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Outdoor Recreation Among Asian Americans: A Case Study of San Francisco Bay Area Residents

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EXECUTIVE SUMMARY: Demographic change is redefining the demand for recreation and leisure within North America (Shelhas, 2002; Struglia & Winter, 2002). One such change is a result of rapid Asian American and Hispanic American population growth. A better understanding of the outdoor recreation attitudes and behaviors of those populations and a clearer understanding of how those groups compare to traditional users will provide the basis for more effective management within public recreation services. While very little is known about Asian American recreational behaviors and preferences, researchers have suggested that treatment of "Asians" as a homogenous group is unwarranted (Okazaki & Hall, 2002). This study examined differences among four Asian American cultural groups (Chinese, Japanese, Korean, and Filipino) residing in the San Francisco Bay Area regarding sociodemographics, linguistic acculturation, outdoor recreational participation, importance of park attributes, motivations to visit natural areas, and constraints to visiting the Golden Gate National Recreation Area (GGNRA).

Analyses revealed significant differences among the four Asian American groups including differences in place of birth, level of education, annual household income, and linguistic acculturation. All cultural groups shared a propensity towards use of ethnic media when watching television, listening to radio, and reading magazines / newspapers. Furthermore, outdoor recreation participation varied significantly by cultural group, accounted for by income, education, gender, and linguistic acculturation. Importance of park attributes varied by cultural group and income. Motivations to visit natural areas were affected by cultural group, education, and gender. Finally, perceived constraints to visiting the GGNRA were affected by the *interaction* of income, education, linguistic acculturation, cultural group, and gender, but not by any variable individually.

Differences among the cultural groups in this study support the premise that the Asian American population is heterogeneous. This finding points to the need for further explorations of the similarities and differences shared among Asian American cultural groups, and the importance of avoiding overly simplistic views of Asian American culture and culture's relationship to recreation and service delivery. The heavy focus on use of ethnic media among respondents is also of importance. The use of ethnic media and the provision of written materials in ethnic languages, is recommended to more effectively communicate with those who have maintained their own ethnic languages. Because differences in park attribute preferences and motivations to visit natural areas were highly dependent upon cultural group, recreation service delivery should focus on

differences as well as the similarities represented by Asian Americans. Sample constraints temper findings of the current study, yet the results offer important insights for service delivery and research alike. Additional research on variation within ethnic groups is needed, to contrast the relative contributions of sociodemographics and cultural variation. Contrasting cultural groups with similar sociodemographic characteristics would be of particular merit.

KEYWORDS: Asian American cultural groups, heterogeneity, linguistic acculturation, recreational activities, motivations to visit natural areas, importance of park attributes, constraints to recreation participation

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Demographic change, and projected future change, in the United States is a critical variable for recreation service delivery. The nation's population is increasing in absolute number, with a projected increase of .8% annually[1]. Given these projections, the nation's population is expected to increase by about 9% over the next decade, and to double within a century. In addition, the population is continuing to become more ethnically and racially diverse in an already historically diverse society (Shelhas, 2002). Over the next decade, the percentage of white non-Hispanics is expected to decrease as a percentage of the nation's population, while the percentage of Asians-Pacific Islanders and Hispanics increase substantially (US Census Bureau, 2000). Although such long-range projections are suspect among demographers, by 2050 the nation is expected to be about 50% white non-Hispanic, 21% Hispanic, 15% black, 1% American Indian, and 13% Asian and other ethnic minorities. Change in the nation's median age is also expected, with an approximate gain of 1.2 years across the next decade (Kramarow et al., 1999; US Census Bureau, 2000). The increase, however, is presumed to vary by race and ethnicity, gender, and geographic location (Shelhas, 2002; Struglia, Winter & Meyer, 2003; US Census Bureau, 2000). These demographic changes are expected to present challenges to recreation service delivery, including shifts in recreation use, the need to revise communication and collaboration methods, the need to address increased impacts on, and demands for natural resources, and the need to collaborate with other service providers to address these changing demands (Struglia & Winter, 2002).

[1] Derived from US Census Bureau data, Projections of the Total Resident Population by 5-Year Age Groups, Race, and Hispanic Origin with Special Age Categories: Middle Series. Available at www.census.gov.

Studies have documented variations in leisure participation, preferences, and behaviors associated with the increasing role of people of color in the nation's future (e.g., Murdock, Backman, Hoque & Ellis, 1991). Within the fields of recreation, parks, and leisure studies, research to date has focused most heavily on differences in black-white or Hispanic-white participation (Chavez, 1992; Floyd & Gramann, 1993; Hutchison, 1987; Johnson & Bowker, 1999). The key foci of these inquiries have been levels of participation in recreation (e.g., inquiries into marginality and ethnicity theories as explanations for under participation of blacks) and desired recreational experiences (e.g., factors influencing a more enjoyable recreational experience).

Floyd (1999) reviewed the conceptual framing behind much of this work, by analyzing the strengths and weaknesses of four theoretical perspectives to approach minority use of natural areas. These theories include the marginality hypothesis (examines the under participation of minorities in natural resource based recreation, explained by differential access to resources particularly discretionary income), the subcultural hypothesis (variations in visitation patterns between whites and minority groups accounted for by cultural differences linked to values and norms), assimilation theory (explains differences in participation based on level of assimilation into the dominant society), and the discrimination hypothesis (accounts for differences in participation patterns based on concern over actual or perceived discrimination in recreation settings). Floyd suggested that controlling for socioeconomic differences is key to examining subcultural influences on recreation participation levels and preferences.

While empirical research on ethnic minority use of natural areas is sparse, there is even less on Asian American populations related to recreation use (Dwyer & Gobster, 1992) or as a minority population in general (Hurh & Kim, 1989; Sue, 1991). Research on ethnic minority use specifically in national parks is also lacking (Floyd, 1999). The lack of research is surprising, given the growing numbers of Asian Americans and their contributions within U.S. society (O'Hare & Felt, 1991).

There is even less research exploring heterogeneity within Asian American populations. Explorations of variations within racial groups are beneficial because of their ability to reduce "a tendency to exaggerate racial differences" and to reveal "more about the full range of behaviors exemplified by members of racial groups" (Jones, 1991, p. 16). Sue (1991) contends that while between-group comparisons are needed in order to help understand the differences and similarities, or the "modal patterns" between groups, modal patterns should not be viewed as descriptive of a particular individual within a group. Studies of within-group differences are necessary as they provide further insight into the differences and similarities found within and between groups. Explorations of within group differences are of special importance for the study of Asian Americans because the term "Asian American" is a relatively recent development in history, and does not tend to mesh with specific cultural traditions or identities held among its

ethnic groups (Okazaki & Nagayama Hall, 2002). Furthermore, it is expected that as diversity increases in the U.S., within-group variation will become more dramatic than variation between groups (Tsai, Chentsova-Dutton & Wong, 2002).

Some research contrasting Asian Americans with members of other ethnic and racial groups has been conducted. For example, Tierney, Dahl and Chavez (1998) conducted a telephone survey of Los Angeles County residents to explore recreational use of undeveloped natural areas by African Americans, Latinos, Asians, and whites. Of the 894 respondents, 145 identified themselves as Asian. The Asian American respondents were somewhat less likely to visit undeveloped natural areas than were whites (33.8 versus 43.6 percent respectively), though both groups were more likely to visit these areas than were African Americans or Latinos (variation across the four groups was statistically significant). Overall, Asians' responses were quite similar to whites' responses, particularly in the perception of time constraints as a barrier to visitation, and the lack of perceived discrimination in recreational settings. Dwyer (1993) found that Asian Americans in Illinois were less likely to visit commercial recreation areas and to take overnight trips when compared to whites, though in his study, Asian Americans used state parks almost as much as whites and more than blacks or Hispanic Americans. In contrast, Gobster and Delgado (1993) reported that Asian American visitors to a city park in Chicago showed wide variation in frequency of park use, similar to blacks. Group sizes were significantly larger than for whites or other racial / ethnic groups, and Asians were more likely to visit parks with family members than were whites. These few studies suggest that there are distinctions between Asians and other racial / ethnic groups, including whites, in recreation related behaviors and preferences. However, relatively little is published regarding Asian Americans' recreational behaviors and preferences (Dwyer, 1993; Gramann, 1996).

Ho and colleagues (in review) examine gender and ethnic differences in urban park preferences, visitation, and perceived benefits. A sample of 1,570 residents, stratified by ethnicity and culture including white, African American, Hispanic, Korean, Chinese, and Japanese, from the greater Philadelphia and Atlanta regions were queried via mail questionnaires in the respondents' preferred language. Results of the study revealed that culture within Asian American groups (i.e., Korean, Chinese, and Japanese) played an important role in park users' preferences, type of visits, and perceptions of benefits involved in park visitation.

Explorations of variations within racial / ethnic subgroups have introduced an added complexity to the question of the influence of race and ethnicity on outdoor recreation behavior (Baas, Ewert & Chavez, 1993; Carr & Williams, 1993; Floyd & Gramann, 1993). Research on various ethnic and racial groups suggests that heterogeneity within groups is linked to a number of different sociodemographic characteristics, although results are mixed. For example, Hispanics of Mexican descent were distinct from those of Central American descent in their reasons for visiting a recreation

site (Carr & Williams, 1993). Chavez (1992) found that Hispanics' place of birth was also linked to importance of site characteristics (e.g., a desire for few rules and regulations).

In addition, in studies of Latinos, acculturation (measured in terms of linguistic use and preference) was found to be important in environmental respect (Carr & Williams, 1993) and length of residence in the United States versus age at entry was related to environmental attitudes (Caro & Ewert, 1995). Floyd and Gramman (1993) employed a different measure of acculturation, taking into account English comprehension, Spanish comprehension, and Spanish use (preferred language for home, radio, television, and newspapers and magazines). The number of recreational activities participated in was related to acculturation, such that the least acculturated Mexican Americans participated in the fewest activities and were most different from Anglos. Shaul and Gramann (1998) used the same measures as the 1993 Floyd and Gramann study for acculturation, and reported that Anglos and the most acculturated Hispanics rated family-related benefits of recreation comparably. .

Many studies focused on Asian Americans have considered them as homogenous in spite of substantial differences in language, education, culture, length of residence in the United States, and skill level (Borjas, 1995; White, Biddlecom & Guo, 1993). A few studies have focused on differences between Asian American cultural groups. For example, Korean immigrants to the U.S. have been found to be highly homogenous in class, occupation, and religious affiliation (Kim, 1981; Kim & Hurh, 1993). Chinese immigrants to the U.S., by contrast, have been found to be heterogeneous in class and regional and linguistic background (Zhou & Logan, 1991; Zhou, 1992). Some Asian groups (Chinese and Japanese) have a longer generational tenure in the United States when compared to more recent immigrants (Hmong, Vietnamese, Laotians, and Cambodians) (Reeves & Bennett, 2003). Tenure may, in turn, be affiliated with other variations within and between ethnic groups.

Differences within Asian American cultural groups have also been reported in the leisure and outdoor recreation literature. Tierney, Dahl and Chavez (1998) found significant differences among Asian American respondents based upon education, income, and U.S. citizenship. Specifically, Asian American respondents with higher education (attended graduate or professional school), higher incomes (annual household incomes of $50,000 or more), and U.S. citizenship were significantly more likely to visit natural areas than their counterparts. Gobster and Delgado (1993) also reported variation between Asian American cultural groups, such that Japanese respondents were the most distinctive Asian cultural group. This group used the park the most, lived the closest to the park, and was most likely to walk to the park. However, Filipino respondents were more likely to visit the park in large groups and come in organized groups. Some variation in outdoor recreation participation by gender has also been found among Chinese immigrant adolescents (Yu & Berryman, 1996).

The present study sought to add to the body of much-needed literature on variations among Asian American ethnic groups by examining outdoor recreation-related issues among Asian American San Francisco Bay Area residents. Sociodemographic characteristics, linguistic acculturation, participation in outdoor recreation, preferred attributes of natural resource settings, motivations to visit local parks, and perceived barriers to recreation were examined. Significant differences among the Asian American cultural groups on the aforementioned variables were hypothesized, consistent with a pattern of heterogeneity of Asian American cultural groups. Further, we sought to examine if those differences would be most significantly linked to ethnic group identification, or to other sociodemographic characteristics including gender, income, education, and linguistic acculturation.

Methods

Asian American residents from four major cultural groups (Chinese, Japanese, Korean, Filipino) in urban communities surrounding the Golden Gate National Recreation Area (GGNRA) in San Francisco were chosen as the focus of this study. The treatment of these four groups as distinct cultures is warranted, given their self-identified memberships in groups from specific countries of origin, with distinct languages, values, and norms equated with culture (Tsai et al., 2002). The GGNRA provides various recreational opportunities and is heavily used by San Francisco residents. The surrounding communities are ethnically and racially diverse, providing a suitable population from which to draw Asian American respondents. Additionally, the Bay Area is recognized for its significant ethnic and racial diversity (Allen & Turner, 1992; Struglia et. al, 2003).

Survey Instrument

A self-administered survey was constructed in English, then translated into Chinese, Japanese, and Korean, and subsequently back-translated into English for verification purposes. Translations were also checked during a pilot test with 10 participants from each ethnic group. Items frequently skipped or eliciting negative comments regarding clarity were eliminated or modified.

The instrument queried country of birth, ethnic identity, assimilation, importance of park attributes, motivations to visit natural areas, barriers to visiting the GGNRA, recreation participation, and typical sociodemographics.

Assimilation was measured in terms of linguistic acculturation (as assessed by Shaul & Gramann, 1998). Use of respondents' ethnic language versus English was assessed by asking respondents their preference for language spoken in the home and preferred language when watching television, listening to radio, and reading newspapers and magazines.

Participation in outdoor recreation was assessed via a listing of outdoor recreation activities (35 separate activities, Table 1). Respondents checked those activities they had participated in during the 12 months prior to survey completion, and number of activities was summed to create a diversity of recreation participation index.

Table 1
Participation in Outdoor Recreation Activities, Overall and by Ethnic Group

Activity	Overall	Chinese	Filipino	Japanese	Korean
	% Participation				
Go to park	61.0	68.2	51.5	66.9	61.2
Go to beach	54.6	52.2	55.0	53.7	57.6
Walk/trail hike	52.4	19.9	51.9	73.7	69.4
Picnic	48.4	24.4	64.5	56.6	43.5
Drive for pleasure	34.9	27.9	21.8	52.0	45.9
Jog/run	26.9	23.9	23.7	20.0	42.4
Swim in outdoor pool	19.4	13.4	21.4	17.1	25.9
Nature study/wildlife viewing	19.2	9.5	25.2	19.4	21.2
Camp at developed sites w/tent or vehicle	17.9	8.0	20.2	18.3	25.9
Bicycle	14.1	9.0	11.5	22.9	15.3
Basketball	13.5	8.0	18.7	9.1	16.5
Swim in lakes/rivers/ocean	12.3	5.0	8.0	26.3	12.9
Salt water fishing	11.6	6.0	14.5	11.4	14.1
Tennis	11.0	7.5	7.6	19.4	11.8
Camp at primitive areas/backpack	8.4	2.0	8.4	6.9	20.0
Golf	7.4	4.0	2.3	13.7	12.9
Downhill skiing	7.3	4.5	2.3	12.6	12.9
Freshwater fishing	7.2	3.5	12.6	3.4	7.1
Softball/baseball	5.9	1.0	6.9	5.7	10.6
Soccer	5.3	2.5	3.8	6.9	9.4
Skateboarding	5.3	3.5	6.9	8.0	2.4
Kayak/canoe/rowboat/rafting	5.1	4.5	3.1	13.7	0
Mountain biking	3.6	3.5	2.3	6.9	2.4
Mountain climbing	3.3	3.5	3.8	5.7	0
Target shooting	2.7				
Waterskiing	2.7	1.0	3.1	4.6	2.4
Football	2.6	2.5	3.1	0	4.7
Horseback riding	1.9	2.0	2.3	1.1	2.4
Powerboating	1.5	1.0	2.3	2.3	0
Cross-country skiing	1.2	1.0	1.5	2.3	0
Sailboating	1.0	0	3.1	0	0
Windsurfing	1.0	0	1.5	0	2.4
Hunting	.7	0	2.3	0	0
Surfing	.5	0	0	2.3	0
Snowmobiling	.2	0	.8	0	0

Importance of park attributes was assessed through 9 items, structured on a 5-point Likert-type format (1 = not at all important, 5 = extremely important). The items were analyzed using a Principal Components Factor Analysis. A two-factor solution was obtained and interpreted as *Basic Attributes* and *Ethnic Use Patterns*. Reliability of the nine items was acceptable for development of two scales (Table 2, *Basic Attributes* $\alpha = .77$ and *Ethnic Use Patterns* $\alpha = .83$). Items within each factor were averaged to create the scales.

Motivations for visiting natural areas were assessed in 11 items (for a discussion of experience preference scales as measures of motivation, and an analysis of similar as well as additional items, see Manfredo, Driver and Tarrant, 1996). Respondents were asked to indicate whether they agreed or disagreed with each statement on a 5-point Likert type format (1 = strongly disagree, 5 = strongly agree). The items were analyzed using a Principal Components Factor Analysis with Varimax rotation (Table 3). A three-factor solution was obtained, and interpreted as motivations focused on *Consumptive Uses*, *Nature*, and *Social Interactions*. Reliability of the

Table 2
Factor Analysis Solution (Principal Components) for Importance of Park Attributes

Attribute	Mean[1]	Factor 1[2] Basic attributes	Factor 2[3] Ethnic use patterns
Appearance and maintenance of area	4.20	**.64**	-.44
Nature/historical information	3.68	**.58**	<.01
Convenient location	3.95	**.59**	-.32
Safety and security of the area	4.43	**.67**	-.44
Availability of parking spaces	3.90	**.60**	-.15
Courteous and friendly staff/rangers	3.83	**.65**	.28
Clear directional signs	3.89	**.68**	<.01
Presence of people I know from same ethnic group	2.52	.48	**.74**
History of consistent use by my ethnic group	2.67	.48	**.73**

[1] Scale: 1=not at all important, 5=extremely important
[2] Basic attributes α = .77
[3] Ethnic use patterns α = .82
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .76
Bartlett Test of Sphericity = 1891.58, Significance = <.01

three motivational factors was acceptable (*Consumptive Uses* α = .85, *Nature* α = .76, and *Social Interactions* α = .65). Items within each factor were averaged to create scales.

The final scales examined constraints to recreation participation at the GGNRA, and were derived from a Principal Components Factor Analysis with Varimax Rotation based on 18 items (Table 4). The resulting scales measured constraints linked to *Discrimination, Information, Economics, Facilities,* and *Time.* The first factor was split into two for conceptual consistency. Each of the five scales had adequate alphas for scale development (*Discrimination* α = .85, *Information* α = .78, *Economic* α = .85, *Facilities* α = .86, and *Time* α = .84).

The remaining items assessed key sociodemographic variables including gender, education, income, country of birth, and generational status in the U.S.

Procedure

Several methods linked to Asian American community services and networks were used for distribution of the questionnaires. A combined approach using networks and community organizations was viewed as the most effective method for distribution to the ethnic groups selected. Going to community organizations and using established Asian American networks fits with a change in methodology suggested by Henderson (1998) for researching diverse populations. Asian Americans were reached through a variety of community programs and service centers, associations, and a local college. Each of these had a unique link to one of the ethnic groups

Table 3
Factor Analysis (Principal Components with Varimax Rotation)
for Motivations to Visit Natural Areas

Motivations	Mean[1]	Factor 1[2] Consumptive uses	Factor 2[3] Nature	Factor 3[4] Social interactions
I go fishing to catch something to eat	2.69	**.84**	<.01	<.01
When choosing to visit sites, I usually go places where I can harvest something such as ferns, mushrooms, watercress or other edible vegetables	2.50	**.88**	<.01	<.01
I like to visit places where I can bring something home	2.78	**.85**	<.01	.17
I like to feel close to the land	4.27	<.01	**.82**	<.01
I like to go places where I can gain a better appreciation of nature	4.23	.20	**.74**	.17
I like to visit places where I can see animals in their natural habitat	3.82	.26	**.53**	.25
I like to visit places where I can view beautiful scenery	4.48	<.01	**.58**	.40
I visit places where I enjoy the smells and sounds of nature	4.40	<.01	**.74**	.24
I like to go places where I can be with my friends	3.96	.18	.14	**.83**
I like to go places where I can meet new people	3.38	.45	.11	**.66**
I like to go places where I can do something with the family	4.17	<.01	.26	**.63**

[1] Scale: 1=strongly disagree, 5=strongly agree
[2] Consumptive uses α = .85
[3] Nature α = .76
[4] Social interactions α = .65
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .80
Barlett Test of Sphericity = 2806.63, Significance = <.01

Table 4
Factor Analysis (Principal Components with Varimax Rotation) for Constraints to Visiting the GGNRA

Constraints	Mean[1]	Factor 1[2] Discrimination/ Information	Factor 2[3] Economic	Factor 3[4] Facilities	Factor 4[5] Time
I feel uneasy or unwelcome at the GGNRA	2.22	**.82**	.12	.32	< .01
I feel discriminated against at the GGNRA	2.19	**.78**	.13	.35	< .01
I do not know anyone who has been to GGNRA	2.44	**.57**	.29	< .01	.41
I did not enjoy being at GGNRA in the past	2.33	**.57**	.25	.16	.33
It is difficult to find my own ethnic group at the GGNRA	2.60	**.58**	.24	.43	< .01
I don t know where to go at the GGNRA	2.98	**.66**	.15	< .01	.39
I don t know who to ask information about the GGNRA	3.15	**.55**	.27	< .01	.30
GGNRA is too far away from home	2.93	.25	**.70**	.12	.24
Cost of transportation to the GGNRA is too high	2.60	.26	**.78**	.16	.12
Cost of equipment for outdoor recreation is too high	2.99	.12	**.80**	.19	< .01
There is a lack of public transportation service to the GGNRA	3.01	.15	**.72**	.25	< .01
Admission fees and charges are too high at the GGNRA	2.93	.14	**.65**	.41	< .01
Facilities are overcrowded at the GGNRA	2.77	.17	.32	**.67**	.17
Facilities are inadequate at the GGNRA	2.85	.12	.21	**.82**	.20
Facilities are poorly maintained at the GGNRA	2.82	.21	.29	**.76**	.16
It is difficult to understand signs and regulations at the GGNRA	2.77	.30	.16	**.64**	.30
I am too busy with work	3.02	.16	< .01	.27	**.82**
I am too busy with my family	2.94	.18	.11	.30	**.78**

[1] Scale: 1=strongly disagree, 5=strongly agree
[2] Discrimination α = .85; Information α = .78
[3] Economic α = .85
[4] Facilities α = .86
[5] Time α = .84
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .89
Barlett Test of Sphericity = 6217.48, Significance = <.01

of interest. For example, the Chinese Progressive Association and the North Beach Community College were the organizations used to contact potential Chinese respondents.

The number of questionnaires distributed was based upon rough approximations of the number of various ethnic groups residing within the greater San Francisco Metropolitan area. Thus, the Chinese and Filipino groups each received 400 questionnaires while 300 questionnaires were distributed to Japanese, and Korean residents (Table 5). Questionnaires were distributed between August 10 and September 8, 1998 (n=1,400). A total of 808 usable surveys were received, representing an overall response rate of 57.7 percent.

Table 5
Distribution of Questionnaires and Response Rates among Ethnic Groups

Ethnic group	Questionnaires distributed	Questionnaires returned	Response rate (%)
Chinese	400	201	50
Filipino	400	262	66
Japanese	300	175	58
Korean	300	170	57
Total	1,400	808	

Respondents

Chinese, Filipino, Japanese, and Korean Bay Area residents participated in this study and differed significantly on several sociodemographic characteristics (Table 6). The majority of respondents was foreign-born (86.3%), though variations were significant by ethnic group (χ^2 (3, n=795) = 90.93, p< .01). More Japanese respondents were born in the United States (34%), than the Chinese (13%), Filipino (8%), or Korean (2%) respondents. The majority of the respondents were female (64%), though the proportion of male and female respondents also varied significantly by ethnic group, with a greater proportion of Japanese (75%) and Chinese (70%) female respondents, and lesser proportions of females among the Filipino (59%) and Korean (54%) respondents (χ^2 (3, n=765) =22.74, p< .01). A majority of the respondents had attended at least some college, with 60.5% reporting more than a high school education. Educational attainment varied significantly by ethnic group, with Japanese, Filipino and Korean respondents more likely to report a Bachelor's or other advanced degree compared to Chinese respondents (χ^2 (6, n=773) =128.76, p< .01). Total annual household income before taxes varied, with slightly less than

Table 6
Respondent Sociodemographics

Characteristic		Chinese (*n*=201)	Filipino (*n*=262)	Japanese (*n*=175) %	Korean (*n*=170)
Born in U.S. or other country	U.S. born	12.9	7.6	33.7	2.4
(missing = 1.6%)	Other country	83.6	92.4	62.9	97.6
Gender	Male	28.4	37.4	24.6	44.1
(missing = 5.3%)	Female	67.2	53.1	74.3	51.8
Education	High school or less	62.2	25.9	18.3	34.7
(missing = 4.3%)	Some college, AA or technical school	22.9	22.9	30.9	10.6
	BA or other advanced degree	11.4	44.7	50.9	48.2
Annual household income	< $10,000	31.8	28.6	10.3	10.6
(missing = 14.7%)	$10,000 to $19,999	26.4	11.8	13.7	11.8
	$20,000 to $49,999	15.9	27.9	36.6	31.2
	$50,000 or greater	13.9	11.8	29.1	31.8

one-fourth of the respondents reporting an income of $50,000 or greater per year. More Chinese and Filipino (one-third or more) respondents reported incomes of less than $10,000 per year than the other two groups (χ^2 (9, n=689) =98.88, p< .01).

Results

Linguistic Acculturation

Linguistic acculturation was examined through preferred language spoken in the home, when watching television, listening to the news, and reading newspapers or magazines. When examining all respondents as a group, more than half (56.6%) reported speaking their ethnic language only (37.4%) or mostly their ethnic language and some English (19.2%) at home (Table 7). English only, or mostly English, was indicated less often as the preferred language in the home (19.7%). About one-third (32.5%) preferred their ethnic language or mostly their ethnic language when watching television. Similarly, about one-third (33.8%) preferred their own ethnic language when listening to the news, or when reading newspapers and magazines (42.1%).

Linguistic acculturation was further examined by creating a scale, based on the average of the four language preference items (α = .89), and then regressing linguistic acculturation on ethnic group, education, age group and birthplace. A significant amount of the variance was explained (R^2 =.19), with birthplace, education, and ethnic group each contributing significantly to the equation (F(4, 741) =42.68 p < .01, Table 8). Birthplace contributed the most to the regression, followed by ethnic group and then education. To examine this further, an analysis of linguistic acculturation by ethnic group was conducted separately for those born in the United States, and those foreign-born. Comparatively few respondents were U.S. born, making the analysis of this group somewhat unreliable. However, among those who were foreign born, the proportion of respondents within each of the four groups that relied primarily on their own ethnic language in media and as primary language in the home varied significantly by ethnic group (χ^2 (6, n=678) =268.40, p< .01). Chinese respondents were most likely to prefer their own ethnic language (78.2%), compared to Koreans (47.6%), Japanese (20.0%), and Filipinos (6.3%). Japanese respondents were most likely to rely on a balance of English and their own ethnic language (52.7%), while Filipinos were most likely to rely on English (51.1%). Taken together these suggest variations in linguistic acculturation linked to ethnic group among the foreign-born respondents.

Outdoor Recreation Participation

Participation in outdoor recreation varied, ranging from no participation reported in any of the 34 listed activities in the prior 12 months, up to 21 separate activities (Table 1). Modal participation was two activities in the one-year period. The number of outdoor recreation activities engaged in varied significantly by ethnic group (F(3, 804) =14.18, p<.01). Sheffé's

Table 7
Linguistic Acculturation Levels Overall, and by Ethinic Group

Preferred language	Ethnic group	English only	Mostly English	English and ethnic equally	Mostly ethnic	Ethnic only
Spoken at home	All	13.0	6.7	22.8	19.2	37.4
	Chinese	6.0	6.0	8.9	23.4	54.2
	Filipino	13.4	3.8	39.3	18.3	23.3
	Japanese	28.0	14.3	17.7	16.0	24.0
	Korean	5.3	4.1	18.8	18.8	52.9
Watching television	All	29.5	11.1	25.9	11.5	21.0
	Chinese	13.9	6.5	13.4	22.4	42.3
	Filipino	46.6	11.8	30.2	3.0	6.5
	Japanese	28.6	14.3	41.7	8.0	7.4
	Korean	22.4	12.4	17.6	15.3	32.4
Listening to radio	All	37.8	11.4	16.0	8.2	25.6
	Chinese	17.9	4.0	8.0	18.4	50.2
	Filipino	56.9	13.4	21.0	.8	6.1
	Japanese	46.3	18.9	18.3	6.3	10.3
	Korean	23.5	9.4	15.3	9.4	42.4
Reading magazines/newspapers	All	27.5	6.6	22.5	9.8	32.3
	Chinese	12.9	3.0	5.0	12.9	64.7
	Filipino	47.3	12.2	28.2	2.3	7.6
	Japanese	29.1	5.1	34.9	13.1	16.6
	Korean	12.4	3.5	21.8	14.1	48.2

Table 8
Simultaneous Regression of Ethnic Group, Education, Age, and Birthplace on Linguistic Acculturation

Variables	Linguistic acculturation (DV)	Ethnic group	Education	Age	B	β	sr^2
Ethnic Group	-.15				-.12	-.16	.02
Education	-.30	.25			-.20	-.21	.04
Age	-.01	.01	-.02		<.01	<.01	<.01
Birthplace	.32	.18	-.15	-.04	.73	.32	.05

R^2 = .19, Adj. R^2 = .18, R = .43

contrasts revealed the least variety of activities reported by Chinese respondents (mean = 2.98), who were significantly different from the other three ethnic groups (means for Filipinos = 4.08, Japanese = 5.07, and Koreans = 5.14).

Outdoor recreational participation was further examined by regressing outdoor recreation participation on education, income, linguistic acculturation, ethnic group, and gender. A significant amount of the variance was explained (R^2 =.16), with income, education, gender, and linguistic acculturation each contributing significantly to the equation ($F(5, 658) = 25.5$ $p < .01$, Table 9). As income increased, so did the number of recreational activities engaged in ($F(3, 685) = 21.71$ $p < .01$). A similar effect was found for education ($F(2, 770) = 30.16$ $p<.01$). Those relying most heavily on their ethnic language (least acculturated) reported the lowest number of recreational activities ($F(2,797) = 19.42$ $p<.01$), and males reported more activities participated in than did females ($t(763) = 4.09$ $p<.01$).

Importance of Park Attributes

A between-subjects multivariate analysis of variance was performed on the two park attribute importance scales: *Basic Attributes* and *Ethnic Use Patterns*. The independent variables were income, education, linguistic acculturation, ethnic group, and gender.

SPSS GLM was used for the analysis, with 623 cases having sufficient data on the variables to be included. Using the Wilks' criterion, *Basic Attributes* and *Ethnic Use Patterns* were significantly affected by the interaction of the independent variables, and individually by ethnic group and income (Table 10). Level of income and importance of *Ethnic Use Patterns* were inversely related, such that those with higher incomes viewed use of others within their same ethnic group as least important. However, importance of *Basic Attributes* did not vary by income in a linear pattern. The individual importance of *Basic Attributes* was of greater importance for Chinese and Filipino respondents than for Korean or Japanese respondents and *Ethnic Use Patterns* were of greatest importance to Filipino, followed by Chinese respondents. This finding suggests cultural variations for importance of park attributes beyond those accounted for by the sociodemographic differences in each group.

Motivations to Visit Natural Areas

A between-subjects multivariate analysis of variance was also performed on the three motivations to visit natural areas scales: *Consumptive Uses, Nature,* and *Social Interactions.* The independent variables were income, education, linguistic acculturation, ethnic group, and gender.

SPSS GLM was used for the analysis, with 638 cases having sufficient data on the variables to be included. Using the Wilks' criterion, motivations to visit natural areas (*Consumptive Uses, Nature,* and *Social Interactions*) were significantly affected by the interaction of the independent variables, and individually by ethnic group, education, and gender (Table 11).

Table 9
Simultaneous Regression of Education, Income, Linguistic Acculturation, Ethnic Group and Gender on Outdoor Recreation Participation

Variables	Outdoor recreation participation (DV)	Education	Income	Linguistic acculturation	Ethnic group	B	β	sr^2
Education	.30					.71	.17	.02
Income	.27	.30				.64	.19	.03
Linguistic acculturation	-.21	-.33	-.16			-.52	-.12	.01
Ethnic group	.15	.25	.17	-.17		.13	.04	<.01
Gender	-.18	-.15	-.02	-.03	-.13	-1.14	-.15	.02

R^2 = .16, Adj. R^2 = .16, R = .40

Table 10
Multivariate Analysis of Variance of Importance of Basic Attributes and Ethnic Use Patterns

Source of variance	Wilks' Lamda	df_1	df_2	Multivariate F	p
Income	.91	6	900	6.88	<.01
Education	.99	4	900	.76	.55
Linguistic acculturation	.99	4	900	1.65	.16
Ethnic group	.86	6	900	11.89	<.01
Gender	.99	2	450	1.23	.29
Intercept	.04	2	450	5160.40	<.01

Table 11
Multivariate Analysis of Variance for Consumptive Uses, Nature, and Social Interaction Motivations to Visit Natural Areas

Source of variance	Wilks' Lamda	df_1	df_2	Multivariate F	p
Income	.98	9	1117.24	.88	.54
Education	.94	6	918	5.01	<.01
Linguistic acculturation	.98	6	918	1.37	.22
Ethnic group	.87	9	1117.24	7.25	<.01
Gender	.97	3	459	3.92	.01
Intercept	.03	3	459	5251.30	<.01

Consumptive Uses motivations were higher for male than female respondents. *Consumptive Uses* motivations were also highest among those with the lower levels of education, though respondents with a BA or other advanced degree shared the highest *Nature* based motives. Motives for *Social Interaction* did not vary significantly by education level. *Consumptive Uses* motives were higher among the Chinese and Filipino respondents, though *Consumptive Uses* motives were relatively low among all groups (not surpassing an average of 3.0 within each ethnic group). Chinese respondents had the highest *Nature* based motivation ratings, and shared higher ratings on the *Social Interaction* motivations with Filipino respondents.

Constraints to Visiting the GGNRA

A between-subjects multivariate analysis of variance was performed on the constraints to visiting GGNRA: *Discrimination, Information, Facilities, Economics,* and *Time*. The independent variables were income, education, linguistic acculturation, ethnic group, and gender.

SPSS GLM was used for the analysis, with 604 cases having sufficient data on the variables to be included. Using the Wilks' criterion, ratings of constraints related to *Discrimination, Information, Facilities, Economics,*

and *Time* were significantly affected by the interaction of the independent variables but no single variable independently (Table 12). Ratings of constraints were low on average.

Table 12
Multivariate Analysis of Variance of Constraints Linked to Discrimination, Information, Facilities, Economics, and Time

Source of variance	Wilks' Lamda	df_1	df_2	Multivariate F	p
Income	.95	15	1176.40	1.54	.08
Education	.98	10	852	.82	.61
Linguistic acculturation	.98	10	852	.75	.68
Ethnic group	.95	15	1176.40	1.43	.12
Gender	.98	5	426	1.39	.23
Intercept	.09	5	426	898.58	<.01

Discussion and Conclusion

While a major demographic shift is changing the social and economic fabric of the United States, surprisingly, there have been few systematic inquiries focused on Asian Americans' recreation and leisure behavior. There are even fewer which treat various Asian American cultural groups as distinct from each other, most often considering them as homogeneous. This study revealed important differences in recreation-related preferences and perceptions among various Asian American cultural groups residing in the San Francisco Bay Area.

Findings suggest that Asian Americans residing in the San Francisco Bay Area should not be viewed as homogeneous in terms of linguistic acculturation, level of recreational participation, park attributes that they deemed important, motivations to visit natural areas, or constraints to visiting parks. These differences were linked to ethnic identification, specifically cultural group, and in many cases sociodemographic variations among our respondents. Based on our findings and the few studies published to date exploring differences in outdoor recreation among Asian American cultural groups, we further suggest that Asian Americans, in general, should not be considered homogenous in terms of recreational behavior and preferences. It appears that a specific subculture among Koreans suggested by Kim and Hurh (1993) may be found in like-kind among Japanese, Chinese, and Filipinos within the United States, although degrees of variation within each of these groups requires further exploration (as suggested by the findings of Zhou & Logan, 1991). In some cases, sociodemographic variations were more telling than culture, but in other cases, cultural identity was more useful in predicting recreational patterns or preferences. This is not surprising given the differential variations in impacts of culture on aspects of life discussed by Tsai and colleagues (2002).

These findings may reflect segmented assimilation even among Asian American cultural groups (Floyd, 1999), or could be a reflection of our sample. Further work is needed with random samples to better understand these variations.

There are some limitations to these findings. Respondents were not randomly selected, but rather contacted through a variety of methods. They were from a specific geographic area and varied distinctly on key sociodemographic variables. While differences were found among our respondents from four Asian American cultural groups regarding linguistic acculturation, recreational participation, importance of park attributes, motivations to visit natural areas, and constraints to visitation at the GGNRA, further investigation is warranted. Given the limited number of studies on Asian Americans and recreation behaviors and preferences, as well as the limited sample, studies conducted with random samples in broader geographic areas, querying visitation to other parks and recreation areas, are warranted. As an exploratory study, however, the differences among the Asian American cultural groups are noteworthy and suggest that Asian Americans should not be considered homogenous. Some of these differences may be imbedded in sociodemographic variation, while others are linked specifically to culture.

Implications for Outdoor Recreation Management

The results of this study offer insights into current issues in public policy and provide useful implications for outdoor recreation management and planning. To the extent that the tremendous volume of Asian Americans is regionally concentrated in some areas, especially in California, recreation service providers in those areas need to focus on developing and accommodating services for Asian American populations. Differences in motivations for use of natural areas suggests that there are cultural variations that will require attention in service delivery. Based on our data, it cannot be assumed that all Asian Americans share an interest in consumptive uses of areas for instance. Providing for various opportunities should take into consideration cultural variations, including those within and between ethnic groups.

It appears that communications should include using ethnic media, and written materials in various Asian ethnic languages. This study suggests that a substantial proportion of Asian Americans rely on their own ethnic media for news and information. It should be noted that the majority of respondents in our study were foreign born, and the low number of U.S. born respondents made comparisons between these two groups difficult. Awareness of geographic concentrations of ethnically diverse groups, and proportions of those born in the U.S. and other countries, is useful in tailoring communication efforts. This type of information is available from the Census Bureau and other regional sources.

As Asian Americans increase substantially as a portion of the population, it becomes increasingly important to understand their recreational

behaviors and preferences, as well as to effectively communicate opportunities to them. Understanding the unique cultural variations among ethnic groups will facilitate serving them as customers of parks and natural resource area agencies.

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