 1998), park needs and interests (Gobster & Delgado, 1993; Zhang & Gobster, 1998), urban park use and leisure participation (Dwyer, 1993; Gobster, 1998; Hutchinson, 1993; Jeong, 1999; Taylor, 1993), recreation experiences (Carr & Williams, 1993; Keefe & Padilla, 1987), park visitation patterns and attitudes (Carr & Chavez, 1993), and environmental attitudes (Floyd & Noe, 1993; Noe & Snow, 1990). Overall, these and other studies have investigated urban park and forest use and outdoor recreation preferences of ethnic minority populations by categorizing Hispanics and Asian Americans as homogenous, monolithic segments. Thus, less seems to be understood about the perceptions, values and needs of the largest, fastest-growing segments within urban Hispanic (Cuban, Mexican, Puerto Rican, Dominican, etc.) and Asian American (Chinese, Korean, Japanese, Filipino, etc.) populations (Hutchinson, 1993), with respect to urban parks, forests, trees, wildlife and their management.

As immigrants and ethnic minority groups become immersed in the dominant culture of their host community, they experience acculturation as the values and modes of behavior of the new host culture are gradually incorporated into their traditional culture. In response to the sociocultural and environmental changes experienced by immigrant and ethnic minority groups as a consequence of acculturation, leisure and recreational settings are oftentimes used by such groups to establish or engage in activities which can be used to cope and deal with (acculturative) changes (Field & O'Leary, 1973). Assuming that the more inclusive culture has the potential to shape leisure and recreation patterns (Goodale & Witt, 1985; Kelly, 1983) and that one's recreation and leisure style is influenced, in varying degrees, by interactions arising from the relationships with and socialization by co-workers, friends, and family (Burch, 1969; Carr & Williams, 1993; Kelly, 1987), differences in recreational preferences, behavior and participation patterns would be expected to be observed both among and within ethnic minority groups depending on the varying levels of acculturation experienced by the groups.

Varying levels of acculturation in association with other sociocultural and demographic factors create differences both among (inter-ethnic) and within (intra-ethnic) ethnic and immigrant groups in terms of recreation activity participation, use and preference for recreation areas, as well as meanings and values attributed to outdoor recreation. The growing ethnic diversity in the suburbs and urban areas of the United States poses several, previously unencountered, challenges to professionals in the area of recreation resource management. Although studies conducted in urban areas indicate that racial and ethnic groups exhibit both among-group and within-group differences in their recreational preferences, behavior and participation patterns (Dwyer, 1993; Gobster, 1998; Gobster & Delgado, 1993; Hutchinson, 1993; Jeong, 1999; Kaplan & Talbot, 1988; Talbot & Kaplan, 1993; Taylor, 1993; Zhang & Gobster, 1998), explanations for the reasons for such differences are currently inadequate (Zhang & Gobster, 1998). While 'ethnicity' and 'marginality' theories have offered standardized viewpoints of how differences in racial and ethnic leisure patterns should be addressed, additional theoretical explanations are required to obtain a more objective assessment of their actual causes (Floyd & Gramann, 1993). Specifically, the relationship between acculturation and differences in the recreational preferences, behavior and participation patterns of ethnic minority groups warrants further investigation.

## Summary of Procedures

### Selection of Study Populations

Household members belonging to five ethnic population subgroups - Hispanic/Latino (e.g., Cuban, Mexican, Puerto Rican, Dominican, etc.) or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, Korean or Korean American, African American, and members of Anglo or White households residing in two urban centers, namely Philadelphia, PA and Atlanta, GA were surveyed using Dillman's (2000) Tailored Design Approach. The initial sample of 6000 respondents (500 households X 6 population subgroups X 2 cities) was reduced to approximately 4088 respondents due to an extremely high proportion of incorrect addresses in the purchased sample. The overall response rate (taking all population subgroups into account) was approximately 31%, i.e., approx. 29% and 33% for

Philadelphia, PA and Atlanta, GA, respectively. Collectively, the total usable sample from both cities was 1269 respondents.

**Instrumentation**

The survey instrument utilized by this study was a self-administered mail questionnaire in which subjects were asked about their park and forest-related outdoor recreation preferences, participation patterns, and activities. A page containing twelve color photographs of parks and forests was enclosed with the questionnaire with the intention that the pictures would serve as a common referent for subjects in responding to the survey questions. The questionnaire was translated into four ethnic languages - Spanish, Chinese (both simplified and traditional), Korean, and Japanese, using a back-translation (double-translation) procedure.

**Operationalizing the Variables**

Indicators of the subjects' ethnicity, patterns of park and forest visitation, types of recreational activities engaged in during visits to parks and forests, and the perceived importance of various park and forest characteristics as well as indices of acculturation and socioeconomic status were operationalized.

Ethnicity was measured by asking subjects to indicate the racial/ethnic group that "best describes your race/ethnicity."

Patterns of park and forest visitation during the preceding 12 months were assessed by asking the subject to indicate the extent to which their visits to parks and forests had occurred: a) with different sizes of groups; b) with members of their own racial/ethnic group; c) on weekends and weekdays; and d) for differing lengths of time. A total of 9 specific items were used, with responses measured on a 3-point scale ('None,' 'Some,' and 'Almost All.').

Information on the types of recreational activities that subjects engaged in during their park and forest visits during the preceding 12 months was obtained by asking them to indicate how often during the last year they had participated in each of 13 categories of activities. Response categories for these items were: 'None,' 'Once or Twice,' and 'Three or More Times.'

The respondents preferences in regard to park and forest area characteristics were measured by asking them to indicate how important ('Not Important,' 'Somewhat Important,' and 'Very Important') each of the 35 items were for parks and forests that they might visit. Principal components analysis reduced this list to five factors - natural resources and wildlife, recreational facilities, park management, landscaping, and ethnic interaction.

Level of acculturation of the subject was indexed by a composite score based on four items from a Language Use scale (or acculturation scale) derived from Marin et al (1987). This scale, used previously to index acculturation, assesses the extent to which the subject reports using the dominant language (English) in various public and private settings. For purpose of analysis, this scale was categorized into three levels (*High*, *Medium* and *Low*).

A measure of the respondent's socioeconomic status, used as a control variable, was derived by calculating the mean z-score for reported educational and income levels.

## Summary of Findings

Three research questions were developed to examine differences in outdoor recreation characteristics related to parks and forests, both across and within six population subgroups, as follows:

***Research Question 1:***

> Are there differences in outdoor recreation characteristics (recreation patterns, activity participation, and preferences) among the six population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) while controlling for (or adjusting for) socioeconomic status (educational level and household income)?

To conduct this analysis, three hypotheses were developed and tested:

***Hypothesis 1a:*** There are differences in patterns of park and forest visitation among the identified population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) when differences in socioeconomic status (educational level and household income) are adjusted for.

While all of the subgroups were most likely to visit parks and forests in small groups of one or two other persons, during weekends, and for more than an hour, there were differences among them in regard to the frequency of these and other visitation patterns. Thus, Chinese or Chinese Americans and Koreans or Korean Americans were less likely than the other groups to go alone, while Hispanics/Latinos or Hispanic Americans and Koreans or Korean Americans were the most likely to visit in groups of three or more other persons and Japanese or Japanese Americans and Anglos or Whites were least likely to visit parks and forests in these larger groups. These results support Hypothesis 1a.

***Hypothesis 1b:*** *T*here are differences in recreational activity participation in parks and forests among the identified population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) when differences in socioeconomic status (educational level and household income) are adjusted for.

Among the subgroups, the Anglo or White respondents participated more frequently than the other groups in activities requiring fewer group members, including *outdoor land activities*, *outdoor water activities*, *physical exercises*, and *educational activities* than the other population subgroups. Both Anglos or Whites and African Americans reported higher frequency of participation than the other groups in *solitary activities.* Although all groups indicated high frequency of participation in *social activities*, respondents of African American, Hispanic/Latino or Hispanic American, Korean or Korean American, and Chinese or Chinese American origins more frequently participated in group activities such as *team activities*, *community activities* and *food-related activities* than Anglo or White and Japanese or Japanese American respondents. These results support Hypothesis 1b.

***Hypothesis 1c:*** There are differences in preferred characteristics of parks and forests among the identified population subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, Korean or Korean Americans, African Americans, and Anglos or Whites) when differences in socioeconomic status (educational level and household income) are adjusted for.

For all groups, park and forest characteristics related to *park management* (litter control, maintenance, proper signage, etc.) were rated as most important. The African American and

Hispanic/Latino or Hispanic American respondents indicated higher importance ratings than the other groups for park and forest characteristics related to *recreational facilities, park management,* and *landscaping*. The Anglos or Whites and Hispanics/Latinos or Hispanic Americans gave higher ratings than the other subgroups for characteristics related to *natural resources and wildlife*. Respondents of African American and Korean or Korean American origins gave higher ratings than the other population subgroups for characteristics related to *ethnic interaction*, although this characteristic received the lowest importance ratings from all groups. These results support Hypothesis 1c.

***Research Question 2:***

> Are there differences in outdoor recreation characteristics (recreation patterns, activity participation, and preferences) within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon the respondent's level of acculturation, while controlling for (or adjusting for) socioeconomic status (educational level and household income)?

To conduct this analysis, three hypotheses were developed and tested:

***Hypothesis 2a:*** There are differences in patterns of park and forest visitation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation when differences in socioeconomic status (educational level and household income) are adjusted for.

In terms of *group composition*, it may be inferred that, with increasing levels of acculturation the Hispanic/Latino or Hispanic American, Chinese or Chinese American, and Korean or Korean American groups exhibit lower frequencies for visitation to parks and forests in groups of 3 or more persons. A similar pattern was observed for the Hispanic/Latino or Hispanic American and Chinese or Chinese American groups in relation to visiting parks with others from the same racial/ethnic group. Increasing levels of acculturation for the Japanese or Japanese American group indicated lower frequencies for weekends as *days of visit*. In terms of *length of visit*, there was a greater tendency among the low acculturated Hispanics/Latinos or Hispanic Americans, Chinese or Chinese Americans, and Korean or

Korean Americans to spend more than 2 hours during their visits to parks and forests; a reverse pattern was observed for the Japanese or Japanese Americans. These results provide support for Hypothesis 2a.

***Hypothesis 2b:*** There are differences in recreational activity participation in parks and forests within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation when differences in socioeconomic status (educational level and household income) are adjusted for.

Overall, level of acculturation of the respondent had little relationship to the types of activities engaged in during visits to parks and forests. The only differences based on level of acculturation were observed for frequency of participation in *food-related activities* and *experiential activities*. The *medium* acculturated Hispanic/Latino or Hispanic American respondents exhibited greater frequency of participation in *food-related activities* than the *low* or *high* acculturated respondents within this group. Increasing levels of acculturation within the Chinese or Chinese American group indicated lower frequency of participation in *experiential activities*. The *medium* acculturated Japanese or Japanese American respondents exhibited greater frequency of participation in *experiential activities* than the *low* or *high* acculturated respondents within this group. These results do not provide much support for Hypothesis 2b.

***Hypothesis 2c:*** There are differences in preferred characteristics of parks and forests within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) depending upon levels of acculturation when differences in socioeconomic status (educational level and household income) are adjusted for.

With the exception of differences in *ethnic interaction* preferences, very few acculturation level-related differences were observed within the four ethnic groups in regard to their importance ratings for park and forest characteristics. With increasing levels of acculturation, the Hispanic/Latino or Hispanic American, Chinese or Chinese American, and Korean or Korean American groups gave lower preference ratings for *ethnic interaction* characteristics related to parks and forests. For the Chinese or Chinese American and Korean or Korean American groups, the *medium* and *low* acculturated respondents gave

higher preference ratings for *recreational facilities* than *high* acculturated respondents. These results provide limited support for Hypothesis 2c.

***Research Question 3:***

> Is acculturation, by members within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans), associated with increasing similarity in outdoor recreation characteristics (patterns, activity participation, and preferences) of these subgroups to the Anglo or White population?

To conduct this analysis, three hypotheses were developed and tested:

***Hypothesis 3a:*** Increasing levels of acculturation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) is associated with increasing similarity in regard to patterns of park and forest visitation reported by the Anglo or White group.

In terms of *group composition*, it was found that, with increasing levels of acculturation the Hispanic/Latino or Hispanic American and Chinese or Chinese American groups exhibit lower frequencies, with increasing similarity to those indicated by the Anglo or White group, for visitation to parks and forests in groups of 3 or more persons; a similar pattern was observed for the Koreans or Korean Americans, but the mean for the high acculturated individuals within this group was much lower than the mean for Anglos or Whites. With increasing levels of acculturation the Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, and Korean or Korean American groups exhibit lower frequencies, with decreasing similarity to those indicated by the Anglo or White group, for visiting parks and forests with others from the same racial/ethnic group. Increasing levels of acculturation for the Hispanic/Latino or Hispanic American and Japanese or Japanese American groups indicated lower frequencies, with increasing similarity to those indicated by the Anglo or White group, for weekends as *days of visit*. Moreover, in terms of *length of visit*, increasing levels of acculturation for the Hispanic/Latino or Hispanic American, Chinese or Chinese American, and Korean or Korean American groups indicated lower frequencies, with increasing similarity to those indicated by

the Anglo or White group, for visitation to parks for a duration of more than 2 hours. These results support Hypothesis 3a.

***Hypothesis 3b:*** Increasing levels of acculturation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) is associated with increasing similarity in regard to recreational activity participation in parks and forests reported by the Anglo or White group.

In general, acculturation had almost no impact on activity participation in parks and forests for all four groups. Very few acculturation level-related relationships with activity participation were found for all groups. With increasing levels of acculturation, the Hispanic/Latino or Hispanic American, Chinese or Chinese American, and Korean or Korean American groups exhibited higher frequencies with increasing similarity in reference to the Anglo or White group, in terms of participation in *solitary activities*. For the Hispanic/Latino or Hispanic American and Korean or Korean American groups, increasing levels of acculturation indicated lower frequencies and increasing similarity in reference to the Anglo or White group, in terms of participation in *food-related activities* and *team activities*. The Japanese or Japanese American group exhibited higher frequencies with increasing similarity in reference to the Anglo or White group, in terms of participation in *food-related activities* and *team activities*. For the Hispanic/Latino or Hispanic American and Japanese or Japanese American groups, decreasing levels of acculturation indicated higher frequencies and increasing similarity in reference to the Anglo or White group, in terms of participation in *outdoor land activities*. For the Chinese or Chinese American and Japanese or Japanese American groups, decreasing levels of acculturation indicated higher frequencies and increasing similarity in reference to the Anglo or White group, in terms of participation in *educational activities*. These results provide limited support for Hypothesis 3b.

***Hypothesis 3c:*** Increasing levels of acculturation within each of the four ethnic subgroups (Hispanic/Latino or Hispanic Americans, Chinese or Chinese Americans, Japanese or Japanese Americans, and Korean or Korean Americans) is associated with increasing similarity in regard to preferred characteristics of parks and forests reported by the Anglo or White group.

The only notable relationship between acculturation and preferences for park and forest characteristics for all groups (with the exception of Japanese or Japanese Americans) was observed for *ethnic interaction*. Increasing levels of acculturation within the Hispanic/Latino or Hispanic American, Chinese or Chinese American, and Korean or Korean American group were associated with lower frequencies and increasing similarity in reference to the Anglo or White group, in terms of preferences for *ethnic interaction* characteristics. With increasing levels of acculturation, the Hispanic/Latino or Hispanic American group reported higher ratings and increasing similarity in reference to the Anglo or White group, in terms of preferences for *natural resources and wildlife* characteristics. For the Chinese or Chinese American and Korean or Korean American groups, increasing levels of acculturation indicated lower ratings and increasing similarity in reference to the Anglo or White group, in terms of preferences for park and forest characteristics related to *recreational facilities*. Higher levels of acculturation within the Japanese or Japanese American and Korean or Korean American groups were associated with higher ratings and increasing similarity in reference to the Anglo or White group, in terms preferences for *park management* and *landscaping characteristics*. These results provide limited support for Hypothesis 3c.

## Discussion

This study examined inter-ethnic and intra-ethnic differences in outdoor recreation characteristics (patterns, activity participation, and preferences) across six population subgroups. Patterns of park and forest visitation, recreational activity participation in parks and forests, and preferred characteristics of parks, forests, and recreational areas among Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, and Korean or Korean American groups were compared with corresponding outdoor recreation characteristics of Anglo or White and African American groups. Overall, the ethnic/racial origin of the respondent played an important role in influencing his/her outdoor recreation characteristics. Recognizing the importance of the process of cultural change and its influence on behavioral and attitudinal variables, the concept of acculturation was introduced within ethnicity to examine intra-ethnic differences in outdoor recreation characteristics. Distinct differences were observed

within the racial/ethnic groups in relation to certain outdoor recreation characteristics, depending upon levels of acculturation of the ethnic respondents.

***Inter-Ethnic Variations In Outdoor Recreation Characteristics***

The primary focus of this study was the influence of ethnicity on outdoor recreation characteristics. Results indicated that the Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, and Korean or Korean American groups were similar to the Anglo or White group with respect to certain outdoor recreation characteristics. Moreover, several differences in outdoor recreation characteristics were also observed between the population subgroups. The major findings of this study in regard to inter-ethnic differences in outdoor recreation characteristics were as follows:

1. *Ethnic individuals (African Americans, Hispanics/Latinos or Hispanic Americans, Koreans or Korean Americans, and Chinese or Chinese Americans) visited parks and forests in larger groups and for longer durations of time than Anglos or Whites.*

Results indicated that African American, Hispanic/Latino or Hispanic American, Korean or Korean American, and Chinese or Chinese American respondents were more likely to visit parks and forests in groups of three or more people than were Anglo or White respondents who frequently visited parks and forests on their own (alone) or in groups with one or two other persons. These results are congruent with existing literature in that members of some ethnic groups tend to visit parks and recreational areas in groups that are larger than the traditional Anglo or White recreation groups. For example, Carr and Chavez (1993) found that individuals of Central American origin visited parks and forests in large groups (averaging seven adults and eight children). Similarly, Pizzini. Latoni, and Rodriguez (1993) noted than Puerto Ricans visited recreational areas in larger groups of families and friends. Gobster and Delgado (1993) reported that families and organized groups were the most important social units of participation for minority visitors to urban parks. While Anglos or Whites visited parks on their own or as couples with an average group size of 1.6, African Americans, Latinos,

and Asians usually visited parks with families with an average group size of 3.7, 4.4 and 5.0 respectively (Gobster & Delgado, 1993).

The findings of this study also suggest that the groups in which the African American and Korean or Korean American respondents visited parks and forests usually consisted of others from their own racial/ethnic group. This pattern was also observed for the Anglo or White respondents, but was less evident for the Hispanic/Latino or Hispanic American, Chinese or Chinese American, and Japanese or Japanese American respondents. In the case of the Korean or Korean American and Chinese or Chinese American respondents, the argument of the 'centrality' of family and friends in recreation outings (Carr & Williams, 1993) may be a compelling factor for such a pattern. Similar to the findings of this study, Yu and Berryman's (1996) study of Chinese immigrants reported that Chinese or Chinese Americans most often recreated with family friends and Chinese friends, or else preferred to be alone during their leisure time. Additionally, the strong church affiliation of the Korean or Korean American respondents may suggest that their visits to parks and forests may be part of church group visits with other churchgoers from the same racial/ethnic background. This conclusion may be drawn from findings of Carr and Chavez (1993) who reported that park visitors of certain ethnic descent frequently visited recreational areas as part of a church group. For African American respondents, the feeling of safety associated with being with other Blacks, the need to see other Blacks recreating in parks and the importance of family recreation (Taylor, 1993) may explain the reason why they visit parks with others from the same racial/ethnic background. In the case of Anglo or White respondents, the lack of members from other racial/ethnic backgrounds within their close, social circles may explain the reason for underrepresentation of persons from other racial/ethnic backgrounds within their recreational groups.

Although previous studies (Carr & Chavez, 1993; Carr & Williams, 1993; Floyd & Gramann, 1993) have found that Hispanic/Latino or Hispanic American respondents also tend to visit parks with others from the same racial/ethnic group, this study failed to provide evidence in support of such findings. The reason for this discrepancy in findings may be geographically related, since the focus of previous studies were Hispanic/Latino or Hispanic American visitors to the forests in the southwest U.S.. The

highly urbanized Hispanic/Latino or Hispanic American populations in the northeast and southern U.S. may have fewer opportunities to visit parks with others from the same racial/ethnic group since they may be less well-established and networked (owing to their recent migration to these parts of the U.S.) with other ethnic members than those residing in the southwest U.S. with larger, tight knit family, kinship and friendship circles, developed as a result of early migration and settlement.

While the respondents of Anglo or White and African American origins more frequently visited parks and forests during weekdays, the Hispanic/Latino or Hispanic American, Korean or Korean American, and Chinese or Chinese American groups were more likely to make recreational visits during weekends. The duration of visit for the Anglo or White and Chinese or Chinese American respondents usually lasted for 1 to 2 hours while African American, Korean or Korean American, and Hispanic/Latino or Hispanic American respondents spent an average of 2 or more hours per visit to parks and forests. Differences in the duration of visits to parks and forests undertaken by the identified population subgroups may be attributed to the influence of variables (employment status, size of household, etc.), that were statistically unadjusted for, related to the socioeconomic status of the groups included in the study sample. The African American, Hispanic/Latino or Hispanic American, and Korean or Korean American groups included in this study were characterized by lower socioeconomic status, compared to the Anglo or White and Chinese or Chinese American respondents (with higher socioeconomic status). According to Robinson and Godbey (1999), upper socioeconomic status groups, generally, tend to be more busy and feel more rushed or time-pressured, compared to lower socioeconomic status groups. Therefore, the Anglo or White and Chinese or Chinese American respondents may be more inclined to visit parks and forests for shorter durations of time, than the other population subgroups. Among the ethnic groups, the higher frequency of visitation to parks and forests during weekends and for durations of 2 or more hours per visit may be explained in part by the types of recreational activities they engaged in during their visits.

2. *Anglos or Whites were more likely to participate in outdoor recreational activities requiring fewer participants than ethnic individuals (African Americans, Hispanics/Latinos or Hispanic Americans,*

*Koreans or Korean Americans, and Chinese or Chinese Americans) who were more likely to engage in group activities during their visits to parks and forests.*

The Anglo or White respondents frequently participated in activities requiring fewer group members, including *solitary activities* (being alone, reading, commuting through park, walking the dog, etc.), *outdoor land activities* (backpacking/hiking, pleasure driving, camping, etc.), *outdoor water activities* (boating/canoeing, fishing, swimming, etc.), *physical exercises* (running/jogging/walking, bicycling, rollerblading/skateboarding, etc.), and *educational activities* (animal/birdwatching, nature study, etc.). The Hispanics/Latinos or Hispanic Americans were also found to frequently participate in *outdoor land activities* and *outdoor water activities*. Other studies have also documented *outdoor land activities* (especially camping and hiking ) as being an important part of Hispanics/Latinos or Hispanic Americans visits to parks and forests (Chavez, Larson & Winter, 1995; Hospodarsky & Lee, 1995; Taylor & Winter, 1995). In congruence with the findings of this study, *outdoor water activities* such as playing, wading, splashing, and 'stream walking,' alongside creeks were also found to be very popular among Hispanic visitors during their trips to parks and forests (Carr & Chavez, 1993). Similarly, Gobster and Delgado (1993) report that Hispanics/Latinos or Hispanic Americans are relatively more active in swimming than Asians and African Americans. The importance of water-based activities among Hispanic/Latino or Hispanic Americans may also be attributed to the fact that these respondents (and/or their family members) emigrated from countries with warmer climates, where streams, creeks, and lakes are oftentimes used as places for cooling-off on warm days.

Respondents of African American, Hispanic/Latino or Hispanic American, Korean or Korean American, and Chinese or Chinese American origins frequently participated in group-oriented, weekend activities such as *social activities* (playing with children, talking with friends, playing board games, etc.), *team activities* (soccer, basketball, softball/baseball, Frisbee, etc.), *community activities* (festivals, parties, etc.) and *food-related activities* (picnicking, eating, barbecuing, etc.), usually requiring longer durations of time. Taylor (1993) noted that picnicking, recreating with children, and playing games such as football, soccer, and baseball were very common among African Americans during their visits to parks.

Among Hispanics/Latinos or Hispanic Americans, a higher incidence of group or team sports (Hospodarsky & Lee, 1995) and picnicking and visiting with others (Chavez, Larson & Winter, 1995) have been evidenced by past studies. In Taylor and Winter's (1995) study, Asian visitors were most likely to indicate 'get-togethers with family and friends' as the reason for their visit to parks and forests. Zhang and Gobster's (1998) study of Chicago's Chinatown residents found that 'socially-relaxing' (including people-watching, sitting, and chatting) along with team sports such as basketball, baseball, volleyball, and tennis were among the top outdoor activities of Chinese or Chinese American respondents. Hutchison (1993) found team sports (such as soccer and volleyball) and community events and festivals to be major outdoor activities among the Hmong population residing in Green Bay, Minnesota. The prevalence of *social activities*, *team activities*, *community activities* and *food-related activities* during the recreational visits of the ethnic groups may be attributed to the cultural importance of 'celebrations and social events' to these groups (Carr & Williams, 1993) as well as the central focus of picnicking, playing and relaxing with family members (especially with children) during such visits (Carr & Chavez, 1993).

3. *All groups gave high importance ratings for park and forest characteristics related to park management; natural resources and wildlife characteristics were very important for Anglos or Whites and Hispanics/Latinos or Hispanic Americans; ethnic interaction received high importance ratings from African Americans, Hispanics/Latinos or Hispanic Americans and Koreans or Korean Americans; all characteristics (except natural resources and wildlife) were important for African Americans.*

Respondents of Anglo or White and Hispanic/Latino or Hispanic American origins gave high ratings for *natural resources and wildlife* characteristics such as the presence of streams, lakes, rivers, animals, birds and fish in parks and forests. Chavez, Larson, and Winter's (1995) study indicated a high desire among Hispanic visitors for creeks, trees and other natural resources (rocks/boulders). The high preference ratings for natural resource characteristics among the Hispanic/Latino or Hispanic American population may be attributed to the importance of scenery and wildlife in enhancing their experience during outdoor activities such as hiking and camping.

Respondents of African American, Hispanic/Latino or Hispanic American and Korean or Korean American origin gave higher ratings, than did others, for characteristics related to *ethnic interaction*, including the presence of other visitors from the same racial/ethnic group, availability of information in racial/ethnic language, and staff who know the cultures and customs of the visitors. In the case of African American respondents, higher preference ratings for characteristics related to *ethnic interaction* may be explained by their desire to visit parks and forests frequented by other Black recreationists (Taylor, 1993) and a heightened need for the presence of park personnel to prevent incidences of racial antagonisms, discrimination and violence from White or Anglo visitors targeted against Blacks (Blahna & Black, 1993; Johnson et al., 1998). Characteristics related to *ethnic interaction* may be important to the Korean or Korean American respondents due to their desire to be in recreational settings with other Korean or Korean American visitors so that they do not feel out of place and the need for information in the Korean language due to lack of English proficiency. Additionally, the availability of staff who are familiar with the customs, traditions, and other cultural characteristics of Koreans may, to a lesser extent, help Korean or Korean American respondents to overcome language and cultural barriers during their visits to parks and forests, thus making this an important and desired aspect of their visit.

The African American respondents also gave higher preference ratings than members of other ethnic groups for characteristics related to *recreational facilities* (picnic areas, family/group recreational areas, outdoor cooking areas, game fields/courts, drinking water/water fountains, recreational facilities and programs, restroom/toilet facilities), *park management* (recycle bins, trash containers, accessibility for the disabled, proper signs and instruction boards, litter-free facilities, parking facilities), and *landscaping* (visibility through trees, open forests with visibility through trees, mowed grass, paved paths, shade trees). Similar to the findings of this study, Taylor (1993) also found a heightened preference among African Americans for well-equipped and well-maintained parks offering a variety of recreational facilities and opportunities, especially for team sports and children's games, as well as the availability of scenic landscapes with walkways for people to stroll. A high preference for 'open, spacious, smooth, ground-textured parks with paved paths, picnic shelters, benches, and park equipment' among African

Americans was also reported in Talbot and Kaplan's (1993) study. African Americans often reside in low socioeconomic status urban areas, with deteriorated parks and recreational facilities. The higher importance ratings indicated by the African American respondents for park and recreational area characteristics may be attributed to the heightened concern among African Americans residing in urban areas, regarding the need for safe, well-maintained parks, with adequate recreational facilities and equipment, in and around their residential areas.

The findings of this study are highly consistent with existing literature. Results show that inter-ethnic differences in outdoor recreation characteristics exist, in terms of group composition, days of visitation, length of visitation, participation in certain types of activities, and preferences for natural resources, recreational facilities, park management, landscaping, and ethnic interaction in relation to visit to parks, forests, and recreational areas.

***Intra-Ethnic Variations in Outdoor Recreation Characteristics***

Examination of acculturation levels within ethnic groups and its influence on outdoor recreation characteristics was another important focal point of this study. An examination of linguistic acculturation-based differences in recreation patterns, activity participation and preferences for certain park features within the Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, and Korean or Korean American groups (or subgroups) also revealed both similarities and dissimilarities between the (*high*, *medium* and *low*) acculturated ethnic groups and the Anglo or White group. The key findings of this study in regard to acculturation-based, intra-ethnic differences in outdoor recreation characteristics were as follows:

1. *Compared to lower acculturated ethnic individuals, higher acculturated respondents were less likely to visit parks and forests in groups, less likely to spend longer hours and more likely to visit during weekdays, indicating similarity in reference to Anglos or Whites. Higher acculturated ethnic individuals were less likely than lower acculturated individuals to visit parks and forests in groups consisting of members from the same race/ethnicity, indicating dissimilarity in reference to Anglos or Whites.*

Results indicated that with increasing levels of acculturation the Hispanic/Latino or Hispanic American, Chinese or Chinese American, and Korean or Korean American groups exhibit lower frequencies for visitation to parks and forests in groups of 3 or more persons. A similar pattern was observed for these three groups and the Japanese or Japanese American groups in relation to visiting parks with others from the same racial/ethnic group. The high propensity of the ethnic groups with lower acculturation levels to visit parks, forests and recreational areas in large groups consisting of members from the same ethnic/racial groups may be attributed to the collectivistic orientation of these cultural groups and the profound emphasis given to a closely integrated social framework. While collectivist cultures stress the importance of the 'rights and needs of the group,' individualistic cultures emphasize 'individual achievement and rights of the individual' (Rosenthal & Feldman, 1990). Thus, visitation to parks and forests in larger groups with members from the same ethnic/racial background may be an indication of the significance of 'group efforts' among the lower acculturated groups. The higher acculturated groups may have somewhat weaker collectivistic orientations (coupled with varying degrees of individualistic orientations) compared to the lower acculturated groups, thus exhibiting a lower propensity to visit parks and forests in groups with members from the same ethnic/racial background. While the higher acculturated groups are more likely to form social ties and friendships outside their own ethnic group (Floyd & Gramann, 1993), lower acculturated groups generally prefer to maintain a 'network of relatives and friends of the same ethnicity' (Padilla, 1980). However, the Anglo or White group indicated higher frequencies for visiting parks with others from the same racial/ethnic group, than the Hispanic/Latino or Hispanic American, Chinese or Chinese American, and Korean or Korean American groups regardless of their respective levels of acculturation.

Increasing levels of acculturation for the Hispanic/Latino or Hispanic American, Chinese or Chinese American, Korean or Korean American, and Japanese or Japanese American groups also indicated higher frequencies for weekdays as *day of visitation*. Moreover, in terms of *length of visit*, increasing levels of acculturation for the Hispanic/Latino or Hispanic American, Chinese or Chinese American, and Korean or Korean American groups indicated lower frequencies for visitation to parks for

a duration of more than 2 hours; a reversed pattern was exhibited by the Japanese or Japanese American groups.

2. *Level of acculturation of the ethnic respondent was mostly unrelated to the types of activities engaged in during visits to parks and forests; very few acculturation-activity participation relationships were found.*

With increasing levels of acculturation, the Chinese or Chinese American and Korean or Korean American groups exhibited higher frequency of participation in *solitary activities* and increasing similarity to Anglos or Whites. The importance of family life (and family cohesion) to the traditional Chinese and Korean cultures and the heightened dependence on the family in these cultures (Rosenthal & Feldman, 1990) may cause an aversion of solitary activities within these cultures, especially among lower acculturated groups.

For the Hispanic/Latino or Hispanic American and Korean or Korean American groups, increasing levels of acculturation indicated decreasing frequency of participation in *food-related activities*. The symbolic significance of food as a means of reinforcing ethnic identity (Gans, 1992) in traditional Hispanic and Korean cultures, especially during ethnic get-togethers, may explain the high incidence of food-related activities during visits by these groups to parks, forests, and recreational areas. Additionally, since the Hispanic/Latino or Hispanic American group included in this study was characterized by a low socioeconomic status, the respondents belonging to this group are less likely to have backyards for private picnics and barbecues. Hence, these respondents would be more likely to use outdoor cooking facilities (such as picnic areas and barbecue grills), offered in parks and forests, for food-related activities. Participation in *team activities* was also higher among the lower acculturated Hispanic/Latino or Hispanic American and Korean or Korean American groups. This pattern might suggest the possibility of using team activities as part of the ethnic identify reinforcement process among the Hispanic/Latino or Hispanic American and Korean or Korean American groups, whereby closer social networks (or ties) are established between ethnic members through group (recreational) activities (Shaull

& Gramann, 1998). The Japanese or Japanese American groups exhibited a reverse pattern in terms of *food-related activities* and *team activities.*

For the Hispanic/Latino or Hispanic American and Japanese or Japanese American groups, increasing levels of acculturation indicated increasing frequency of participation in *outdoor land activities* and increasing similarity to the Anglo or White respondents. Similar to the findings of this study, Floyd and Gramann (1993) also observed high levels of participation in consumptive forms of recreation (fishing, hunting, camping, ORV/ATV driving) among Hispanic Americans, in general. For the Chinese or Chinese American and Japanese or Japanese American groups, increasing levels of acculturation indicated increasing frequency of participation in *educational activities* and increasing similarity to the Anglo or White respondents. Yu and Berryman (1996) report that the activities of Chinese recreationists' can be characterized as being 'less organized, less expensive, less physically active, less skill oriented, and more easily accessible' (p. 267). The relatively high degree of organization and skill levels required for *educational activities* (animal/birdwatching, nature study, etc.) in parks and forests might deter the low acculturated Chinese or Chinese Americans from engaging in activities of such nature.

3. *Level of acculturation of the ethnic respondent was mostly unrelated to preference ratings for park and forest characteristics. With the exception of ethnic interaction characteristics, acculturation did not influence most park and forest attribute ratings of ethnic respondents. Lower acculturated ethnic individuals gave higher preference ratings than higher acculturated respondents for ethnic interaction, indicating similarity in reference to Anglos or Whites.*

With increasing levels of acculturation the Hispanic/Latino or Hispanic American, Chinese or Chinese American, and Korean or Korean American groups indicated lower preference ratings for *ethnic interaction* characteristics, indicating dissimilarity to the Anglos or Whites. Carr and Williams' (1993) study of forest recreation site visitors of Hispanic origin indicated that 'the most homogeneous sites (from an ancestral group composition standpoint) had the highest proportion of immigrant individuals, the lowest proportion of second generation individuals, and the lowest acculturation levels' (p. 32). Carr and Williams' (1993) findings provide support for the results of this study, indicating high preference ratings

for ethnic interaction among low acculturated groups. These findings, taken together, highlight the importance given by low acculturated groups toward recreating in 'areas where other recreationists have compatible social definitions' (Carr & Williams, 1993, p. 33).

In terms of *natural resources and wildlife* characteristics, results indicated that with increasing levels of acculturation the Hispanic/Latino or Hispanic American groups gave higher preference ratings. Considering nature as the central theme of natural resource based characteristics, this result was contrary to the findings of Shaull and Gramann (1998) who reported higher importance ratings among less-acculturated Hispanic Americans for nature-related benefits of park and forest visitation. However, the results were in congruence with Gramann, Floyd, and Saenz's (1993) study which reported that least acculturated Mexican Americans rated natural resource characteristics ('being in a scenic area') as less important than did the other acculturated Mexican groups as well as the Anglo or White group. Similarly, Heywood and Engelke's (1995) study found that environmental or natural resource conditions did not greatly influence recreation site selection among Hispanic/Latino or Hispanic American park and forest visitors in general. A reverse pattern was observed for the Chinese or Chinese American groups in relation to their preference ratings for *natural resources and wildlife* characteristics. The higher preference for natural resources and wildlife among the low acculturated Chinese or Chinese American group may be attributed to the traditional views of the Chinese culture, which regards 'a sound natural environment as an extension of a decent human life' (Zhang & Gobster, 1998, p. 348).

In terms of *recreational facilities* characteristics, it may be inferred that with increasing levels of acculturation the Hispanic/Latino or Hispanic American, Chinese or Chinese American, and Korean or Korean American respondents gave lower preference ratings. Higher preference ratings for characteristics related to *recreational facilities* among low acculturated groups indicates greater support from these groups for developed sites and facilities within parks and forests. In terms of *landscaping*, it may be inferred that with increasing levels of acculturation the Chinese or Chinese American groups gave lower ratings. A reverse pattern was observed for the Korean or Korean American and Japanese or Japanese American groups in relation to their preference ratings for *landscaping* characteristics.

The results of this study indicate that acculturation-based intra-ethnic differences in outdoor recreation characteristics exist, in terms of group composition, days of visitation, length of visitation, participation in certain types of activities, and preferences for certain park and forest characteristics. Overall, the acculturation level of the ethnic respondent played an important role in influencing visitation patterns of the individual, whereas recreational activity participation and preferences for park and forest features (except ethnic interaction) were mostly unaffected by acculturation levels.

Collectively, these results suggest that although the Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, and Korean or Korean American groups may differ from the Anglos or Whites in terms of outdoor recreation characteristics, several similarities may also become apparent upon dissecting these ethnic groups on the basis of levels of acculturation, or vice versa. It may be concluded that members of respective ethnic groups need not be similar nor different from Anglos or Whites with respect to outdoor recreation characteristics (Floyd & Gramann, 1998) such as recreation patterns, activity participation and preferences for certain park features.

## Conclusions and Implications

As the ethnic makeup of the United States continues to change, especially in cities and towns, it becomes important to understand the implications of ethnic and racial diversity for the management of urban parks and forests. Knowledge regarding the ways in which ethnic groups recreate in parks and forests is vital for providing necessary resources and facilities that meet the needs of urban populations with sizeable representations from ethnic and racial groups. Prior to the provision of outdoor recreational amenities for satisfying the needs of ethnic groups, an understanding of the recreational characteristics, interests and preferences of ethnic/racial groups is required. Social science researchers have previously examined differences in outdoor recreation characteristics of ethnic groups in comparison with Anglos or Whites. Prior studies have largely relied on general population samples, usually consisting of a larger proportion of White than non-White respondents. Although these studies have, to some extent, enabled leisure and recreation researchers to understand the recreation participation rates and participation

patterns of specific ethnic minority groups, there exists a lack of knowledge regarding differences in outdoor recreation patterns, activity participation, and preferences for certain park and forests features both among and within a wider range of ethnic groups.

Since 'ethnicity' and 'marginality' theories serve as inadequate vantage points for addressing differences in racial and ethnic leisure patterns, additional theoretical explanations are required to gain a clearer understanding of their actual causes (Floyd & Gramann, 1993). Further research examining ethnic differences in outdoor recreation characteristics, involving a wide range of ethnic groups, is required to alleviate the burden on recreation resource managers attempting to better understand their clientele. What implications does cultural and ethnic diversity have for recreation resource management in urban areas? Are there differences within ethnic groups in the ways they use parks and forests for recreational purposes? The argument is that, due to the continuous process of acculturation taking place among the individuals of any given ethnic group, a person's level of acculturation will, to some degree, influence his/her recreational preferences, behavior and participation patterns.

Although previous studies have investigated ethnic differences in recreation use and activity patterns (Carr & Williams, 1993; Floyd & Gramann, 1993; Gobster & Delgado, 1993; Shaull & Gramann, 1998; Talbot & Kaplan, 1993; Taylor, 1993) this study systematically examined inter-ethnic differences in outdoor recreation characteristics among Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, and Korean or Korean American groups in comparison with corresponding characteristics of Anglos or Whites and African Americans. Second, this study attempted to expand existing ethnic recreation research by investigating intra-ethnic differences in outdoor recreation characteristics among Hispanic/Latino or Hispanic American, Chinese or Chinese American, Japanese or Japanese American, and Korean or Korean American groups (or subgroups) by assessing the effect of acculturation levels on their patterns of park and forest visitation, outdoor recreation activity participation in parks and forests, and preferred characteristics of parks and forests.

The results of this study highlighted several similarities and differences in outdoor recreation characteristics between the population subgroups. African American, Hispanic/Latino or Hispanic

American, Korean or Korean American, and Chinese or Chinese American respondents indicated higher propensities to visit parks and forests in larger groups consisting of members (usually with family and friends) from the same racial/ethnic group, than Anglos or Whites. These findings are congruent with previous studies (Carr & Chavez, 1993; Gobster & Delgado, 1993; Pizzini, Latoni & Rodriguez, 1993) that reported greater tendencies among ethnic individuals to recreate in groups that are larger than the traditional Anglo or White recreation groups. The study results also revealed that many of these visits also took place during weekends and lasted for 2 or more hours. With respect to these findings, recreation resource managers of parks and forests serving ethnic populations should take measures to accommodate larger groups for long durations of time, especially during weekends. This may require the expansion of existing recreational facilities (e.g., pavilions, picnic areas, etc.) and services (e.g., extended timings for security personnel, concession stands, etc.). Increased visitation by large groups for extended durations of time could result in overuse of certain sites, accompanied by the deterioration of the recreational quality of such areas. In order to curb such impacts, urban parks and forests receiving use from ethnic groups would need to adopt 'crowd control' measures, especially during weekends, to regulate group size and activities (e.g., group and activity permits, restricted areas, etc.).

Similar to past studies (Chavez, Larson & Winter, 1995; Hospodarsky & Lee, 1995; Taylor & Winter, 1995), it was observed that outdoor land (backpacking/hiking, pleasure driving, camping) and outdoor water (boating/canoeing, fishing, swimming) activities were very popular among Hispanics/Latinos or Hispanic Americans. The Hispanic/Latino or Hispanic American group also gave high ratings for *natural resources and wildlife* characteristics such as the presence of streams, lakes, rivers, animals, birds and fish in parks and forests. Parks and forests catering to the recreational needs of Hispanics/Latinos or Hispanic Americans may need to focus their efforts on offering more opportunities for hiking and camping especially alongside water bodies such as lakes and streams, provided these resources are physically available. Such efforts could include, depending upon natural resource availability, the setting up of campsites and hiking trails as well as manmade ponds, lakes and fountains for meeting Hispanic visitors' outdoor recreation needs.

There was a higher incidence of group-oriented activities such as *social activities* (playing with children, talking with friends, playing board games, etc.), *team activities* (soccer, basketball, softball/baseball, Frisbee, etc.), *community activities* (festivals, parties, etc.) and *food-related activities* (picnicking, eating, barbecuing, etc.) among some of the ethnic groups compared to the Anglos or Whites. Other studies (Taylor, 1993; Taylor & Winter, 1995, Zhang & Gobster, 1998) have also reported similar findings. Recreation resource managers in urban areas should consider the importance of social events and celebrations among groups of ethnic origin and the central focus of involving picnicking, playing and relaxing with family members (especially with children) among such groups. The high prevalence of group-oriented, social activities among ethnic groups would suggest the need for larger picnic areas (with more tables and barbecue pits), more game fields/courts for team activities, larger play areas for children, and roofed areas (pavilions and domes) for festivals and other social get-togethers, in parks and forests that receive use from ethnic groups.

Preference ratings for ethnic interaction (presence of others from same ethnic group, availability of staff who are familiar with the ethnic/racial group's customs and practices, and availability of information in ethnic language) during visits were low among all ethnic groups, but the African American followed by Korean or Korean American respondents gave the highest ratings for characteristics related to *ethnic interaction.* These findings call for a greater level of cultural sensitivity from park and forest staff members towards African Americans and Koreans or Korean Americans. Parks and forests could consider an increased representation of African Americans among their on-site staff in order to increase cultural sensitivity toward African American visitors. Such ethnic representation efforts would be most practical on a civilian volunteer basis, thereby circumventing the problem of reverse discrimination from park and forest authorities. Parks and forests that attract Korean or Korean American visitors should consider appropriate measures for disseminating information in Korean through brochures, pamphlets, and interpretation signs/boards as well as having on-site staff members (or volunteers) who can converse in Korean.

The need for appropriate landscaping (visibility through trees, open forests with visibility through trees, mowed grass, paved paths, shade trees) were also given high preference ratings by all ethnic groups, in general. Urban parks that are frequented by African American visitors would need to consider tailoring their services and facilities to suit their landscaping preferences for enhancing their enjoyment and ensuring continued patronage of this group. Managers of parks and forests located in areas with high proportions of African American residents may need to undertake concentrated efforts to keep these areas manicured and aesthetically pleasing for African American visitors.

The results of this study indicated that increasing levels of acculturation among the identified ethnic groups produced change in some outdoor recreation characteristics of the ethnic groups, in reference to the Anglo or White group. In general, the high acculturated individuals with the ethnic groups were less likely than those with lower acculturation levels to visit parks and forests in larger groups with members from the same racial/ethnic background. Visits by lower acculturation individuals to parks and forests mostly took place during weekends and lasted for long durations of time. Within the Hispanic/Latino or Hispanic American and Korean or Korean American groups, high acculturated individuals participated in food-related activities and team activities less frequently compared to the lower acculturated respondents. While the high acculturated Hispanics/Latinos or Hispanic Americans gave higher preference ratings for natural resources and wildlife than the lower acculturated respondents, the high acculturated Chinese or Chinese American group gave lower preference ratings for natural resources and wildlife than the lower acculturated members. Lower preference ratings for characteristics related to recreational facilities and ethnic interaction were indicated by almost all high acculturated individuals. These findings indicate greater preference among lower acculturated individuals for developed sites and facilities, that support recreational activities and social events involving large groups, within parks and forests in addition to the existing need among such groups to recreate in areas where they would easily (culturally) blend in with other recreationists.

While the policy and practice implications of different acculturation levels among individuals within ethnic groups and its' influence on their outdoor recreation characteristics are not easily

generalizable, it is important to understand that variations do exist within ethnic groups in terms of group size, length of visit, and days of visitation, and the level of acculturation, in some cases, can influence an ethnic individual's participation in recreational activities and preferences for certain park and forest features. Managers of urban parks and forests need not be overly concerned about acculturation-based differences within a given ethnic group, with respect to outdoor recreation characteristics, while managing outdoor recreation resources. Although certain components of recreation resource management, such as site design, maintenance, and staffing, could be slightly impacted depending upon levels of acculturation of ethnic recreationists, overall, management guidelines, for an urban park or forest, are more likely to be determined by the ethnic makeup of its visitors, rather than the recreationists' levels of acculturation. As Carr and Williams (1993) have pointed out, ethnic groups visiting parks and forests cannot be treated as individual, cultural monoliths; rather, varying degrees of intra-group diversity is highly prevalent among ethnic groups. While it would be impractical to cater to the recreational needs of all individuals of an ethnic group, management systems such as the Recreation Opportunity Spectrum and Benefits Based Management could be modified or adapted to include ethnic preferences in order to provide a range of recreation opportunities to both individual as well as group recreationists, depending on the experience(s) sought by the ethnic group (Shaull & Gramann, 1998).

## Recommendations for Future Research

The purpose of this study was to explore ethnic differences in outdoor recreation preferences and participation patterns both across and within selected population subgroups. This study examined differences in outdoor recreation characteristics among various ethnic groups and the influence of respondents' acculturation levels on their park and forest visitation patterns, recreational activity participation, park use as well as preferences for certain park and forest features. Future research is needed to verify the applicability of linguistic acculturation in explaining differences in outdoor recreation characteristics within ethnic groups. Perhaps, a more complex measure of acculturation levels consolidating the respondent's length of residence in the United States and generational status along with

his/her language use and preference may be employed as an indicator of the ethnic individual's level of acculturation. In addition to the acculturation variable, future research should include other variables, such as ethnic individual's country of birth and purpose of immigration, religion, kinship structures, job skills, and ethnic density of the individual's neighborhood, in order to differentiate within ethnic groups.

In this study, indices were developed to measure respondents' preferences for certain park and forests features such as natural resources and wildlife, recreational facilities, park management, landscaping, and ethnic interaction. Although these indices exhibited good reliability in terms of item constructs, future research should include more preference characteristics (or items) in order to develop additional indices (or constructs) while ensuring that reliability is not compromised. Additionally, ethnic differences in single item indicators of activity participation such as solitary activities, social activities, food-related activities, team activities, outdoor land activities, outdoor water activities, physical exercises, experiential activities, subsistence activities, community activities, educational activities, gardening, etc., should also be further explored by dissecting these indicators into individual activities, thereby avoiding the usage of umbrella terms that combine several activities of similar nature and character. A break-up of these activity groups into individual activities would allow for a more rigorous and detailed analysis of ethnic differences in participation levels for each activity, thereby enabling the researcher to determine specific ethnic differences in participation levels within each activity group. Future research comparing satisfaction levels of ethnic visitors in terms of their recreation experiences in parks and forests may enable recreation resource providers to evaluate the effectiveness of their initiatives toward meeting the needs of culturally diverse recreationists.

Assuming that socioeconomic differences exists among population subgroups, socioeconomic status was used as the control variable in this study in order to examine the influence of ethnicity or subcultural effects on outdoor recreation characteristics while holding the respondent's socioeconomic status constant. The socio economic status variable was a consolidated index that included the respondent's income and educational level. Additional control variables such as the individual's employment status, age, and number of (young) children should be included in future studies in order to

examine ethnic differences in recreation characteristics (Gramann, Floyd & Saenz, 1993). Moreover, future research should also consider the influence of household composition and length of residence at current address in accounting for both inter- and intra-ethnic differences. Although controlling for socioeconomic status is a regular procedure in social science research, a proper rationale for the need to control for socioeconomic status is seldom provided (Floyd, 1998), as was the case in this study. Prior to controlling for socioeconomic status, future research should explore the factors responsible for socioeconomic differences between ethnic groups and the ways in which they condition leisure choices and constraints (Floyd, 1998, pp. 9-10).

Does the cultural and ethnic background of an individual influence his/her outdoor recreation participation patterns and preferences for certain park and forest features? What role does the level of acculturation of an ethnic individual play in shaping his/her outdoor recreation characteristics? Future social research should continue to probe interdisciplinary theories for answers to these fundamental questions. Owing to the existing inadequacy of explanations for ethnic differences in outdoor recreation patterns from broader sociopsychological perspectives, further theory-based research endeavors need to be undertaken to unravel reasons for such ethnic differences and/or similarities (Floyd, 1998; Johnson et al., 1997). Thus, the influence of cultural values and levels of acculturation on ethnic individuals' outdoor recreation participation patterns and preferences warrants in-depth examination in future research.

# REFERENCES

Alba, R.D. (1990). Ethnic identity: The transformation of white America. New Haven, CT: Yale University Press.

Anderson, K.J. (1988). Cultural hegemony and the race-definition process in Chinatown, Vancouver: 1880-1980. Environment and Planning D: Society and Space, 6, 127-149.

Andujo, E. (1988). Ethnic identity and transethnically adopted Hispanic adolescents. Social Work, 33, 531-535.

Atkinson, D.R. (1983). Ethnic similarity in counseling psychology: A review of research. Counseling Psychologist, 11, 79-92.

Banton, M. (1977). The idea of race. Andover, Hants: Tavistock Publications.

Barth, F. (1989). The analysis of culture in complex societies. Ethnos, 54, 120-142.

Bentley, G. (1991). Response to Yelvington. Comparative Studies in Society and History, 33, 169-175.

Berry, J.W. (1980). Acculturation as varieties of adaptation. In A.M. Padilla (ed.), Acculturation: Theory, Models and Some New Findings,. (pp. 9-25). Boulder, CO: Westview Press.

Berry, J.W. (1986). The acculturation process and refugee behavior. In C.L. Williams & J. Westermeyer (eds.), Refugee Mental Health in Resettlement Countries. New York: Hemisphere.

Berry, J.W., & Annis, R.C. (1974). Acculturation stress: the role of ecology, culture, and differentiation. Journal of Cross-Cultural Psychology, 5, 382-406.

Berry, J.W., & Kim, U. (1988). Acculturation and mental health. In P.R. Dasen, J.W. Berry, & N. Sartorius (eds.), Health and Cross-Cultural Psychology: Toward Applications, (pp. 207-236). Newbury Park, CA: SAGE Publications.

Blahna, D.J., & Black, K.S. (1993). Racism: A concern for recreation resource managers? In P. Gobster (ed.), Managing Urban and High-Use Recreation Settings, (pp. 111-118). Gen. Tech. Rep. NC-163. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station.

Bontempo, R. (1993). Translation fidelity of psychological scales: An item-response theory of analysis of an individualism-collectivism scale. Journal of Cross-Cultural Psychology, 24, 149-166.

Burch, W.R. Jr. (1969). The social circles of leisure: Competing explanations. Journal of Leisure Research, 1(Spring), 125-147.

Buriel, R. (1975). Cognitive styles among three generations of Mexican-American children. Journal of Cross-Cultural Psychology, 6, 417-429.

Burnam, M.A., Hough, R.L., Karno, M., Escobar, J.I., & Telles, C.A. (1987). Acculturation and lifetime prevalence of psychiatric disorders among Mexican Americans in Los Angeles. Journal of Health and Social Behavior, 28, 89-102.

Burr, J.A., & Mutchler, J.E. (1993). Nativity, acculturation, and economic status: Explanations of Asian American living arrangements in later life. Journal of Gerentology, 48(2), S55-S63.

Carr, D.S., & Chavez, D.J. (1993). A qualitative approach to understanding recreation experiences: Central American recreation on the National Forests of Southern California. In A. Ewert, D. Chavez, & A. Magill (eds.), Culture, Conflict, and Communication in the Wildland-Urban Interface, (pp. 181-194). Social Behavior and Natural Resources Series. Boulder, CO: Westview Press.

Carr, D.S., & Williams, D.R. (1993). Understanding the role of ethnicity in outdoor recreation experiences. Journal of Leisure Research, 25(1), 22-38.

Casas, J.M. (1985). A reflection on the status of racial/ethnic minority research. Counseling Psychologist, 13, 581-598.

Celano, M.P., & Tyler, F.B. (1991). Behavioral acculturation among Vietnamese refugees in the United States. Journal of Social Psychology, 131(3), 373-385.

Chametzky, J. (1990). Beyond melting pots, cultural pluralism, ethnicity-or, déjà vu all over again. MELUS, 16(4), 3-17.

Chavez, D.J., Larson, J., & Winter, P.L. (1995). To be or not to be a park: That is the question. In D.J. Chavez (comp.), Proceedings of the Second Symposium on Social Aspects and Recreation Research, (pp.29-33). Gen. Tech. Rep. PSW-GTR-156. San Diego, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.

Chicago Park District (1989). Narrative of the Lakefront users study data. Chicago, IL: Chicago Park District.

Clark, M., Kaufman, S., & Pierce, R.C. (1976). Explorations of acculturation: Toward a model of ethnic identity. Human Organization, 35, 231-238.

Clarke, J., Hall, S., Jefferson, T., & Roberts, B. (1976). Subcultures, cultures and class: A theoretical overview. In S. Hall & T. Jefferson (eds.), Resistance Through Rituals: Youth Subcultures in Post-War Britain (pp. 9-74). London: Hutchinson/Centre for Contemporary Cultural Studies.

Clément, R., & Noels, K. (1992). Towards a situated approach to ethnolinguistic identity : the effects of status on individuals and groups. Journal of Language and Social Psychology, 11, 203-232.

Conzen, K.N., Gerber, D.A., Morawska, E., Pozzetta, G.E., & Vecoli, R.J. (1992). The invention of ethnicity: A perspective from the U.S.A. Journal of American Ethnic History, 12(1), 3-41.

Cuellar, I., Arnold, B., & Maldonado, R. (1995). Acculturation rating scale for Mexican Americans-II: A revision of the original ARSMA scale. Hispanic Journal of Behavioral Sciences, 17(3), 275-304.

Cuellar, I., Harris, L.C., & Jasso, R. (1980). An acculturation scale for Mexican-Americans. Hispanic Journal of Behavioral Sciences, 2, 199-217.

Damji, T., Clément, R., & Noels, K.A. (1996). Acculturation mode, identity variation, and psychological adjustment. Journal of Social Psychology, 136(4), 493-500.

Dana, R. (1993). Multicultural assessment perspectives for professional psychology. Boston, MA: Allyn and Bacon.

Der-Karabetian, A. (1980). Relation of two cultural identities of Armenian-Americans. Psychological Reports, 47, 123-128.

Dillman, D.A. (2000). Mail and internet surveys: The tailored design method. New York: J. Wiley.

Dwyer, J.F. (1993). Outdoor recreation participation: An update on Blacks, Whites, Hispanics, and Asians in Illinois. In P. Gobster (ed.), Managing Urban and High-Use Recreation Settings, (pp. 119-121). Gen. Tech. Rep. NC-163. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station.

Dwyer, J.F. (1994). Customer diversity and the future demand for outdoor recreation. Gen. Tech. Rep. RM-252. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 58 p.

Elizur, D. (1984). Facet analysis of ethnic identity: The case in Israeli Jewish families living in the United States. Journal of General Psychology, 111, 259-269.

Ewert, A., Gramann, F., & Floyd, M. (1991). Ethnic patterns in recreational uses of natural resources: Rethinking the marginality-ethnicity paradigm. Paper presented at the annual meeting of the Rural Sociological Society, Norfolk, VA.

Feather, N.T. (1986). Cross-cultural studies with the Rokeach value survey: The Flinders program of research on values. Australian Journal of Psychology, 38, 269-283.

Filed, D.R., & O'Leary, J.T. (1973). Social groups as a basis for assessing participation in selected water activities. Journal of Leisure Research, 5(Spring), 16-25.

Floyd, M., & Noe, F. (1993). Understanding intra-ethnic environmental attitude variations: Cuban origin population views. In P. Gobster (ed.), Managing Urban and High-Use Recreation Settings, (pp. 127-129). Gen. Tech. Rep. NC-163. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station.

Floyd, M.F. (1998). Getting beyond marginality and ethnicity: The challenge for race and ethnic studies in leisure research. Journal of Leisure Research, 30(1), 3-22.

Floyd, M.F., & Gramann, J.H. (1993). Effects of acculturation and structural assimilation in resource-based recreation: The case of Mexican Americans. Journal of Leisure Research, 25(1), 6-21.

Floyd, M.F., Shinew, K.J., McGuire, F.A., & Noe, F.P. (1994). Race, class, and leisure activity preferences: Marginality and ethnicity revisited. Journal of Leisure Research, 26(2), 158-173.

Frey, W.H. (1998). The diversity myth. In American Demographics (comp.), Diversity in America: Projections for Minority, Black, Hispanic American, and Asian American Populations to the year 2001, (pp. 3-7). Stanford, CT: PRIMEDIA Intertec.

Fuchs, L.H. (1992). Comment: "The invention of ethnicity": The amen corner. Journal of American Ethnic History, 12(1), 53-58.

Gabriel, J., & Ben-Tovim, G. (1978). Marxism and the concept of racism. Economy and Society, 7, 118-154.

Gans, H.J. (1992). Comment: Ethnic invention and acculturation: A bumpy-line approach. . Journal of American Ethnic History, 12(1), 42-52.

Gans, H.J. (1994). Symblic ethnicity and symbolic religiosity: Towards a comparison of ethnic and religious acculturation. Ethnic and Racial Studies, 17(4), 577-592.

Gans, H.J. (1997). Toward a reconciliation of "assimilation" and "pluralism": The interplay of acculturation and ethnic retention. International Migration Review, 31(4), 875-892.

Garcia, M., & Lega, L. (1979). Development of a Cuban identity questionnaire. Hispanic journal of Behavioral Sciences, 1, 247-261.

Georgas, J., Berry, J.W., Shaw, A., Christakopoulou, S., & Mylonas, K. (1996). Acculturation of Greek family values. Journal of Cross-Cultural Psychology, 27(3), 329-338.

Gerber, D.A., Morawska, E., & Pozzetta, G.E. Response. Journal of American Ethnic History, 12(1), 59-63.

Gobster, P. (1998). Explanations for minority "underparticipation" in outdoor recreation: A look at golf. Journal of Park and Recreation Administration, 16(1), 46-64.

Gobster, P., & Delgado, A. (1993). Ethnicity and Recreational Use in Chicago's Lincoln Park: In-Park User Survey Findings. In P. Gobster (ed.), Managing Urban and High-Use Recreation Settings, (pp. 75-81). Gen. Tech. Rep. NC-163. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station.

Goodale, T.L., & Witt, P.A. (1985). Recreation and leisure: Issues in an era of change. State College, PA: Venture.

Gordon, M.M. (1978). Human nature, class, and ethnicity. New York: Oxford University Press.

Gramann, J.H., Floyd, M.F., & Saenz, R. (1993). Outdoor recreation and Mexican American ethnicity: A benefits perspective. In A. Ewert, D. Chavez, & A. Magill (eds.), Culture, Conflict, and Communication in the Wildland-Urban Interface, (pp. 69-84). Social Behavior and Natural Resources Series. Boulder, CO: Westview Press.

Gramsci, A. (1971). Selections from prison notebooks. London: Lawrence and Wishhart.

Greenberg, A. (1980). Race and state in capitalist development. Comparative perspectives. New Haven, CT : Yale University Press.

Gross, C.S. (1983). Transition in perspective: A study of the Hmong in Isla Vista. Discovery: UCSB Journal of Undergraduate Research, 6, 1-34.

Grove, M., Vachta, K.E., McDonough, M.H., & Burch, W.R. (1993). The urban resources initiative: Community benefits from forestry. In P. Gobster (ed.), Managing Urban and High-Use Recreation Settings, (pp. 24-30). Gen. Tech. Rep. NC-163. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station.

Heywood, J.L., &, Engelke, R.L. Differences in behavioral conventions: A comparison of U.S.-born and Mexico-born Hispanics, and Anglo Americans. In D.J. Chavez (comp.), Proceedings of the Second Symposium on Social Aspects and Recreation Research, (pp.35-40). Gen. Tech. Rep. PSW-GTR-156. San Diego, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.

Helms, J.E., & Talleyrand, R.M. (1997). Race is not ethnicity. American Psychologist, 52(11), 1246-1247.

Hofstede, G. (1983). National cultures revisited. Behaviour Science Research, 18, 285-305.

Hospodarsky, D., & Lee, M. (1995). Ethnic use of the Tonto: Geographic expansion of the recreation knowledge base. In D.J. Chavez (comp.), Proceedings of the Second Symposium on Social Aspects and Recreation Research, (pp.45-47). Gen. Tech. Rep. PSW-GTR-156. San Diego, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.

Hui, C.H., & Triandis, H.C. (1986). Individualism-collectivism: A study of cross-cultural researchers. Journal of Cross-Cultural Psychology, 17, 225-248.

Hutchinson, R. (1993). Hmong leisure and recreation activity. In P. Gobster (ed.), Managing Urban and High-Use Recreation Settings, (pp. 87-92). Gen. Tech. Rep. NC-163. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station.

Inglis, F. (1977). Nation and community: A landscape and its morality. The Sociological Review, 25(3), 489-514.

Jackson, P.A. (1987). The idea of "race" and the geography of racism. In P.A. Jackson (ed.), Race and Racism: Essays in Social Geography (pp. 3-22). London: Allen and Unwin.

Jackson, P.A. (1989). Maps of meaning: An introduction to cultural geography. Boston, MA: Unwin Hyman.

Jackson, P.A. (1992). The racialization of labour in post-war Bradford. Journal of Historical Geography, 18(2), 190-209.

Jenkins, R. (1994). Rethinking ethnicity: Identity, categorization and power. Ethnic and Racial Studies, 17(2), 197-223.

Jeong, W. (1999). Ethnic variations in recreational resource use: The case of Asian immigrants. Unpublished doctor's dissertation. The Pennsylvania State University, University Park, Pennsylvania.

Johnson, C.Y., Bowker, J.M., English, D.B.K, & Worthen, D. (1997). Theoretical perspectives of ethnicity and outdoor recreation: A review and synthesis of African-American and European-American participation. Gen. Tech. Rep. SRS-11. Ashville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 16 p.

Johnson, C.Y., Bowker, J.M., English, D.B.K., & Worthen, D. (1998). Wildland recreation in the rural south: An examination of marginality and ethnicity theory. Journal of Leisure Research, 30(1), 101-120.

Jones, W.H. (1927). Recreation and amusement among Negroes in Washington, DC. Westport, CT: Negro Universities Press.

Kang, J., & Kim, Y. (1998). Ethnicity and acculturation: Influences on Asian American consumers' purchase decision making for social clothes. Family and Consumer Sciences Research Journal, 27(1), 91-117.

Kaplan, R., & Talbot, J.F. (1988). Ethnicity and preference for natural settings: A review and recent findings. Landscape and Urban Planning, 15, 107-117.

Kar, S.B., Jimenez, A., Campbell, K., & Felicia, S. (1998). Acculturation and quality of life: A comparative study of Japanese-Americans and Indo-Americans. Amerasia Journal, 24(1), 129-142.

Keefe, S.E. (1980). Acculturation and the extended family among urban Mexican-Americans. In A.M. Padilla (ed.), Acculturation: Theory, Models and Some New Findings. Boulder, CO: Westview Press.

Keefe, S.E., & Padilla, A.M. (1987). Chicano ethnicity. Albuquerque, NM: University of New Mexico Press.

Kelly, J.R. (1983). Leisure identities and interaction. Boston, MA: George Allen and Unwin.

Kelly, J.R. (1987). Freedom to be: A new sociology of leisure. New York: MacMillan.

Kobayashi, A. (1989). A critique of dialectical landscape. In A. Kobayashi & S. Mackenzie (eds.), Remaking Human Geography (pp. 164-184). London: Unwin Hyman.

Kranau, E.J., Green, V., & Valencia-Weber, G. (1982). Acculturation and the Hispanic woman: Attitudes towards women, sex-role attribution, sex-role behavior, and demographics. Hispanic Journal of Behavioral Sciences, 4, 21-40.

Kraus, R., & Lewis, C. (1986). Ethnic and racial minorities in urban recreation. In A Literature Review: President's Commission on Americans Outdoors, (pp. 19-30). Washington, DC: U.S. Government Printing Office.

Lang, J.G., Munoz, R.F., Bernal, G., & Sorensen, J.L. (1982). Quality of life and psychological well-being in a bicultural Latino community. Hispanic Journal of Behavioral Sciences, 4, 433-450.

Laroche, M., Kim, C., Hui, M.K., & Joy, A. (1996). An empirical study of multidimensional ethnic change : The case of French Canadians in Quebec. Journal of Cross-Cultural Psychology, 27, 114-131.

Laroche, M., Kim, C., Hui, M.K., & Tomiuk, M.A. (1998). Test of a nonlinear relationship between linguistic acculturation and ethnic identification. Journal of Cross-Cultural Psychology, 29(3), 418-433.

Lee, R.G. (1972). The social definition of outdoor recreational places. In Burch, W., Cheek, N., & Taylor, L. (eds.), Social Behavior, Natural Resources, and the Environment, (pp. 68-84). New York, NY: Harper and Row.

LeVine, E., & Padilla, A. (1980). Crossing cultures in therapy: Pluralistic counseling for the Hispanic. Belmont, CA: Wadsworth.

Magana, J.R., de la Rocha, O., Amsel, J., Magana, H.A., Fernandez, M.I., & Rulnick, S. (1996). Revisiting the dimensions of acculturation: Cultural theory and psychometric practice. Hispanic Journal of Behavioral Sciences, 18, 444-468.

Marans, R.W., & Fly, J.M. (1981). Recreation and the quality of urban life: Recreational resources, behaviors, and evaluations of people in the Detroit region. Ann Arbor, MI: The University of Michigan, The Institute for Social Research.

Marín, G. (1992). Issues in the measurement of acculturation among Hispanics. In K. Geisinger (ed.), Psychological Testing of Hispanics (pp. 235-251). Washington, DC: American Psychological Association.

Marín, G., & Marín, B.V. (1991). Research with Hispanic populations. Applied Social Research Methods Series, 23. Newbury Park, CA: SAGE Publications.

Marín, G., Sabogal, F., VanOss Marín, B., Otero-Sabogal, R., & Perez-Stable, E.J. (1987). Development of a short acculturation scale for Hispanics. Hispanic Journal of Behavioral Sciences, 9, 183-205.

Matsuoka, J.K. (1990). Differential acculturation among Vietnamese refugees. Social Work, 35(4), 341-345.

Mercer, J.R. (1976). Pluralistic diagnosis in the evaluation of Black and Chicano children: A procedure for taking sociocultural variables into account in clinical assessment. In C.A. Hernandez, M.J. Haug, & N.N. Wagner (eds.), Chicanos: Social and Psychological Perspectives (pp. 183-195). Saint Louis, MO: C.V. Mosby Company.

Miyares, I.M. (1997). Changing perceptions of space and place as measures of Hmong acculturation. Professional Geographer, 49(2), 214-224.

More, T.A. (1985). Central City Parks: A behavioral perspective. Burlington, VT: University of Vermont School of Natural Resources.

Murdock, S.H., Backmann, K., & Coldberg, E. (1990). Modeling demographic change and characteristics in the analysis of future demand for leisure services. Leisure Sciences, 12(12), 79-102.

Naidoo, J.C., & Davis, J.C. (1988). Canadian South Asian women in transition: A dualistic view of life. Journal of Comparative Family Studies, 19, 311-327.

National Urban and Community Forestry Advisory Council. (2000, June 1). NUCFAC: Our Mission Statement. Sonora, CA: NUCFAC. Retrieved June 2, 2001, from the World Wide Web: http://www.treelink.org/nucfac/nfback.htm

Negy, C. (1993). Anglo- and Hispanic-Americans' performance on the family attitude scale and its implications for improving measurements of acculturation. Psychological Reports, 73(3), 1211-1217.

Negy, C., & Woods, D.J. (1992a). The importance of acculturation in understanding research with Hispanic-Americans. Hispanic Journal of Behavioral Sciences, 14(2), 224-247.

Negy, C., & Woods, D.J. (1992b). A note on the relationship between acculturation and socioeconomic status. Hispanic Journal of Behavioral Sciences, 14(2), 248-251.

Noe, F., & Snow, R. (1990). Hispanic cultural influence on environmental concern. The Journal of Environmental Education, 21, 27-34.

Norris, A.E., Ford, K., & Bova, C.A. (1996). Psychometrics of a brief acculturation scale for Hispanics in a probability sample of urban Hispanic adolescents and young adults. Hispanic Journal of Behavioral Sciences, 18(1), 29-38.

Olmedo, E.L. (1981). Testing linguistic minorities. American Psychologist, 36, 1078-1085.

Olmedo, E.L., & Padilla, A.M. (1978). Empirical and construct validation of a measure of acculturation for Mexican Americans. Journal of Social Psychology, 105, 179-187.

Padilla, A.M. (1980). The role of cultural awareness and ethnic loyalty in acculturation. In A.M. Padilla (ed.), Acculturation: Theory, Models and Some New Findings,. (pp. 47-84). Boulder, CO: Westview Press.

Padilla, A.M., Wagatsuma, Y., & Lindholm, K.J. (1985). Acculturation and personality as predictors of stress in Japanese and Japanese-Americans. Journal of Social Psychology, 125, 295-305.

Parrillo, V.N. (1994). Strangers to these shores. New York, NY: Macmillan Publishing Co.

Penaloza, L., & Gilly, M.C. (1999). Marketer acculturation: the changer and the changed. Journal of Marketing, 63(3), 84-104.

Phelan, T.J., & Schneider, M. (1996). Race, ethnicity, and class in American suburbs. Urban Affairs Review, 31(5), 659-680.

Phinney, J.S. (1990). Ethnic identity in adolescents and adults: Review of research. Psychological Bulletin, 108, 499-514.

Pizzini, A.V., Latoni, A., & Rodríguez, V. (1993). El Yunque or the Caribbean National Forest? Meaning, management, and culture in the urban-tropical forest interface. In A. Ewert, D. Chavez, & A. Magill (eds.), Culture, Conflict, and Communication in the Wildland-Urban Interface, (pp. 221-233). Social Behavior and Natural Resources Series. Boulder, CO: Westview Press.

Rick, K., & Forward, J. (1992). Acculturation and perceived intergenerational differences among Hmong youth. Journal of Cross-Cultural Psychology, 23(1), 85-94.

Riche, M.F. (2000). America's diversity and growth: Signposts for the 21st century. Population Bulletin, 55(2), 43 p. Washington DC: Population Reference Bureau.

Robinson, J.P., & Godbey, G. (1999). Time for life: The surprising ways Americans use their time. University Park, PA: The Pennsylvania State University Press.

Rosenthal, D.A., & Feldman, S.S. (1990). The acculturation of Chinese immigrants: Perceived effects on family functioning of length of residence in two cultural contexts. Journal of Genetic Psychology, 151(4), 495-514.

Schwartz, S.H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. Advances in Experimental Social Psychology, 25, 1-65.

Shafer, S., & Floyd, M. (1997). Demonstrating community values of urban forests relative to their form and function. National Urban and Community Forestry Advisory Council Challenge Cost-Share Program, 1997 Research & Technology Development Project.

Shaull, S.L., & Gramann, J.H. (1998). The effect of cultural assimilation on the importance of family-related and nature-related recreation among Hispanic Americans. Journal of Leisure Research, 30(1), 47-63.

Shinew, K.J., Floyd, M.F., McGuire, F.A., & Noe, F.P. (1995). Gender, race, and subjective social class and their association with leisure preferences. Leisure Sciences, 17, 75-89.

Sklar, F., & Ames, R.G. (1985). Staying alive: Street survival in the inner city. Journal of Urban Affairs, 7, 55-65.

Smaje, C. (1997). Not just a social construct: Theorising race and ethnicity. Sociology, 31(2), 307-327.

Sodowsky, G.R., & Carey, J.C. (1988). Relationship between acculturation-related demographics and cultural attitudes of an Asian-Indian immigrant group. Journal of Multicultural Counseling and Development, 16, 117-136.

Sodowsky, G.R., & Plake, B.S. (1992). A study of acculturation differences among international people and suggestions for sensitivity to within-group differences. Journal of Counseling and Development, 71(1), 53-59.

Sodowsky, G.R., Lai, W.E., & Plake, B.S. (1991). Moderating effects of sociocultural variables on acculturation attitudes of Hispanics and Asian Americans. Journal of Counseling and Development. 70(1), 194-204.

Stephenson, M. (2000). Development and validation of the Stephenson Multigroup Acculturation Scale (SMAS). Psychological Assessment, 12(1), 77-88.

Streltzer, J., Rezentes, W.C. III., & Arakaki, M. (1996). Does acculturation influence psychosocial adaptation and well-being in native Hawaiians? International Journal of Social Psychiatry, 42(1), 28-37.

Sue, S., & Zane, N. (1987). The role of culture and cultural techniques in psychotherapy: A critique and reformulation. American Psychologist, 42, 37-45.

Sunberg, N.D. (1981). Cross-cultural counseling and psychotherapy: A research overview. In A.J. Marsella & P.B. Pedersen (eds.), Cross-Cultural Counseling and Psychotherapy. New York: Pergamon.

Szapocznik, J., & Kurtines, W. (1980). Acculturation, biculturalism, and adjustment among Cuban Americans. In A.M. Padilla (ed.), Acculturation: Theory, Models and Some New Findings,. (pp. 139-159). Boulder, CO: Westview Press.

Szapocznik, J., Scopetta, M.A., Kurtines, W., & Aranalde, M.A. (1978). Theory and measurement of acculturation. International Journal of Psychology, 12, 113-130.

Taft, R. (1985). The psychological study of adjustment and adaptation of immigrants in Australia. In N.T. Feather (ed.), Australian Psychology: Review of Research, (pp. 364-386). Sydney: Allen and Unwin.

Taft, R. (1986). Methodological considerations in the study of immigrant adaptation in Australia. Australian Journal of Psychology, 38, 339-346.

Talbot, J.F. (1993). Public Participation in Rail-Trail Planning: Two Case Studies. In P. Gobster (ed.), Managing Urban and High-Use Recreation Settings, (pp. 13-16). Gen. Tech. Rep. NC-163. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station.

Talbot, J.F., & Kaplan, R. (1993). Preferences for nearby natural settings: Ethnic and age variations. In P. Gobster (ed.), Managing Urban and High-Use Recreation Settings, (pp. 93-97). Gen. Tech. Rep. NC-163. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station.

Taylor, D.E. (1993). Urban park use: Race, ancestry, and gender. In P. Gobster (ed.), Managing Urban and High-Use Recreation Settings, (pp. 82-86). Gen. Tech. Rep. NC-163. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station.

Taylor, D.E., & Winter, P.L. (1995). Environmental values, ethics, and depreciative behavior in wildland settings. In D.J. Chavez (comp.), Proceedings of the Second Symposium on Social Aspects and Recreation Research, (pp.59-66). Gen. Tech. Rep. PSW-GTR-156. San Diego, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.

Torres-Matrullo, C.M. (1980). Acculturation, sex-role values and mental health among Mainland Puerto Ricans. In A.M. Padilla (ed.), Acculturation: Theory, Models and Some New Findings,. (pp. 111-137). Boulder, CO: Westview Press.

Tropp, L.R., Erkut, S., Coll, C.G., Alarcon, O., & Garcia, H.A.V. (1999). Psychological acculturation: Development of a new measure for Puerto Ricans on the U.S. mainland. Educational and Psychological Measurements, 59(2), 351-367.

Tsai, E.H. (2000). The influence of acculturation on perception of leisure constraints of Chinese immigrants. World Leisure Journal, 42(4), 33-42.

U.S. Department of Agriculture, Forest Service. (1994). RPA assessment of the forest and rangeland situation in the United States - 1993 update. For. Resour. Rep. 27. Washington, DC: U.S. Department of Agriculture, Forest Service. 75 p.

U.S. Department of Agriculture, Secretary of Agricluture, National Urban and Community Forestry Advisory Council. (1998, February). NUCFAC Action Plan. Sonora, CA: NUCFAC. Retrieved June 2, 2001, from the World Wide Web: http://www.treelink.org/nucfac/nf98actn.htm

U.S. Department of Commerce, Bureau of the Census. (2000). Projections of the resident population by race, Hispanic origin, and nativity: Middle series, 2050 to 2070. Washington, DC: Population Division.

Warburton, R. (1981). Race and class in British Columbia : A comment. BC Studies, 49, 79-85.

Warner, W.L., & Srole, L. (1945). The social systems of American ethnic groups. New Haven, CT: Yale University Press.

Washburne, R.F. (1978). Black under-participation in wildland recreation: Alternative explanations. Leisure Sciences, 1(2), 175-189.

Waters, M.C. (1990). Ethnic options: Choosing identities in America. Berkley, CA: University of California Press.

Westphal, L. M. (1993). Why Trees?" Urban Forestry Volunteers Values and Motivations. In P. Gobster (ed.), Managing Urban and High-Use Recreation Settings, (pp. 19-23). Gen. Tech. Rep. NC-163. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station.

Wilson, W.J. (1980). The declining significance of race: Blacks and changing American institutions. Chicago: University of Chicago Press. 254 p.

Williams, R. (1961). Culture and society 1880-1950. Harmondsworth: Penguin.

Williams, R. (1977). Marxism and literature. Oxford: Oxford University Press.

Williams, R. (1981). Culture. London: Fontana.

Wink, P. (1997). Beyond ethnic differences: Contextualizing the influence of ethnicity on individualism and collectivism. Journal of Social Issues, 53(2), 329-350.

Wong-Rieger, D., & Quintana, D. (1987). Comparative acculturation of southeast Asian and Hispanic immigrants and sojourners. Journal of Cross-Cultural Psychology, 18, 345-362.

Woodard, M.D. (1988). Class, regionality, and leisure among urban black Americans: The post civil rights era. Journal of Leisure Research, 20(2), 87-110.

Yu, P., & Berryman, D.L. (1996). The relationship among self-esteem, acculturation, and recreation participation of recently arrived Chinese immigrant adolescents. Journal of Leisure Research, 28(4), 251-273.

Zhang, T., & Gobster, P. (1998). Leisure preferences and open space needs in an urban Chinese American community. Journal of Architectural Planning Research, 15(4), 338-355.

# Appendix

## DATA COLLECTION MATERIALS

Cover Letter

Postcard Reminder

Follow-up Cover Letter

Mail-back Questionnaire

Insert (Pictures)

## AREAS SAMPLED

Areas Included in the Atlanta Sample

Areas Included in the Philadelphia Sample

# Parks In Philadelphia

## A Survey of Residents

A national initiative of the National Urban and Community Forestry Advisory Council, the USDA Forest Service, and Penn State University

First Name Last Name
Address
City, State Zipcode

I am writing to request your help in a study of how residents use and feel about the parks and natural areas in and around Philadelphia.

You, along with a small sample of others, were selected at random to provide a cross-section of the views of the city's residents. If the study is to truly represent this population, it is extremely important that you and the others being contacted complete and return the enclosed questionnaire.

Information obtained from the study will contribute to improving parks in and around Philadelphia to better meet the needs of the city's residents.

Please take a few minutes to answer the enclosed questionnaire now or ask another adult member of your household to do so. It should take only about 20 minutes. Return the completed survey form in the postage-paid envelope. Completion and return of the questionnaire signifies your consent to have your responses included in the statistical summaries of the survey data.

Although your participation is voluntary and you may refuse to answer any specific questions, your answers will be most useful if you respond to every question carefully and honestly. Your answers will be treated confidentially and your name will never be placed on your questionnaire or associated with your answers in any way. The number on the survey form is for record-keeping so that I will not trouble you with reminder letters after I have received your completed questionnaire. The identification numbers connecting your identity with the questionnaire will be destroyed once data collection is completed.

If you have any questions, please call me at 1-877-408-4092 or write to me at the address on the enclosed envelope.

Thank you in advance for your participation in this important study.

Sincerely,

G. C. Godbey, Project Director

P.S. If we have made a mistake and you are not a resident of the Philadelphia area, please indicate this on the questionnaire and return it to me in the postage-paid envelope. Many thanks.

# Parks In Philadelphia

## A Survey of Residents

A national initiative of the National Urban and Community Forestry Advisory Council, the USDA Forest Service, and Penn State University

First Name Last Name
Address
City, State Zipcode

Recently, a questionnaire seeking your opinions about parks and natural areas in and around Philadelphia was mailed to you.

Your opinion is important. If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please do so today. We are especially grateful for your help because it is only by asking people like you to share your views that we can better understand the needs of the residents of the Philadelphia area.

Sincerely,

G. C. Godbey, Project Director

# Parks In Philadelphia

## A Survey of Residents

A national initiative of the National Urban and Community Forestry Advisory Council, the USDA Forest Service, and Penn State University

January 31, 2001

During the past few months we have sent you several mailings about an important research study we are conducting about how residents use and feel about the parks and natural areas in and around Philadelphia. Information from this study can contribute to the improvement of parks in and around Philadelphia to better meet the needs of the area's residents.

The study is drawing to a close, and this is the last contact that will be made with the random sample of people who can provide a cross-section of the views of residents.

We are sending this final contact because of our concern that people who have not responded may have different views than those who have. Hearing from everyone in this small sample helps assure that the survey results are accurate as possible.

Please have ANY ADULT MEMBER OF YOUR HOUSEHOLD complete the questionnaire. It should take only about 20 minutes. Return the completed survey form in the postage-paid envelope. Completion and return of the questionnaire signifies your consent to have your responses included in the statistical summaries of the survey data.

Finally, we appreciate your willingness to consider our request as we conclude this effort to better understand the views of residents regarding parks and natural areas in and around Philadelphia.

Sincerely,

G. C. Godbey, Project Director

**Parks in Philadelphia**
**A Survey of Residents**

an initiative of the National Urban and Community Forestry Advisory Council
the USDA Forest Service, and Penn State University

**The people who plan and manage parks and natural areas in and around Philadelphia are interested in knowing what you think about parks, forests and wildlife and their importance in your life. Please answer each of the following questions in terms of your beliefs and feelings. Your answers will be treated confidentially.**

**YOUR Views Are Important**

**Section A.**

**PLEASE LOOK AT THE PHOTOS ON THE ENCLOSED PAGE.**
**For each of the questions that follow, think about areas with which you are familiar that are similar to those in the photos.**

**A1. How far from where you live is the nearest park area similar to those in the photos? (Please circle the number for ONE response.)**

1 Walking distance
2 A day's round trip or less
3 More than a day's trip
4 Don't know

**A2. How would you rate park areas similar to those in the photos as ... ?**

| | Undesirable | Neutral | Desirable |
|---|---|---|---|
| | (Circle ONE answer for each item.) | | |
| a. Places to be alone | 1 | 2 | 3 |
| b. Places to visit with others | 1 | 2 | 3 |
| c. Places to take children | 1 | 2 | 3 |
| d. Places to exercise | 1 | 2 | 3 |
| e. Places to see and hear wildlife and birds | 1 | 2 | 3 |
| f. Places to get away from traffic and noise | 1 | 2 | 3 |
| g. Places for neighborhood residents to gather | 1 | 2 | 3 |

**A3. Do you agree or disagree that park areas similar to those in the photos ... ?**

| | | Agree | Neutral | Disagree |
|---|---|---|---|---|
| | | (Circle ONE answer for each item.) | | |
| a. | Improve overall health | 1 | 2 | 3 |
| b. | Improve social well being | 1 | 2 | 3 |
| c. | Are unnecessary tax burdens | 1 | 2 | 3 |
| d. | Attract crime and create unsafe conditions | 1 | 2 | 3 |
| e. | Increase littering | 1 | 2 | 3 |
| f. | Improve the economy | 1 | 2 | 3 |
| g. | Improve environmental quality | 1 | 2 | 3 |
| h. | Attract undesirable animals and birds | 1 | 2 | 3 |
| i. | Improve spiritual well being | 1 | 2 | 3 |
| j. | Attract desirable animals and birds | 1 | 2 | 3 |
| k. | Provide plant and animal materials for home use (food, medicine, decoration) | 1 | 2 | 3 |

**A4. During the last 12 months, have you visited park areas similar to those in the photos? (Please circle the number for ONE response.)**

1 No ⟶ **If No, SKIP to A8**
2 Yes ⟶ **If Yes, CONTINUE with A5**

**A5. How often in the last 12 months have you visited park areas similar to those in the photos? (Please circle the number for ONE response.)**

1 Almost daily
2 Weekly
3 Three or more times a month
4 Once or twice a month
5 Three or more times in the last twelve months
6 Once or twice in the last twelve months
7 Never visited in the last twelve months

**A6. Of your visits in the last twelve months to park areas similar to those in the photos, how many of these visits were undertaken ... ?**

| | | None | Some | Almost All |
|---|---|---|---|---|
| | | (Circle ONE answer for each item.) | | |
| a. | Alone | 1 | 2 | 3 |
| b. | In groups of 1 or 2 other persons | 1 | 2 | 3 |
| c. | In groups of 3 or more persons | 1 | 2 | 3 |
| d. | With others from your own racial/ethnic group | 1 | 2 | 3 |
| e. | During weekdays | 1 | 2 | 3 |
| f. | During weekends | 1 | 2 | 3 |
| g. | For less than 1 hour | 1 | 2 | 3 |
| h. | For 1 to 2 hours | 1 | 2 | 3 |
| i. | For more than 2 hours | 1 | 2 | 3 |

**A7. Have many times have you done the following activities during your visits to park areas similar to those in the photos in the last twelve months?**

| | None | Once or Twice | Three or More Times |
|---|---|---|---|
| | Circle ONE answer for each item.) | | |
| a. Solitary activities (*Being alone, Reading, Commuting through park, Walking the dog, etc.*)..... | 1 | 2 | 3 |
| b. Social activities (*Playing with children, Talking with friends, Playing board games, etc.*)..... | 1 | 2 | 3 |
| c. Food-related activities (*Picnicking, Eating, Barbecuing, etc.*)..... | 1 | 2 | 3 |
| d. Team activities (*Soccer, Basketball, Softball/Baseball, Frisbee, etc.*)..... | 1 | 2 | 3 |
| e. Outdoor land activities (*Backpacking/Hiking, Pleasure driving, Camping, etc.*)..... | 1 | 2 | 3 |
| f. Outdoor water activities (*Boating/Canoeing, Fishing, Swimming, etc.*)..... | 1 | 2 | 3 |
| g. Physical exercises (*Running/Jogging/Walking, Bicycling, Rollerblading/Skateboarding, etc.*)..... | 1 | 2 | 3 |
| h. Experiential activities (*Aerobics, Tai Chi, Qigong, Yoga, etc.*)..... | 1 | 2 | 3 |
| i. Subsistence activities (*Collecting plant/animal materials, Hunting/Trapping, etc.*)..... | 1 | 2 | 3 |
| j. Community activities (*Festivals, Parties, etc.*)..... | 1 | 2 | 3 |
| k. Educational activities (*Animal/Birdwatching, Nature Study, etc.*)..... | 1 | 2 | 3 |
| l. Gardening (*Vegetables, Fruits, Flowers, etc.*)..... | 1 | 2 | 3 |
| m. Photography (*Still photos, Videos, etc.*)..... | 1 | 2 | 3 |
| n. Other, please specify:_____..... | 1 | 2 | 3 |

**A8. Why did you not visit park areas similar to those in the photos more often? (Please check ☑ ALL that apply.)**

- ☐ a. No interest
- ☐ b. No time
- ☐ c. No money
- ☐ d. No one to go with
- ☐ e. Dangerous/Unsafe
- ☐ f. Too far
- ☐ g. Illness/disability, Old age
- ☐ h. Would not feel welcome, Would feel out of place
- ☐ i. No one from own racial/ethnic group goes there
- ☐ j. Pollution problems (polluted air, streams, ponds)
- ☐ k. Areas too crowded
- ☐ l. Areas poorly maintained
- ☐ m. Don't have enough information
- ☐ n. Outdoor pest problems
- ☐ o. No way to get there
- ☐ p. Other, please specify: _____

**A9. When you visit a park, how important is it for the area to have each of the following?**

| | Not Important | Somewhat Important | Very Important |
|---|---|---|---|
| | (Circle ONE answer for each item) | | |
| a. Recreational facilities and programs | 1 | 2 | 3 |
| b. Trash containers for garbage disposal | 1 | 2 | 3 |
| c. Containers for recycling | | | |
| d. Lack of interference from other visitors | 1 | 2 | 3 |
| e. Proper signs and instruction boards | 1 | 2 | 3 |
| f. Parking spaces | 1 | 2 | 3 |
| g. Well-maintained/litter-free facilities | 1 | 2 | 3 |
| h. Safety and security at the area | 1 | 2 | 3 |
| i. Outdoor cooking facilities | 1 | 2 | 3 |
| j. Accessibility for those with disabilities | 1 | 2 | 3 |
| k. Non-crowded areas | 1 | 2 | 3 |
| l. Presence of other visitors from your racial/ethnic group | 1 | 2 | 3 |
| m. Availability of information in your racial/ethnic language | 1 | 2 | 3 |
| n. Closeness to home | 1 | 2 | 3 |
| o. Concession stands selling food and beverages | 1 | 2 | 3 |
| p. Picnic areas | 1 | 2 | 3 |
| q. Game fields/courts (baseball, volleyball, tennis, etc.) | 1 | 2 | 3 |
| r. Drinking water/water fountains | 1 | 2 | 3 |
| s. Family/group recreational areas and facilities | 1 | 2 | 3 |
| t. Restroom/toilet facilities | 1 | 2 | 3 |
| u. Staff who know the cultures/customs of visitors | 1 | 2 | 3 |
| v. Alcoholic beverages permitted | 1 | 2 | 3 |
| w. Pets allowed | 1 | 2 | 3 |
| x. Short, evenly mowed grass | 1 | 2 | 3 |
| y. Open forests with visibility through trees | 1 | 2 | 3 |
| z. Dense forests with little visibility through trees | 1 | 2 | 3 |
| aa. Shade trees | 1 | 2 | 3 |
| bb. Lake or lakes | 1 | 2 | 3 |
| cc. River or rivers | 1 | 2 | 3 |
| dd. Stream or streams | 1 | 2 | 3 |
| ee. Animals | 1 | 2 | 3 |
| ff. Birds | 1 | 2 | 3 |
| gg. Fish | 1 | 2 | 3 |
| hh. Paved paths | 1 | 2 | 3 |
| ii. Gravel or dirt paths | 1 | 2 | 3 |

**A10. Are you interested in doing any of the following as a volunteer (without pay) to help parks in your area?**

| | Yes | No |
|---|---|---|
| | (Circle ONE answer for each item.) | |
| a. Planting trees in parks | 1 | 2 |
| b. Cleaning-up vacant lots for planting gardens | 1 | 2 |
| c. Cleaning-up trash from parks | 1 | 2 |
| d. Helping prevent crime in parks | 1 | 2 |
| e. Working with others for improving the quality of parks | 1 | 2 |

**Section B.**

**B1. Below is a series of statements that some people say guide their lives. How important is each of these as a guiding principle in your life? Use a scale from 1 to 5, where 1 means "Not Important" and 5 means "Extremely Important."**

| Principle | Not Important → Extremely Important | | | | |
|---|---|---|---|---|---|
| | (Circle ONE answer for each item) | | | | |
| a. Authority (the right to lead or command) | 1 | 2 | 3 | 4 | 5 |
| b. Honoring of parents and elders (showing respect) | 1 | 2 | 3 | 4 | 5 |
| c. Social power (control over others, dominance) | 1 | 2 | 3 | 4 | 5 |
| d. Honesty (genuine, sincere) | 1 | 2 | 3 | 4 | 5 |
| e. Wealth (material possessions, money) | 1 | 2 | 3 | 4 | 5 |
| f. Family security (safety for loved ones) | 1 | 2 | 3 | 4 | 5 |
| g. Influence (having an impact on people and events) | 1 | 2 | 3 | 4 | 5 |
| h. Self-discipline (self-restraint, resistance to temptation) | 1 | 2 | 3 | 4 | 5 |
| i. Obedience (dutiful, meeting obligations) | 1 | 2 | 3 | 4 | 5 |
| j. Loyalty (faithful to my friends, group) | 1 | 2 | 3 | 4 | 5 |
| k. True friendship (close, supportive friends) | 1 | 2 | 3 | 4 | 5 |
| l. Devoutness (holding to religious faith and belief) | 1 | 2 | 3 | 4 | 5 |
| m. Protecting the environment (preserving nature) | 1 | 2 | 3 | 4 | 5 |
| n. Sense of belonging (feeling that others care about me) | 1 | 2 | 3 | 4 | 5 |
| o. Unity with nature (fitting into nature) | 1 | 2 | 3 | 4 | 5 |
| p. Helpfulness (working for the welfare of others) | 1 | 2 | 3 | 4 | 5 |
| q. Respecting the earth (harmony with other species) | 1 | 2 | 3 | 4 | 5 |
| r. A world at peace (free of war and conflict) | 1 | 2 | 3 | 4 | 5 |
| s. Social justice (correcting injustice, care for the weak) | 1 | 2 | 3 | 4 | 5 |
| t. Equality (equal opportunity for all) | 1 | 2 | 3 | 4 | 5 |
| u. Preventing pollution (conserving natural resources) | 1 | 2 | 3 | 4 | 5 |
| v. A world of beauty (beauty of nature and the arts) | 1 | 2 | 3 | 4 | 5 |

Section C.

Finally, for statistical purposes, we would like to know a little about your background
**(Please circle ONE response for each question, unless otherwise instructed.)**

**C1. What is your gender?**

1 Male
2 Female

**C2. Which of the following best describes *your* race/ethnicity?**

1 White or Caucasian
2 Other, please specify: _____

**C3. What is your age in years?** _____ (years)

**C4. In general, what language do you read and speak?**

1 Only English
2 English More than Another Language
3 Both Equally
4 Another Language More than English
5 Only Another Language
6 Other, please specify:_____

**C5. What language do you usually speak at home?**

1 Only English
2 English More than Another Language
3 Both Equally
4 Another Language More than English
5 Only Another Language
6 Other, please specify:_____

**C6. In which language do you usually think?**

1 Only English
2 English More than Another Language
3 Both Equally
4 Another Language More than English
5 Only Another Language
6 Other, please specify:_____

**C7. What language do you usually speak with your friends?**

1 Only English
2 English More than Another Language
3 Both Equally
4 Another Language More than English
5 Only Another Language
6 Other, please specify:_____

**C8. Were you born in the United States?**

1 Yes → If **Yes, SKIP** to **C9**
2 No, → If **No**, Answer **a** & **b** below

**a Where were you born?** _____
**b How long have you been living in the United States?** _____(in years)

**C9. Was your father born in the United States?**

1 Yes → If **Yes, SKIP** to **C10**
2 No → If **No**, Answer **a** & **b** below

**a Where was he born?** _____
**b At present, does he live in the United States?**
1 Yes → For how many years has he lived in the U.S.?
_____
2 No

**C10. Was your mother born in the United States?**

1 Yes → If **Yes, SKIP** to **C11**
2 No → If **No**, Answer **a** & **b** below

**a Where was she born?** _____
**b At present, does she live in the United States?**
1 Yes → For how many years has she lived in the U.S.?
_____
2 No

**C11. Who currently resides in your household? (Please circle ALL that apply.)**

1 Self
2 Spouse/partner
3 Parents
4 Grandparents
5 Children
6 Other members, please specify: _____
(Indicate their relationship to you.)

**C12. How many children living with you fall within the following age categories ?**

(If none live with you, indicate '0' in the blank spaces)

| | Number of Children |
|---|---|
| 1 Less than 6 years | _____ |
| 2 6 years to 12 years | _____ |
| 3 13 years to 18 years | _____ |

**C13. What is the highest educational level you have attained?**

1 Less than High School Graduate
2 High School Graduate
3 Some Post-Secondary Education
4 Bachelor's Degree
5 Some Post-Graduate Education
6 Advanced College Degree
7 Other, please specify: _____

**C14. Which ONE answer best describes your current work situation?**

1 Employed full time
2 Employed part time
3 Unemployed
4 Homemaker
5 Other, please specify: _____

**C15. How long have you lived at your present address?**

1 Less than 1 year
2 1 to 4 years
3 5 to 9 years
4 10 or more years

**C16. Which of the following categories best describes your annual household income, before taxes?**

1 Less than $5,000
2 $5,000 to $14,999
3 $15,000 to $24,999
4 $25,000 to $34,999
5 $35,000 to $49,999
6 $50,000 to $74,999
7 $75,000 to $100,000
8 Over $100,000

**C17. What is your religious affiliation?**

1 Roman Catholic
2 Greek Orthodox
3 Protestant
4 Muslim
5 Jewish
6 Buddhist
7 No affiliation
8 Other, please specify: _____

**C18. Compared to five years ago, would you say you have ... ?**

1 More time for recreation and leisure
2 About the same amount of time
3 Less time for recreation and leisure

**C19. In general, how do you feel about your time? Would you say you ... ?**

1 Always feel rushed even to do things you have to do
2 Only sometimes feel rushed
3 Almost never feel rushed

**C20. What is more important to you?**

1 Your work
2 Your leisure
3 Both are equally important

**Thank You for Completing This Questionnaire**

**Your cooperation will contribute to our understanding of how to better manage parks and natural areas in and around Philadelphia**

---

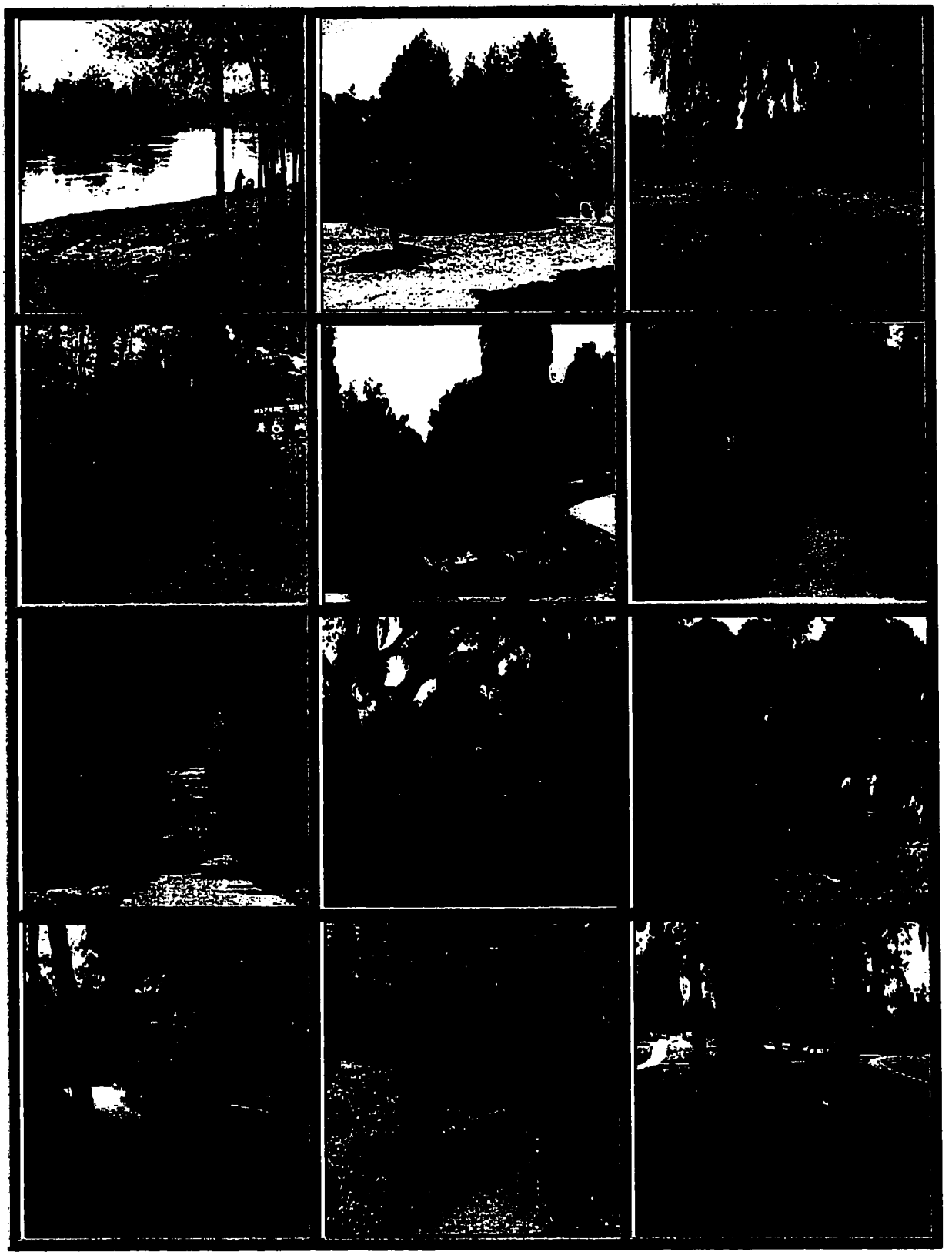
Section D

If you have any comments about parks or natural areas in and around Philadelphia, please write them in the space below.

---

**Please return the completed questionnaire to:**

**Parks in Philadelphia**
**A Survey of Residents**
**The Pennsylvania State University**
**201 Mateer Building**
**University Park, PA 16802**



**Disclaimer:** While the survey instrument employed in this study was not a photoquestionnaire, it utilized a set of color photos of parks and forests to establish a broad frame of reference to set the stage for consideration by the subject while responding to the questions included in the survey. These photos were not site-specific with respect to Philadelphia, PA and Atlanta, GA. This technique had the advantage of standardizing the images of parks and forests while providing a broad frame of reference for the questions responded to by the subjects, but it also meant that subjects were not encouraged to visualize and respond in terms of parks and forests that might have been either most familiar or accessible to them.

**Areas Included in the Atlanta Sample**

| | | | |
|---|---|---|---|
| ACWORTH | GA | MONROE | GA |
| ADAIRSVILLE | GA | MORROW | GA |
| ALPHARETTA | GA | NELSON | GA |
| ATLANTA | GA | NEWNAN | GA |
| AUBURN | GA | NORCROSS | GA |
| AUSTELL | GA | OXFORD | GA |
| AVONDALE ESTATES | GA | PALMETTO | GA |
| BALL GROUND | GA | PEACHTREE CITY | GA |
| BOWDON | GA | PINE LAKE | GA |
| BROOKS | GA | POWDER SPRINGS | GA |
| BUFORD | GA | RED OAK | GA |
| CANTON | GA | REX | GA |
| CARROLLTON | GA | RIVERDALE | GA |
| CARTERSVILLE | GA | ROSWELL | GA |
| CLARKSTON | GA | RYDAL | GA |
| CONLEY | GA | SCOTTDALE | GA |
| CONYERS | GA | SHARPSBURG | GA |
| COVINGTON | GA | SMYRNA | GA |
| CUMMING | GA | SNELLVILLE | GA |
| DACULA | GA | SOCIAL CIRCLE | GA |
| DALLAS | GA | STATHAM | GA |
| DECATUR | GA | STOCKBRIDGE | GA |
| DOUGLASVILLE | GA | STONE MOUNTAIN | GA |
| DULUTH | GA | SUWANEE | GA |
| ELLENWOOD | GA | TALKING ROCK | GA |
| FAIRBURN | GA | TATE | GA |
| FAYETTEVILLE | GA | TAYLORSVILLE | GA |
| FOREST PARK | GA | TEMPLE | GA |
| GRANTVILLE | GA | TUCKER | GA |
| GRAYSON | GA | TYRONE | GA |
| GRIFFIN | GA | UNION CITY | GA |
| HAMPTON | GA | VILLA RICA | GA |
| HIRAM | GA | WALESKA | GA |
| JASPER | GA | WHITE | GA |
| JONESBORO | GA | WINDER | GA |
| KENNESAW | GA | WOODSTOCK | GA |
| LAWRENCEVILLE | GA | | |
| LILBURN | GA | | |
| LITHIA SPRINGS | GA | | |
| LITHONIA | GA | | |
| LOGANVILLE | GA | | |
| MABLETON | GA | | |
| MARIETTA | GA | | |
| MCDONOUGH | GA | | |

**Areas Included in the Philadelphia Sample**

| | | | |
|---|---|---|---|
| ABINGTON | PA | FAIRLESS HILLS | PA |
| AMBLER | PA | FEASTERVILLE TREVOSE | PA |
| ARDMORE | PA | FLOURTOWN | PA |
| ASTON | PA | FOLCROFT | PA |
| AVONDALE | PA | FOLSOM | PA |
| BALA CYNWYD | PA | FORT WASHINGTON | PA |
| BEDMINSTER | PA | FRANCONIA | PA |
| BENSALEM | PA | FURLONG | PA |
| BERWYN | PA | GILBERTSVILLE | PA |
| BIRCHRUNVILLE | PA | GLADWYNE | PA |
| BLUE BELL | PA | GLEN MILLS | PA |
| BRIDGEPORT | PA | GLENMOORE | PA |
| BRISTOL | PA | GLENOLDEN | PA |
| BROOKHAVEN | PA | GLENSIDE | PA |
| BROOMALL | PA | GREEN LANE | PA |
| BRYN MAWR | PA | HARLEYSVILLE | PA |
| CHADDS FORD | PA | HATBORO | PA |
| CHALFONT | PA | HATFIELD | PA |
| CHELTENHAM | PA | HAVERFORD | PA |
| CHESTER | PA | HAVERTOWN | PA |
| CHESTER SPRINGS | PA | HOLICONG | PA |
| CHEYNEY | PA | HOLMES | PA |
| CLIFTON HEIGHTS | PA | HONEY BROOK | PA |
| COATESVILLE | PA | HORSHAM | PA |
| COCHRANVILLE | PA | HUNTINGDON VALLEY | PA |
| COLLEGEVILLE | PA | JAMISON | PA |
| CONSHOHOCKEN | PA | JENKINTOWN | PA |
| CROYDON | PA | KEMBLESVILLE | PA |
| CRUM LYNNE | PA | KENNETT SQUARE | PA |
| DANBORO | PA | KIMBERTON | PA |
| DARBY | PA | KING OF PRUSSIA | PA |
| DEVON | PA | KINTNERSVILLE | PA |
| DOWNINGTOWN | PA | LAFAYETTE HILL | PA |
| DOYLESTOWN | PA | LANDENBERG | PA |
| DRESHER | PA | LANGHORNE | PA |
| DREXEL HILL | PA | LANSDALE | PA |
| DUBLIN | PA | LANSDOWNE | PA |
| EAST GREENVILLE | PA | LEVITTOWN | PA |
| ELKINS PARK | PA | LINCOLN UNIVERSITY | PA |
| ELVERSON | PA | MALVERN | PA |
| ESSINGTON | PA | MARCUS HOOK | PA |
| EXTON | PA | MEDIA | PA |

**Areas Included in the Philadelphia Sample (continued)**

| | | | |
|---|---|---|---|
| MERION STATION | PA | SPRINGFIELD | PA |
| MONTGOMERYVILLE | PA | SWARTHMORE | PA |
| MORRISVILLE | PA | TELFORD | PA |
| MORTON | PA | TOUGHKENAMON | PA |
| NARBERTH | PA | UNIONVILLE | PA |
| NEW HOPE | PA | UPPER BLACK EDDY | PA |
| NEW LONDON | PA | UPPER DARBY | PA |
| NEWTOWN | PA | UWCHLAND | PA |
| NEWTOWN SQUARE | PA | VALLEY FORGE | PA |
| NORRISTOWN | PA | VILLANOVA | PA |
| NORTH WALES | PA | WALLINGFORD | PA |
| NORWOOD | PA | WARMINSTER | PA |
| NOTTINGHAM | PA | WARRINGTON | PA |
| ORELAND | PA | WASHINGTON CROSSING | PA |
| OTTSVILLE | PA | WAYNE | PA |
| OXFORD | PA | WEST CHESTER | PA |
| PAOLI | PA | WEST GROVE | PA |
| PARKESBURG | PA | WILLOW GROVE | PA |
| PENNSBURG | PA | WOODLYN | PA |
| PERKASIE | PA | WYNCOTE | PA |
| PERKIOMENVILLE | PA | WYNNEWOOD | PA |
| PHILADELPHIA | PA | ZIEGLERVILLE | PA |
| PHOENIXVILLE | PA | ATCO | NJ |
| PIPERSVILLE | PA | AUDUBON | NJ |
| PLYMOUTH MEETING | PA | BARRINGTON | NJ |
| POINT PLEASANT | PA | BELLMAWR | NJ |
| POMEROY | PA | BERLIN | NJ |
| POTTSTOWN | PA | BEVERLY | NJ |
| PROSPECT PARK | PA | BLACKWOOD | NJ |
| QUAKERTOWN | PA | BORDENTOWN | NJ |
| RED HILL | PA | BROWNS MILLS | NJ |
| RICHBORO | PA | BURLINGTON | NJ |
| RIDLEY PARK | PA | CAMDEN | NJ |
| RIEGELSVILLE | PA | CEDAR BROOK | NJ |
| ROYERSFORD | PA | CHERRY HILL | NJ |
| SCHWENKSVILLE | PA | CLARKSBORO | NJ |
| SELLERSVILLE | PA | CLAYTON | NJ |
| SHARON HILL | PA | CLEMENTON | NJ |
| SOLEBURY | PA | COLLINGSWOOD | NJ |
| SOUDERTON | PA | COLUMBUS | NJ |
| SOUTHAMPTON | PA | COOKSTOWN | NJ |
| SPRING CITY | PA | ELMER | NJ |

**Areas Included in the Philadelphia Sample (continued)**

| | | | |
|---|---|---|---|
| FLORENCE | NJ | SWEDESBORO | NJ |
| GIBBSBORO | NJ | TRENTON | NJ |
| GIBBSTOWN | NJ | VINCENTOWN | NJ |
| GLASSBORO | NJ | VOORHEES | NJ |
| GLENDORA | NJ | WATERFORD WORKS | NJ |
| GLOUCESTER CITY | NJ | WENONAH | NJ |
| HADDON HEIGHTS | NJ | WILLIAMSTOWN | NJ |
| HADDONFIELD | NJ | WILLINGBORO | NJ |
| JOBSTOWN | NJ | WOODBURY | NJ |
| LAWNSIDE | NJ | WOODBURY HEIGHTS | NJ |
| LUMBERTON | NJ | WOODSTOWN | NJ |
| MAGNOLIA | NJ | WRIGHTSTOWN | NJ |
| MALAGA | NJ | | |
| MANTUA | NJ | | |
| MAPLE SHADE | NJ | | |
| MARLTON | NJ | | |
| MEDFORD | NJ | | |
| MERCHANTVILLE | NJ | | |
| MOORESTOWN | NJ | | |
| MOUNT EPHRAIM | NJ | | |
| MOUNT HOLLY | NJ | | |
| MOUNT LAUREL | NJ | | |
| MULLICA HILL | NJ | | |
| NATIONAL PARK | NJ | | |
| NEWFIELD | NJ | | |
| OAKLYN | NJ | | |
| PALMYRA | NJ | | |
| PAULSBORO | NJ | | |
| PEMBERTON | NJ | | |
| PENNS GROVE | NJ | | |
| PENNSAUKEN | NJ | | |
| PENNSVILLE | NJ | | |
| PITMAN | NJ | | |
| RIVERSIDE | NJ | | |
| RIVERTON | NJ | | |
| ROEBLING | NJ | | |
| RUNNEMEDE | NJ | | |
| SALEM | NJ | | |
| SEWELL | NJ | | |
| SICKLERVILLE | NJ | | |
| SOMERDALE | NJ | | |
| STRATFORD | NJ | | |

## VITA

Vinod Sasidharan was born on October 14, 1972 in Kerala, India. In 1994, Mr. Sasidharan obtained his Postgraduate Diploma in Hotel Administration, with specialization in Amusement Park Management, from the Institute of Hotel Management, Catering Technology and Applied Nutrition in Bombay, India, a school well-renowned throughout the Asian continent. During the course of his postgraduate work in Hotel Management, he worked with various hotel chains, including the Hilton and the Forte Grande groups, at the junior management level. Mr. Sasidharan's interest in global tourism and natural resource management issues led him to acquire a M.Sc. in Tourism Policy and Management, with a wilderness recreation focus, from the University of Birmingham in the United Kingdom in December, 1995. In the fall of 1997, he accepted a graduate assistantship in order to pursue a Doctor of Philosophy Degree in Leisure Studies at The Pennsylvania State University (School of Hotel, Restaurant, and Recreation Management).

During the course of his doctoral studies at The Pennsylvania State University, Mr. Sasidharan was actively involved in teaching and research. He taught three courses at the undergraduate level, namely Tourism and Leisure Behavior, Commercial Recreation and Tourism, and Computer Applications in Recreation and Park Management. He also guest lectured in several graduate as well as undergraduate classes. As part of his research efforts with his advisor, Dr. Geoffrey Godbey, Mr. Sasidharan acquired a grant from the USDA Forest Service in 1999 in order to undertake a study that eventually led to his dissertation. He also worked with Dr. Godbey on the compilation of a future trends report for the National Park Service (Northeast Region). In recognition of his academic excellence, he was awarded with the prestigious 2001 Kligman Graduate Fellowship by the College of Health and Human Development, The Pennsylvania State University. He received his Ph.D. degree in August 2001.

Mr. Sasidharan has an active publication record (both refereed and non-refereed journal articles and book chapters) with emphases in the areas of multiculturalism in urban parks and forests, impacts of global climate change on recreation and tourism, ecotourism and sustainable tourism, and tourism ecolabeling. He also serves as the guest editor for the Spring 2002 Special Issue of Leisure Sciences focusing on multicultural perspectives related to recreation and the environment.

Mr. Sasidharan accepted a position in the Department of Recreation, Parks, and Tourism at San Diego State University (San Diego, CA) as an Assistant Professor. He is also associated with the Hospitality and Tourism Management Program in the College of Business Administration at San Diego State University. He assumed his appointment responsibilities in August 2001.