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Recreation Visitor Research: Studies of Diversity

Editors

Deborah J. Chavez is a supervisory social scientist, and **Patricia L. Winter** and **James D. Absher** are research social scientists, Pacific Southwest Research Station, Wildland Recreation and Urban Cultures research unit, 4955 Canyon Crest Drive, Riverside, CA 92507-6099; e-mail: dchavez @fs.fed.us; pwinter@fs.fed.us; jabsher@fs.fed.us.

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Abstract

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In 1987, the Pacific Southwest Research Station (PSW) of the U.S. Department of Agriculture Forest Service (USFS) chartered a research work unit to examine outdoor recreation in the wildland-urban interface. The new work unit was established to address the needs of the increasingly diverse recreation visitors to national forests. The four forest supervisors in southern California observed that in the past, most recreation visitors were White.[1] However, that percentage was changing with an increase in diverse visitors. In particular, they noted the increasing numbers of Latino visitors. They also observed that the diverse visitors were recreating in different ways compared to White visitors. The supervisors expressed concern that the needs of the diverse visitors may not be being met because the sites were often developed with White visitors in mind, and thought it was beneficial for PSW to provide scientific information about the diverse outdoor recreation visitors who were using USFS lands for outdoor recreation. The research work unit has emphasized applied research in response.

We report 16 studies grouped into six major topical headings: international studies, syntheses of studies, management studies, environmental belief studies, communication studies, and measurement studies.

Keywords: Recreation, diversity, forest visitors, forest users, wildland-urban interface.

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[1] Please note that throughout this document we will use a variety of terminology when discussing racial and ethnic groups. We often use the term "White," for example in place of Caucasian or European-American and other terms. We often use the term "Latino" in place of Hispanic, Chicano, Mexican American, Central American, etc. We sometimes use the term "Hispanic." We use African American in place of Black. We understand that people have strong preferences for a particular term, and do not wish to offend any reader with our choices.

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Section I

Chapter 1: Introduction

Deborah J. Chavez, Patricia L. Winter, and James D. Absher

In 1987, the Pacific Southwest Research Station (PSW) of the U.S. Department of Agriculture, Forest Service (USFS), chartered a research work unit to examine outdoor recreation in the wildland-urban interface. The need for the work unit was identified by the four forest supervisors in southern California, from the Angeles National Forest, the Cleveland National Forest, the Los Padres National Forest, and the San Bernardino National Forest. Supervisors wanted scientific information about the diverse outdoor recreation visitors who were using USFS lands for outdoor recreation. They noted that in the past, most recreation visitors were White, but that the percentage was changing with an increase in diverse visitors. In particular, they noted the increasing numbers of Latino or Hispanic visitors and that they recreated in different ways compared to White visitors. For example, for outdoor picnics, Latinos would come early in the day and stay all day, often making foods from scratch on site. In comparison, White recreation visitors would stay for only a few hours and bring foods made at home. The supervisors expressed concern that the needs of the diverse visitors may not be being met because the sites were often developed with White visitors in mind. For example, Latinos were coming in larger groups than could be accommodated with solitary picnic tables, so site designs did not fit their patterns of use. The supervisors requested scientific information that would help them better serve those diverse visitors. The research work unit has emphasized applied research as a response.

In 2001, Chavez authored a general technical report (PSW-GTR-180) on managing outdoor recreation in California, focusing on studies of visitors from 1989 through 1998. The current document presents a compilation of studies that have occurred since the Chavez 2001 paper. Several differences exist between the 2001 paper and this general technical report (GTR). First, many of the studies reported here are outside California (they include studies in Oregon, Minnesota, Illinois), and several studies are international. Next, some articles in this GTR include general population studies, whereas Chavez 2001 focused on visitors to public forest and desert lands. Another difference between the GTRs is that the Chavez 2001 GTR is a synthesis of different topics included in several studies, whereas here we report on several individual papers, including a few synthesis papers. There are also some similarities—both GTRs have an emphasis on diverse visitors and both emphasize the applied nature of the studies. Our hope is that this document continues to fulfill the needs of the supervisors in southern California as well as other managers in need of information about diverse recreation visitor groups.

The 16 papers included in this GTR were grouped into six major topical headings: international studies, syntheses of studies, management studies, environmental belief studies, communication studies, and measurement studies.

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International Studies

The three papers in this section cover the following topics:

- The dual role of local residents in the management of natural protected areas in Mexico. Local residents play an important role in the management of protected areas because they represent potential users of these areas, they receive the benefits or costs of developing nature-based recreation in these areas, and they are the group most closely interested in the management of these areas.
- The use of the Recreation Opportunity Spectrum (ROS) framework for managing recreation opportunities at two protected natural areas in Mexico. The ROS criteria and standards used to inventory and describe outdoor recreation opportunities in these two areas had to be adapted for local conditions; nonetheless, the ROS framework performed well.
- Results from constraints to leisure travel and visitation to natural area studies conducted in Mexico, and also, Scotland, Spain, and the United States. The article points out how cultural values produced significant differences on visitation constraints and use of undeveloped natural areas.

Syntheses of Studies

Three papers in this section cover the following topics:

- A synthesis of materials from 17 research projects provides insight into serving Latino recreation visitors to urban proximate outdoor recreation areas. Suggestions to serve Latino outdoor recreation visitors were offered in communications, development of recreation sites, use of partnerships and cooperation, and provision of employment opportunities.
- A synthesis of visitor participation patterns, visitor preferences, and the perceptions of visitors based on data collected over time in southern California at day use outdoor recreation sites.
- An assessment of research trends and five research gaps in studies related to race, ethnicity, recreation, and leisure.

Management Studies: Programs/Outreach/Employment

The five papers in this section cover the following topics:

- Management assumptions and program realities for fern gathering on the San Bernardino National Forest, focusing on biological and sociological factors.

- Southwesterners' views of threatened and endangered species management, which examined whether trust, or the willingness to rely upon others to make decisions or take actions on others' behalf, was influenced by racial/ethnic diversity or gender.

- Physical activity among Latino and non-Latino White visitors in California, Illinois, and Minnesota. The differences found between the two racial and ethnic groups suggested both management challenges and opportunities.

- Results of focus group interviews with racial and ethnic group members in Oregon. The focus group interviews were designed to determine perceptions about what recreation activities, services, facilities, and experiences were thought to be appropriate at various public locations in Oregon.

- Perceptions of agriculture and natural resources careers among minority students from a national organization. The perceptions and attitudes reported by students who chose a career in agriculture and natural resources were focused around the themes of career opportunities, positive educational experiences, and internship/job experiences with agencies and organizations.

Environmental Belief Studies

The two papers in this section cover the following topics:

- Perceptions of Latino outdoor recreation visitors about ecosystem services. These visitors strongly agreed with the importance of managing natural areas for both cultural (such as outdoor recreation locations) and regulating (such as protecting water quality) ecosystem services.

- Wilderness and day use recreationists' preferences for natural resource management and their perceptions of purposes for management using an Environmental Identity Salience scale, which indicate that management of recreation opportunities can include considerations of sustainability.

Communication Studies

The two papers in this section cover the following topics:

- Lessons for outreach based on a needs analysis conducted among residents of Los Angeles County. The findings suggest that ethnic media may be one form of contact to utilize, and the data suggest the use of print media and getting the word out through community contacts.
- Routes to communication about outdoor recreation with diverse publics, including a discussion of the value of ethnic media, the potential utility of community networks (such as churches), and the use of the Internet.

Measurement Studies

The one paper in this section covers the following topic:

An approach to measuring cultural diversity in recreation. Measuring cultural diversity in recreation is an important topic because of the increasing coverage of and interest in ethnicity and cross-cultural aspects of recreation. Cultural consensus analysis is suggested to estimate the level of within-group agreement, and approaches to measuring between-group differences are described.

Literature Cited

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Section II:
International Studies

Chapter 2: The Dual Role of Local Residents in the Management of Natural Protected Areas in Mexico

Gustavo Perez-Verdin,[1] Martha E. Lee,[2] and Deborah J. Chavez[3]

Abstract

In many developing countries, local residents play an important role in the management of protected areas because they represent potential users of natural protected areas (NPA) resources, they receive the benefits (or costs) of developing nature-based recreation, and they are the group most closely interested in the management of an area located near them. In this study, we evaluated the perceptions of local residents toward developing nature-based recreation programs in a protected area in northern Mexico. Personal interviews in three cities were used to assess barriers to recreation participation and the potential impacts that additional recreation programs could bring to the area. We found that residents identified lack of money, lack of time, lack of knowledge, and no interest as the main barriers to participation in nature-based recreation opportunities. No consensus was found among the three communities with regard to recreation impacts. Two communities agreed that recreation can be beneficial, whereas the third community believed that it can bring negative impacts. If more recreation were to develop in this NPA, resource managers would have to consider all residents' perceptions to plan for effective management strategies.

Keywords: Natural protected areas, marginality theory, Michilía Biosphere Reserve, recreation impacts, residents' perceptions.

We evaluated the perceptions of local residents toward developing nature-based recreation programs in a protected area in northern Mexico.

Introduction

Natural protected areas (NPAs) have been recognized worldwide because of their role in conservation strategies and their historical, intrinsic relationship with humans. People protect areas for spiritual reasons, resource or species management, or for the sustainable use of natural resources (Chape et al. 2005). An NPA is a human response to perceived threats to nature and, further, the type

[1] Assistant professor, Department of Forestry, Mississippi State University, Box 9681, Starkville, MS 39762, e-mail: gperez@cfr.msstate.edu.

[2] Professor, School of Forestry, Northern Arizona University, Box 15018, Flagstaff, AZ 86011, e-mail: Martha.Lee@nau.edu.

[3] Supervisory social scientist, USDA Forest Service, Pacific Southwest Research Station, 4955 Canyon Crest Drive, Riverside, CA 92507, e-mail: dchavez@fs.fed.us.

and characteristics of the protected area are determined by the current generation's values (McNeely 1997). For example, Yellowstone National Park established in 1872 and considered one of the first protected areas in the modern era, was created as a result of society's increasing needs for wildland recreation uses and wildlife protection (Haines 1974). The Yellowstone National Park concept as an NPA eventually sparked the creation of more protected areas to address specific concerns within the United States and transcended to other parts of the world. These include Canada (Banff), Mexico (El Chico), New Zealand (Tongariro), and Switzerland (Swiss National Park), among others (Mulongoy and Chape 2004). Today, there are more than 100,000 NPAs registered in the World Database on Protected Areas, covering almost 12 percent of Earth's land area (Chape et al. 2005).

Although the concept of NPAs implies different land uses for various objectives, depending in part on a country's legislative regime (Chape et al. 2005), the majority of these areas have similar objectives with regard to wilderness protection, preservation of species, maintenance of environmental services, tourism and recreation, scientific research, and education (Mulongoy and Chape 2004). Tourism and recreation have recently seen tremendous increases because of the growing number of visits and the economic impacts visitors bring to the regional economy of many countries (Barkin 2000). The economic value of ecotourism in Canada and the United States in 1996, for example, was estimated to be worth between $237 and $370 billion (Mulongoy and Chape 2004). Likewise, visits to the Monarch butterfly (*Danaus plexippus*) sanctuary in central Mexico greatly increased from about 25,000 people in 1986 to some 250,000 in 1999 (Barkin 2000). Ideal goals of ecotourism are to simultaneously pursue environmental conservation, benefits to local communities, and sustain profitable business (Jones 2005).

In many developing countries, NPAs are created in areas removed from mainstream development. As soon as an NPA is established, an exchange process between protected resources and humans begins, making the linkage between nature conservation and economic development especially challenging. Local residents respond to that process by giving support to its establishment to the extent that such areas continue to provide benefits to them, especially in the form of continued resource availability (Mulongoy and Chape 2004). Visitors in turn are compensated by the quality of services found and the level of accomplishment of their personal goals. This exchange process has been the topic of many studies in areas such as tourism, ecotourism, and recreation (Bryant and Napier 1981; Madrigal 1993, 1995; Perdue et al. 1987, 1990; Teye et al. 2002).

Conceptual frameworks to explain residents' perceptions toward nature-based recreation include social exchange theory (Bryant and Napier 1981). This theory explains the relationship between individual benefits and perceptions of economic development (Perdue et al. 1987, 1990). The theory specifies that local residents seek benefits in exchange for something estimated as equal to the benefits they offer in return, such as resources provided to tourism developers, tour operators, and visitors (Perdue et al. 1990). Residents offer support for appropriate development, hospitability, and tolerance for inconveniences created by recreation such as pollution, littering, and queuing for services (Teye et al. 2002). If a resident perceives environmental impacts, threats to their cultural status, or anticipate no economic development, the resident will be more likely to oppose a program intended to develop recreation. One way to identify potential impacts of recreation development is by assessing local residents' perceptions. Typically, support for additional recreation development is classified into positive or negative impacts and residents are asked to rate specific variables in each category (Madrigal 1993, 1995; Perdue et al. 1987, 1990).

Although the majority of studies on residents' perceptions about nature-based recreation treat locals as hosts (e.g., Avila-Foucat 2002; Barkin 2000; Pearce 1980; Walker 1996, 1997), few studies have analyzed their role as potential users of NPA's resources. In the absence of available recreation areas, some residents can become active users and still maintain their host status as exchangers for recreational programs. However, the use of recreation areas is restricted as a function of various socioeconomic, demographic, and cultural barriers (Floyd 1998, Johnson et al. 1997). The emphasis on local participation in NPA development implies that host members are often excluded from not only planning, but decisionmaking and management of programs (Teye et al. 2002). The exclusion of locals in NPA management is a common practice in developing countries with a top-down decisionmaking culture.

Some residents can become active users and still maintain their host status as exchangers for recreational programs.

In this paper, we evaluate the dual role of local residents toward recreation in an NPA in northern Mexico. These roles have been identified as potential users of recreation resources and hosts of outside visitors. In the first case, we examine a social theory that explains limitations to participation in nature-based recreation programs and discuss the differences among residents of three nearby cities. In the second case, we use local residents' perceptions to identify positive and negative impacts for potential recreation development. We begin this paper by providing background on the marginality theory and the system of NPAs in Mexico.

Marginality Theory

Several social theories have been developed to analyze the lack of participation in outdoor recreation opportunities in the United States (Johnson et al. 1997). Marginality theory, for example, suggests that differences in leisure participation are a function of poverty or discrimination as reflected in fewer available recreation opportunities, lack of access to transportation, underdeveloped program availability, and lack of information about facilities (Chavez 2000; Johnson et al. 1997, 1998). Other social theories include ethnicity, perceived discrimination, and opportunity (Johnson et al. 1998, Manning 1999). In Mexico, few studies have been conducted to evaluate the factors that keep people from visiting recreation areas. We focused on the marginality theory only because of the presence of a single dominant ethnic group and the existence of well-identified socioeconomic classes. We assumed that the marginality theory could have some effect on recreation participation among residents of Durango, similar to that of Latinos in the Southwestern United States (Chavez 2002, Floyd 1998, Floyd et al. 1993, Tierney et al. 1998). This observational reasoning came from the various similarities between these populations in terms of customs and values (Ai-Camp 2003).

As active users of recreation resources, residents face various limitations, which can reduce their participation in nature-based recreation opportunities. They can be restricted by money, resource accessibility, lack of knowledge of NPA resources, and lack of time, among other factors.

The Natural Protected Areas System in Mexico

According to the National Commission on Natural Protected Areas (or CONANP, its Spanish acronym), there are 159 protected areas in the Mexican system of NPAs. These include 67 national parks, 36 biosphere reserves, 29 wildlife areas, 17 sanctuaries, and 10 national monuments. They cover approximately 22.3 million hectares (11.3 percent of the country's total area) of which about 11 million hectares are biosphere reserves making them the biggest contributor to the protected area system (CONANP, accessible at http://www.conanp.gob.mx/anp/anp.php).

Owing to the unique land tenure system in Mexico where the majority of forest lands belong to local communities in the form of common properties (ejidos[4]), nature-based recreation is more likely to occur in NPAs, especially in national parks and biosphere reserves. Although more ejidos and other private properties have started community enterprises for ecotourism development, particularly in

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[4]An ejido/comunidad is an expanse of land, title to which resides in a community of beneficiaries of the agrarian reform. In the majority of ejidos the property is collectively owned, and some lands (woodlands, pastures) are for collective use.

tropical areas, the supply of recreation areas is still not enough to satisfy a growing demand for nature-based recreation opportunities. In addition, the cost for visiting community-developed recreation areas is regulated by market and seasonal changes as opposed to the reduced fee (or sometimes free access) to public NPA areas.

Although there are no area restrictions in using national parks for recreation, biosphere reserves have barriers to unlimited access (Borrini 1996). A typical biosphere reserve contains a secure central core area designed strictly for nature preservation, a surrounding buffer area in which relatively nondestructive multiple uses may occur, and an outermost transition area that allows greater human participation (Baker 1994). It is in the buffer and transition areas of reserves where properly managed ecotourism can bring considerable income to locals without threatening the natural resource base (Kaus 1993, Mulongoy and Chape 2004).

Although participation in nature-based recreation opportunities has increased in recent years, a considerable portion of Mexican society still faces many restrictions, mostly economic, to visitation. Cothran and Cothran (1998) suggested that nature-based recreation is still exclusive for the middle and upper socioeconomic classes, leaving city parks and other outdoor attractions to the low socioeconomic class. The fact that NPAs are located in remote areas, coupled with little knowledge of NPA resources, have resulted in few visitors to the areas. Not surprisingly, city parks and other town attractions report overcrowding, especially on the weekends.

It is in the buffer and transition areas of reserves where properly managed ecotourism can bring considerable income to locals without threatening the natural resource base.

Methods

The Michilía Biosphere Reserve (MBR), one of the two biosphere reserves in the state of Durango, was examined in this research. The MBR receives more than a thousand visitors per year mostly from in-state cities such as Durango City, Súchil, El Mezquital, and Vicente Guerrero, but others travel from distant areas like Mexico City, Monterrey, and Torreón. Currently, resource managers are developing a comprehensive management plan for the reserve in which nature-based recreation programs are considered to promote a sense of conservation and environmental education among local residents and visitors. Our study focused on this area because of its potential to provide recreation opportunities, its low popularity, and its developing facilities. To learn residents' perceptions, we conducted personal interviews in the cities of Durango, El Mezquital, and Súchil in 2002. The sample sizes for each city were Durango 105, El Mezquital 96, and Súchil 95 (fig. 2-1). More on the characteristics of the study area can be found in Perez-Verdin (2003).

The survey instrument consisted primarily of closed-ended questions asking individuals to identify barriers to recreation participation and indicate their level of agreement with perceived recreation impacts. Response categories included 7-point
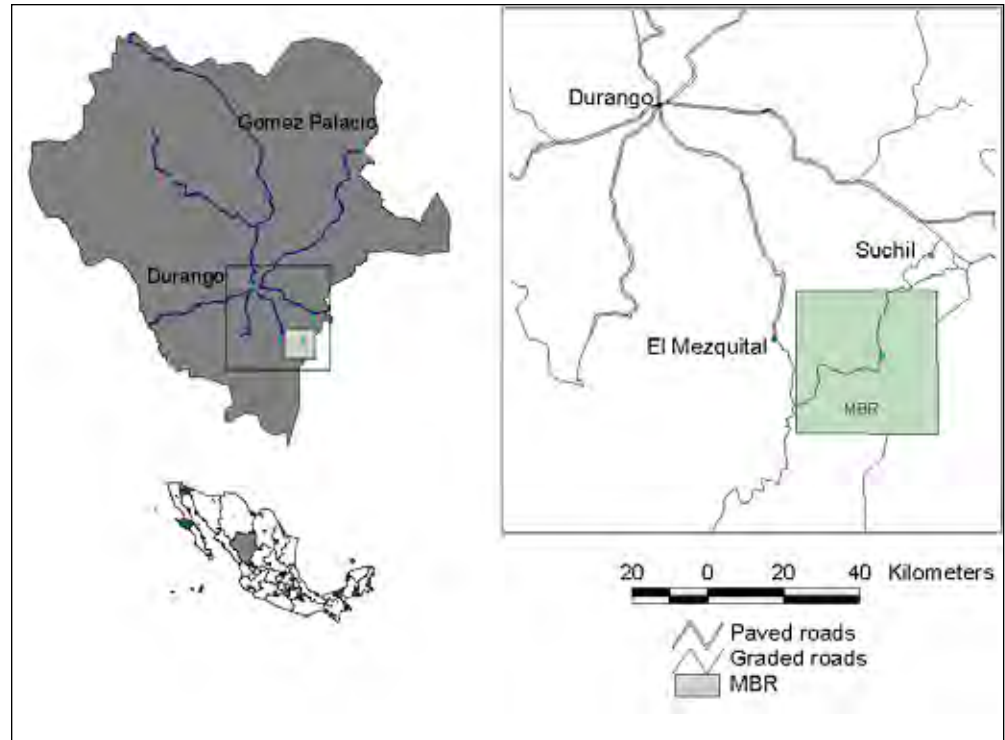
Figure 2-1—Michilía Biosphere Reserve (MBR) and the communities involved in the study of local residents' perceptions in Durango, Mexico. The communities are Durango, El Mezquital, and Súchil.

scales with endpoints labeled -3 (either very unimportant, or strongly disagree) and +3 (either very important, or strongly agree). Other questions required dichotomous answers ("yes/no") or open-ended responses such as basic demographic data. Consistent with the marginality theory (Johnson et al. 1997), barriers to visitation included lack of money, lack of time, lack of knowledge, and no interest in recreation participation among others. Other nonmarginality factors included discomfort in MBR settings, feeling unsafe in the area, and the weather. The perceived impacts were classified into positive and negative impacts. The negative impacts group included higher risk of wildfires, ecological impacts to flora and fauna, loss of cultural values, change in customs, and overcrowding by visitors. The positive impacts groups consisted of creation of new facilities, increase in investments, increase in labor supply, and increase in the standard of living (Perez-Verdin et al. 2004). Cross tabulations, one-way analysis of variance, and discriminant function analysis were the statistical tools most used to differentiate residents' perceptions.

Results

In general, most of the interviewees (79 percent) had visited forest lands, but only 31 percent had visited MBR. In these visits, survey respondents tended to participate in large groups (average nine people per visit; no significant difference was found among the three cities), and 68 percent of residents spent fewer than 2 days per visit. The city of Durango reported the highest percentage of non visitors (84 percent), compared to El Mezquital (60 percent), and Súchil (47 percent).

Marginality Theory Effects

A majority of respondents reported lack of time (65 percent) as the main reason for not visiting MBR.[5] Lack of knowledge (63 percent), family and friends not liking this type of recreation (43 percent), lack of money (42 percent), and lack of interest (37 percent) were other reasons respondents provided for their relatively few visits to MBR. Nonetheless, when asked the question "If the reason you expressed as the most important could be changed, would you consider visiting the MBR in the future?" 90 percent of the respondents answered "yes."

Residents of El Mezquital and Súchil were more likely than Durango residents to report being constrained by lack of money and lack of interest (fig. 2-2). Lack of time and lack of knowledge did not show significant differences among the cities. The results agreed somewhat with the socioeconomic profiles of the cities: Durango

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[5] This number is fairly analogous to the 77 percent of Latino-Americans who indicated the same variable as the main participation barrier in the United States (Cordell et al. 1999).
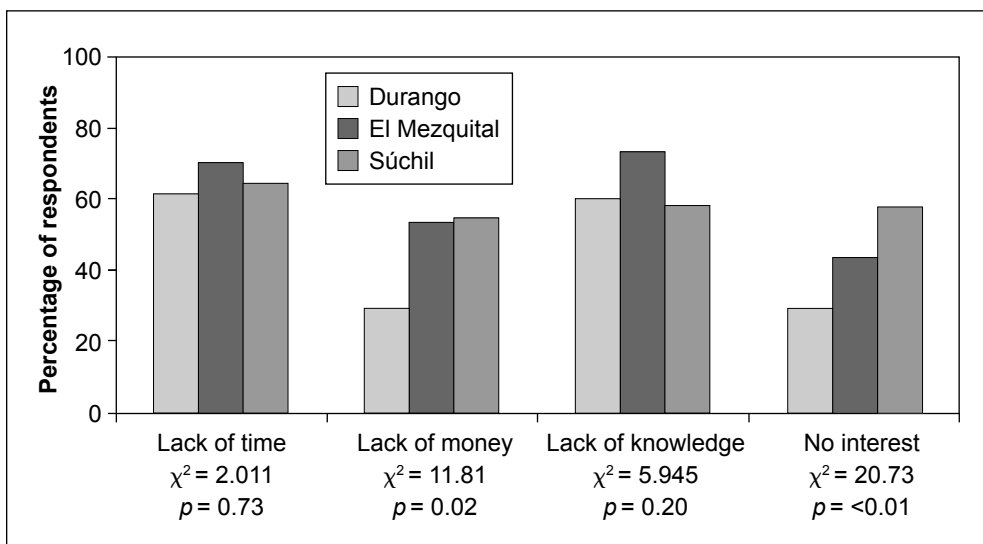
Figure 2-2—Cross tabulations of reasons that keep people from visiting the Michilía Biosphere Reserve in Durango, Mexico.

residents had the highest economic status and the highest level of education, thus marginality issues were less important than for the other two cities involved in the study. Cross tabulations showed that all marginality factors together accounted for 88 percent of responses, whereas nonmarginality factors accounted for 12 percent (χ^2 = 13.34, p < 0.01).

Perceived Impacts of Nature-Based Recreation Programs

A one-way ANOVA was conducted to test for differences in the perceived impacts among the three cities. Six of the nine impacts, including all items within the negative impacts group plus an increase in labor supply, reported significant differences among the communities (fig. 2-3). A discriminant function analysis was performed to identify the relative weights of each recreation impact and differentiate residents' perceptions. The nine recreation impact variables were entered as independent variables with residency membership as the grouping variable. The first discriminant function (λ = 0.61, χ^2 = 129.1, $p < 0.001$) accounted for 96 percent of the total variance and correlated most highly with the negative impacts groups, which include higher risk of wildfires (0.65), loss of cultural values (0.54), overcrowding by visitors (0.49), change of customs (0.27), and ecological impacts to fauna and flora (0.19). The correlation coefficients for the
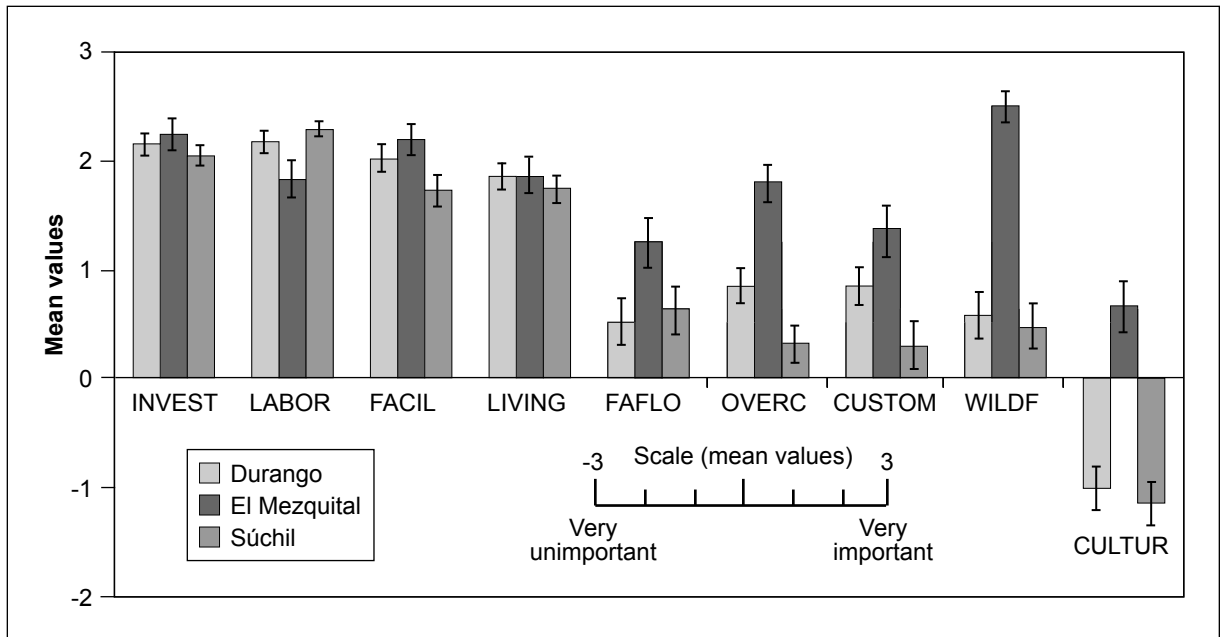
Figure 2-3—Perceived impacts of developing outdoor recreation programs in the Michilía Biosphere Reserve. The positive impacts included increase in investments (INVEST), increase in labor supply (LABOR), creation of new facilities (FACIL), and increase in the standard of living (LIVING). The negative impacts included ecological impacts to fauna and flora (FAFLO), overcrowding by visitors (OVERC), change in customs (CUSTOM), higher risk of wildfires (WILDF), and loss of cultural values (CULTUR).

positive impacts were increase in labor supply (-0.21), creation of new facilities (0.15), increase in investments (0.08), and increase in standard of living (0.03). Analysis of group centroids clearly identified that El Mezquital residents had higher scores on the discriminant function than the Durango and Súchil residents. The functions at group centroids were Durango -0.38, El Mezquital 1.06, and Súchil -0.72 (fig. 2-4). If a person had strong negative perceptions toward the development of outdoor recreation programs, she or he was more likely to be identified as an El Mezquital resident.

Excluding increase in labor supply, El Mezquital residents agreed that recreation is beneficial in terms of providing greater investments in the region, more facilities, and an increase in living standards. However, they were concerned about the potential negative impacts of recreation such as the risk of wildfires and loss of traditional, cultural values. In 1998, a forest fire burned several hectares in the MBR and killed one firefighter near El Mezquital. It is not clear what caused this wildfire, but apparently visitors did not completely extinguish a campfire. Events like this could have influenced residents' perceptions on nature-based recreation impacts, particularly the risk of wildfires. We also attributed the score differences of El Mezquital residents in part to the physical and social conditions of this community. El Mezquital is isolated from other towns or communities and is home to Tepehuanos, one of the most important indigenous groups in Durango. More than 90 percent of the El Mezquital residents have been in a forest land and have
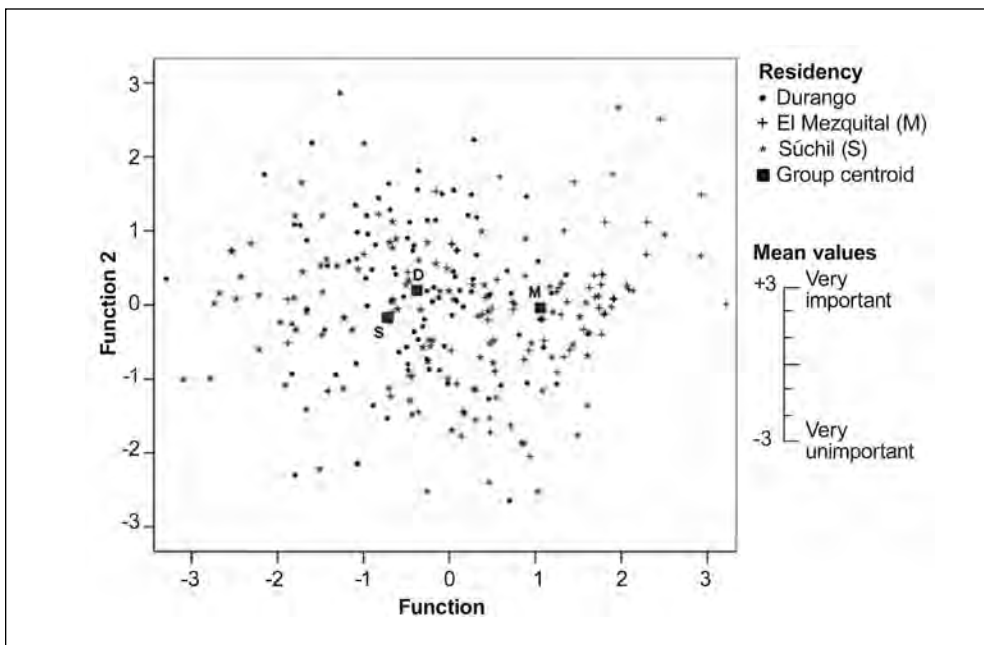
Figure 2-4—Discriminant function analysis of the perceived impacts by local residents in Durango, Mexico. Function 1 accounted for 96 percent of the total explained variance and is the reference axis.

perceived threats to natural resources. For example, we found a slight negative correlation ($r = -.20$, $p < 0.05$) between visitors to forest lands and perceived risk of wildfires. Visitors were more concerned about the potential increase of wildfires than nonvisitors. In sum, it appeared that El Mezquital residents' perceptions reflected past experiences when rating the importance of the perceived impacts of recreation in MBR.

Conclusions

This research contributes to an understanding of the dual role of local residents in managing NPAs. Residents can be active users of recreation areas and at the same time hosts of outside visitors and judgers of potential impacts from developing recreational programs. The case study presented here provides support for the marginality theory in understanding factors that influence recreation participation. Residents reported lack of money, time, knowledge, and interest as the main barriers to participation in nature-based recreation opportunities in the area. However, there is significant latent demand for MBR visitation in the three cities. Nearly 90 percent of the survey respondents would consider visiting MBR if their main reason for not visiting could be changed in the future, which means that if outdoor recreation programs are developed in the MBR, resource managers should consider strategies to overcome these marginality-related barriers. These strategies could include alternative transportation, improving existing roads, and providing more facilities in the area, particularly for large groups.

We also found that recreational development is positively supported by two of the three communities involved in this study. El Mezquital residents, the differing community, perceived that more recreation could bring potential negative impacts such as higher risk of wildfires, loss of traditional cultural values, change in customs, and overcrowding. The cultural richness of El Mezquital is based in part on the ethnic diversity and on the traditional ways values and customs are kept. Having more people visit the MBR may result in locals breaking traditional rules by working through the weekends (typically the days with most visitation), and employing women, which may affect family unity and community cohesiveness. El Mezquital residents agreed that recreation could bring more employment to the region, but this agreement was not as strong as in the other two communities. If more commercial recreation were to develop in MBR, resource managers would have to consider all residents' perceptions to arrive at successful management strategies.

The case study presented here provides support for the marginality theory in understanding factors that influence recreation participation. Residents reported lack of money, time, knowledge, and interest as the main barriers to participation in nature-based recreation opportunities in the area.

The implications of these findings are particularly relevant for NPA managers who have to recognize and accept the delicate role of local residents in the management of protected areas. The results from residents' perceptions may indicate whether people associate relevant social problems with managing natural resources. Negative perceptions and potential conflicts could indicate the urgency for political arbitration and possible interventions, whereas positive perceptions could be interpreted as public policies finding acceptance and satisfaction. These results can be helpful to integrating the opinions and demands of all stakeholders into political planning and decisionmaking processes of MBR resources. However, we recommend more studies of the relationships among recreation participation, land conservation, and economic development of rural communities interacting with NPAs.

Acknowledgments

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Chapter 3: Use of the Recreation Opportunity Spectrum in Natural Protected Area Planning and Management

Gustavo Perez-Verdin,[1] Martha E. Lee,[2] and Deborah J. Chavez[3]

Abstract

The use of the Recreation Opportunity Spectrum (ROS) framework, widely used in planning and managing wildland recreation in the United States, was tested for managing recreation opportunities in southern Durango, Mexico. Two natural protected areas were used as case studies to evaluate the ROS criteria and standards for land classification of outdoor recreation opportunities. Personal interviews were used to learn visitors' characteristics and the recreation activities they performed during their visits. Other pieces of information consisted of maps, aerial photos, field trips, and population demographics. The ROS criteria and standards used to inventory and describe outdoor recreation opportunities in the two areas differed from the original ROS criteria and were adapted to local conditions. Based on visitors' preferred settings and other available information, the study identified three of the six commonly used ROS classes. Overall, the ROS framework appears to perform appropriately in these two case studies and could be used effectively for recreation planning purposes in other forest areas of Mexico.

Keywords: Michilía Biosphere Reserve, protected area management, recreation opportunity spectrum, recreation planning, El Tecuán Recreational Park.

Introduction

Natural protected areas are primarily managed to protect biodiversity but can often provide recreation-related economic benefits to local communities (Borrie et al. 1998, Lane 2001). The fact that these goals can be in conflict requires careful planning of recreation opportunities so as to minimize the negative impacts to natural resources (impacts to the biota, wildlife, and water quality), to visitor experiences (crowding, conflicts, and dissatisfaction), and to local residents (loss of culture, economic disbenefits). Borrie et al. (1998) proposed a series of 11 principles to guide protected area planning based on research on visitor impacts

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[1] Assistant professor, Department of Forestry, Mississippi State University, Starkville, MS 39762; e-mail: gperez@cfr.msstate.edu.

[2] Professor, School of Forestry, Northern Arizona University, Flagstaff, AZ 86011; e-mail: Martha.Lee@nau.edu.

[3] Supervisory social scientist, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, 4955 Canyon Crest Drive, Riverside, CA 92507; e-mail: dchavez@fs.fed.us.

and management practices designed to minimize those impacts; for example, the need to develop explicitly stated objectives being the first and most basic principle. The second principle acknowledges that visitors both within a particular protected area and among various protected areas desire a variety of recreation activities, experiences, and settings and that providing a "diversity of resource, social and managerial conditions in and among protected areas is inevitable and may be desirable" (Borrie et al. 1998: 138). Providing a diversity of recreation opportunities gives visitors choices, enabling managers to meet a variety of expectations, contributing to greater visitor satisfaction. These recreation opportunity "zones" can also lessen conflicts among visitors engaged in potentially conflicting activities (e.g., motorized vs. nonmotorized), and may lead to preservation of protected areas via a proactive management approach that plans for varying levels of human use rather than allowing unplanned recreation (Haas et al. 1987, McNeely 1994).

The Recreation Opportunity Spectrum (ROS) was developed as a framework to assist resource managers to inventory, classify, and manage outdoor recreation resources within an overall planning framework (Brown et al. 1978). This planning process involves estimating user demand for recreation opportunities and combining this expected demand with the capability of the resource to provide recreation opportunities. Recreation opportunity planning outputs, including explicit management objectives, can be integrated with other outputs of protected area planning such as wildlife, cultural resources, and local community values to develop plans for resource allocation and management.

The intent of these case studies was to assess the usefulness of ROS as a recreation planning tool for natural protected areas in southern Durango, Mexico. The flexibility of the ROS as a recreational planning framework motivated the study described here. The ROS recognizes that change is part of the natural environment and that human activity can accelerate and intensify change. In Mexico, the topography, the unique land tenure system that affects the patchiness of ecosystems, along with other management considerations, might require modified or even new ROS classification criteria and standards. Few studies in Mexico have documented the application of recreation planning and management frameworks. González-Guillen et al. (1996) studied 14 natural parks in central Mexico to identify forest-based recreation potential and identified 27 forest recreation sites. Even though they never mentioned the ROS framework or any other planning approach to manage these areas, they considered the setting characteristics to identify those recreation sites.

The overall objective of this study was to analyze the potential use of ROS in two natural protected areas in northern Mexico for managing and planning outdoor recreation opportunities. We attempted to achieve this through the following

specific objectives: (1) identify visitors' preferences for recreation setting characteristics; (2) classify visitors based on clustering setting preferences; (3) create a visitor typology by characterizing the settings-based visitor types in terms of activities, reasons for visiting, and selected demographic characteristics; and, (4) use the visitor typology to identify potential recreation opportunity classes in the Michilía Biosphere Reserve (MBR) and the El Tecuán Recreational Park (TEC). We focused primarily on recreation settings to map recreation opportunities because settings are the component of recreation opportunity planning most readily influenced by resource managers (Driver et al. 1987, Manfredo et al. 1983).

The Recreation Opportunity Spectrum

The ROS is based on the assumption that people seek diversity in recreation opportunities; that is, visitors seek a variety of activities, settings, and experiences (Brown et al. 1978, Burch 1964). Various combinations of activity, setting, and experience opportunities are grouped into recreation opportunity classes along a spectrum, ranging from primitive to modern urban. These combinations of opportunities reflect setting conditions necessary for people to realize desired experiences and benefits. Criteria are used to classify lands suitable for opportunities in different classes along the spectrum. These include remoteness of the area, type and amount of development, and the number of other people encountered. Standards for each criterion are prescribed for each opportunity class. Criteria and standards can be modified to consider natural barriers, unique landscapes, and vegetative features (Douglass 1993, Manfredo et al. 1983). Applying the criteria and associated standards to a tract of land enables recreation planners to delineate and map the recreation opportunities available to visitors. For example, a remote area that is isolated from the sights and sounds of human activities provides opportunities for solitude and introspection. A developed campground offers opportunities for socializing and learning.

The ROS approach to recreation planning is being widely applied in the United States and abroad. It has been expanded and adapted to manage water-based recreation (Haas et al. 2004), visual quality (Ribe 1993), interpretation (Pollock 1989), designated wilderness (Kliskey 1998), and ecotourism (Boyd and Butler 1996). Managers in Australia proposed a "micro-ROS" approach wherein ROS would be used to manage small "pockets" of recreation opportunity (Parkin et al. 2000). The ROS is being used to manage recreation resources in New Zealand (Kliskey 1998, Sutton 2004), Australia (Parkin et al. 2000), and Japan (Yamaki et al. 2003). This was the first application of ROS in protected areas in Mexico and adds important knowledge for further cross-cultural application of ROS.

Methods

We used two natural protected areas as case studies to discuss the potential application of ROS for managing and planning outdoor recreation in Mexico. The natural protected areas chosen for this study are the 30 000-hectare MBR that was established in 1979 as part of the Man and Biosphere International program, and a 778-hectare, state-owned TEC. Even though TEC has not been officially declared as a natural protected area, its management objectives coincide with those of the national parks category, i.e., natural resources conservation, outdoor recreation, and aesthetics. The MBR has few facilities, including fire grates and interpretive signs along the main road and at major destinations. There is a research station, which hosts researchers and occasionally recreationists who visit the area for environmental education purposes (RBLM 2001). In contrast to MBR, TEC has more facilities, including picnic areas, basketball courts, restrooms, cabins, and dispersed recreation facilities. Two large ponds are used for fishing and backcountry recreation. We estimated that TEC receives more than 3,000 visitors, whereas MBR receives approximately 1,000 visitors per year. The study areas are located in the southeast and south-central parts of the state of Durango, Mexico, respectively (fig. 3-1).

Data Collection and Analysis

The ROS classes can be delineated by following criteria and standards (Driver et al. 1987). To adjust for local conditions, we used personal interviews to learn visitors' characteristics and the recreation activities they performed during their visits. Information gathered with the questionnaires consisted of documenting (1) the recreation activities they participated in; (2) characteristics of preferred recreation settings, facilities, or works preferred in the area; and (3) reasons for visiting the area and sociodemographic variables. Setting attribute preferences were measured by using a seven-point scale ranging from strongly disagree to strongly agree. Other pieces of information consisted of maps, aerial photos, field trips, and population demographics.

In both areas, all visitors contacted during the 2002 sampling period were asked to participate in the study. Information was collected from MBR visitors using onsite interviews, and TEC visitors were given a questionnaire to fill out onsite and leave at the exit station at the conclusion of their visit. All 73 MBR visitors contacted during the sampling period participated in the survey, and 100 of the 123 TEC visitors contacted participated, an 81-percent response rate. The final sample included 73 MBR visitors and 100 TEC visitors.
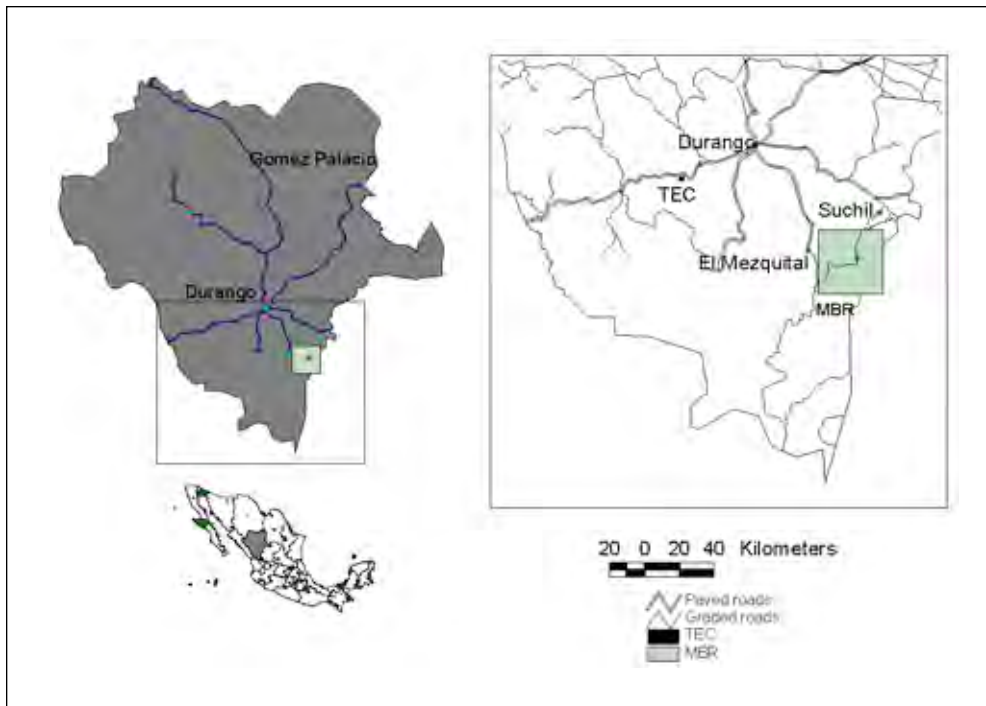
Figure 3-1—The Michilía Biosphere Reserve (MBR) and the El Tecuán Recreational Park (TEC).

Cluster analysis was used to differentiate visitor preference attributes of the recreation settings to identify recreation setting classes or zones. The setting attributes included easy access to the area, many interpretive signs for guiding visitors within the area, many interpretive signs for using the forest, distance from main roads, few social encounters, high degree of naturalness, many big trees in and around the site, no forest harvesting activities, no grazing and agricultural activities, and basic facilities, e.g., grills, tables, and restrooms. We identified the clusters using the average within-groups linkage method, measured by Euclidian distance.

The clusters were further described according to nine groups of reasons/motivations given for visiting the area (Manning 1999). These are participating in recreation activities, learning, family/friends together, escape pressure, enjoy nature, physical rest, risk reduction, nostalgia, and other. The characteristics of the selected recreation settings were used to identify potential recreational zones in the two protected areas and to construct a ROS-like map to represent the diversity among setting opportunities for each area based on visitors' setting preferences. We used local maps, aerial photos, field trips, and the original ROS criteria and standards to identify ROS-like classes in both areas. The original ROS criteria and standards (USDA FS 1982) were slightly modified to consider local characteristics of roads such as accessibility and maintenance frequency. For example, some roads were ignored for primitive, semiprimitive motorized, or semiprimitive nonmotorized

ROS classification because of their current conditions that complicated access and transportation. Information gathered from the visitors' questionnaires, particularly recreation setting, was used to identify areas that could meet visitor's preferences for recreation sites. A comparison between modified and original ROS classes is provided in the discussion.

Cross-tabulations were used to examine the levels of association between clusters and descriptor variables such as recreation activities, motivation domains of reasons, and sociodemographic data. Chi-square statistics tested the significance of the levels of association among the setting clusters and descriptor variables.

Results and Discussion

We found significant differences between the two visitor samples in terms of education, household income, employment, and distance traveled to the two areas. The MBR visitors had lower levels of education, income, and employment than TEC visitors. In both areas, visitors tended to participate in large groups: MBR groups averaged 8.2 members (maximum 20) while TEC groups averaged 10.7 members (maximum 40).

Recreation Settings Preferences

Cluster analysis of preferred setting attributes identified two types of visitors in both areas. In TEC, we found significant differences between the clusters in their preferences for a high degree of naturalness, many big trees in and around the site, no harvesting activities, and no grazing/agriculture activities. Respondents in cluster 2 were more intolerant of setting modifications including harvesting and grazing/agricultural activities; they preferred undisturbed sites with many big trees in and around the sites. In MBR, significant differences were also found between the two groups in their preferences for easy access to the site, many interpretative signs for guiding within the area, few social encounters, and many big trees in and around the site (table 3-1).

Although the visitor clusters differed in their preferences for setting attributes and tolerance for setting modifications, their socioeconomic profiles showed that the TEC groups are sociodemographically similar and had no significant differences in the reasons that motivated their visit to the park. The cluster 2 visitors were more likely to participate in nature-oriented activities and preferred recreation settings with nonnoticeable setting alterations (table 3-2).

We found significant differences between the two visitor samples in terms of education, household income, employment, and distance traveled to the two areas. The MBR visitors had lower levels of education, income, and employment than TEC visitors.

Table 3-1—Comparison of the recreation setting type preferences of El Tecuán Recreational Park (TEC) and Michilía Biosphere Reserve (MBR) visitors

Characteristic of the site	Overall mean[a]	Recreation settings[a]		
		Cluster 1	Cluster 2	Sig.
TEC visitors:		(*n* = 36)	(*n* = 63)	
Easy access to the site	1.94	1.69	2.08	0.14
Many interpretative signs for guiding within the area	1.83	1.64	1.94	.26
Many interpretative signs for using the forests	2.19	2.03	2.29	.25
Short distance from main roads	1.73	1.50	1.86	.16
Few social encounters	.62	.69	.57	.68
High degree of naturalness	2.39	2.02	2.60	<.01
Many big trees in and around the site	2.49	1.92	2.83	<.01
No harvesting activities	1.75	1.22	2.05	<.03
No grazing/agriculture activities	1.68	.81	2.17	<.01
Basic facilities	2.11	1.83	2.27	.13
MBR visitors:		(*n* = 31)	(*n* = 41)	
Easy access to the site	2.19	1.90	2.41	<0.01
Many interpretative signs for guiding within the area	1.58	1.94	1.32	<.05
Many interpretative signs for using the forests	2.03	1.87	2.15	.11
Short distance from main roads	1.64	1.58	1.68	.69
Few social encounters	.19	.58	-0.10	<.05
High degree of naturalness	2.15	2.23	2.10	.35
Many big trees in and around the site	2.38	2.10	2.59	<.01
No harvesting activities	1.71	1.45	1.90	.09
No grazing/ agriculture activities	.93	.90	.95	.90
Basic facilities	2.60	2.55	2.63	.53

[a] Means based on a 7-point scale with endpoints labeled -3, very unimportant; and +3, very important.

The MBR groups are sociodemographically similar to each other and had no significant differences in the reasons that motivated their visit to MBR. Visitors to the MBR reserve came to enjoy nature, hike, picnic, and watch wildlife. We did not find significant relationships between the clusters or participation in any of the activities as well as motivations and setting clusters. Cluster 1 visitors were more likely to camp, although the differences were not statistically significant (table 3-3).

Table 3-2—Recreation activities, motivations, and sociodemographic variables of El Tecuán Recreational Park visitors clustered in recreation setting types

		Recreation settings		
Item	Overall	Cluster 1 (n = 36)	Cluster 2 (n = 63)	Sig.
Activities:				
Camping (%)	20.5	12.9	24.6	0.15[a]
Hiking (%)	96.8	94.1	98.4	.29[a]
Picnicking (%)	94.3	100.0	90.9	.09[a]
Biking (%)	17.8	16.0	18.8	.52[a]
Enjoying nature (%)	92.4	90.9	93.2	.49[a]
Research activities (%)	25.7	25.0	26.1	.58[a]
Wildlife watching (%)	78.8	66.7	84.9	.06[a]
Collecting products (%)	30.8	29.6	31.4	.54[a]
Collecting plants (%)	28.8	35.7	25.0	.22[a]
Motives:				
Enjoying nature (%)	26.8	31.4	24.2	.32[a]
Physical rest (%)	15.5	5.7	21.0	.32[a]
Participating in recreation activities (%)	14.4	14.3	14.5	.32[a]
Sociodemographics:				
Percentage employed	83.7	83.3	83.9	.58[a]
Percentage male	74.2	72.2	75.4	.45[a]
Percentage with income ≤ $ USD 9,820 per year[c]	53.9	55.2	53.2	.53[a]
Percentage with college degree	61.7	62.9	61.1	.43[a]
Average age (years)	39.3	37.9	40.1	.37[b]
Average distance traveled (km)	137.0	72.4	174.0	.07[b]

[a] χ^2 –values.

[b] *t*-test values.

[c] 2002. Exchange rate pesos to dollars, 11:1.

Table 3-3—Recreation activities, motivations, and sociodemographic variables of Michilía Biosphere Reserve visitors clustered in recreation setting types

		Recreation settings		
Item	**Overall**	**Cluster 1** *(n = 31)*	**Cluster 2** *(n = 41)*	**Sig.**
Activities:				
Camping (%)	7.1	13.3	2.5	0.10^a
Hiking (%)	98.6	96.8	100.0	$.43^a$
Picnicking (%)	95.7	93.1	97.6	$.037^a$
Biking (%)	2.9	3.3	2.5	$.68^a$
Enjoying nature (%)	100.0	100.0	100.0	-
Research activities (%)	22.5	29.0	17.5	$.19^a$
Wildlife watching (%)	97.1	93.3	100.0	$.18^a$
Collecting products (%)	33.8	43.3	26.8	$.11^a$
Collecting plants (%)	26.8	35.5	20.0	$.11^a$
Motives:				
Participating in recreation activities (%)	45.8	45.2	46.3	$.50^a$
Family/friends together (%)	22.2	29.0	17.1	$.50^a$
Learning (%)	13.9	6.5	19.5	$.50^a$
Sociodemographics:				
Percentage employed	50.0	51.6	48.8	$.50^a$
Percentage male	77.1	76.7	77.5	$.58^a$
Percentage with income ≤ \$USD 9,820 per year^c	93.0	90.0	95.1	$.47^a$
Percentage with college degree	20.8	19.3	22.0	$.63^a$
Average age (years)	40.6	42.0	39.5	$.19^b$
Average distance traveled (km)	62.1	73.9	53.3	$.19^b$

[a] $\chi 2$ –values.
[b] *t*-test values.
[c] 2002. Exchange rate pesos to dollars, 11:1.

Zoning Outdoor Recreational Opportunities

Figure 3-2 presents a zoning of the TEC area that attempts to meet current and future needs for recreation opportunities and minimize recreation impacts. We identified zone A for cluster 1 visitors, zone B for cluster 2 visitors, and the rest of the area would be held in reserve. This distribution should reduce the impact on zone A by accommodating visitors in a larger area. In this scenario, the area for the cluster 1 visitors is 247 hectares (32 percent of the TEC area) and the area for the cluster 2 visitors is 264 hectares (34 percent of the area). In addition, zone C is proposed to be kept in reserve, which in turn may serve to receive future visitors that may feel displaced by a potential increase in demand for undisturbed areas. This zone includes the most remote sites with no access by motorized vehicles.

Figure 3-3 presents the recreation opportunity zones for the MBR. Because of the easy access, zone A is more likely to receive more visitors than the rest of the MBR. Cluster 2 visitors will more likely visit zone A because it has easier access, there is little concern about social encounters, and it has more basic facilities (grills, tables). The 8007-hectare zone A represents 23 percent of the total area. It
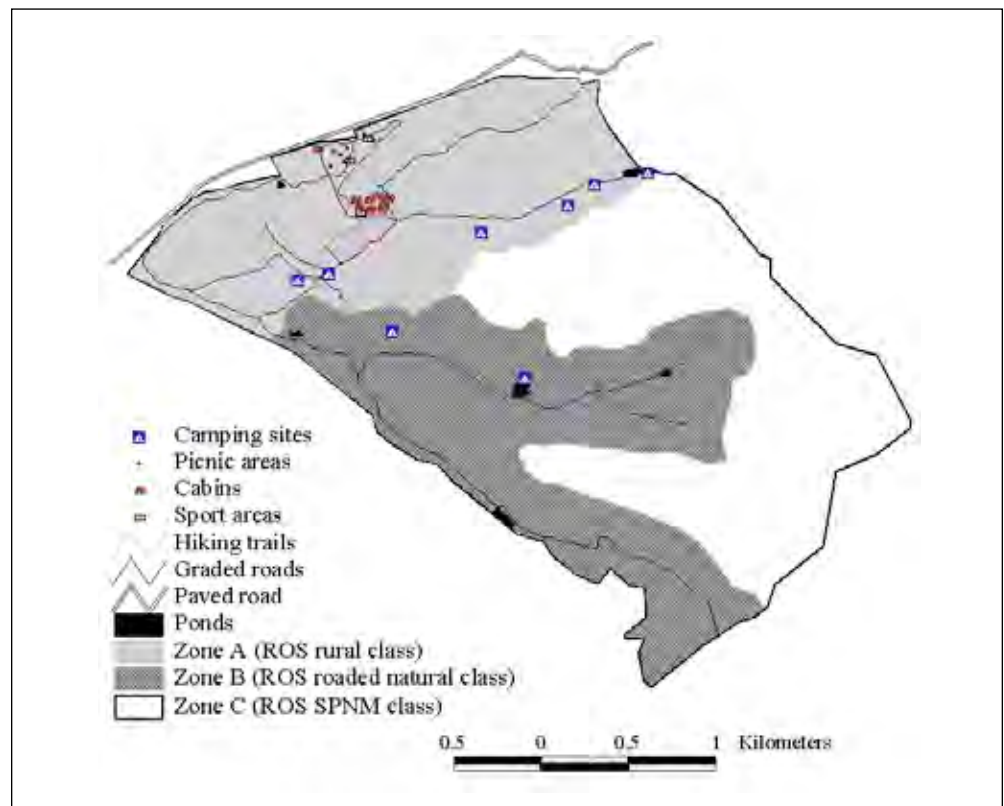
Figure 3-2—Classification of the recreation opportunities in the El Tecuán Recreational Park. Zone A is intended to provide recreation opportunities for cluster 1 visitors, zone B for cluster 2 visitors, and zone C would be held in reserve.
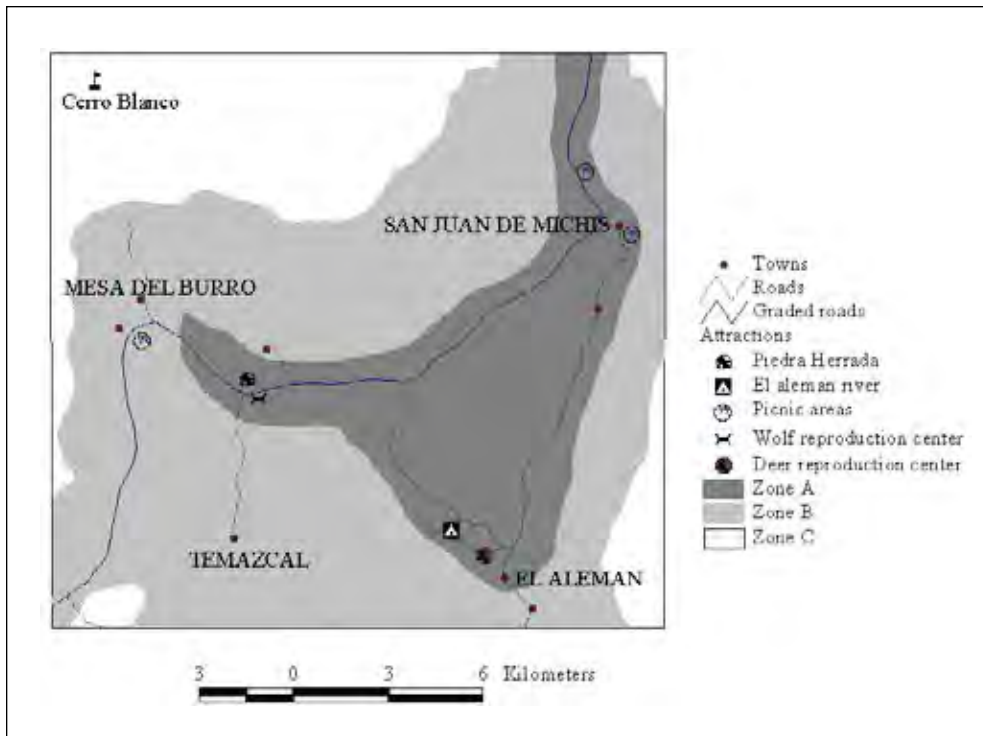
Figure 3-3—Types of recreation opportunities in the Michilía Biosphere Reserve. Zone A is oriented to provide recreation opportunities for cluster 2 visitors; zone B for cluster 1 visitors, and zone C will be kept in reserve.

is located in the center of MBR and close to the main roads. Cluster 1 visitors would likely prefer zone B, which comprises 19 264 hectares (55 percent of the total area). Cluster 1 visitors needed many interpretative signs to guide them within the area and were more likely to participate in camping, collecting products and plants, and developing research/educational activities than cluster 2 visitors. As the number of visitors to each zone is relatively small, MBR appears to offer sufficient area to meet current and future needs for recreation opportunities. We included zone C, a remote area that comprises 23 percent of the total MBR (7803 hectares), to protect the reserve core from potential recreation impacts. The reserve core is located in the northwest part of the MBR, around the Cerro Blanco Peak, and could also fulfill potential demand for more primitive areas in the future.

The analysis identified three zones to classify lands for recreational opportunities in TEC and MBR: (A) zones with easy access and basic facilities, (B) natural-appearing zones having less access and fewer facilities, and (C) reserve zones. Using the U.S. Forest Service ROS criteria, these zones could be classified as (1) rural, (2) roaded natural, and (3) semiprimitive nonmotorized or primitive areas, respectively. The analogy is based on key common components that matched the ROS criteria: degree of naturalness, level of access, facilities, interpretative

signs, and social settings. The degree of naturalness, expressed as remoteness and evidence of humans in the ROS, along with level of access and facilities correspond to the biophysical setting as described in the ROS criteria, and interpretative signs are included within the managerial setting. We found that the biophysical setting was more important for TEC visitors than MBR visitors, whereas the social and managerial setting was found to be less significant for TEC visitors but significant for MBR visitors.

The ROS rural class, i.e., zone A, is characterized by the presence of cultural modifications in the setting including pastoral, agricultural, and evidence of roads and highways; the frequency of contact with others is moderate to high; and the onsite regimentation and controls are obvious and numerous. The ROS roaded natural class, i.e., zone B, allows some modifications of the natural setting, but must remain unnoticed from sensitive travel routes and use areas. The frequency of contact with other parties is moderate to high on roads and low to moderate on trails and away from roads. Zone B, named as natural-appearing zones, matches ROS roaded natural class, and is characterized by being easily accessed and having fewer facilities. Sights and sounds of visitors are evident, but harmonize with the natural environment.

The ROS semiprimitive nonmotorized class is characterized by a predominantly unmodified natural environment of moderate to large size (Manning 1999). The only difference between the semiprimitive nonmotorized class and zone C of TEC is the size of the areas and the distance from roads. The former should be larger than 1000 hectares and 1.2 to 4.8 kilometers from roads, whereas the latter comprises 267 hectares and is 500 meters from roads. However, zone C in TEC does not have roads or trails for motorized use, and the frequency of contact with other parties is from moderate to low. In the spectrum of the ROS classes, the lack of use of motorized roads is more likely to occur either in the semi-primitive non-motorized or primitive classes. The primitive class includes other characteristics such as remoteness, size, and managerial setting that are hardly found in the TEC. Thus, the semiprimitive nonmotorized class better matches zone C.

Zone C of MBR is more similar to the ROS primitive class because of the size of the areas, which is larger than 2000 hectares, and the reduced frequency of contact with other parties. We found that zone C does not systematically fit the remoteness criteria of 4.8 kilometers from all roads. According to the recreation opportunity maps, the distance from roads ranged from 500 meters to 5 kilometers. In this case, the topographic and rough conditions of the terrain helped to delineate this zone as the ROS primitive class. The terrain conditions isolate the primitive conditions from all other recreation opportunity classes.

Conclusions and Recommendations

The purpose of this study was to investigate the flexibility of ROS application in two protected areas in Mexico. The ROS criteria and standards used to inventory and describe outdoor recreation opportunities in the two areas differed from the original ROS criteria and were adapted to local conditions. We were able to identify distinct recreation opportunity zones and compared them to those of the ROS being used in the United States. This information was used to create recreation opportunity maps for use in recreation opportunity planning and enables planners to estimate and describe recreation opportunity supply and demand in equivalent terms.

It is important to recognize that the ROS was designated as a recreation opportunity inventory tool, not necessarily as a resource allocation tool. A ROS recreation opportunity inventory provides managers with information about the recreation opportunities' potential in an area, not necessarily how an area should be allocated for recreation use (Moore and Driver 2005). A ROS inventory is only one informational input to the protected area management planning process, to be considered along with other biodiversity, cultural, economic, resource protection, and social concerns.

Overall, the ROS framework appears to be a useful framework for managing protected areas in Mexico. In the United States, the ROS is used primarily for managing and planning recreational opportunities in the wildlands. Most of the wildlands in the United States belong to the federal government, as do the MBR and TEC, and the agencies responsible for managing natural resources use the ROS as the primary approach to provide quality recreational opportunities. In Mexico, despite the increasing interest in recreation, few forest lands are explicitly managed for recreational opportunities. One alternative is to involve other nonfederally owned properties to increase the lands' value for recreational purposes, such as the ejidos and comunidades' forest lands. Ejidos' forest lands can fulfill the lack of available recreation areas and at the same time, can reduce the pressure on timber production. We recommend more research to study the ejidos' participation in providing recreation opportunities including people's acceptance of ejidos' recreation resources, including use of ROS to maximize economic benefits and evaluate tradeoffs on ejidos' lands.

We were able to identify distinct recreation opportunity zones and compared them to those of the ROS being used in the United States.

Acknowledgments

Metric Equivalents

When you know:	Multiply by:	To get:
Yards	0.914	Meters
Miles	1.609	Kilometers
Acres	.405	Hectares

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Chapter 4: Constraints to Leisure Travel and Visitation to Natural Areas: An International Comparison of Four Cities

Patrick T. Tierney,[1] Deborah J. Chavez,[2] and James D. Absher[2]

Abstract

Leisure travel and visitation to natural areas and constraints to undertaking these activities are important concerns for recreation resource managers and tourism businesses. Surveys were administered to Los Angeles, Barcelona, Glasgow, and Morelia, Mexico, residents to ascertain leisure travel and undeveloped natural area visitation levels and constraints. A comparison of these cities with abundant nearby natural resources shows significant differences in leisure travel and natural area visitation levels. Differences were attributable to respondent demographic disparities and importance of visitation constraints. The study identifies how cultural values produce significant differences in visitation constraints and use of undeveloped natural areas.

Keywords: Recreation, natural areas, cross-cultural, constraints, visitation, international.

Introduction

Natural areas, such as national and state forests, parks, wildlife refuges, and open space preserves located outside of cities, are some of the most popular recreation destinations. Few studies have compared visitation and travel constraints to natural areas among residents of international cities to learn if there are substantive differences. International comparisons might be useful to determine if natural area use patterns and constraints are unique to certain countries and culturally based, or if they are more universal. Such information could provide resource and tourism managers with information to help them more effectively market and manage their services.

Numerous studies have investigated constraints to visitation of recreation and natural areas (Carr and Williams 1993, Driver and Peterson 1986, Dwyer 1994, Jackson 1988, Pinhey and Iverson 1994, Shinew et al. 2004, Sonmez and Graefe 1998). Findings of these studies were used to identify salient outdoor recreation constraints. For example, Norman (1995) identified over 25 common barriers to

Few studies have compared visitation and travel constraints to natural areas among residents of international cities to learn if there are substantive differences.

[1] Professor, Department of Recreation and Leisure Studies, San Francisco State University, San Francisco, CA 94132; e-mail: ptierney@sfsu.edu.

[2] Chavez is a supervisory social scientist and Absher is a research social scientist, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, 4955 Canyon Crest Drive, Riverside, CA 92507; e-mail: dchavez@fs.fed.us, jabsher@fs.fed.us.

outdoor recreation. Also, in an earlier study, Tierney et al. (2000) compared vacation travel patterns of Hong Kong and Los Angeles residents. Johnson et al. (2001) analyzed recreation constraints by gender, race, and rural residence. They found gender was significant, but that race and rural residence were not significant predictors of constraints. Martin (2004) found that certain racial and ethnic groups are more comfortable in certain environments, and there is the potential for discrimination if a group is unfamiliar with areas. However, more information is needed to see if differences in natural area visitation and constraints exist among countries.

The current paper compares residents of Barcelona (BAR), Spain, Glasgow (GLS), Scotland, Los Angeles (LA), California, and Morelia (MOR), Mexico metropolitan areas on their leisure travel patterns, constraints, and visitation to undeveloped natural areas (UNA). One purpose was to determine whether or not there are international similarities in visitation and constraints to visiting natural areas, or whether social and cultural environments contribute to differences in natural area visitation and constraints.

Barcelona, Glasgow, Los Angeles, and Morelia were selected for this research because they are large, cosmopolitan metropolitan areas and have numerous natural areas, such as national forests and parks, within 100 kilometers. For example, the city of Morelia, located northwest of Mexico City with a population of about one-half million persons, has numerous nearby protected natural areas, including a national park, geysers, and archeological sites. The overall goal of the research was to gather and compare data from four international metropolitan areas about resident leisure travel and visitation to UNAs.

Methods

Telephone surveys and personal interviews were used to ask respondents about their leisure trips away from their home during the previous summer (May-August). If they took a trip, respondents were asked if they participated in a vacation, described as "work free periods of 4 or more consecutive days where most time was spent in leisure activities." The survey next asked persons who took a leisure trip if they visited a UNA. Visits to UNAs were defined as "trips to places located outside of cities where you visited natural areas, such as national or state parks, forests, nature preserves or protected areas. These areas could have campgrounds and cabins, access roads, visitor centers, trails or an occasional farm." Respondents were asked to agree or disagree with 16 statements about constraints to visiting natural areas, developed from past research (Driver and Peterson 1986, Norman 1995, Tierney et al. 1998).

Demographic data collected included respondent age, education, gender, and having children under 18 years living at home.

Data for the Los Angeles part of the research came from Tierney et al. (1998) who used a telephone survey of LA City and County adult residents. A stratified random sample was developed to oversample and acquire large enough sample sizes from four ethnic groups: Whites, African Americans, Asian Americans, and Latino Americans. The interviews were available in English, Spanish, and Mandarin. A similar but shortened survey was used in BAR, GLS, and MOR. Local recreation experts (professors at adjacent universities) translated the survey, designed the sampling, administered the data collection, and assisted in data interpretation. These partnerships were needed to ensure internal validity of the survey, comparable data collection methods, and accurate interpretation of survey results.

The data collection methods in BAR, GLS, and MOR were modified from the LA approach because of issues related to using telephone surveys in those countries. Personal interviews were used instead. The survey used a systematic sample of three districts that represented high-to-low socioeconomic levels in the metropolitan area. Districts were identified, and then neighborhoods were selected that were representative of the district. Next, trained surveyors visited every other residence in the selected neighborhoods and attempted to administer the personal interview.

In LA, 894 telephone surveys were completed, 310 in-person interviews were obtained in BAR, 359 in GLS, and 257 in MOR, resulting in a total of 1,820 usable surveys. The response rate to the LA telephone survey was 29 percent; response rate for personal interviews was 79 percent in BAR, 68 percent in GLS, and 74 percent in MOR.

Cross-tabulations with Chi-square and Z-tests were used to test for significant differences in taking a leisure trip, visiting natural areas, and demographic variables. Exploratory factor analysis of constraint data for respondents who did not visit a UNA was used to identify a smaller number of constraint aggregations for this subpopulation. Factor analysis used the principal components extraction with equimax rotation.

Results

Demographics

Findings indicate that there were substantial demographic differences among respondents of the four survey sites (see table 4-1). There were differences across countries by age, gender, marital status, parents born in the country, education level, and child at home. For example, MOR and BAR had more respondents in the 18 to 34 age group than did GLS and LA.

Table 4-1—Respondent demographic characteristics by site

	Barcelona (*n* = 310)	Glasgow (*n* = 359)	Los Angeles (*n* = 894)	Morelia (*n* = 257)	Probability[a]
	- - - - - - - - - - - - - *Percent* - - - - - - - - - - - - -				
Age:					0.000
18–34	55.1	21.6	49.2	56.9	
35–44	24.5	28.9	23.5	20.0	
45–54	10.2	29.8	11.6	12.1	
55 or more	10.2	19.7	15.7	11.0	
Gender:					.000
Male	50.6	52.4	44.6	33.7	
Female	49.4	47.6	55.4	66.3	
Marital status:					.000
Single	38.1	28.2	42.4	44.6	
Married	22.9	59.9	45.6	61.3	
Divorced	31.6	3.4	6.7	2.3	
Separated	1.6	4.0	2.0	2.3	
Widowed	2.9	4.5	3.3	3.1	
Parents born in country:					.000
Yes	80.0	51.9	68.5	97.3	
No	20.0	48.1	31.5	2.7	
Education level:					.000
Grade school	13.2	1.7	4.6	16.5	
High school	46.8	44.5	30.2	42.4	
Technical school	12.9	44.5	30.2	42.4	
College	25.5	39.4	48.6	2.0	
Grad school	1.6	0.0	11.7	11.4	
Child at home:					.000
Yes	26.6	49.0	43.5	50.6	
No	73.4	51.0	43.5	56.5	

[a] Chi-square test of significance for each subtable of sociodemographic variable by four survey sites.

Leisure Trips and Vacations

Table 4-2 shows that BAR respondents were far more likely to have taken a leisure trip away from home during the summer (88 percent), compared to GLS (73 percent), LA (54 percent), and MOR respondents (44 percent). Almost all BAR and GLS respondents who took a leisure trip also took a vacation of 4 or more consecutive days (97 percent and 93 percent), which was much greater than LA (68 percent) and MOR (58 percent) respondents.

Visits to Undeveloped Natural Areas

Respondents were also asked if they visited a UNA for any period during the prior summer. Table 4-3 shows that when comparing respondents who took a leisure trip, BAR respondents were more likely to visit a UNA (72 percent) compared to MOR

Table 4-2—Took a leisure trip and vacation, by site

	Barcelona (*n* = 310)	Glasgow (*n* = 359)	Los Angeles (*n* = 894)	Morelia (*n* = 257)	Probability[a]
	- - - - - - - - - - - - *Percent* - - - - - - - - - - - -				
Took leisure trip:					0.000
Yes	88.4	72.9	53.9	44.1	
No	11.6	27.1	46.1	55.9	
Took vacation[b]:					.000
Yes	96.7	92.7	67.6	58.4	
No	3.3	7.3	32.4	41.6	
Visited natural area outside cities[b]:					.000
Yes	71.5	30.7	32.4	65.2	
No	28.5	69.3	67.6	34.8	

[a] Chi-square test of significance among four survey sites based on original cell frequencies (not shown).
[b] Only respondents who took a leisure trip are included in this analysis.

Table 4-3—Visitation to an undeveloped natural area, by site

	Barcelona	Glasgow	Los Angeles	Morelia	Probability[a]
Visited natural area outside cities: Those who took leisure trip					0.000
Yes	71.5	30.7	32.4	65.2	
No	28.5	69.3	67.6	34.8	
Visited natural area outside cities: All respondents					.000
Yes	63.2	21.8	32.4	28.5	
No	36.8	78.2	67.6	71.5	

[a] Chi-square test of significance among four survey sites.

(65 percent), LA (57 percent), and GLS respondents (31 percent). When comparing all respondents, 63 percent of BAR respondents, 32 percent of LA, 29 percent of MOR, and 22 percent of GLS respondents visited a UNA.

Comparisons by Demographic Characteristics

Table 4-4 illustrates that age and martial status were generally not significantly related to visitation to a UNA for the four survey sites, except for age in BAR. Gender was moderately related to UNA visitation at BAR and LA, with males being more likely to visit than females. In GLS, LA, and MOR, education was highly related to UNA visitation. The higher the educational level, the greater the likelihood of visitation to natural areas.

Table 4-4—Probability levels associated with cross-tabulations of visiting a natural area, by demographic characteristics (Chi-square test of significance)

	Barcelona	Glasgow	Los Angeles	Morelia
Age	0.017	0.611	0.491	0.523
Education	.084	.002	.000	.000
Gender	.034	.267	.015	.407
Marital status	.052	.302	.054	.374

Constraints

The overall most frequently mentioned constraints were "my family and friends do not visit UNAs," "my financial situation," "lack of free time," "lacked information on where to go and what to do," and "want more workers of my ethnicity."

Constraints for travel and visitation to UNAs and a comparison of responses from the four study sites are shown in table 4-5. The overall most frequently mentioned constraints were "my family and friends do not visit UNAs" (42 percent of all respondents strongly agreed or agreed), "my financial situation" (39 percent), "lack of free time" (34 percent), "lacked information on where to go and what to do" (33 percent), and "want more workers of my ethnicity" (23 percent). The least frequently mentioned constraints among all respondents were "UNAs are uncomfortable" (17 percent), "do not feel welcome" (17 percent), "no interest in visiting UNAs" (14 percent), "people like me are discriminated against when traveling" (14 percent), and "not healthy enough to travel" (9 percent).

The percentage of respondents who strongly agreed or agreed with a constraint statement differed by survey site. For example, more than half (51 percent) of GLS versus 22 percent of BAR respondents agreed that their friends and family do not visit natural areas. The Z-test of proportions provided a test of the significance for the maximum difference (range) among cities. Results show that the range of responses for each constraint differed markedly and independently of the absolute magnitude of the ratings above. For instance, the variables "my financial situation prevented travel" (range of 60.8 percentage points) and "lack transportation" (53 percentage points) had the greatest difference and were the second and seventh highest rated overall. Other constraints had a relatively low range among sites, such as "not healthy enough" (4.8 percentage points), and "no nearby UNAs" (9.5 points). The percentages for each of the 16 constraints were significantly different among the four study sites.

Four factors emerged from an exploratory factor analysis conducted on constraint data for respondents who did not visit a UNA. First, items with low communalities and inconsistent relationships were dropped and the remaining nine items were factored. Table 4-6 shows that Eigenvalues for the factor dimensions ranged from 1.0 to 2.1 with a total of 62.1 percent of the variance explained. The factor accounting for the most variance was called "Feel unwelcome and unsafe,"

Table 4-5—Constraints for travel and visitation to undeveloped natural areas (UNAs) for all respondents from each country (percentage who strongly agree or agree)

	Barcelona (n = 310)	Glasgow (n = 355)	Los Angeles (n = 858)	Morelia (n = 243)	All (n = 1,766)	Range	Probability[a]
	- - - - - - - - - - - - - - - - - - - *Percent* -						
Family or friends do not visit UNA	21.9	50.9	48.2	29.8	41.6	29.0	0.000
My financial situation	27.4	12.4	43.2	73.2	38.6	60.8	.000
Lack of free time	25.5	33.5	52.1	49.4	33.6	26.6	.000
Lack information	23.9	24.5	39.0	36.5	33.2	15.1	.000
Want more workers of my ethnicity	43.6	11.0	36.1	32.9	32.0	32.6	.000
UNA too crowded	10.7	7.6	43.7	43.9	30.9	36.3	.000
Lack transportation	17.8	14.9	27.9	67.9	29.2	53.0	.000
Normally go to UNA but wanted variety	10.6	7.4	39.2	16.5	23.0	31.8	.000
UNAs are unsafe	22.5	6.5	23.3	31.8	22.0	25.3	.000
No nearby UNA	16.5	19.7	23.8	14.3	20.1	9.5	.000
No companions	15.1	13.8	25.9	15.6	20.1	12.1	.000
UNA uncomfortable	9.1	14.1	18.4	28.8	17.4	19.7	.000
Do not feel welcome	10.6	1.7	16.7	48.7	17.2	47.0	.000
No interest in UNA	13.2	19.4	15.1	6.7	14.3	12.7	.000
Discriminated against	5.8	2.8	18.5	23.1	13.9	20.3	.000
Not healthy enough	10.3	5.9	10.7	8.0	9.3	4.8	.001

[a] Z-test to determine probability of significance of range (maximum difference) across cities.

Scale: 1=strongly disagree, 2=disagree, 3=neither disagree or agree, 4=agree, 5=strongly agree.

Table 4-6—Factor analysis results of natural area visitation constraints scale for respondents who did not visit a natural area (all survey sites; n = 861)

Item statement	F1	F2	F3	F4
F1—Feel unwelcome and unsafe				
Discriminated against	0.76			
Do not feel welcome	.75			
Undeveloped natural areas are unsafe	.63			
F2—Want more ethnic workers				
Normally go to UNA, wanted variety		0.88		
Want more ethnic workers		.65		
F3—Lack opportunity				
No companions to travel with			0.82	
No nearby natural areas			.78	
F4—Have time but no interest				
Lack free time				-0.79
No interest in visiting UNA				.67
Eigenvalue	2.1	1.3	1.2	1.0

had three constraint items ("Discriminated against," "Did not feel welcome," and "UNAs are not safe"), and explained 19.6 percent of the variance. The second factor was named "Want more ethnic workers" (var = 15.1 percent), and it included "Normally go to UNA but wanted variety" and "Want more workers of my ethnicity." The third factor was called "Lack opportunity" (var = 14.17 percent) and had the barriers of "No companions to travel with" and "No nearby natural areas." The final factor was called "Have time but lack interest" (var = 13.3 percent) and it consisted of only two constraints "No interest in visiting UNA" and a negative value for "Lack free time."

Discussion

International research comparisons present large challenges, but this study attempted to increase validity by using similar survey instruments translated into three languages (English, Spanish, and Mandarin) by researchers who live in the study areas and are familiar with leisure travel and natural area visitation in BAR, GLS, LA, and MOR. Survey responses were translated and results were reviewed by these bilingual recreation experts to ensure accuracy. Despite efforts to make the research as comparable as possible, the findings may be affected by some differences in survey wording, data collection methods, and interpretation of results. We do not know the impact of these differences.

The focus of the study was on visitation and constraints to visiting UNAs. A much larger percentage of BAR and GLS respondents took a leisure trip away from home during the summer compared to LA and MOR respondents. This suggests there are large constraints to leisure travel in both LA and MOR. Findings also indicate leisure and vacation travel is more of a cultural norm in BAR, GLS, and LA. In BAR and other countries in Europe, the average citizen gets 30 days paid vacation in addition to three other 5-day holiday periods per year. The average in LA is about 2 weeks paid vacation, often taken as a 1-week holiday and then several long weekends. Paid vacation is much less common in MOR.

There is broad interest in visiting natural areas by residents of all four cities, with more than three-quarters of respondents having a desire to visit UNAs. However, a much smaller number actually visited a UNA. Almost two-thirds of BAR respondents visited a UNA compared to about one-third of LA respondents, one-quarter of MOR respondents, and about one-fifth of GLS respondents. Much of this was due to respondents who had severe travel constraints and did not take a leisure trip. However, BAR respondents were still more likely to visit UNAs compared to respondents from the other cities, when only considering those respondents who took a leisure trip. There is strong interest in visiting natural

areas by MOR respondents, but severe constraints are hindering many from taking leisure trips.

Demographic characteristics of respondents were also shown to influence the likelihood of visiting UNAs. Gender, and in particular, respondent education level significantly affected UNA visitation.

These findings indicated that overall perceived constraints to visiting UNAs differed considerably among study areas. Personal time, economics, information, lack of interest, and access constraints were present. An overall comparison of constraint scores from the four study areas suggested that the types of factors limiting visits to natural areas were similar among the four cities, but the importance or degree of the constraint differed widely. The most highly rated constraints overall were "Friends and family do not visit UNAs," "My financial situation," "Lack of free time," and "Lack of information." The results from Z-tests of proportions indicated considerable variation in the level of influence a specific constraint had on respondents from each study site. These findings suggest there are unique cultural bases for the varying impact of some constraints. For example, the greatest constraints for MOR were "UNAs are unsafe," "Financial situation," and "Lack of transportation," but these were very different from the mean values for the same constraints according to the BAR respondents. The implications for managers are that they can start to address the most powerful constraints, but they will need to conduct additional research to identify other constraints prevalent in their specific region.

Factor analysis of responses from respondents who did not visit a UNA revealed four constraint clusters: "Feel unwelcome and unsafe," "Want more ethnic workers," "Lack opportunity," and "Have time but lack interest." It is important for forest and park managers to understand these four "universal" constraint factors and try to mitigate their impact through planning, management actions, and interventions. Findings also reinforce the need for agency outreach efforts, some of which are already underway, to help overcome respondent feelings of being unwelcome, UNAs being unsafe, and lacking opportunity. Introductory outdoor recreation programs with peers that are sponsored or supported by land management agencies working with ethnic organizations, such as churches, to recruit urban residents who do not normally visit natural areas is strongly supported by study findings.

This research, through a comparison of four international cities with a similar abundance of nearby natural resources, illustrates a large number of cross-cultural similarities in leisure travel and use of natural areas. But, it also demonstrates how cultural values produce significant differences in visitation constraints and use of UNAs.

The implications for managers are that they can start to address the most powerful constraints, but they will need to conduct additional research to identify other constraints prevalent in their specific region.

Acknowledgments

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Section III:
Synthesis of Studies

Chapter 5: Serving the Needs of Latino Recreation Visitors to Urban-Proximate Natural Resource Recreation Areas

Deborah J. Chavez[1]

Abstract

A major shift has occurred in the ethnic and racial profile of the United States, with large increases in the Latino population. Beyond the demographic profiles are the influences on other aspects of life in the United States, including urban-proximate natural resource recreation area management. Latino groups may have different expectations about natural resource recreation areas, different barriers to participation, and different site development preferences than other groups. The information provided in this article is based on 17 research projects over the past 16 years conducted mostly in southern California. Suggestions for serving the needs of the rapidly increasing Latino population are offered. These suggestions relate to communications, development of recreation sites, use of partnerships and cooperation, and provision of employment opportunities.

Keywords: Latinos, outdoor recreation, preferences, experience use history.

Introduction

The ethnic and racial profile of the United States is undergoing a major shift such that in the decades ahead, people of color will constitute a majority of the population (Shinew et al. 2006). Over the last 100 years, few racial or ethnic groups have had as great an impact on the demography of the United States as Latinos (Saenz 2004). The number of Latinos in the United States more than doubled between 1980 and 2000, accounting for 40 percent of the growth in the country's population during that period. In 1900 there were approximately 500,000 Latinos in the United States. Today there are more than 35 million (Saenz 2004). In 2003, the U.S. Census Bureau designated Latinos as the Nation's largest minority group. Beyond demography, this population has had additional impacts on American society. Some of those influences are found at natural resource recreation areas. Research indicates Latino groups may have different expectations about natural resource recreation areas, different barriers to participation, and different site development preferences than other groups (Chavez 2001, 2002; Tierney et al. 1998).

In 1900 there were approximately 500,000 Latinos in the United States. Today there are more than 35 million. In 2003, the U.S. Census Bureau designated Latinos as the Nation's largest minority group.

[1] Supervisory social scientist, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, 4955 Canyon Crest Dr., Riverside, CA 92507; e-mail dchavez@fs.fed.us.

This paper examines the management of urban-proximate natural resource recreation areas as influenced by Latinos. In short, this paper describes special management characteristics of urban national forests (UNFs), especially for use by Latinos, barriers to outdoor recreation experiences, environmental beliefs, and experience use history of Latinos. These will be followed by suggestions for serving the needs of this rapidly increasing population. These suggestions relate to communications, development or renovation of recreation sites, use of partnerships and cooperation, and provision of employment opportunities.

The information provided in this article is based on 17 research projects over the past 16 years conducted mostly in southern California. Owing to this emphasis on southern California, managers in other places may want to verify the validity and reliability of these studies for their management areas.

Urban National Forests

Urban National Forests are forests located within 50 miles of a population center of greater than 1 million people (Dwyer and Chavez 2005). These forests demonstrate unique management challenges and opportunities (Hartley 1986). They also have great potential to educate the public and create supportive constituencies (Gangloff 2003).

In 1995, the U.S. Department of Agriculture, Forest Service, identified 14 UNFs located in eight U.S. states. In 2005, they identified an additional 10 UNFs. Hartley (1986) defined several characteristics of UNFs including year-round accessibility, cultural beliefs, emergence of new recreation activities, and competition for open space. An adapted model is presented here, including intense use, regional parklike use, sprawl, complex communication strategies, safety, and cultural beliefs:

- Intense use: areas that may be managed for "dispersed" use get quite "concentrated" use; often significant amounts of day use.
- Regional parklike usage: since most regional parks in southern California are booked well in advance, some parties intended for regional parks are shifted to public lands; there may be competition for open space.
- High use of designated wilderness: day use increases visitation at designated wilderness significantly (e.g., San Mateo Canyon Wilderness on the Cleveland National Forest where more use occurs from day users than permit holders); not enough permits available for wilderness use and lotteries need to be used.
- Sprawl: urban development adjacent to public land boundaries complicates management decisionmaking (e.g., fire management or land use decisions); community relations become more complex.

- Social ills: urban social problems can migrate to public lands; might see increases in crime, vandalism, arson, traffic congestion, etc.
- Safety: special care must be taken for the safety of the public and employees.
- Complex communication: information strategies need to consider race/ethnic diversity, use of multiple languages, and cultural meanings.
- Cultural beliefs: recreation visitor expectations may be based on behaviors learned in other countries; cultural activities may occur on public lands.
- New activities: the newest recreation activities or fads may occur here first, sometimes without benefit of administrative guidelines.

Some of these UNF characteristics linked to use of sites by Latinos in southern California are discussed (such as intense use levels at some sites, regional parklike use, and complex communication strategies).

Hartley (1986) discussed intense use. Her premise was that some areas might be managed as dispersed sites, but use levels at those sites can be quite intense. Stikkers (1983) termed these concentrated dispersed-use areas, where, for example, a thousand people can be found in an area managed for 100 visitors. Importantly, few developments are located at these sites although many people frequent these areas. Some of these sites in southern California are predominately used by Latinos. At the convergence of the north and west forks of the San Gabriel River, approximately 90 percent of site users are Latinos. For years the only development was a nearby parking lot and pit toilet facilities. This has changed little over the years, with a few picnic tables recently added along with improved toilet facilities.

Hartley (1986) also discussed regional parklike usage, focusing on the busy regional parks system in southern California. Indeed, most of the parks are booked well in advance making it difficult for people to obtain group reservations. Consequently, some groups intended for regional parks are shifted to other natural resource recreation areas. Many of these displaced visitors are Latino groups.

In discussing sprawl, Hartley (1986) commented on how complex community relations can become. In areas that include large Latino populations, it becomes important to include Latinos in public meetings. In general, managers in southern California have found that few Latinos attend public meetings or participate in decisionmaking proceedings.

Complex communication strategies were also discussed by Hartley (1986). In southern California, information strategies need to consider race/ethnicity, use of multiple languages, and cultural meanings of communications. Indeed, use of Spanish is quite necessary, but not all Spanish translations are done well.

Hartley (1986) also addressed cultural beliefs. The premise is that recreation visitor expectations for natural resource recreation areas may be based on behaviors

learned in other countries. In southern California, many recreation visitors have family roots in Mexico, and cultural beliefs and practices from Mexico are common (such as mariachi performances at day use sites).

Findings From the 17 Research Studies
Barriers to Outdoor Recreation Experiences

Barriers that were mentioned within at least two of the travel scenarios were: "Would travel if more people of my race/ethnicity were employed there," "Few friends travel or recreate in natural areas," and "We don't know where to go or what to do."

In a telephone survey of residents of Los Angeles County, Tierney et al. (1998) contacted 894 people. About one-third were Latino. They asked about barriers faced by Latino respondents who had not taken any trip in a 1-year period, who had taken a trip but not to a natural area, and who had taken a trip to a natural area where barriers were limiting their stay. Only barriers identified by at least 50 percent of Latino respondents are presented in table 5-1. There were seven barriers identified by Latinos who had not taken a trip, three by those who took a trip but not to a natural area, and one by those who took a trip to a natural area. There is little overlap in barriers, and no barrier that was identified within all three travel scenarios by Latino respondents. Barriers that were mentioned within at least two of the travel scenarios were: "Would travel if more people of my race/ethnicity were employed there," "Few friends travel or recreate in natural areas," and "We don't know where to go or what to do."

Table 5-1—Barriers identified by Latinos who either took no trip in a 1-year period, took a trip but not to a natural area, or mentioned barriers limiting their stay at a natural area

	Took no trip	Took trip, but not to a natural area	Natural area stay limited
Normally travel but did something different	X		
Financial situation	X		
Would travel if more people of my race/ethnicity employed there	X	X	
Nearby destinations are too crowded	X		
Few friends travel or recreate in natural areas	X		X
Don't know where to go or what to do	X	X	
Time commitments	X		
Want more luxury accommodations		X	

Source: Tierney et al. 1998.

Additional issues come from a series of day use studies on two forests in southern California (the series results are reported in Chavez 2001). It was found that day use visitors to two national forests (who were primarily Latino visitors) disliked seeing litter along forest roadways, litter at picnic sites, or graffiti on natural

surfaces (such as rocks or trees). These are interesting findings given the sites where visitors were surveyed were frequently highly littered and graffiti was found on human-made (such as picnic table tops) and natural surfaces.

No discussion of barriers would be complete without some mention of societal barriers. For Latinos these include, among others, barriers to education, barriers to the political process, and racism.

Environmental Beliefs

In 2005, Chavez (2006) examined the environmental beliefs of day use visitors to two canyons on the Angeles National Forest. More than half of the respondents were Latino. The respondents were asked about natural resource areas and what they should be managed for. Items rated included environmental activities. They evaluated items using a scale of 1 to 5 (1 = strongly disagree, 5 = strongly agree). Most felt natural resource areas should be managed for protection of water quality, protection of wildlife, scenic value, watching wildlife, and improved air quality. Using the same list, they were asked if there were currently enough natural resource areas for these activities or if more were needed. Respondents used a scale of -1 (fewer areas needed) to 1 (more areas needed). Most reported the need for additional natural resource areas for improved air quality, protection of plants, protection of water quality, and protection of wildlife.

Experience Use History

Chavez (2001, 2003) found evidence of repeat use of sites over time and plans to return to natural resource recreation areas multiple times per year by Latinos. A series of day use studies in southern California (Chavez 2001) have indicated that although Latinos are not found at all sites across forests, they are found in particular locations. At those sites, Latinos are often repeat visitors, who learned about the sites from family and friends, and who have plans to return to those sites in the future. Some respondents returned to the same day use site multiple times each summer. Respondent perceptions were that the natural resource recreation areas provided great recreation experiences, were well worth the money it took to take the trip, and planned to tell others about their experiences at those areas.

In a qualitative study of Latinos, Chavez (2003) found that family groups were at natural resource recreation areas to rest and relax and have enjoyable family outings. She also found that Latinos were at these natural resource recreation areas because the areas were reminders of homelands. Proximity to homelands (such as Mexico) can contribute to the maintenance of Latino cultures, such as adding to the cultural identity through language or cultural activities. These findings also suggest

that Latinos may be less likely to leave one site and substitute another place—which could be suggested by managers when sites are overcrowded—unless those substituted sites meet the same reminder of homelands criteria.

Serving Needs of Latino Visitors

The remainder of the paper focuses on considering the needs of Latinos in natural resource recreation management. For some of these sections it is important to note that, in general, Latinos tend to use the natural resource recreation areas in larger and extended family groups (nuclear family plus aunts, uncles, cousins, etc.) as compared to non-Latinos. Many of the suggestions to consider are directed at urban-proximate natural resource recreation areas where Latinos select and use particular sites, when Latinos are fairly well attached to those places, where large groups of Latinos may use sites for big gatherings with cultural activities, where communications plans need to incorporate the Spanish language and respect cultural meanings, and where barriers to recreation use need to be alleviated.

Suggestions Related to Communications

Research on Latino visitors to two southern California national forest recreation day use areas indicated a large percentage of Spanish speakers and Spanish readers (Chavez 2001). The same studies found a preference for getting information about these areas by word of mouth, particularly from family and friends. It was found that once on site, visitors preferred to receive information through a brochure at the site entrance, signs along the road, and notes on bulletin boards. The information preferred was site specific. At one site, preferences were for information on stream-side areas, things to see and do, rules and regulations, and rare types of plants and animals. At another site, the preferences were for the best times to visit the area to avoid crowds, safety in the area, picnic/barbecue area, and camping in the area.

Research on international symbols (signs without words) in use on two urban-proximate national forests indicated the following were signs well understood by all visitors: Fishing, Swimming, Restrooms, Horse trail, No fireworks, Hiking trail, Picnic area, No trucks, Camping (tent), Drown campfires, and Hikers (Chavez et al. 2004). Fewer visitors understood these symbols: Off-road vehicle trail, Information, and Automobiles permitted. The following symbols were not understood by visitors: No alcohol, No charcoal grills, Amphitheater, Carry water back to the site, Fish hatchery, and Conserve water. The majority of respondents were Latino, but results included others as well.

These various findings suggest some specific actions to consider for serving Latinos at urban-proximate natural resource recreation sites. Providing translated

materials (into Spanish) is strongly suggested. Even better would be to provide well- translated materials that have been back-translated (see Marin and Marin 1991) and are culturally correct. Some international symbols may be used as well, and would possibly serve more than Latino visitors. It appears that traditional use of brochures at the site entrance, signs along the road, and notes on bulletin boards are acceptable. When considering the types of information to provide, managers will need to survey their visitors.

Suggestions Related to Development of Sites

Research conducted in southern California indicated that Latino recreation visitors liked to recreate at relatively developed sites; they wanted restrooms, picnic tables, and related facility development. At one site the strongest preferences expressed by Latinos were for trash cans, water faucets, cooking grills, and picnic tables (Chavez 2002). This was a function of the site being a picnic area. At another site, which is managed for dispersed use, the preferences were for trash cans, telephones, water faucets, and parking areas.

Research indicated that visitors engaged in several activities when recreating on natural resource recreation areas (Chavez 2001). The things they usually engaged in were a function of the site where the data were collected. At one site, for example, the activities were picnic/barbecue, stream play, day hike, watch wildlife, and drive for pleasure. At another site the usual activities were picnic/barbecue, camp, drive for pleasure, stream play, and off-highway vehicle driving. In a study where half of the respondents were Latino, Chavez (2006) found that respondents believed that more areas were needed for camping, day hiking, educational purposes, scenic value, visitor safety, and watching wildlife.

Sites that serve Latino visitors in urban-proximate natural resource recreation areas may need to be developed or renovated to suit the desires of those visitors. Level of development depends on the management plan of an area. For example, picnic areas can be highly developed since they serve a particular need, but managers should exercise more caution for development of dispersed sites. Picnic area development for Latinos should consider grouped tables, barbecues to suit larger groups, and nearby trash containers (Chavez 2002). It is also suggested that Latinos tend to be day users and prefer stream play, picnic/barbecues, and available hiking trails. Some consideration should be made for the longer period Latinos tend to stay at sites—perhaps having services/facilities that fit their preferences (such as group play areas that could be used for volleyball or soccer, drinking water, and toilets). Keeping sites clean is appreciated by all visitors.

Serving Latinos Through Partnerships and Cooperation

Given the backlog of work that needs to be accomplished at many urban-proximate natural resource recreation areas, managers may need to consider partnerships and cooperation with others. Managers of these areas will want to conduct an institutional analysis to determine the capabilities of the agency and to determine who else would be available to assist with site management and visitor services.

Partnerships and cooperation to serve Latinos can be important at three points of the recreation experience—before they arrive onsite, once onsite, and after they return home. Thus, outreach and related efforts can serve many purposes. Managers can use partnerships and cooperation to communicate information to Latino groups before they arrive onsite, they can publicize information meetings, and they can encourage community involvement. If the partners focus on issues salient to Latinos, they will do a good job in developing appropriate environmental education programs and interpretation services and programs. Given how much use occurs onsite, managers can partner with groups to provide public transportation services while onsite, or even to the site (Sorvig 2002). They may also be able to partner with others in developing or renovating recreation areas.

Makopondo (2006) had four major recommendations for creating racially and ethnically inclusive collaboration and partnerships: (1) agencies need to recognize minorities as legitimate stakeholders and invite all relevant organizations and leaders into partnership formation and problem defining, (2) agencies need to consider expanding their mission and goals outside their traditional boundaries, (3) agencies need to make their programs and activities relevant to the lives of racial and ethnic minorities, and (4) agencies must develop genuine personal relationships with their community partners.

Provision of Employment Opportunities

When considering how to best serve Latinos in urban-proximate natural resource recreation areas, managers will want to consider staffing and training (Chavez 2000). One of the barriers for Latinos to taking a trip or taking a trip to a natural area was the perception that few people of their ethnicity were employed at natural areas (Tierney et al. 1998). This perception can be alleviated through the continued hiring of Latinos into urban-proximate natural resource recreation positions. It would also be beneficial to train urban-proximate natural resource recreation paid and volunteer staff members. This training would focus on beliefs and preferences of the recreating public, especially the beliefs and preferences of Latino recreation visitors.

Conclusions

There has been a major shift in the ethnic and racial profile of the United States with large increases in the Latino population. The demographic profiles influence other aspects of life in the United States, including urban-proximate natural resource recreation area management. Latino groups may have expectations about natural resource recreation areas, barriers to participation, and site development preferences that are different than other groups (Chavez 2001, 2002; Tierney et al. 1998).

Suggestions for serving the needs of this rapidly increasing population were offered. These suggestions related to communications, development of recreation sites, use of partnerships and cooperation, and provision of employment opportunities.

The information provided in this article was based on research conducted mostly in southern California. Owing to this emphasis on southern California, the suggestions presented may have different applicability in other areas of the United States.

Latino groups may have expectations about natural resource recreation areas, barriers to participation, and site development preferences that are different than other groups.

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Chapter 6: Diverse Users of Four Urban National Forests: Participation, Preferences, and Perceptions

Deborah J. Chavez and David D. Olson [1]

Abstract

Diversity at outdoor recreation sites, particularly those near large and diverse urban populations, is occurring across the United States. It is likely that individuals who belong to these changing groups bring a set of values and behaviors to public lands that differ from that of White visitors, and perhaps, land managers. Reported here are findings from studies conducted on four national forests in southern California. We examined the participation, preferences, and perceptions of diverse recreation visitors, focusing on Latinos. Studies like the ones reported here provide land managers insights to better serve this important group. Percentage of Latinos at the areas included in this article ranged from 24 percent (Palomar Mountain on the Cleveland National Forest) to 78 percent (Applewhite on the San Bernardino National Forest).

At all four areas, picnic/barbecues and stream playing were among the activities usually engaged in. Activities usually engaged in at the areas were development dependent (picnicking/barbecuing, camping, and off-highway vehicle riding), natural area dependent (watching wildlife and driving for pleasure), or water dependent (stream play and fishing).

When communicating with diverse groups, managers should consider whether this information is provided before people get to the area or after they arrive. Offsite communications were primarily word of mouth (family and friends) and would be challenging for land managers to tap into. Onsite communications are less problematic and fit the traditional methods available—brochure at the area entrance, signs along the road, and notes on a bulletin board. The desired pertinent information to share with visitors onsite differed by area suggesting managers will need input from their visitors to provide for visitor needs.

Visitors rated several facilities and amenities as important or very important. Trash cans and water faucets were common responses to all the areas studied, but other facilities and amenities were site specific.

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[1] Supervisory social scientist and social science analyst, respectively, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, 4955 Canyon Crest Drive, Riverside, CA 92507; e-mail: dchavez@fs.fed.us; dolson04@fs.fed.us.

These studies also indicate that Latino and other urban national forest visitors to these areas were bothered by litter along the road and at picnic sites, graffiti on natural and on human-made surfaces, and tree carving. These findings suggest area managers should focus on keeping sites free of litter and graffiti.

Visitors at all four of these urban national forest areas said they wanted to return to the area again, thought it was well worth the money expended to take the trip, and said they had a great recreation experience. These data suggest that Latino and other visitors are likely to continue to recreate in these places and will tell others about them.

Keywords: Latinos, outdoor recreation, participation, perceptions, preferences.

Introduction

The social composition of the visitors to many U.S. outdoor recreation areas has been changing. In some states, it is the racial/ethnic makeup that is changing. In other states the changes might be in age, education, income, family composition, or some other variable or set of variables. In California, diversity is manifested in several ways with race and ethnicity being dominant among them. It is likely that individuals who belong to these changing groups bring a set of values and behaviors to public lands that differ from that of "traditional" users, and perhaps, land managers. These changes may be felt the strongest in resource programs dealing with visitor use, such as recreation, cultural resources, and lands (Chavez 2001).

It is important to examine users of urban-proximate outdoor recreation sites and obtain visitor points of view about those sites. Of particular importance are day use sites, which receive a large amount of use but little research emphasis. Day use sites are those in which people visit for some portion of a day but they do not stay overnight. Managers of urban-proximate day use sites can better manage with detailed information about participation patterns, site preferences, and visitor perceptions.

The following reports participation, preference, and perception results from day use visitor contact surveys conducted on four urban national forests in southern California between 2001 and 2004 with a focus on areas where Latinos recreate. The surveys were a replication of the day use surveys conducted on the same national forests in 1992-94 and 2000-01 (Chavez and Mainieri 1995; Chavez et al. 1995a, 1995b, 2002).

> **It is important to examine users of urban-proximate outdoor recreation sites and obtain visitor points of view about those sites. Of particular importance are day use sites, which receive a large amount of use but little research emphasis.**

Forest Descriptions

The Angeles National Forest (ANF) is situated primarily in Los Angeles and San Bernardino Counties. The ANF is more than 656,000 acres in size. The ANF offers year-round opportunities for camping, hiking, swimming, boating, picnicking, and sightseeing. Over 800 miles of forest trails lead hikers, mountain bikers, equestrians, and off-highway vehicle (OHV) riders across rugged backcountry, along high, scenic ridges, and through shady, tree-lined canyons. During the winter, visitors can ski at one of the five ski areas or cross-country ski, snow camp, hike, snowmobile, or just play in the snow.

The San Bernardino National Forest (SBF) covers about 820,000 acres within San Bernardino and Riverside Counties. Of this area, about 162,000 acres are in private, county, state, and other federal agency ownership. The forest lies within 2 hours driving distance of more than 16 million residents of southern California. The SBF is one of the most heavily-used in the Nation and was ranked 12th in recreation use among national forests in 1995, with 6.3 million visitor days (it was ranked third in California). Developed recreation sites on the SBF frequently exceed their design capacity during weekends of high season use (includes summer and winter). General forest recreation accounted for 4.5 million visitor days in 1982 and has increased since then. It is important to examine use of recreation sites and get visitor points of view about those sites.

The Los Padres National Forest (LPNF) is situated primarily in Monterey, San Luis Obispo, Santa Barbara, and Ventura Counties. Populations in these counties are extremely diverse. The LPNF is characterized by a mediterranean climate, with cool winters and hot, dry summers, and has more than 1.7 million acres on the Coast and Transverse Ranges, providing a variety of terrain, vegetation, and recreation settings including ocean beaches, forest, chaparral, and desert. The LPNF was one of the most heavily used in the state and ranked fifth in 1995 for recreation visitor days, with 5.0 million recreation visitor days. About 30 percent of the recreation use in the forest is in developed sites. These include public facilities such as campgrounds, picnic grounds, and observation sites. General forest recreation opportunities include undeveloped areas and roads and trails. About 70 percent of recreation use occurs in general forest areas.

The Cleveland National Forest (CNF) includes three distinct mountain ranges adjoining the urbanized lowlands of Orange, Riverside, and San Diego Counties. Los Angeles County is within an hour's drive of the northern part of the forest. More than 420,000 acres in size, the CNF encompasses much of the Santa Ana, Palomar, and Laguna Mountains. Elevations range from 400 to 6,140 feet. Chaparral is the most abundant vegetation type, covering about 88 percent of forest lands.

The forest's developed recreation facilities can accommodate about 4,200 persons at one time. These facilities include 5 picnic areas, 16 family campgrounds, 7 group campgrounds, and 2 information stations. The forest has experienced great demand for general forest or non-facility-based recreation opportunities, particularly for hiking and horseback riding.

Methods

All four studies reported here (ANF, CNF, LPNF, and SBF) are based on results from day use studies at those sites. The instrument used for the four studies reported here closely followed the questions first asked of day use visitors in 1992. All data were collected under the auspices of Office of Management and Budget approvals, as well as study plans filed with the Pacific Southwest Research Station. The survey instruments were available to participants in English and Spanish, and were collected by bilingual research teams. All visitors (age 18 or over) onsite were asked for their voluntary participation in the survey. Visitors were assured confidentiality of their responses.

Dates of data collection were randomly selected throughout the summer months 2001 through 2004. Day use sites within the planning places were also randomly selected from a list provided by each forest of developed picnic areas, general day use areas, and trailhead sites.

The primary objectives of each day use study were to:
- Gain a stronger understanding of recreation visitor characteristics.
- Report visitation patterns.
- Determine onsite activities.
- Determine interpretation, communication, and information patterns.
- Report on the relative importance of site attributes.
- Report visitor perceptions about impacts to day use sites and about their recreation experiences.

In total, 924 respondents were used for this paper. There were 137 from the ANF, 249 from the CNF, 268 from the LPNF, and 270 from the SBF.

Results were analyzed using the Statistical Package for Social Sciences.

Results

Sociodemographic Profiles

There are several differences in forest respondents among sites (table 6-1). There were more Latino respondents at the ANF and SBF day use sites, and more White respondents at the CNF and LPNF sites. There were also fewer respondents who

Table 6-1—Sociodemographic characteristics of respondents, by forest

	Angeles National Forest	Cleveland National Forest	Los Padres National Forest	San Bernardino National Forest
	- - - - - - - - - - - - - - - *Percent* - - - - - - - - - - - - - - - -			
Race/ethnicity:				
White	41	71	65	37
Latino	40	21	12	47
Other	19	8	23	16
Gender:				
Male	52	66	55	49
Female	45	34	44	50
English:				
Spoken	63	86	83	52
Read	69	90	88	57
U.S. born	64	82	81	62
Household income:				
Up to $39,999	40	19	31	54
$70,000+	22	43	29	17
	- - - - - - - - - - - - - - - - *Mean* - - - - - - - - - - - - - - - -			
Age	37	39	38	35
Education	13	15	15	17

spoke English and read English as their primary language at the ANF and SBF day use sites, fewer U.S.-born respondents at those sites, and lower incomes. The respondents at the CNF and LPNF were somewhat older (on average), and they reported higher years of education attained. There were more male respondents at all the sites except the SBF.

The remainder of the paper examines participation, preferences, and perceptions focusing on areas within each forest where Latinos were found in the greatest numbers: On the ANF, it is the San Gabriel Canyon where 73 percent of the site respondents were Latino; on the CNF, Palomar Mountain had 24 percent Latino respondents; on the LPNF, the area with the most Latino respondents was Santa Ynez (39 percent). The Applewhite Picnic Area had the highest percentage of Latino respondents (78 percent) for the SBF. Group and visit characteristics were similar among these places with most respondents reporting they were recreating in a family group, most had plans to stay for more than 4 hours (except CNF where most reported planned visits of 1 to 3 hours), and most were on repeat visits to the areas.

Participation

Respondents were asked what activities they usually engaged in while on the national forest where they were contacted. Activities that respondents usually engaged in did not differ much by site (table 6-2). At all four areas, respondents reported picnic/barbecues and stream playing to be among the activities usually engaged in. For example, 66 percent of the respondents at the Applewhite Picnic Area said they usually engaged in picnicking/barbecuing when onsite and 65 percent of the respondents at the Applewhite Picnic Area said they usually engaged in stream playing when onsite. At three areas, respondents said watching wildlife, driving for pleasure, and camping were activities in which they usually engaged. Day hiking, fishing, and OHV riding rounded out the list. Some of these activities are development dependent (picnicking/barbecuing, camping, and OHV riding), natural area dependent (watching wildlife and driving for pleasure), or water dependent (stream play and fishing).

Table 6-2—Activities respondents usually engaged in while on a forest visit, by area

Area[a]	Activity	Percentage
SBF Applewhite	Picnic/barbecue (BBQ)	66
	Stream play	65
	Day hike	48
	Wildlife viewing	38
	Drive for pleasure	36
ANF San Gabriel Canyon	Picnic/BBQ	60
	Camp	42
	Drive for pleasure	40
	Stream play	35
	OHV[b] riding	20
LPNF Santa Ynez	Stream play	79
	Camp	64
	Picnic/BBQ	61
	Wildlife viewing	50
	Fishing	32
	Drive for pleasure	32
CNF Palomar Mountain	Picnic/BBQs	96
	Fishing	52
	Day hiking	48
	Stream play	48
	Camp	44
	Wildlife viewing	44

[a] ANF = Angeles National Forest, CNF = Cleveland National Forest, LPNF =

Preferences About Communication and Development

Communication—

Respondents were asked how they first learned of the site (response choices included agency, brochures, family, flyers, friends, newspaper, radio, television, other). Most (at least 50 percent within an area) heard about the areas by word of mouth through family members or friends.

Respondents at each area were asked how they would like to receive information related to national forests while onsite. Response categories included brochure at entrance, evening program at information center, notes on bulletin board, radio broadcast, ranger who stops by for a visit, and signs along the road. How these respondents would like to receive information related to national forests while onsite differed little (table 6-3) by area. For example, 65 percent of the respondents at the Applewhite Picnic Area said they would prefer a brochure at the area entrance, 61 percent said signs along the road, and 51 percent said notes on a bulletin board. The top three responses across areas were brochure at entrance, signs along the road, and notes on a bulletin board.

> **Respondents were asked how they first learned of the site. Most heard about the areas by word of mouth through family members or friends.**

Table 6-3—Top three preferences for receiving information while onsite, by area

Area[a]	Information choice	Percentage liked
SBF Applewhite	Brochure at entrance	65
	Signs along the road	61
	Notes on bulletin board	51
ANF San Gabriel Canyon	Brochure at entrance	81
	Signs along the road	66
	Notes on bulletin board	46
LPNF Santa Ynez	Brochure at entrance	68
	Notes on bulletin board	61
	Signs along the road	54
CNF Palomar Mountain	Brochure at entrance	84
	Signs along the road	80
	Notes on bulletin board	52

[a] ANF = Angeles National Forest, CNF = Cleveland National Forest, LPNF = Los Padres National Forest, and SBF = San Bernardino National Forest.

Visitors selected several types of information they would like to receive about these areas (table 6-4). The options included best times to visit the area to avoid crowds, camping in the area, cultural and historical features of the area, fishing in the area, hiking in the area, history of the area, hunting in the area, location of day hike trails, locations of overnight trails, picnic/barbecue areas, places similar to this

Table 6-4—Top four preferences for topics of information, by area

Area[a]	Information topic	Percentage
SBF Applewhite	Streamside areas	43
	Things to see and do	40
	Rules and regulations	38
	Rare types of plants and animals	35
ANF San Gabriel Canyon	Best times to avoid crowds	66
	Safety in the area	59
	Picnic/barbecue area	59
	Camping in the area	57
LPNF Santa Ynez	Best times to avoid crowds	71
	Camping in the area	68
	Location of day hike trails	64
	Streamside areas	64
CNF Palomar Mountain	Picnic/barbecue areas	84
	Camping in the area	68
	Streamside areas	68
	Fishing in the area	64

[a] ANF = Angeles National Forest, CNF = Cleveland National Forest, LPNF = Los Padres National Forest, and SBF = San Bernardino National Forest.

one, OHV areas, rare types of plants and animals, rules and regulations, safety in the area, shooting areas, similar areas that are not crowded, streamside areas, area surrounding the forest, things to see and do, types of plants and animals in the area, ways to keep the area natural looking, ways to protect the wild area, other. The responses differed by area with respondents at three of the four sites selecting streamside areas and camping in the area. Respondents at two of the four areas selected best times to visit the area to avoid crowds and picnic/barbecue areas.

Development—
Respondents at these areas were asked the importance of having particular facilities and amenities onsite (cooking grills, fire pits/rings, group facilities, law enforcement and patrols, parking areas, restricted use levels, telephones, trash cans, water faucets, other). Common responses to these areas included trash cans and water faucets (table 6-5 reports percentages for those saying these facilities and amenities were "important" or "very important"). Other responses differed by area with respondents at two of the four areas selecting cooking grills, picnic tables, and parking areas.

Table 6-5—Top four preferences rated as "important" or "very important" for site development and amenities, by area

Area[a]	Amenity	Percentage
SBF Applewhite	Trash cans	84
	Water faucets	80
	Cooking grills	80
	Picnic tables	79
ANF San Gabriel Canyon	Trash cans	67
	Telephones	65
	Water faucets	61
	Parking areas	61
LPNF Santa Ynez	Trash cans	57
	Parking areas	54
	Water faucets	54
	Law enforcement and patrols	50
CNF Palomar Mountain	Cooking grills	60
	Water faucets	60
	Trash cans	56
	Picnic tables	52

[a] ANF = Angeles National Forest, CNF = Cleveland National Forest, LPNF = Los Padres National Forest, and SBF = San Bernardino National Forest.

Perceptions

Respondents were asked their opinions about impacts to the day use sites. The possible impacts were cars parked at "no parking" areas; carving of names, initials, or messages on trees (tree carving); dogs walked off leash; drawings or graffiti on human-made surfaces (graffiti—man-made surfaces); drawings or graffiti on natural surfaces (graffiti—natural surfaces); litter along the road; litter at picnic sites; a lot of people at the site; people drinking alcohol. Items that bothered them "a lot" were litter along the road, litter at picnic sites, and graffiti on natural surfaces (table 6-6).

Finally, the respondents provided their impressions about their recreation experience (table 6-7). They were asked if these statements were true (or false) about them: "Being at this site reminds me of childhood recreation experiences" (reminder of childhood), "I plan to tell at least one other person about my trip here" (tell others about trip), "I want to return here again," "I was disappointed with some aspects of this site," "My experience was not as good as I had hoped," "The employees were helpful," "The site was safe and secure," "This is a great recreation experience," "This trip was well worth the money I spent to take it" (well worth the money). A large percentage of respondents (70 percent or more) at all four areas

Table 6-6—Top three perceptions about human impacts that bother them "a lot," by area

Area[a]	Human impact	Percentage
SBF Applewhite	Litter along the road	63
	Litter at picnic sites	57
	Graffiti on natural surfaces	55
ANF San Gabriel Canyon	Litter along the road	62
	Graffiti on natural surfaces	59
	Litter at picnic sites	57
LPNF Santa Ynez	Graffiti on man-made surfaces	61
	Graffiti on natural surfaces	57
	Litter along the road	57
CNF Palomar Mountain	Litter along the road	72
	Litter at picnic sites	72
	Tree carving	68

[a] ANF = Angeles National Forest, CNF = Cleveland National Forest, LPNF = Los Padres National Forest, and SBF = San Bernardino National Forest.

Table 6-7—Perceptions about the recreation experience, by area

Area[a]	Recreation experience	Percentage[b]
SBF Applewhite	I want to return here again	79
	Well worth the money	74
	Tell others about trip	71
	It's a great recreation experience	70
ANF San Gabriel Canyon	I want to return here again	85
	Tell others about trip	82
	Well worth the money	71
	It's a great recreation experience	70
LPNF Santa Ynez	Tell others about trip	82
	I want to return here again	79
	It's a great recreation experience	71
	Well worth the money	71
CNF Palomar Mountain	I want to return here again	88
	The site was safe and secure	88
	Well worth the money	84
	It's a great recreation experience	80

[a] ANF = Angeles National Forest, CNF = Cleveland National Forest, LPNF = Los Padres National Forest, and SBF = San Bernardino National Forest.
[b] Percentage who said each statement was "true" about them.

said the following were true about them: "I want to return there again," "It was well worth the money expended," and "It was a great recreation experience." At three of the four areas, the respondents also said they would tell others about their trip.

Discussion

Studies like the ones reported here provide land managers insights to better serve this important group. When communicating with diverse groups, for example, managers should consider whether this information is provided before people get to the area or after they arrive. Offsite communications were primarily word of mouth (family and friends) and would be challenging for land managers to tap into. Onsite communications are less problematic and fit the traditional methods available—brochure at the area entrance, signs along the road, and notes on a bulletin board. The desired pertinent information to share with visitors onsite differed by area suggesting managers will need to have some specific information from their visitors to provide for visitor information desires. Still, there was some consistency with preferences for information about streamside areas and camping in the area.

Visitors rated several facilities and amenities as important or very important. This is consistent with other studies reporting a desire by Latinos for development of sites (Chavez 2002). Trash cans and water faucets were common desires to all the areas studied, but other desires were site specific.

These studies also indicate that Latino and other urban national forest visitors to these sites were bothered a lot by litter along the road and at picnic sites, and graffiti on natural surfaces. They were also bothered by graffiti on man-made surfaces and tree carving. These findings suggest managers should focus on keeping sites free of litter and graffiti. Another study found the addition of many trash cans cut back considerably on litter (Chavez 2002).

Visitors at all four of these urban national forest areas said they wanted to return to the area again, thought it was well worth the money expended to take the trip, and said they had a great recreation experience. These data suggest that Latino (and other) visitors are likely to continue to recreate in these places and will tell others about it, signaling increased use by these respondent groups in the future.

Visitors rated several facilities and amenities as important or very important. This is consistent with other studies reporting a desire by Latinos for development of sites.

Metric Equivalents

When you know:	Multiply by:	To get:
Acres	0.405	Hectares
Miles	1.609	Kilometers

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Chapter 7: Race, Ethnicity, Recreation, and Leisure: An Assessment of Research Gaps

Edwin Gómez[1]

Abstract

The purpose of this report is to identify research gaps related to the race/ethnicity and leisure literature. This was done by first highlighting the trends involved in the ethnicity and leisure literature, and then presenting five gaps found in the literature for future researchers to consider.

Keywords: Ethnicity, race, recreation, leisure, research gaps.

Introduction

General interest in the area of racial/ethnic minority populations and recreation/leisure began prior to the 1960s, but expanded in the 1960s as a function of the civil rights movement (Floyd 1998). Specific interest in racial/ethnic minority populations and outdoor recreation areas was spurred by findings from the Outdoor Recreation Resources Review Commission (ORRRC) (Mueller and Gurin 1962). Over the past 40 years, the quantity of studies in race/ethnicity and recreation/leisure has increased. Floyd's (2007) review of five major leisure studies journals in the field noted that only 5 articles appeared in the 1970s, whereas 23 appeared in the 1980s, and 66 in the 1990s. Since 2000, 55 articles have appeared on the topic. Special issues devoted to the topic of race/ethnicity and recreation were allocated in the following journals: *Journal of Leisure Research* (1993, 1998), *World Leisure* (2001), *Leisure Sciences* (2002), *Leisure Studies* (2004), and *Leisure/Loisir* (2007).

Given the increase in the number of studies on the topic of race/ethnicity and recreation, and continued interest due to changing demographics of user groups, the purpose of this report is to conduct a gap analysis. To conduct a gap analysis, it is critical to look at past/current trends and future directions. As such, the present analysis is twofold.

The first area of analysis considers what has been researched in the area of race/ethnicity, and recreation over the past four decades. However, this analysis is less of a literature review, and more of a notation of trends. For more extensive literature reviews and critiques see Allison (2000), Floyd et al. (1994), Gómez (2002),

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[1]Associate professor, Recreation and Tourism Studies Program, Department of Exercise Science, Sport Management, Physical Education and Recreation, Old Dominion University, 115 Spong Hall, Norfolk, VA 23529; e-mail; egomez@odu.edu.

Gramann (1996), Philipp (1999), Shinew et al. (2006), and Woodard (1988). The second area of analysis involves the assessment of gaps in the field of ethnicity/race and recreation and leisure. It is important to begin with a brief analysis of where we have been, prior to addressing where we need to go.

An Assessment of the Current State of Ethnicity/Race and Leisure Studies

The 1962 ORRRC study initiated a line of research that would last over a decade. The investigations following the ORRRC study focused on African American/White differences in outdoor recreation. Outdoor recreation investigations of the 1970s were typically centered on issues related to racial inequality in the outdoors, and in African American/White differences in participation in various recreational activities (Manning 1999). These foci consequently led to a search for explanations for the pattern of findings observed.

One explanation for the recreation underparticipation of racial/ethnic minorities was the marginality-ethnicity paradigm espoused by Washburne's (1978) seminal article. Washburne hypothesized that the underparticipation of minorities was due to socioeconomic (marginality) and subcultural identity (ethnicity) reasons. This heralded an era of exploration in the 1980s concerning which of these two theories was more viable. Support for the ethnicity theory came from Klobus-Edwards (1981) and Stamps and Stamps (1985). Support for the marginality theory came from Woodard (1988) and West (1989). Mixed results regarding support for marginality and ethnicity came from Hutchison (1988). These studies looked at differences between racially-integrated vs. homogenous neighborhoods, Southern vs. Northern African Americans, peer-group compositions, and called for more subjective/qualitative measures, as well as a move to alternative explanations beyond the ethnicity-marginality paradigm. At the close of the 1980s, West's (1989) introduction of discrimination or interracial relations as an explanation for underparticipation led to a new set of studies in the 1990s that examined the role of discrimination in outdoor recreation (Chavez 1993, Feagin 1991, Floyd et al. 1993).

The 1990s could be characterized as the decade where ethnicity/race and leisure research really soared and began to reflect on past research and point to new directions. The literature on race/ethnicity and recreation expanded its scope to include more ethnically diverse samples from populations such as Latinos/Hispanics (Carr and Williams 1993; Floyd and Gramman 1993, 1995), Asians (Allison and Geiger 1993, Tsai 2000, Yu and Berryman 1996), and Native Americans (Condon 1995, McDonald and McAvoy 1997, Sky 1995). These and

similar studies focused on meanings of leisure by various ethnic groups, intra- and intergroup differences, and the roles that acculturation, assimilation, and immigration play in public recreation opportunities. Philipp (1999) explored African American socialization, discrimination, parental beliefs, and leisure in order to delve into the belief system of African Americans and how it impacts their leisure choices and their feelings about being "welcomed" in various leisure settings.

The transition from the 1990s to the 21st century involved a growing interest in the expansion of the race/ethnicity and recreation literature. The 21st century marked three key trends: (1) model development, (2) alternative explanations, and (3) more qualitative studies.

One of the first conceptual models was developed by Floyd et al. (1993) to illustrate the factors affecting ethnic group participation in recreation activities and reconceptualize the marginality-ethnicity paradigm within the larger perspective of assimilation theory. Gómez developed (2002) and empirically tested (2006) the Ethnicity and Public Recreation Participation Model. Gómez' model illustrated how acculturation, subcultural identity, socioeconomic status, perceived discrimination, and benefits of recreation affected recreation participation. Stodolska (2005) developed the Conditioned Attitude Model of Discrimination to look at the relationship that external and internal forces contribute to recreation participation.

Alternative explanations for race/ethnicity and recreation are expanding. For example, the empirical literature has focused on acculturation issues related to ethnic identity, immigration, and transnationalism (Juniu 2000, Stodolska 2000, Stodolska and Alexandris 2004, Utsey et al. 2002). The role of leisure constraints and negotiation strategies has also been applied to recreation behavior by minority groups (Li and Stodolska 2007). The role of place attachment/meaning has been explored with respect to specific ethnic groups such as African Americans (Johnson 1998) and, more recently, Native Americans (McAvoy et al. 2003), as well as the specific role a place can play in enhancing positive interracial interactions (Shinew et al. 2004).

Hutchison (1988) was one of the first to advocate for more qualitative studies in the race/ethnicity and recreation literature—a sentiment echoed by Henderson et al. (1999). Kelly (2000) pointed out that qualitative studies have legitimately established themselves in the recreation literature in general, and Stodolska and Walker (2007) noted this pattern as a staple of current initiatives in race/ethnicity and leisure research.

An Assessment of the Gaps in Race/Ethnicity and Leisure Studies

Gap 1—Need for Replication of Previous Studies

There have been a multitude of studies geared at exploring various aspects of ethnicity/race and leisure. While certainly laudable, the next step is to begin the process of replicating studies to confirm previous conceptualizations and findings. As a discipline, ethnicity/race and leisure needs a more concerted effort regarding the establishment of correlations between hypothesized relationships. For example, what is the relationship (e.g., correlation) between acculturation and recreation use, or between perceived benefits and recreation use, and are these associations similar within and across race/ethnic groups? Replication studies would allow for the assessment of trends over time and a meta-analytic approach to race/ethnicity and leisure. Replication studies could be augmented by "linking" qualitative and quantitative data. Henderson et al. (1999) noted that quantitative data can provide "reliable outcome information that can be generalized," while qualitative data provide an "insider's view to better understand the phenomenon under study" (1999: 254).

Gap 2—Location, Location, Location

Related to the need for replication is the need to replicate studies in both the same areas of the country and in different areas of the country. The focus has traditionally been on national parks, regional recreation areas, or areas predominantly west of the Appalachians. As noted in an earlier publication (Gómez 2003), most African American studies have been conducted in the Great Lakes Region or in the U.S. Southeast; most studies on Latinos in the U.S. Southwest; the widest geographic distribution of studies have been done on Asian Americans; and Native American research has been primarily in the U.S. West and Canada. Very little has been done in the larger metropolitan areas, in general (with Chicago and Los Angeles being the exception), and the largest cities on the U.S. East Coast in particular. This is not to say that there is no research on wildland-urban interface; however, the vast majority of our concentrations of ethnic/racial groups are in cities, and the vast majority of park lands used by these groups, for various reasons, are urban park systems. Additionally, the Latino/Hispanic population grew faster from 1990 through 2000 in much of the U.S. South than in other areas of the United States (Kochlar et al. 2005), and these new Latinos have distinctive characteristics (e.g., they tend to be male, unmarried, born abroad, and young), different from their predecessors in traditional settlement areas (e.g., New York and California).

Gap 3—The Role of Language in Leisure

The role that language plays in leisure will be an area that will require further exploration. As the United States becomes more pluralistic and ethnic group members become more and more inclined to speak their heritage language, it will be important to look at the relationship between non-English speakers and the role that their heritage language has on how they recreate, where they recreate, and why they recreate with specific groups (in- vs. out-groupings). Also, what effect does language have on recreation participation? Besides being simply a constraint, what is it about language that encourages or discourages participation? For example, if one speaks both Spanish and English, and is a functional bilingual, where would that person choose to recreate, and who would he or she participate with? Language, in terms of loss or maintenance, should be explored. This will give the oft-measured acculturation variable a more indepth analysis (see Carr and Williams 1993, Floyd and Gramman 1993, for early examples of this work—especially on why language use should be studied). Researchers noted that language is as much a cultural marker as it is an indication of acculturation and adaptation. Additionally, heritage language can facilitate intra-ethnic leisure interaction, which is important to maintain and reinforce other aspects of cultural norms.

Gap 4—The Role of Values and Leisure/Recreation

Acculturation is not simply an issue of language, but also of value systems. Some researchers argued for acculturation measures to take into account the role of values, in addition to linguistic issues. As such, a gap in the literature is the lack of understanding of the role of value systems. Related to this, how is leisure itself valued as a concept by various racial/ethnic group members? Researchers have asked about meanings given to the environment and the outdoors, the same extension should be allotted to the exploration of leisure from a non-Western perspective. Over three decades ago, Meeker and others (1973) noted that "myth" of national parks as "Gardens of Eden" does not go well with conceptions of nature in traditional African and American Indian culture. Given that some cultures are collectivistic, while others are individualistic, how does leisure manifest itself in the public psyche of different cultural orientations (see Kim et al. 2001 for a case study on Koreans)? For example, is leisure manifested as a collective identity issue? What's the role of leisure in maintaining ethnic identity or reinforcing values? Typically, leisure or recreation is viewed as the dependent variable or the "end product." Arguably, however, recreation and leisure could be the cause of the reinforcement of values and ethnic identity (Virden and Walker 1999), or cultural values could be the cause of recreational resource conflicts (Dustin et al. 2002).

Gap 5—More Exploration on Role of Dominant Ideologies

Assuming the hegemonic leisure mindset is an Anglo male perspective, why have researchers not asked Anglos their perceptions of why they think various ethno-racial groups do not participate in recreation, or visit certain leisure environments or recreation sites? When discussing individual leisure experiences, identity, and difference, researchers need to ask "why" difference matters, and ask how discourse about race operates within leisure. Kivel (2000) advocated for the need to "explicitly examine the construction of dominant discourses around race (e.g., whiteness); gender (masculinity); sexual identity (heterosexism); disability (hegemony of ability); class (economic privilege); [and religion (Christianity)] in order to understand leisure's role in constructing and maintaining dominant identities of privilege" (p. 81). It is important to "deconstruct" the historical role of "whiteness" and its impact on recreation. Critical theorists and others have addressed the deconstruction of whiteness in public spaces (see Price's 1998 case study in Washington, DC). The focus on whiteness and its accompanying issues or power and privilege are not only an extension of the interracial contact hypothesis mentioned by West, but also moves away from a categorical perspective of race to a more concerted effort surrounding the issue of racism, and how "leisure contexts operate to reproduce and reinforce racist discourses and discriminatory practices or how they serve as contexts in which people resist racism" (Kivel 2005: 26).

Discussion

This report noted that there has been a tremendous increase in the size and scope of research on race/ethnicity and recreation. This includes both theoretical approaches (i.e., theories and models), an exploration of various racial/ethnic groups, and methodological approaches (i.e., quantitative and qualitative). Although there has been an expansion in the literature on this topic, I noted other areas in need of expansion within the study of race/ethnicity and leisure including (1) replication of previous studies, (2) an expansion of research in regions of the United States where there has been historically limited research, or where demographic changes in regions necessitate new research, (3) a more thorough investigation of the role of language as a cultural marker and determinant of leisure behavior or attitudes, (4) the role that value systems play in race/ethnicity and recreation or attitudes toward recreation, and (5) a more critical examination of White hegemony and racial discourse as it relates to the recreation and leisure context. Although there certainly are more, I have presented the top five gaps or areas of concern for future research in race/ethnicity and recreation.

This report noted that there has been a tremendous increase in the size and scope of research on race/ethnicity and recreation. This includes both theoretical approaches (i.e., theories and models), an exploration of various racial/ethnic groups, and methodological approaches (i.e., quantitative and qualitative).

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Section IV:
Management Studies: Programs, Outreach, and Employment

Chapter 8: Management Assumptions and Program Realities: A Case Study of Noncommercial Fern Gathering

Janet E. Alm,[1] Dale J. Blahna,[2] and Deborah J. Chavez[3]

Abstract

In the mid-1990s, picking bracken fern (*Pteridium aquilinum* (L.) Kuhn) fiddle-heads became a popular activity on the Mountaintop (formerly Arrowhead) Ranger District (MRD) of the San Bernardino National Forest in California. Concerned that fern picking was affecting the resource and that pickers were making large profits by selling the ferns, the MRD developed a program to charge a commercially based fee and limit fern picking to designated areas. Several years after implementation, MRD staff asked scientists to evaluate the program. Biologically, bracken ferns are very resistant, and there was no evidence of overpicking on the MRD. Studies also found no evidence of commercial resale of the ferns. Rather, fern gathering was a culturally-based recreational activity pursued primarily by Korean and Japanese family groups. Most participants picked for social and outdoor experiences and used the ferns in the preparation of culturally significant traditional dishes. As a result of program rules designed for commercial picking, most participants gathered many fewer pounds of ferns than they paid for. Similarly, many of the program violations resulted from the incompatibility between the commercially based rules and the pickers' recreational motivations. This case illustrates that special forest products programs and management strategies need to be based on site-specific biological and sociological factors.

Keywords: Special forest products, commercial use, recreation, race, ethnicity, bracken fern, ferns, program evaluation.

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[1] Senior librarian, Utah State University Libraries, Logan, UT 94322; e-mail: janet_alm@yahoo.com.

[2] Social scientist, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Seattle, WA 98103; e-mail: dblahna@fs.fed.us.

[3] Social scientist, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Riverside, CA 92507; e-mail: dchavez@fs.fed.us.

Introduction

Each spring, hundreds of Asians and Asian-Americans visit the San Bernardino National Forest's Mountaintop (formerly Arrowhead) Ranger District (MRD) to pick the tender young shoots, or fiddleheads, of bracken ferns (*Pteridium aquilinum* (L.) Kuhn) for use in preparing holiday and everyday meals. Bracken fern picking is accommodated under a special forest products (SFP) permit program introduced in 1981 and updated in 1993.

District staff and the San Bernardino National Forest Association (SBNFA) designed a permit program to address concerns that commercially motivated gatherers picked more ferns than they paid for, ranged onto private land, deliberately ignored program rules, demonstrated a lack of respect for the Forest Service and its employees, endangered the bracken fern resource, disturbed the state-listed threatened southern rubber boa (*Charina b. umbractica*) snake, and earned large profits from their harvests. A fee of $1.00 per pound of ferns picked, with a minimum purchase of 40 pounds, was instituted and later reduced to 50 cents; color-coded picking bags were issued to verify fee payment; five legal picking areas were designated, signed, and flagged; and law enforcement services were contracted with the county sheriff.

The Forest Service initiated a pair of studies in 1996 and 1997 to evaluate the program. Study objectives were to identify demographics and motivations of MRD fern gatherers, group characteristics and picking experience, interest in stewardship behavior while picking, and perceptions of discrimination or other inequities related to program rules and in-field behavior. The project also compared survey responses of Korean and Japanese pickers to see whether major cultural differences exist (Anderson et al. 1997, 1998).

Review of the Literature

No studies of people who pick bracken ferns were found in the literature. The most relevant literature for this study was related to harvesting SFPs and sustainability of bracken ferns. Recreational characteristics of multicultural visitors are examined in the literature and were part of the development of both studies but have limited relevance to the present discussion. (For complete findings see Anderson et al. 1997, 1998).

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Special Forest Products

Many categories of nonwood forest products have been documented and analyzed, including fiber products, food products from both plants and animals, medicinal and cosmetic products, live animals, and others (Richardson 1995). In addition to the direct use of forest commodities, other types of SFP values recognized in the literature include cultural symbolism, recreation, biological diversity, carbon storage, and commercial values (e.g., Emery et al. 2003, Love and Jones 2001).

The overwhelming majority of literature on the management of SFPs focuses on the economic value and commercial harvest of these products and on subsistence uses. Some common themes related to economic and subsistence concerns include harvest and resource value, subsistence vs. commercial use, harvest sustainability, marketing of SFPs, the role of SFPs in rural development, support of SFP harvest for household income and use, migrant SFP gatherers' attention to profit rather than resource sustainability, outsiders' intrusion on the commercial income of local/indigenous peoples through SFP harvest, and so forth (e.g., Adger et al. 1995, Ros-Tonen et al. 1995, Wickramashinghe et al. 1996). Although some authors emphasized the noncommercial, cultural, and symbolic values of nonwood forest products, even this acknowledgment was often couched in relationship to the economic value of the resources and collectors' livelihoods.

Multicultural Uses of Special Forest Products

Studies linking cultural differences and resource behavior are important to understand (1) diverse cultural groups whose numbers are growing on public lands, (2) the interests and preferences of underrepresented groups, and (3) potential sources of conflict over resource use. Little sociological or ethnographic research has been done on SFP harvesters in the United States with the exception of Native Americans and their subsistence use of SFPs. And while there is little research on recreational behavior of Asians in general, even less exists for harvesting SPFs.

Two studies of multicultural harvesters including several Southeast Asian groups were conducted in the Pacific Northwest by Hansis (1996), and Richards and Creasy (1996). Hansis (1996) interviewed Cambodian, Laotian, and Hispanic harvesters in Washington's Yakima Valley who collected beargrass (*Nolina bigelovii* (Jorr.) S. Watson), huckleberries (*Vaccinium scoparium*), matsutake (*Tricoloma magnivelare*) mushrooms, medicinal herbs, and other products. The primary purpose of the harvest was to sell these products for commercial use.

A study by Richards and Creasy (1996) focused on gathering matsutake mushrooms in the Klamath region of Oregon and California. The authors reported differences in both the cultural backgrounds and gathering behavior of Southeast

Asians and Native Karuk tribal members. The Asian pickers were relatively new to the practice in the Klamath region, and their primary motive was to sell mushrooms to help offset unemployment and to supplement their relatively low incomes in a way that reflected traditional forest resource gathering practices from their native countries. The traditional nature of the activity and the social gatherings were also important motives, but the pickers were primarily commodity-oriented and not necessarily concerned with resource sustainability or protection.[4]

Bracken Fern Biology

Bracken fern grows throughout the world, occurring almost everywhere with the exception of hot and cold deserts (Crane 1990). In fact, it may be the single most widespread vascular plant in the world (Richardson 1995). Two subspecies are recognized: *aquilinum* in the Northern Hemisphere, and *caudatum* in the Southern Hemisphere (Crane 1990).

Although spores germinate and grow in culture, most *Pteridium aquilinum* regeneration is vegetative. Spore generation appears to require soil sterilized by fire (Crane 1990). Even after fire, however, some rhizomes also survive to provide new growth. Bracken fern's hardy and aggressive rhizome system allows the plant to reproduce vegetatively and stores water for the plant's needs (Crane 1990). Some rhizomatous clones alive today may be over 1,000 years old (Crane 1990). In short, bracken fern is a survivor. In addition to fire, it also survives most herbicides—a fact well known to foresters who attempt to reduce bracken fern competition with conifer crops (e.g., University of Guelph 1996).

Methods

Study Background

The MRD is located in the San Bernardino Mountains, an hour's drive east of Los Angeles. In spring 1981, MRD staff first noticed heavy bracken fern picking by Asian visitors. At the same time they became aware of conflicts between fern pickers and private landowners in the area. In response to these conflicts, the MRD instituted a per-pound fee for gathering bracken ferns, designated approved picking sites, and began selling permits for the activity. In 1993, management of the fern program was assumed by the SBNFA, a nongovernmental support group.

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[4] For Native Karuks, by contrast, matsutake mushroom picking is a traditional activity they have conducted in the same areas for generations for who sustainability was a key concern (Richards and Creasy 1996).

The MRD's bracken fern fiddlehead season lasts about 6 weeks each spring, roughly from the last week in April through the first week in June. In 1996, 427 permits were sold, representing permission to pick nearly 10 tons (19,900 pounds) of bracken ferns. In 1997, 381 permits were issued for gathering 16,520 pounds. At the time of the 1996-97 study, the purchase of a $20 permit allowed an individual or group to gather up to 40 pounds of bracken ferns.

The management of this program is complicated by a mosaic of land owner-ships as well as areas of rubber boa habitat. Therefore five specific areas were designated as legal picking areas and marked with plastic flagging and signs in English and Korean. Permits were sold at the MRD. With each permit, purchasers were issued two official fern collection bags as well as a handout including basic program rules and a map showing designated picking areas.

1996 Pilot Study

Accounts of large potential profits and ecological overuse from SFP harvesting carried in area newspapers caused concern among Forest Service and SBNFA staff members who managed the bracken fern program on the MRD. Staff members believed the sale or commercial use of ferns was an important motive for pickers, and the district instituted a relatively high fee for picking the ferns based on the price of processed ferns for sale in nearby Los Angeles. As noted above, the staff also felt there was a relatively low level of awareness of, and cooperation with, program rules. This perception was largely based on the fact that some pickers used collection bags other than those issued with the purchase of a permit. At the same time, conflicts with local landowners and the operator of a nearby arboretum had also been reported.

The results of the 1996 pilot study found little basis for the managers' concerns (Anderson et al. 1997). The study employed onsite observations at fern picking areas in the forest, indepth interviews with six agency and eight cultural key infor-mants, an analysis of the previous season's permits, a brief postcard-length ques-tionnaire sent to permit holders, and a review of literature related to bracken fern sustainability and regeneration. Some of the key findings of the 1996 study were (1) there were Japanese (13 percent) as well as Korean (83 percent) fern pickers on the MRD; (2) fern gathering is primarily a recreational and cultural, rather than com-mercial (<3 percent of respondents), activity; (3) bracken fern gathering is mainly an activity of the middle and older generations; (4) nearly 90 percent (86.4 percent) of the pickers purchased the 20-pound permit, the smallest permit size allowed; and (5) the bracken fern resource is not endangered by even extensive picking of the fiddleheads. The study also found that most harvesters came in groups of three or

four. As they spread out across picking areas, the two plastic bags provided were not sufficient for their needs, and consequently pickers brought additional bags from home.

1997 Followup Study

Questions for the 1997 followup mail survey were based on the 1996 pilot study and information from cultural key informants, including experienced Japanese and Korean fern pickers. An eight-page survey was mailed to each person who purchased a fern gathering permit during the 1997 picking season. Of the 269 deliverable surveys, 146 were completed and returned for a response rate of 54 percent (Anderson et al. 1998).

Results

Demographics

Bracken fern gathering on the MRD is primarily a family activity, with 89 percent of all respondents participating in family groups or with a combination of family and friends. Just two individuals came with organized groups, and one came alone. Unlike the predominantly lower income Southeast Asian SFP gatherers in the Pacific Northwest (Richards and Creasy 1996), fern pickers on the SBNF primarily had moderate household incomes (57 percent earning $25,001 to $65,000) and higher than average education levels (77 percent with education beyond high school).

Motivations

The primary reasons for picking ferns were social and environmental: to spend time with family or friends, spend time in the mountains, get away from the city, and just being outdoors.

A 17-item list was used to identify specific motivations for picking ferns on the MRD in 1997. Based on a four-point scale (1 = not important at all, 2 = slightly important, 3 = moderately important, 4 = very important), regardless of ethnicity, the primary reasons for picking ferns were social and environmental: to spend time with family or friends (mean = 3.12), spend time in the mountains (3.00), get away from the city (2.99), and just being outdoors (2.99).

Although selling ferns was the lowest rated motivation at 1.05, 32 percent of the respondents reported that "needing the ferns to have enough food to eat" was at least slightly important (1.48), which suggests there may be a subsistence use of bracken ferns. Only one person said they were planning to sell some of the ferns they picked (2 pounds). Five respondents said "earning money by selling ferns" was a slightly or moderately important reason for picking ferns; at most 3 to 4 percent of the respondents reported they might sell some portion of their ferns.

When asked to identify the one or two most important reasons for picking, environmental and social reasons were again rated highest. Most common was

"to enjoy the outdoors," named by 27 percent. Twenty-three percent named spending time with others and liking the taste of ferns, and 19 percent named being in the mountains or using ferns in either holiday or everyday meals. Although there were some use differences between Japanese and Korean pickers—for example, Koreans were more likely than Japanese to use the ferns in holiday meals—social and environmental aspects of the experience were clearly rated highest by both cultural groups, and commercial activity was rated very low.

Experience

For 91 percent of all respondents, the MRD is the only place they go to pick ferns, and a large majority picked ferns on the MRD only once during the 1997 season. The mean time spent picking was 2.4 hours. Among pickers on the MRD, 37 percent had no previous MRD visits, and 33 percent had picked there just once or twice previously. By contrast, Richards and Creasy (1996) found Southeast Asians camping in the area and picking matsutake mushrooms an average of 3.75 weeks per year. No MRD respondent reported camping in association with their fern visits.

About half (45 percent) of Japanese and one-third (35 percent) of Korean respondents said they take some special effort to ensure that ferns will be available in the future. Seventeen different stewardship actions were named in an open-ended question. These included, for example, "take only what's needed," "don't damage the roots," and "pick only young ferns" (Anderson et al. 1998). Again, this is in contrast to Richards and Creasy's (1996) finding of little or no concern for resource sustainability among Southeast Asian gatherers in the Pacific Northwest.

Program Satisfaction

The major area of dissatisfaction with the fern program was the price charged. Seventy-three percent of respondents felt that $20.00 to pick up to 40 pounds of ferns was too high. When asked what a fair price for 40 pounds of ferns would be, the mean response was $10.06. In open-ended comments, five respondents (3 percent) indicated that the fee is too high considering that they pick for fun or to remember their culture, rather than for commercial profit.

Most groups picked significantly fewer ferns than they bought permits for. Estimates by those who purchased a permit for 40 pounds, the smallest permit they could buy, averaged 25 pounds picked, while those who paid for 80 pounds of ferns reportedly picked an average of only 37 pounds. Just two respondents bought permits for 120 pounds. One of these said they picked 50, and the other reported picking 110 pounds.

Discussion

This study illustrates the problem of making assumptions about visitor motivations and resource sustainability as well as generalizing research findings across visitor groups, activities, locations, and forest products. Failure to make appropriate resource impact, user group, and SFP distinctions can lead to management decisions that are not in the best interests of the resources, SFP gatherers, or even the agency itself.

Many of the 1996 and 1997 findings contrast with the conclusions of Hansis (1996), Richards and Creasy (1996), and other authors who identified commercial resale as the primary goal of the SFP harvesters they studied. Whereas Southeast Asians in the Pacific Northwest often gathered SFP for consecutive days and even weeks, the majority of fern gatherers came to the MRD only once for just over 2 hours of picking, and almost no resale of their harvest was reported. Other survey responses that suggested commercial picking is not the basis of the MRD's fern gathering activity include (1) the most commonly named motivations for picking were social and environmental, (2) the MRD was the only place most respondents gathered ferns, (3) most respondents gathered considerably fewer ferns than they paid for despite the fact nearly 90 percent of the pickers purchased the smallest possible permits, and (4) many more pickers considered fern gathering a fun activity rather than work.

These findings suggest that an economic or commercial approach to managing the MRD fern program is inappropriate. While it is clear from MRD staff members that some abuses of picking limits and boundaries have occurred, there was no real evidence that this was a common occurrence or that the abuses (in one case, a car trunk-full of ferns by a group holding a single 40-pound permit) indicated commercial activity. Rather, fern gathering on the Mountaintop Ranger District appeared to be primarily a social and recreational activity that was laden with cultural meanings, an activity in which every step—from picking through processing, cooking, and eating—serves to reinforce ethnic group affiliation. Although this project identified several differences between Japanese- and Korean-background pickers, the similarity in the two groups' picking motives and behaviors turned out to be greater when compared with the managers' concept of what was important about the fern gathering activity—especially as picking bracken fern fiddleheads does not endanger the resource (Anderson et al. 1998).

Managers who focus exclusively on economic or subsistence values may implement management strategies that are inappropriate to the particular SFP activities they oversee. The fact that most SFP research has focused on commercial gathering and economic values may give the impression that SFP gathering is always eco-

nomic in intent. Study results revealed that in addition to the two major types of SFP collectors discussed in the literature—subsistence and commercial pickers—a third general category exists: the cultural/recreational picker.

In light of these results, it is clear that both (a) knowledge of participants and their motivations and (b) understanding of the biology of the resource are essential to designing appropriate management strategies for SFPs.

Metric Equivalents

When you know:	Multiply by:	To find:
Pounds	454	Grams

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Chapter 9: Southwesterners' Views of Threatened and Endangered Species Management: Does Racial/Ethnic Diversity Make a Difference?

Patricia L. Winter[1] and George T. Cvetkovich[2]

Abstract

This paper presents an examination of trust in the Forest Service to manage threatened and endangered species as measured through a survey of residents of four Southwestern States. Of particular interest were variations by ethnic/racial group, gender, concern about threatened and endangered species, and self-assessed knowledge. Increasing diversity in the United States makes explorations of trust in natural resource managing agencies especially important to understand. Expected trust levels among groups of color[3] compared to Whites was not especially clear to us. Some very convincing arguments in natural resource management literature suggesting distrust should be expected among groups of color, while an expectation of higher trust among groups of color also finds strong support. A marginally lower level was found among people who engaged in more frequent outdoor recreation, and who visited national forests more often. Time in the United States was associated with lower trust levels among our non-U.S. born respondents. However, the most influential variables among those we considered were gender, ethnic/racial group, concern, knowledge, and perceived similarity of values to the Forest Service (the most significant of those examined). Findings suggest additional research is needed to fully illuminate the complexities of trust in our diverse society, as implications for natural resource management spill over into communication and collaboration efforts.

Keywords: Ethnic and racial diversity, salient values similarity, trust, concern, knowledge.

This paper presents an examination of trust in the Forest Service to manage threatened and endangered species as measured through a survey of residents of four Southwestern States. Of particular interest were variations by ethnic/racial group, gender, concern about threatened and endangered species, and self-assessed knowledge.

[1] Research social scientist, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, 4955 Canyon Crest Drive, Riverside, CA 92507-6099; e-mail: pwinter@fs.fed.us.

[2] Professor of psychology and Interim Director, Center for Cross-Cultural Research, Western Washington University, Department of Psychology, 516 High Street, Bellingham, WA 98225-9089; e-mail: cvet@wwu.edu.

[3] Throughout this paper we reference specific ethnic/racial groups. When we refer to people of color we are referring to non-Whites. When we refer to Whites we are including Caucasians and Anglos. Individuals of Hispanic origin are referred to as Latinos, and included Hispanic Americans, Latinos, Mexican Americans, and similar identifications. Asians are referred to as Asian Americans and Pacific Islanders. African Americans refers to Blacks. Native Americans includes First Nations and Aboriginals. Finally, Multiracials selected more than one of any of the groups above.

Introduction

Trust (the willingness to rely upon others to make decisions or take actions on our behalf) in natural resource agencies is essential to gaining public acceptance of management plans and actions (Borrie et al. 2002, Cvetkovich and Winter 2003, Shindler et al. 2004). It has been documented as an essential component of effective risk-related communications (Covello et al. 1986, Frudenberg and Rursch 1994, Johnson 2004, Slovic 2000). Those who trust a communication source are more likely to believe messages coming from that source and are more likely to comply with recommendations made to reduce risk exposure. Within the risk context, believability and compliance are of enhanced value to social agencies as well as publics, presumably because risk will be reduced when compliance is present. As such, trust is a form of social capital, easing acceptance of management decisions.

Understanding the perceptions of risk and responses to risk communications among multiethnic communities has been cited as essential to successful risk management in a diverse society (Johnson 2004, Lindell and Perry 2004). The importance of this line of inquiry is expanding rapidly, as the U.S. population is continuing to increase in ethnic and racial diversity. Implications of trust extend beyond risk management issues of course. Because believability of messages, compliance with messages, and willingness to engage in collaborative endeavors with natural resource managers extend to a broad array of management concerns, trust is especially important to natural resource management agencies. It is clear in some instances that minorities are underrepresented among the recreating public in natural areas (see Winter 2007 for a further examination of equity and access). Additionally, minorities have been found to have differing needs and interests regarding communication approaches and outlets (see Crano et al. Chapter 15 of this publication and Thapa et al. 2002). If differences in trust also exist, these are important to understand so that managers can be equipped to serve these diverse needs and interests.

Research exploring variations in trust across a number of contexts informs the work in this paper. Specifically, trust has been shown to be lowest among females (Delhey and Newton 2002, Patterson 1999), and Latinos or African Americans (Rahn et al. 2003). Higher levels of trust were reported for Whites and Asians (Rahn et al. 2003). Lower levels of trust among groups of color have been explained as a reflection of those groups' histories of being marginalized, historically disadvantaged, or having experienced direct harm or discrimination (Bengston 2004; Bengston and Sanchez 2004; Hardin 1997, 2002; Patterson 1999).

Other studies suggest an underlying complexity easily overlooked in a discussion of White/non-White comparisons. For example, work focused on Latinos

suggests that degree of acculturation influences levels of trust in national government (Wenzel 2006). Participants who were more acculturated into the dominant U.S. culture (measured through language and interethnic social interaction) showed lower levels of trust than those who were less acculturated. Another study reported that while African Americans were consistently less positive and less trusting of government than Whites, Latinos were generally more positive than Whites (Bowler and Donovan 2002). The exception of Latinos as a community of color with more positive views of government than Whites was also reported by Hero and Tolbert (2004).

These are noteworthy findings because they suggest that an increasingly ethnically and racially diverse society may be characterized by changes in trust levels (general population surveys reporting levels of trust or distrust in government for example may be affected). However, which direction these changes might take and which groups might be associated with higher or lower levels of trust remains unclear. This could be a source of great concern to natural resource management agencies. Cultural differences may lie at the heart of distrust and could lead to difficult and complex debates (Nie 2003). On the other hand, we may discover that groups of color are more willing to extend trust to natural resource managers.

Many inquiries represent general explorations of trust, rather than trust in specific targets regarding specific issues. Queries of specific issues may yield very different responses than would general questions on trust (Cvetkovich and Lofstedt 1999).

In addition, recent work conducted by the authors challenges the notion of lower trust among groups of color and among females (Winter and Cvetkovich 2007). In that particular study, we applied the salient values similarity model of trust. Trust, as measured through the salient values similarity model (Earle and Cvetkovich 1995), predicts that trust will result when individuals believe that they have salient values similar to those of another individual, group, or agency. Similarity of salient values is assessed through the measurement of public perceptions regarding degree of shared values, goals, and views with the managing agency. Using the salient values similarity approach, we examined public trust regarding fire management. We found a significant difference by ethnic/racial group in salient values similarity and trust, such that Whites had the lowest scores and Latinos the highest (Winter and Cvetkovich 2007). Additionally, males within both groups had significantly lower trust/salient values scores than females.

Additional measures have been examined in our trust and salient values similarity research. Specifically, concern (about threatened and endangered species on local national forests), knowledge (self-assessed), and gender have been found to influence trust and salient values similarity ratings (Cvetkovich and Winter 2003).

Siegrist and Cvetkovich (2000) also found a relationship between trust and knowledge. According to these authors, lay publics and those who have less knowledge about a hazard rely more on trust when making judgments about risks and benefits of management actions, whereas those who possess more knowledge about an issue rely much less on trust.

This paper examines Southwestern residents' trust in the USDA Forest Service to manage threatened and endangered species on wildlands and wilderness areas.[4] We conducted a telephone survey of residents in four Southwestern States (Arizona, California, Colorado, and New Mexico). In the surveys, we explored ratings of salient values similarity and trust, concern about threatened and endangered species, and knowledge about threatened and endangered species. In particular, we looked for differences by ethnic and racial group and gender because of their implications for researchers, managers, and educators. Findings may aid our continued understanding of the role of diversity in trust and natural resource management. They might also help managers focus their communication and collaboration efforts. Additionally, our specific focus on trust in the Forest Service regarding threatened and endangered species management may reveal complexities of trust regarding the issues of acculturation, perceived similar values, gender, race/ethnicity, and knowledge. Findings should be of use in equipping managers to demonstrate greater cultural competency as discussed by Anderson and Stone (2005).

Our specific focus on trust in the Forest Service regarding threatened and endangered species management may reveal complexities of trust regarding the issues of acculturation, perceived similar values, gender, race/ethnicity, and knowledge.

Methods

A random sample of residential telephone numbers, drawn from regional divisions in each of four states, was used to compile our sample. The total population for each region and state was determined based on state data from the U.S. census. Target sample sizes of 600 respondents in California, and 400 in each of the other three states were set. California's target was established in the first wave of interviewing, and was based on a desired confidence level of 95 percent, plus or minus 4 percent; sampling for the other three states was designed for a confidence level of 95 percent, plus or minus 5 percent. A telephone survey in each state was then conducted.

Procedures

The California data were collected from late summer through early fall 2001, and the data for the other three states were collected in summer 2002. Interviewers contacted the adult in the household (age 18 or older) with the most recent birthday,

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[4] Wildlands and wilderness are used here to refer to semideveloped and undeveloped natural areas, including federally designated wilderness areas.

asked if they were willing to participate in a phone survey, and then noted if they were male or female (each final set of respondents was targeted to have half males and half females).

Survey Instrument

A questionnaire for telephone administration was developed in both English and Spanish. It was modeled after prior surveys on trust in natural resource management used by the authors and their colleagues (Cvetkovich and Winter 2003, 2004; Winter et al. 1999). A pretest on a randomly selected sample of residents led to minor refinements to a portion of the introductory statement and to two questions. Respondents were asked about sociodemographics, concern about threatened and endangered species (assessed using an 8-point scale where 1 = not at all concerned, 8 = very concerned), knowledge about threatened and endangered species within their state of residence (assessed using an 8-point Likert-type scale where 1 = not at all knowledgeable, 8 = very knowledgeable), similarity of salient values with the Forest Service (measured by asking about values, goals, and views, with 1 = a dissimilarity anchor, and 8 = a similarity anchor, for example, "The Forest Service does not share your values" represented dissimilarity), and trust of the Forest Service (on a scale from 1 to 8, where 1 = do not trust the Forest Service at all, 8 = trust the Forest Service completely).

Participants

In total, 1,807 telephone surveys were completed (603 in California, 401 in Arizona, 402 in Colorado, and 401 in New Mexico). All respondents were residents of the states within which they were contacted (this was a screening item during the telephone interview). The vast majority of surveys were completed in English (93.0 percent), with the balance conducted in Spanish by a bilingual interviewer. Data for the English- and Spanish-speaking respondents are combined in this paper. Cooperation rates were high across states, ranging from about 84 to 90 percent.

Results

Respondents

Approximately equal numbers of males and females (50.1 percent female) participated. The majority (74.5 percent) of respondents had attended at least some college. The greatest proportion of respondents (58.5 percent) was between 35 and 54 years of age, and most (82.3 percent) had lived in the United States their entire lives. Those who were born outside of the United States reported an average of 26.13 years lived here. The majority of respondents were White (66.2 percent),

with about one-fifth (19.6 percent) selecting Latino as their ethnic identity. Fewer indicated that they identified with multiple ethnicities/races (3.2 percent), Native American (2.9 percent), African American (2.8 percent), or Asian (2.0 percent).

General engagement in outdoor recreation activity showed that about one-fourth recreated several times a week (23.4 percent), or several times a month (25.9 percent), while about one-tenth recreated at least monthly (15.3 percent). About one-third reported infrequent participation in outdoor recreation (17.3 percent once or twice a year, and 17.3 percent rarely or never). The vast majority (80.5 percent) had visited a national forest in their state, and average number of visits in the past 12 months was 11.48 visits (SD = 44.36, n = 1,438).

Concern About Threatened and Endangered Species

Ratings of concern over threatened and endangered species differed significantly by ethnic/racial group (based on the six ethnic/racial groups, table 9-1), with the highest concern among Latinos. Comparisons among ethnic/racial groups showed Whites provided significantly lower concern ratings than did Latinos.

Table 9-1—ANOVA exploring variation in concern by ethnic/racial group

Ethnic/racial group	Mean[a]	n	Degrees of freedom	F	p
Asians	6.06	36	5, 1,732	7.65	< 0.01
African Americans	6.20	50			
Latinos	6.37	353			
Native Americans	5.96	51			
Whites	5.64	1,185			
Multiracial	6.24	58			

[a] Scale was 1 = not at all concerned, 8 = very concerned.

Followup *t*-tests comparing males and females within each ethnic/racial group revealed significant differences by gender for Whites, with White females (mean = 5.92) showing more concern than their White male counterparts (mean = 5.35, $t = -4.69$, $p < 0.001$).

Knowledge About Species in Respondent's State of Residence

As with concern, knowledge also differed significantly by ethnic/racial group (table 9-2), with Native Americans and Whites rating their own knowledge about species the highest. Differences between males and females within each ethnic/racial group were also significant for Whites, with males rating their knowledge higher (mean = 4.82) than did females (mean = 4.48, $t = 3.18$, $p < 0.01$). Across all six groups, the tendency was for males to rate their knowledge higher than did females.

Table 9-2—ANOVA exploring variation in knowledge by ethnic/racial group

Ethnic/racial group	Mean[a]	n	Degrees of freedom	F	p
Asians	4.11	36	5, 1,735	5.97	< 0.01
African Americans	4.10	49			
Latinos	4.06	349			
Native Americans	4.88	52			
Whites	4.64	1,192			
Multiracial	4.53	58			

[a] Scale was 1 = not at all knowledgeable, 8 = very knowledgeable.

Salient Values Similarity and Trust

Perceptions of similar salient values, goals, and views were high, ranging from 5.5 to 6.0 on the 8-point scale. A majority (56.1 percent) of respondents selected 6, 7, or 8 for the shared-values scale, as well as for shared goals (51.9 percent), and for shared views (52.8 percent). Even more (60.4 percent) chose 6, 7, or 8 on the scale for overall trust in the Forest Service to manage threatened and endangered species. The salient value items were highly correlated with each other (ranged from 0.63 to 0.70). The salient values items were averaged to create a salient values similarity scale (α = 0.86).

Additional insights into those who trusted and those who did not—
Given our need to understand variations in trust to the greatest degree possible, we conducted an additional set of analyses exploring potential differences between those who trusted (provided a rating of 5, 6, 7, or 8) and those who did not (provided a rating of 1, 2, 3, or 4). The division at the mid-point of the scale was for future comparative purposes with other data sets, and helped standardize our point of comparison.

Gender was associated with variations in trust, such that males were more likely to be in the distrust group (62.4 percent), females in the trust group (55.1 percent; $\chi^2_{1\ 1537}$ = 38.52, p < 0.01). Education level also differed significantly by trust group, such that respondents with more education had a greater percentage of their members in the distrust group ($\chi^2_{4\ 1529}$ = 41.05, p < 0.01). Around 80 percent of respondents with a high school degree or less were in the trust group, whereas 60 percent of those with at least some graduate education were in the trust group. Age was also associated with trust where younger respondents were much more likely to be in the trust group (above 80 percent of respondents between 18 and 24, and 25 and 34) than were older respondents (between about 60 and 70 percent in the trust

group for ages 35 and up). This difference was also significant ($\chi^2_{5\ 1524} = 43.19$, $p < 0.01$). Although these comparisons were significant, their combined ability to predict trust ratings was marginal ($R^2 = 0.07$; $F_{3\ 1729} = 44.77$, $p < 0.001$).

Influence of acculturation was examined for respondents born outside of the United States. Among those born outside of the United States, years lived in the United States was higher in the distrust group (35.31 years) than in the trust group (22.78 years, $t = 4.77$, $p < 0.01$).

Members who distrusted the Forest Service engaged in outdoor recreation more frequently than the trust group. Of those recreating several times a week, more than one-fourth were in the distrust group. Respondents that recreated rarely or never had fewer members in the distrust group (only one-fifth, $\chi^2_{4\ 1525} = 13.16$, $p < 0.05$). Having visited the states' national forests was also associated with a greater proportion of those in the distrust group (15.9 percent of respondents who never visited were in the distrust group compared to 32.1 percent of those who had, $\chi^2_{1\ 1519} = 29.80$, $p < 0.01$). Finally, number of visits to a national forest in the past 12 months was significantly higher in the distrust group ($M = 17.69$, SD = 56.55, n = 389) than in the trust group ($M = 7.61$, SD = 32.04, n = 828, $t = 3.95$, $p < 0.01$). Predicting trust score from outdoor recreation frequency and number of visits to a national forest revealed a marginal effect ($R^2 = 0.02$; $F_{2\ 1383} = 18.20$, $p < 0.01$).

Predicting trust based on salient values similarity, knowledge, concern, ethnic/ racial group, gender, and education—

The ability to predict trust based on the salient values similarity scale, knowledge, concern, ethnic/racial group, gender, and education (following our prior research cited in Winter and Cvetkovich 2007) was examined through regression. A significant amount of the overall variance in trust was explained by these predictors ($R^2 = 0.47$, $F_{6\ 1627} = 239.88$, $p < 0.001$, table 9-3). The salient values similarity scale was the most influential predictor in the regression, although each of the predictors was a significant contributor to the equation.

To further examine variations in trust, the trust ratings were analyzed by ethnic/racial group, and significant variation by group was revealed (table 9-4). The lowest average trust scale ratings were provided by White respondents and Native American respondents, the highest by Latino respondents.

Contrasts by gender within each ethnic/racial group revealed significant differences for Whites and Latinos, with females (White mean = 5.91, Latinos mean = 6.84) giving higher trust scale ratings than their male counterparts (White mean = 5.27, Hispanic mean = 6.40, $t = -5.55$, $p < 0.01$ and $t = -2.24$, $p = 0.03$).

Table 9-3—Summary of regression analysis to predict trust ratings

Independent variable	β	t	p	sr^{2a}
Similar salient values	0.67	33.93	< 0.01	0.38
Knowledge	-.05	-2.67	< .01	< .01
Ethnicity/race	-.09	-4.98	< .01	< .01
Concern	-.13	-6.35	< .01	.01
Gender	.04	2.39	< .02	< .01
Education	-.09	-4.52	< .01	< .01

[a] Squared semipartial correlation is a measure of the unique contribution of the independent variable to the amount of variance explained within that set of independent variables. According to the numbers shown, similar salient values is the only variable contributing a substantial unique variance beyond the other independent variables.

Source: Tabachnik and Fidell 2000.

Table 9-4—ANOVA exploring variation in trust ratings by ethnic/racial group

Ethnic/racial group	Mean	n	Degrees of freedom	F	p
Asians	6.28	36	5, 1,692	16.53	< 0.01
African Americans	6.13	47			
Latinos	6.62	349			
Native Americans	5.71	51			
Whites	5.59	1,157			
Multiracial	6.32	53			

Discussion

Findings suggest that ethnic/racial diversity and gender are of importance in management of Forest Service lands. Concern about threatened and endangered species, knowledge, and similar salient values, along with gender and ethnic/racial group, were highly predictive of trust ratings. Those who trusted and distrusted differed some in age group, outdoor recreation participation, and visits to national forests. Some difference was found linked to potential acculturation, where average time in the United States was greater among those in the distrust group. However, these differences told us less about trust in the Forest Service to manage threatened and endangered species on forest lands.

Males had a tendency to rate their concern about threatened and endangered species lower than females. Ratings of concern differed significantly by ethnic/racial group with Whites indicating the lowest levels of concern, Latinos the highest. Similar to concern, ratings of knowledge were higher among males within all ethnic/racial groups. Ratings of knowledge also varied significantly by ethnic/racial group, with Whites indicating the highest levels, Latinos the lowest.

Findings suggest that ethnic/racial diversity and gender are of importance in management of Forest Service lands. Concern about threatened and endangered species, knowledge, and similar salient values, along with gender and ethnic/racial group, were highly predictive of trust ratings.

Based on the trust literature cited earlier (Rahn et al. 2003), we might have expected that Whites and Asians would have the highest trust ratings, and that groups of color would have the lowest. Furthermore, because females tend to have less advantage than males, trust ratings should be lower for females across all groups. Neither of these predictions found support in our data. In fact, groups of advantage, particularly White males were among the lowest in their trust ratings. This finding is in line with what we report elsewhere regarding fire and fire management (Winter and Cvetkovich 2007). The higher trust level among Latinos is in line with findings reported by Bowler and Donovan (2002). Some of this may have been accounted for by less time in the United States, as expected from the literature reporting an inverse relationship between acculturation and trust. While this would require further exploration, our findings suggest that greater experience living in the United States and recreating on national forests may both be associated with lesser trust. A longitudinal study exploring trust upon immigration and its evolution over time would of course require significant investment but would be more definitive on clarifying the relationships between acculturation, experience with the managing agency, and development of trust. If the inquiry were specific to threatened and endangered species management, a direct measure of knowledge and experience with that topic would be of special interest.

Forest Service resource managers and public information officers working in ethnically and racially diverse areas can use these findings by anticipating that the various ethnic/racial groups will respond uniquely to some management actions. In particular, trust regarding threatened and endangered species management might differ greatly by ethnic/racial identification. Given the significance of salient values similarity and trust, it seems advisable to establish and maintain ongoing relationships with different ethnic/racial groups to foster trust. As the Nation continues to increase in diversity, the importance of such efforts will increase. Interestingly enough, the predictions of decreasing trust in government affiliated with an increase in groups of color in the population do not find support here. However, groups of color may seek out different interaction styles and types of information from the managing agency, which could affect efforts to establish and maintain trust over time. In addition, as groups of color become more engaged and interested in natural resource management, the basis of information from which they derive trust judgments could change, shifting the patterns of higher trust reported in this paper. As direct knowledge increases, other factors may become more important than trust.

Finally, note that this inquiry was specific to issues of Forest Service management in four states regarding threatened and endangered species. Results should not be assumed to indicate a broader trust in government across other topics/matters of concern among groups of color, or among women of any ethnic/racial group. The complexities of trust, which no doubt differ by topic of concern, by target of trust, by individuals that we are interested in, and by comparison with other issues of concern, dictates caution. In addition, although trust is important and valuable, its ultimate behavioral outcomes are not always clear cut. We know from risk management research that trust has been linked to greater acceptance of messages and greater compliance. However, individuals who trust might also be just as likely to be willing to engage more in dialogue about threatened and endangered species management, believing that their concerns and arguments will be attended to and they can help determine management direction. On the other hand, those who trust government in some matters (such as threatened and endangered species management) may have determined this is an appropriate area of concern to leave to the Forest Service to handle on their behalf, while they concern themselves with matters of social policy such as education or health care. The specific species may create other variations in trust, adding to the complexity of public/agency interactions. Ultimately, the minimum amount of trust necessary to conduct the business of natural resource management has not been determined, but it seems important to maintain as a concern of public agencies.

Conclusions

We examined the role of trust and salient values similarity in opinions regarding threatened and endangered species. Results demonstrate the significance of perceived similar salient values, trust, and concern related to species management. Analyses exploring the roles of gender and racial/ethnic identity indicate heterogeneity between groups of color, as well as between males and females on some measures. Other indicators of potential experience with natural resources and the agency (specifically measured as outdoor recreation and visits to national forests) told us much less about trust judgments.

These findings offer insight into the ever-increasing complexity of managing natural resources, as well as forming informational and educational strategies that are sensitive to the diverse cultures of the region. Findings suggest caution in assuming that all groups of color can be considered homogeneous. Recent research has revealed the importance of considering heterogeneity within ethnic groups (Alvarez et al. 2004, Tierney et al. 1998), further emphasizing the complexity of a diverse public.

Ultimately, the minimum amount of trust necessary to conduct the business of natural resource management has not been determined, but it seems important to maintain as a concern of public agencies.

However, additional research is needed to further illuminate the differences and similarities within and between ethnic/racial groups and by gender. Larger numbers within each ethnic/racial group would be helpful in continuing this line of inquiry. The amount of influence risk has on individuals should also be considered (Shindler et al. 2004) and was not assessed here. It may be a factor in the determinations of trust that are complicated by a number of factors, including ethnic/racial group membership. Direct experience with threatened and endangered species, or more personalized concerns about species management, may be affiliated more with some ethnic/racial groups than others. The continuing increase of diversity within an already diverse society speaks to the importance of these lines of inquiry.

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Chapter 10: Physical Activity Among Hispanic/Latino and Non-Hispanic/Latino White Visitors on Urban-Proximate Public Lands

Sonja A. Wilhelm Stanis,[1] Ingrid E. Schneider,[2] Kimberly J. Shinew,[3] Deborah J. Chavez,[4] and Mary C. Vogel[5]

Abstract

Health benefits of physical activity are well recognized and documented, yet obesity rates remain high in the United States, particularly among Hispanics/Latinos. As our population becomes more urban and ethnically diverse, a greater understanding of specific populations may help agencies better address issues related to obesity and sedentary lifestyles. This study examined use of urban-proximate outdoor recreation sites for physical activity as well as differences in use, experience use history, and body mass index between Hispanics/Latinos of all races, and non-Hispanic/Latino Whites. Ultimately, this research seeks to inform efforts to increase physical activity levels on public lands. Data were collected through onsite interviews in urban-proximate parks in California, Illinois, and Minnesota used by a variety of racial and ethnic groups. Findings indicate that parks and recreation areas remain important places for physical activity for both Hispanics/Latinos and non-Hispanic/Latino Whites. Differences between the two groups suggest both management opportunities and challenges.

Keywords: Leisure, physical activity, health, ethnicity.

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[1] Graduate student, Department of Forest Resources, University of Minnesota, St. Paul, MN 55108; e-mail: wilh0065@umn.edu.

[2] Associate professor, Department of Forest Resources, University of Minnesota, St. Paul, MN 55108; e-mail: ingridss@umn.edu.

[3] Co-director, Center of Changing Landscapes, University of Minnesota, St. Paul, MN 55108.

[4] Supervisory social scientist, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Riverside, CA 92507; e-mail: dchavez@fs.fed.us.

[5] Professor, Department of Recreation, Sport and Tourism at the University of Illinois, Urbana-Champaign, Il 61820; e-mail: shinew@uiuc.edu.

Introduction

Human health is a vital concern throughout the world, including the United States. Being overweight or obese is associated with increased health risk for numerous chronic diseases (National Institutes of Health 1998). Therefore, the rising obesity level in the United States is gaining increasing attention as 66.3 percent of U.S. citizens are either overweight or obese (Ogden et al. 2006). Physical inactivity, as a contributing factor to obesity, is a serious problem. In 2003, only 45.9 percent of the U.S. population met the recommended levels of physical activity (Centers for Disease Control Prevention [CDCP] 2005a). Physical inactivity is most prevalent among ethnic and racial minority groups (Wilcox et al. 2000), particularly among Hispanics/Latinos (Marquez et al. 2004). In 2005, 32.6 percent of Hispanic adults reported no leisure time physical activity (LTPA), compared to 21.4 percent of non-Hispanic Whites (as cited in Ainsworth et al. 2007). Further, more than 75 percent of Mexican Americans are overweight or obese (Ogden et al. 2006). Obesity rates contribute to health issues.

Hispanic populations compose 14.8 percent of the U.S. population and are the fastest growing group, accounting for almost half of the national population growth between 2005 and 2006 (U.S. Census Bureau 2007). The term Hispanic refers to people with ethnic backgrounds from Spanish-speaking countries: they can belong to any race, and most in the United States are White. Although the U.S. Census uses the terms Hispanic and Latino interchangeably, the term Latino holds a slightly different meaning referring to Latin America nationality. As the U.S. population becomes more urban and ethnically diverse, a greater understanding of specific populations' physical activity may facilitate agencies' ability to address obesity and sedentary lifestyles. In June 2002, President Bush issued Executive Order 13266 for the purpose of improving the health of all Americans with physical activity as one of the four health-protection pillars. The Department of Health and Human Services was designated as the lead agency and a federal interagency memorandum of understanding and work group, representing the Departments of Health and Human Services, Agriculture, the Interior, and the U.S. Army Corps of Engineers, is in process. This executive order has accentuated agency interest in health benefits, including those related to recreation.

Given the percentage of the U.S. population that occupies urban domains and the fact that this population is diversifying, this paper focuses on the use of urban-proximate outdoor recreation sites among a variety of race and ethnicity groups. Specifically, differences in park use history, physical activity, and body mass index (BMI) between Hispanics/Latinos of all races and non-Hispanic/Latino Whites were examined.

Background

In 2000, 80.3 percent of U.S. citizens lived in urban areas, with one-third of the total population living in metropolitan areas of 5 million or greater (U.S. Census Bureau 2001). Urban-proximate recreation areas are those located close to urban areas and may attract different visitors than urban-distant or remote areas (Ewert 1998). Outdoor recreation in urban-proximate areas is of increasing importance as residents seek benefits from natural environments and respite from the urban environs. Positive experiences often result from urban-outdoor recreation (Moore et al. 1998) and these experiences include health benefits.

Recreation and park visits can contribute to physical activity and improved health (Ho et al. 2003). However, physical activity participation differs markedly among racial and ethnic groups (Henderson and Ainsworth 2001, Ho et al. 2003). Hispanic and African-American groups engage in outdoor recreation less frequently than other groups (Floyd et al. 1993, Ho et al. 2003). Studies examining recreation participation among Mexican Americans typically focus on between-group differences, primarily comparing Mexican Americans to White Americans. Many of these studies have found that Mexican Americans have significantly lower levels of involvement in outdoor recreation and active sports (Cunningham et al. 1994).

One variable that may differentiate realized health benefits and physical activity is visitor experience with a site or, experience use history (EUH). Typically up to three elements measure EUH: total visits, total years of use, and frequency of use of a site (Hammitt and McDonald 1983, Schreyer et al. 1984). Hammitt and others (2004) suggested EUH is "linked to a number of recreation user perception, behavior, and management preferences" (p. 358). For example, a number of studies explore the relationship between EUH and crowding (Budruk et al. 2002, Graefe and Moore 1992). Similarly, EUH may be related to measures of physical health, such as BMI, as well as physical activity engagement.

Methods

In this study, onsite interviews were administered to park users across three U.S. urban-proximate areas to ascertain EUH, physical activity, and BMI, among other variables.

Study Sites

The study sites were Hawkins Park in Los Angeles, California; Humboldt Park in Chicago, Illinois; and Powderhorn Park in Minneapolis, Minnesota. These sites were selected because they were comparable in terms of the amenities offered and

urban density. Each park is accessible by bus, bicycle, foot, and car, and is located in racially and ethnically mixed neighborhoods.

Sampling

Bilingual (Spanish and English) interviewers contacted park users during the summer of 2006. Sampling was conducted across a variety of weekends and weekdays and daylight hours. All available visitors were contacted during the data collection times. Field personnel tracked response rates and logged information about "unapproachable" visitors (e.g., number in group, reason could not approach, activity, etc.). The response rates ranged between 72.9 and 87.4 percent across the three sites.

Instrument

A two-page instrument assessed EUH, physical activity (usual location, intensity, frequency, and duration), BMI, and demographics. Experience use history was measured by total times visited, times visited in the past 12 months, and years coming to the area. Physical activity was measured in terms of days per week and amount of time per day spent in moderate and/or vigorous activity (with a minimum of 10 minutes) modeled after select physical activity questions from the Behavioral Risk Factor Surveillance System (CDCP 2005b) and International Physical Activity Questionnaire (Karolinska Institutet 2002). Moderate activity was defined as that which causes small increases in breathing or heart rate while vigorous activity was defined as that which causes large increases in breathing or heart rate. The location of usual physical activity was obtained by asking respondents where they usually do their physical activity from a list of possible options. Body mass index was calculated by the height and weight information respondents reported. For comparison purposes, a person with a BMI between 25 and 30 is considered to be overweight and a person with a BMI more than 30 is considered to be obese (CDCP 2006). Finally, respondents were asked several demographic questions, including race and ethnicity.

Analysis

Questionnaire data were entered and analyzed using SPSS 13. Descriptive analysis provided means, standard deviations, and frequencies to describe the sample and variables of interest. The EUH items were winsorized to deal with outliers. *T*-tests were used to compare EUH, physical activity, and BMI between Hispanic/Latino and non-Hispanic/Latino White visitors, and correlation analysis assessed the relationship between EUH and physical activity as well as EUH and BMI. Although
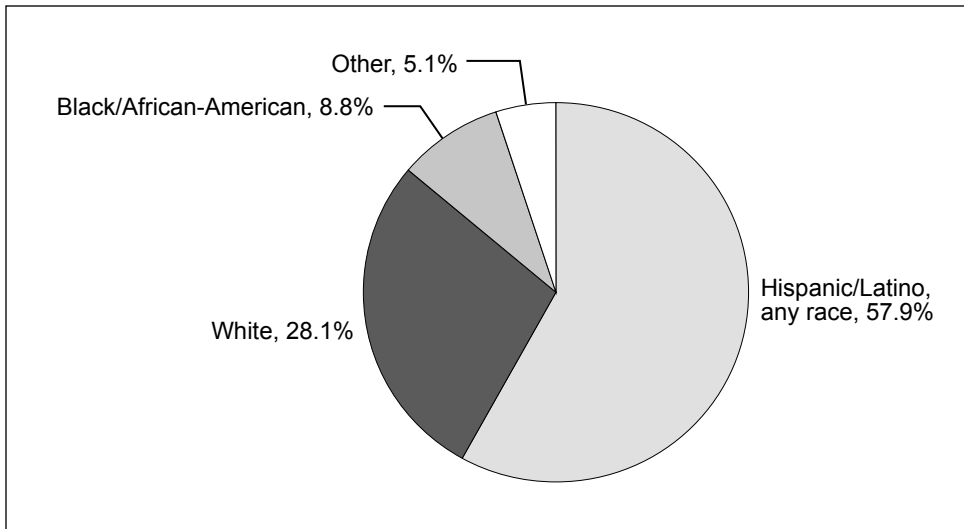
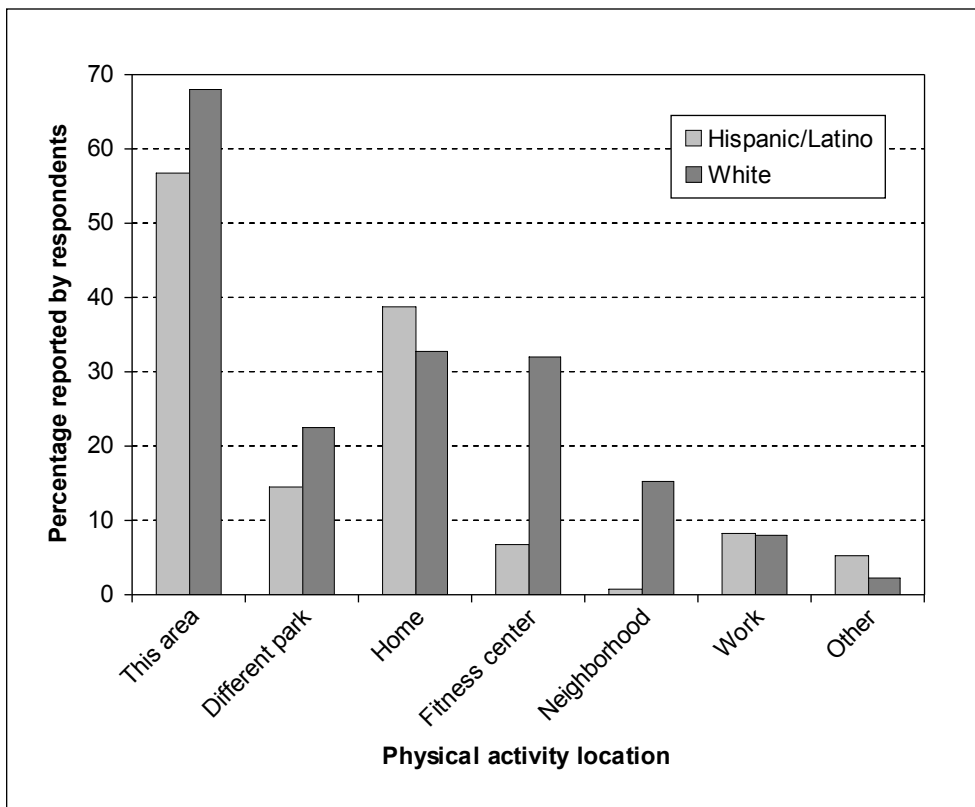Figure 10-1—Race/ethnicity distribution of visitors by percentage.

Figure 10-2—Location of usual physical activity reported by visitors.

Hispanic/Latinos can be of any race including White, for the purposes of this paper, Hispanic/Latinos of any race will be referred to as Hispanic/Latino and non-Hispanic/Latino Whites will be referred to as White.

Results

Respondents were rather evenly split between males and females, U.S. and non-U.S. born, and Hispanic/Latino and White. Specifically, 53 percent of the sample was female, 56 percent born in the United States and 57.9 percent Hispanic/Latino (fig. 10-1). The average age of the respondents was 37.9 years. The White respondents had a BMI of 24.8 (just under overweight), and the Hispanic/Latinos had a BMI of 26.8 (considered overweight).

The majority of both Hispanic/Latinos and Whites indicated the site where they were contacted as a usual location of their physical activity (57 and 68 percent for Hispanic/Latinos and Whites, respectively; fig. 10-2). For Hispanic/Latino visitors, home (39 percent), different park/recreation area (15 percent) and work (8 percent) followed as the next usual locations for physical activity while for Whites the order differed slightly with home (33 percent) followed by fitness center (32 percent) and different parks/recreation area (23 percent).

Significant differences were found between Hispanic/Latinos and Whites on two of the three EUH measures, one of four physical activity measures, and BMI. Specifically, Hispanic/Latinos visited less frequently in terms of total visits and visits in the past 12 months, engaged in moderate physical activity fewer days per week and had higher BMIs than Whites (table 10-1).

Weak correlations existed between EUH measures and select physical activity measures (table 10-2). There was a weak, positive relationship between times visiting in the past 12 months and years and days per week of moderate physical activity for both groups. However, EUH was positively correlated to moderate physical activity duration for Hispanics only. For Hispanic/Latinos, there was a weak, negative relationship between total times visiting, vigorous physical activity duration, and frequency. Similarly, one of the EUH measures was weakly related to BMI: years for Hispanic/Latino and total visits for Whites.

Discussion and Implications

Onsite surveys with urban-proximate visitors found differences in EUH, physical activity levels, and BMI between Latino/Hispanic and White visitors. Also, weak correlations existed between EUH and BMI. These results suggest both opportunities and challenges for recreation managers.

The majority of respondents indicated their physical activity took place at either the site where they were contacted or another park/recreation area; thus, it appears the opportunities at these public lands are, in fact, contributing to physical activity. However, other studies contradict this finding (Huston et al. 2003) and reported that neighborhood, home, and fitness centers are used more frequently

The majority of respondents indicated their physical activity took place at either the site where they were contacted or another park/recreation area; thus, it appears the opportunities at these public lands are, in fact, contributing to physical activity.

Table 10-1—Experience use history, physical activity and body mass index for Hispanic/Latino and non-Hispanic Latino (White) visitors

Measure	Hispanic/Latino	White	*t*-value
	- - - - - - *Mean* - - - - - -		
Experience use history:			
Total times visited	203.7	348.2	3.49***
Times visited in the past 12 months	41.8	83.5	5.86***
Years been coming to this area	9.1	9.0	-.14
Physical activity level:			
Moderate—			
Days per week	4.3	5.5	5.31***
Time per week	1:43	1:23	-1.64
Vigorous—			
Days per week	2.4	2.4	.22
Time per week	0:39	0:35	-.91
Body mass index	26.8	24.8	-3.67***

Note: * indicates significance where *p* < 0.1, ** *p* < 0.05, *** *p* < 0.01.

Table 10-2—Correlations of experience use history, physical activity, and body mass index descriptions of Hispanic/Latino and non-Hispanic Latino (White) visitors

	Hispanic/Latino			White		
	Total	Visits in past 12 months	Years moderate activity	Total	Visits in past 12 months	Years moderate activity
Physical activity level:						
Moderate						
Days/week	0.05	0.12*	0.14**	0.14	0.15*	0.19**
Time/day	.17**	.19***	.12*	-.02	-.05	-.06
Vigorous						
Days/week	-.16**	.03	.10	.06	.03	-.09
Time/day	-.15**	-.01	-.04	.01	.00	-.03
Body mass index	.01	.06	.13*	.16*	.11	.06

Note: * indicates significance where *p* < 0.1, ** *p* < 0.05, *** *p* < 0.01.

than parks for physical activity. Therefore future research is needed to understand these differences. Nonetheless, to retain and encourage more physical activity and subsequent health benefits like reduced BMI, managers have a number of options to consider: (1) identify and inventory their physical activity offerings and programs, (2) promote physical activity offerings and programs in dominant and locally used languages as well as diverse publications, (3) work with nondominant cultures to ensure the physical activity opportunities are offered in situations and at times that are culturally appropriate, (4) consider the constraints to physical activity

for all visitors and nonvisitors, and (5) explore partnerships with local park and recreation providers as well as health organizations (clubs, hospitals, etc.). Given the positive relationship between EUH measures and moderate-level physical activity, promoting or continuing to promote park and recreation lands as important locations for physical activity is of interest and meets the intent of the 2002 Executive order relating to the health of U.S. citizens. Understanding if and how these participation patterns differ across recreational opportunities is of interest, as these findings are limited to urban-proximate parks.

With regard to the diverse population, managers need to recognize Hispanic/Latino park visitors as frequent park users as well as a population with opportunities to improve physical activity levels and BMI. Given that a healthy BMI range is 18.5 to 24.9 (CDCP 2006), the average Hispanic/Latino park user is overweight. Partnering with local health care providers and/or other physical activity facilities can open new doors for agency partnerships. Further, although Hispanic/Latino visitors were frequent visitors to these sites, their visitation was still significantly lower than the White visitors. Certainly this difference raises questions about constraints to participation and abilities to negotiate these constraints to be addressed in future research.

Despite park use for physical activity, physical activity and BMI were not consistently correlated with park use. One reason for this finding is that our park use question focused on general use rather than that of park use for physical activity: the lack of specificity may contribute to the inconsistent relationship. Another reason for this inconsistent relationship is that constraints to participation may exist and therefore, identifying and understanding intervening factors to physical activity and park use is recommended.

Federal agencies are mandated to promote physical activity on public lands. This research represents a first step to examine such physical activity and compare use between racial/ethnic groups. Results indicate visitors to these public lands have opportunity to increase their physical activity, decrease their BMI and realize greater health benefits. Subsequently, as appropriate, recreation managers can engage a variety of visitors to improve the health of Americans as stipulated in Bush's 2002 executive order.

Acknowledgments

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Chapter 11: Outdoor Recreation and Nontraditional Users: Results of Focus Group Interviews With Racial and Ethnic Minorities

Robert C. Burns,[1] Elizabeth Covelli,[2] and Alan R. Graefe[3]

Abstract

Resource managers in Oregon State Parks and the Pacific Northwest Region of the U.S. Department of Agriculture, Forest Service (U.S. Forest Service) identified a need to better understand the needs of existing and potential stakeholders who may visit public recreation lands in Oregon. Specifically, this research was designed to understand the perceptions of racial and ethnic minorities in Oregon. A series of focus groups were completed in the state of Oregon to understand ethnic minorities' interests and needs related to outdoor recreation, and how agencies such as Oregon State Parks, the U.S. Forest Service, and local park and recreation authorities can better respond to these nontraditional users. This report documents visitor usage perceptions for different outdoor recreation activities in a variety of outdoor recreation settings within the state of Oregon. The focus group interviews were designed to ascertain residents' perceptions about what recreation activities, services, facilities, and experiences are appropriate on various public lands in Oregon.

Keywords: Outdoor recreation, diversity, racial and ethnic minorities.

Introduction

As ethnic and racial groups continue to grow in the United States, it will become important for social service agencies to reexamine how they manage for a diverse population. According to estimates by the U.S. Census Bureau (Census Bureau 2002), Latino and Asian American populations are increasing at a faster rate than the population as a whole, with a majority of these population changes taking place in the Western United States. Outdoor recreation managers will need to consider that ethnic and racial groups may have different outdoor recreation preferences, constraints, and information needs than the traditional outdoor recreation participant.

Outdoor recreation managers will need to consider that ethnic and racial groups may have different outdoor recreation preferences, constraints, and information needs than the traditional outdoor recreation participant.

[1]Assistant professor, Division of Forestry and Natural Resources, West Virginia University, 6125 Percival Hall, Morgantown, WV 26506.

[2] Doctoral student, Department of Recreation, Parks and Tourism Management, Pennsylvania State University, 800 Ford Building, University Park, PA 16801.

[3]Associate professor, Department of Recreation, Parks and Tourism Management, Pennsylvania State University, 800 Ford Building, University Park, PA 16801.

Resource managers in the state of Oregon, including the Oregon State Parks and Recreation Department and the Pacific Northwest Region (Region 6) of the U.S. Department of Agriculture, Forest Service (U.S. Forest Service) continue to see a need to understand all of their users, including ethnic and racial minority groups. A research effort was designed to understand the perceptions of racial and ethnic minorities in Oregon. The study documented preferences and perceptions of different outdoor recreation activities in a variety of outdoor recreation settings. Through the use of focus group interviews, the study was designed to understand residents' perceptions about what recreation activities, services, facilities, and experiences are appropriate at various places on public lands.

Literature Review

The demographics of the United States are changing rapidly, with changes most visible in the Western States. A compilation of studies completed by Chavez (2001) suggested that, over the next 25 years, Latinos will account for one-fifth to one-half of the total U.S. population. Chavez also stated that if Latinos grow at the highest projected rate, they will account for 54 percent of the Nation's growth. Another rapidly growing group is the Asian American population. Since 1980, Asian Americans have grown to 3 percent of the population (Chavez 2001). The growth of the Asian American population has especially increased in the Western States of California, Oregon, and Washington. It is also projected that, within the next 20 years, 49 percent of the Asian American population will live in the Western States (Census Bureau 2002).

Several theories have been proposed to help explain nonparticipation in outdoor recreation by different ethnic and racial groups. According to Johnson et al. (1997), two primary theoretical perspectives emerged in the 1960s and 1970s. The theories were based around race and ethnicity and socioeconomic status (income and education). Opportunity theory or demographic theory emerged in the 1970s and was used to explain specific causes of nonparticipation. According to Johnson et al. (1997: 2) "opportunity theory is distinct from the more general socioeconomic explanation because greater emphasis is placed on human proximity to resources as the specific cause of non-participation." Lack of participation by ethnic and racial groups may be explained by lack of opportunities or resources for populations with lower socioeconomic status (Lindsey and Ogle 1972).

Washburne (1978) was among the first to propose a theoretical framework regarding race and outdoor recreation and approached the problem by offering two alternative hypotheses: ethnicity and marginality (Johnson et al. 1997). The marginality hypothesis suggests that African Americans do not participate in outdoor

recreation because of poverty and other consequences of socioeconomic discrimination. Washburne went on to explain that historically unmet needs like transportation from urban residences contributed to marginality. According to this theory, once the socioeconomic barriers are removed, we will see more equal participation between ethnic and racial groups (Floyd 1998). The ethnicity hypothesis attributes nonparticipation to cultural differences. Washburne (1978) explained that leisure patterns are a reflection of culture, and African Americans may have a historically different relationship with wildlands. Additionally, ethnic and racial groups have unique recreation preferences that may be attributed to value differences based on group norms (Floyd 1998, Johnson et al. 1998).

Recent research on marginality and ethnicity theory attributed minority differences to social structural barriers like discretionary income, transportation, and information (Johnson et al. 1998). Carr and Williams (1993) explained that not all racial and ethnic groups are homogenous. Their study found significant differences in recreation preferences within the Latino ethnic group, specifically differences between Mexicans and Central Americans. In 2004, Winter et al. found similar results. They examined different cultures, income, education, and language. Results indicated that several different recreation patterns existed among Asian Americans. Thus, not all Asian Americans can be categorized together as they are not a homogenous group.

Johnson et al. (1997) examined and reviewed several race and ethnicity theories. In their assessment, no single factor offers a definitive explanation of racial differences in recreation behavior. Lack of definitive findings may be attributed to not having standard definitions of terms and lack of consistency in measures across studies. The authors explain that the inconsistent results could also be due to peculiarities of the specific study areas. Johnson et al. (1997) noted that researchers tend to generalize findings from a specific area to entire racial and ethnic populations and that research should focus on regional or geographic differences.

Tierney et al. (1998) examined the use of undeveloped natural areas by residents in the Los Angeles area. Their results indicated that respondents who were lower income African Americans, younger Latinos with low income, and low income Asian Americans were significantly less likely to visit an undeveloped area. Additionally, Asian American, Latino, and White respondents with similar status, assimilation, and perceived discrimination were equally likely to visit natural areas when compared to African Americans, supporting marginality theory's assertion that differences between ethnic groups are reduced when other factors are taken into consideration.

Tierney et al. (1998) also examined potential constraints to recreation at natural areas. Their results identified information and transportation as constraints; however, ethnic preferences, assimilation, education, and perceived discrimination also affected participation. Shinew and Floyd (2005) explained that more research is needed to understand minorities and the factors that constrain their outdoor recreation participation. Further examination will help broaden understanding of societal issues surrounding minority groups.

Last, Thapa et al. (2001) demonstrated that understanding information needs and search behaviors of ethnic groups is essential to communicating with visitors at natural areas. According to their results, White respondents were more likely to use all available information sources, whereas Latinos and other minority groups were less likely to use technology sources. All groups indicated that they used printed material; however, language was identified as a potential limiting factor.

Methods

In the summer of 2006, a series of focus group interviews were conducted in several cities in Oregon to understand ethnic/racial minorities' interests, participation, and constraints regarding outdoor recreation. The respondents were interviewed in four separate meetings with African American respondents (Portland, Oregon), Asian American respondents (Portland, Oregon), and Latino respondents (Medford and Hermiston, Oregon).

The sample was identified through the use of snowball sampling, relying heavily on the existing contacts and relationships of Oregon State Parks and Recreation Department resource managers. The contacts consisted primarily of local recreation resource managers in the communities noted above. These contact persons were a key link in communicating with the racial and ethnic minorities in each community, as an element of trust between the managers and community groups had already been established. The meetings were held in community buildings (libraries, town meeting halls, etc.) and the duration of each meeting ranged from 2 to 3 hours.

The interviews followed a semistructured focus group protocol. This method was employed with the goal of obtaining as much information from the participants as possible. According to Madriz (2000), focus groups should be used when the interviewer desires a free expression of ideas. The focus group methodology empowers participants by tilting power in their favor, which can reduce the interviewer's influence and allow for more open and honest discussion. A focus group interview guide was used as a loose guide throughout the meetings. The discussion guide addressed five specific research questions:

- What are your current and previous recreation experiences?
- What benefits do you seek from recreation?
- What constraints keep you from recreating more often?
- What media sources would be most effective in getting you to recreate more often?
- What specific amenities (e.g., facilities, services, information) should be changed or improved?

Results

Current and Previous Recreation Experiences

Participants were asked to describe their outdoor recreation experiences and interests, including the types of activities they currently or previously have participated in. Probing questions were asked to understand the setting in which these activities took place and with whom they participated during the activity. The results of the interviews are outlined by segment (Asian American, Latino, and African-American) below and summarized in table 11-1.

Asian Americans—

A theme that emerged throughout the focus group meeting with Asian American participants was recreating with family, especially with children. Many participants explained that they prefer to recreate with their children. They want to experience outdoor recreation with their children rather than sending them to participate in a program by themselves, like the Boy Scouts. Additionally, participants explained that they usually recreate with their extended family, including elders. This has implications for the types of areas they visit and also dictates the types of activities in which they participate. Many Asian American participants indicated that they enjoyed visiting areas with water features, such as the Columbia River Gorge, Crater Lake, and the Willamette River in Portland.

Issues surrounding safety and protection were identified as important to the Asian American group. Participants were not interested in recreating in areas that do not "feel safe." Nor will they allow their children to go to such areas. Reflections of childhood among participants revealed that they were not allowed to recreate or leave the apartment owing to safety concerns, which may help explain why more Asian Americans do not recreate outdoors. Asian Americans preferred going on shorter hikes and visiting areas where they could be close to people.

Latinos—

Latino participants expressed frustration with visiting areas that do not have enough room for large, extended families. Latinos often enjoy celebrating a child's

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Table 11-1—Summary of major themes in nontraditional user focus groups

Asian Americans	Latinos	African Americans
Current and previous recreation experiences:		
Improved amenities: overnight facilities and places to eat	Facilities large enough for extended families	Dislike remote locations
Access to facilities	Prefer local areas over traveling distances	Aesthetics
Recreation areas with water features	Information needs	Often stereotyped
Dislike camping in tents	Places for youth	
Enjoy visiting areas with entire family including elders and children		
Safety and protection		
Benefits sought:		
To be in nature and see wildlife	Spend time with family	Solitude
To get away from it all	To get away from it all	Spending time with family and friends
Education	Education	
Constraints:		
Lack of information	Distance to recreation areas	Facilities
Safety concerns	Lack of information	Cleanliness
Culture	Fear of new places	
	Signage	
	Different activity styles	
	Transportation	
Media and recreation opportunities:		
Information in multiple languages	Lack of information	African American organizations
Asian American organizations	Information in multiple languages	More information
Using key informants to build trust	Information sent home with children	
Publicizing benefits	Latino media sources	
	Calendar of events	
	Latino organizations	
Changes in parks and recreation services and facilities:		
Increased signage	Facility improvements	Making health links
Facility improvements	National forests	Free is key
Web site improvements	Parent/youth involvement	

birthday, or having a family party in an outdoor setting. However, the setting or facility does not accommodate the group size. Additionally, many local areas are often busy or full and require a reservation system that Latinos are unaware of. Areas with gazebos or pavilions are also preferred settings. According to many participants, Latinos are likely to have jobs that often require long hours, and are also concerned with the price of gasoline. This prevents them from traveling long distances to recreation areas. They would like to see more local recreation facilities including campgrounds. Members of the Latino community often seek new places to visit; however, they have had problems accessing information from the local chamber of commerce. Participants agreed that members of their community would enjoy going to outdoor areas, but they are often constrained by not knowing what public facilities are available for recreation.

Similar to Asian American respondents, participants explained that children are an important component of the Latino community. They prefer settings that accommodate children by having playgrounds, basketball courts, clean bathrooms, and water to play in. Additionally, parents and members of the community desired open places for their child to play and be free.

African Americans—

Participants in the African American focus group preferred to recreate in locations that were not "off the beaten path." The participants preferred controlled areas like city parks and facilities that were managed by the city, areas that were close to urban centers, and places that were well maintained with clean amenities. They find comfort in knowing that in case of an emergency, they can leave an area and get help. Aesthetically pleasing areas were important to African Americans; places with a view, water, or green spaces were identified as ideal. Participants like being able to look back at the hike and see the "reward" of climbing a mountain. African Americans discussed how stereotypes often prevent people from recreating in outdoor settings. However, they confirmed that African Americans are interested in outdoor recreation activities and specifically mentioned hiking, picnicking, and viewing nature.

Benefits Sought

Participants were asked to identify what types of benefits they hoped to get from participating in an outdoor recreation activity. Benefits have been defined as voluntarily engaging in recreation behaviors for intrinsic rewards when basic needs like survival, comfort, material needs, and social commitments have already been met (Driver et al. 1991).

Asian Americans—

For the Asian American group, three general benefits were discussed. One of these involved experiencing nature and viewing wildlife. One participant explained that Asian Americans place a high value on animals and they visit areas hoping to see wildlife. Scenery and fresh air are also important benefits. Along with nature, "getting away from it all" was identified by Asian Americans as a major benefit. They enjoy outdoor recreation because they are able to get away from home and spend time with family. Educational opportunities were also identified as a benefit to participating in outdoor recreation. Participants indicated that they look for areas where they can learn something. A nearby Corps of Engineers hydro-power project that provides opportunities for fish viewing was mentioned as an example of the type of educational experience that they look for. This specific area includes interpretive messages and guided interpretive tours.

Latinos—

Participants noted that they often recreate to spend time with family and friends. They enjoy going to places where they can have large parties and socialize with each other. Thus, areas with pavilions and barbeque facilities are ideal settings. Similar to Asian American respondents, they are also interested in going to areas to get away from the stress of everyday life. They like to go to places that are free of pollution and free of cost. Many Latino participants noted that members of their group cannot afford to go to expensive places. Additionally, they want to go to areas that will build memories for their families. Educational programs that help promote self-esteem for youth in the community would be welcomed. Parents want to be able to take their children to a place where they can learn and explore.

African Americans—

African American participants identified solitude and spiritual healing as reasons for participating and benefits that they hope to gain through outdoor recreation. The benefit of self-renewal is also important. Being with family and friends is another important benefit sought by African Americans. They enjoy connecting with family and meeting new people. Children are an important component of family; however, they often preferred to go to places where children are well behaved.

Constraints

Participants were asked about their perceived constraints, or factors that prevent or decrease their participation in outdoor recreation. Since the 1980s, recreation and leisure researchers have examined the reasons why some people do not participate in desired recreation activities.

Asian Americans—

A constraint that was noted for the Asian American group was lack of information or knowledge of where to find information. This included information about where to recreate, safety, and the reservation system for state parks. Asian Americans often will only go to places that they have visited before and know are safe, familiar, and convenient. Historical and cultural differences seem to play a role in the type of activities that Asian Americans have traditionally participated in. Generally, indoor activities are preferred, according to many participants. Additional cultural constraints were concerned with children and education. Although the Asian American group would enjoy more programs devoted to outdoor recreation and survival skills, they are still reluctant to send their children to classes alone. Consistent with earlier thoughts on recreation activities, they explained that they enjoy recreating with their children and do not like to send the child to a class focused on outdoor recreation without parental guidance. Participants explained that, while parents want to participate with their child, they also want programs that are focused on academic enhancement. Instead of an outdoor recreation program, a program that takes children into the woods to learn about archeology is more appealing to the parents.

Latinos—

Transportation is a major constraint to recreation for the Latino community. The respondents explained that many Latinos are already paying a high price to live in the United States and driving to a recreation area takes more money than they can afford. Continual increases in fuel costs have exacerbated this problem and prevented some Latino participants from visiting outdoor recreation areas. Participants also explained that many people within their community do not like to go to remote locations and prefer more front-country settings that are easy to access and close to home.

According to the participants, lack of information is also a major reason for not recreating at outdoor recreation areas. Participants see the benefit of recreating outdoors; however, they do not know where to go or who to contact about recreation opportunities. Additionally, lack of information written in Spanish is seen as a constraint. Along with not being aware of recreation opportunities, there is a fear amongst immigrants of visiting new areas. Latino immigrants seldom go to areas that other people in their community have not previously visited.

There is also uncertainty when actually arriving at the site as to where to go and what the rules are. Although many communities on the local level have moved toward universal or Spanish/English signs, there are still many areas that have not altered their signage. Latinos may not be able to read a sign in English that informs

Transportation is a major constraint to recreation for the Latino community. The respondents explained that many Latinos are already paying a high price to live in the United States and driving to a recreation area takes more money than they can afford.

them of the recreation fee or that an area may be restricted, which could result in a dangerous situation. Many of the participants explained that Latinos do not recreate in the same fashion as traditional users. They often recreate in large groups and expect to have more amenities, like a place for barbeques and food.

African Americans —

African American participants felt that many recreation areas are not large enough for their outdoor recreation interests. They would like to see more areas with picnic tables and places to barbeque. Also, outdoor recreation areas should include facilities with basketball hoops and restrooms. Other constraints included cleanliness of facilities. Participants would be more inclined to recreate if there were more trash receptacles and cleaner restrooms. According to the participants, unclean and unkempt areas discourage use.

Media and Recreation Opportunities

Participants were asked about how they learned of outdoor recreation opportunities. This included what types of media sources they currently used and what types of media sources could be used to reach more people in their group.

Asian Americans—

According to the participants, having literature and information in multiple Asian languages would help encourage use at outdoor recreation areas. Mandarin Chinese is a language that is understood by many Chinese as well as by many Vietnamese. There was also a suggestion to recruit a more diverse staff in outdoor recreation settings. Participants all agreed that utilizing existing Asian American organizations as a means to inform the community about recreation opportunities would be helpful. This includes using social service agencies, Asian restaurant associations, churches, and schools. One suggestion was to hang fliers and posters in Asian restaurants and stores. The issue of trust within the community is important to acknowledge. Participants suggested that outdoor recreation agencies need to create trust with key informants within the community to pass along the benefits of outdoor recreation. This may be achieved by going to Asian community fairs and using social service agencies.

Participants also suggested publicizing the benefits of recreation to the community. Some benefits that may be appealing to the Asian American community include health, culture, and education.

Latinos—

Lack of information about recreation opportunities was an evident concern throughout the Latino focus group meetings. Participants often felt that they were excluded from receiving information and felt frustrated with not knowing where to look to find outdoor opportunities. Participants agreed that disseminating information in Spanish would be a good way to reach their community. In many Latino families, it is the children who speak or read English and have to translate for the adults. If the child does not find the information interesting, then they will not inform the parent. Using both English and Spanish in information campaigns and literature is ideal.

Participants identified youth as a resource to communicate to adults. Sending information to households through the school system is a potential method of communication. As one participant put it, "children are a way into the household." Information that is brought home from school is considered important and is more likely to be read by parents or translated to them by the children.

Participants noted that many Latinos watch television, especially Univision (Spanish language channel). Advertising and informing the public through this media would be a useful way to inform the Latino community. Participants suggested making commercials with Latinos as advertisements for outdoor areas. Spanish language newspapers would also be useful avenues for informing the community.

Participants agreed that they would like to see some form of a calendar put together by local, state, and federal agencies listing the different recreation events that are occurring in the area. Along with a calendar, a list of resources with corresponding phone numbers would be a helpful way to find out about potential recreation opportunities.

Utilizing Latino organizations to disseminate information is another potential way to inform the community about recreation opportunities. These organizations can include farm workers associations, local health clinics, community centers, and small businesses.

African Americans—

African American participants felt that more people would visit outdoor recreation areas if local, state, and federal agencies utilized local businesses to inform the public about recreation opportunities. These organizations could include barber/hair shops, restaurants, and public health offices. They also identified the need to have more readily accessible information. The use of local radio stations and African American newspapers (specific to each community) could help inform this segment of the public of outdoor recreation opportunities.

Changes in Parks and Recreation Services and Facilities

Participants were asked if they had noticed any changes in the service or facilities of their parks and forests within their Oregon community. These changes could be either negative or positive. This part of the interview also covered any additional areas that may not have been covered in previous sections. For example, amenities were mentioned several times throughout the focus group interviews. Especially during the Asian American discussion, participants explained that they sought areas with amenities. This included places to eat (restaurants) and indoor overnight facilities. Along with amenities there were concerns over actually accessing these facilities. Repeated concerns were mentioned about online reservation systems and not being able to locate overnight facilities on both the state and federal level.

Asian Americans—

Participants have noticed an increase in signage and interpretive displays in the recreation areas they visit. However, some site-specific improvements are still needed, including repairing poor railings and stairs. They would like to see recreation areas where they can bring the elders in their family.

Accessing information on the Internet is a useful development. Participants who had visited numerous sites had specific comments about the negative and positive elements of recreation resource Web sites. Some were considered more user friendly and resulted in visitations to recreation areas. Other Web sites were hard to navigate, and the respondents said they could not find the information they were looking for.

Latinos—

Participants have recognized improvements in facilities at the community level. They have seen improvements in safety and feel that local parks are much safer than before. They also believe that their tax money is well spent with regard to local parks. But they wondered what the National Forests have to offer. A participant asked the question, "Why go to a national forest? What is there for me and my family? There is just open space." These are questions that go back to lack of information about opportunities and the need to reach out to the Latino community. Participants discussed the importance of using youth to target adults. Many Latino children assimilate at a quicker rate than their parents. The school system provides opportunities for youth to experience the outdoors. Participants agree that it is harder to get the parent to be part of field trips or programs outside of school. Often Latino parents are most concerned with working and providing for the family.

African Americans—

Participants agreed that, with current issues of obesity and health in America, people are more willing to participate in recreation. If outdoor recreation agencies could make the link between outdoor recreation and health, more people would be willing to go to outdoor facilities.

The African American community would like to see more free recreation opportunities. The group was informed that Oregon State Parks offers a free recreation day at their sites; however, the participants were unaware this existed.

Conclusions

The social context is a very important aspect of recreation among minorities. The family group is especially important. A lot of free time is devoted to family activities, and often involves the extended family spending time together. For example, if the older generation is not interested in going to parks, no one goes to the parks. The younger generation is more likely to participate in outdoor recreation with groups of friends. When families, specifically Asian Americans and Latino-Americans, go to parks, they prefer nearby areas with modern facilities and plenty of space for their extended groups.

Safety is a major concern affecting outdoor recreation participation and includes two elements: personal safety and safety for children. Many minority individuals consider parks dangerous, with the degree of danger varying for different types of parks and outdoor areas. While members of all cultures are concerned for the safety of their children, Asian American parents are especially protective of their children. They often will not allow their children to go to parks, especially if they are places for risky activities, such as skate parks, or far away outdoor areas.

Ethnic minorities have little awareness of the recreation opportunities available to them on public lands. Few understand the differences between the many federal, state, and local areas and managing agencies. Better information is needed to facilitate greater participation by these groups. Efforts such as multilingual materials and reaching out through community groups are necessary to deliver the needed information to the minority populations.

Ethnic minorities are interested in outdoor recreation, but their extent and type of participation are related to the degree of acculturation. For example younger Asian Americans born in the United States have interacted with Whites all of their lives and have been introduced to parks and outdoor recreation, often through the schools. Older generations generally are less interested in outdoor recreation; they have no interest in camping and don't like camping food. They would rather do other things with the family (including community gardening or other outdoor or

When families, specifically Asian Americans and Latino-Americans, go to parks, they prefer nearby areas with modern facilities and plenty of space for their extended groups.

indoor activities). In general, interests in outdoor recreation activities and areas become more similar to the majority population as ethnic minorities become more assimilated within America.

Ethnic minorities are not all alike. There is variation within the three groups studied as well as between them. Like the majority population, minorities in Oregon are split into two groups, rich and poor. These groups have very different interests in outdoor recreation. A common denominator for both groups, however, is support for the children's education. Often, even the poorest will put all that they have to help their kids advance in life through a better education. Minority kids don't usually join groups like Boy or Girl Scouts—their parents do not support it. Minority families might support it more if it were considered more educational.

Summer is the best time to get the minority youth outdoors, as they have several weeks with no school. But most minority parents do not want to send their kids away. They would rather participate with their children, but are unable to owing to work obligations. They might send kids to programs near to home while they are working, especially if they are educational.

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Chapter 12: Perceptions of Agriculture and Natural Resource Careers Among Minority Students in a National Organization

Corliss Wilson Outley[1]

Abstract

The purpose of the study was to identify factors that influence the career choice behaviors among students who were members of Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS) National Society. A secondary purpose was to identify perceptions and attitudes among students that chose careers in agriculture and natural resources. The MANRRS students in the study indicated their mother and persons employed in the field as the individuals who most influenced their choice of a career. Students' personal concern for the environment was an additional factor that influenced their choice of a career. The perceptions and attitudes reported by MANRRS students who chose a career in agriculture and natural resources focused around several themes, which included career opportunities, positive educational experiences, and internship/job experiences with agencies and organizations. It is hoped that the experiences presented here by current agriculture and natural resources students will aid governmental agencies, private corporations, and nonprofit organizations in increasing the number of ethnic minority professionals in the field of agriculture and natural resources.

Keywords: Minority students, natural resources, career development, agriculture education.

Introduction

One of the biggest challenges facing agriculture and natural resource professionals and educators lies in recruiting and retaining traditionally underserved populations. Although minorities are well represented in many fields, minority professionals in agriculture and natural resource careers are still limited and research is needed to investigate why there is a lack of interest among minorities.

The national U.S. demographics have shifted and continue to shift toward a more and more diverse population. According to a 2007 census brief, roughly 34 percent of the U.S. population identified themselves as non-White—14.5 percent of

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Latino origin, 12.8 percent African American, 4.3 percent Asian American, about 1 percent Native American, and approximately 1.5 percent indicated two or more races. In addition, minorities are more likely than Whites to live in urban areas (U.S. Census Bureau 2007) and 303 of the Nations' 3,143 counties no longer have majority White populations (U.S. Census Bureau 2007).

Despite increased attention to and discourse on the role changing demographics will have on the field of agriculture and natural resources, there have been few changes in the way minorities are recruited to pursue higher education in these professional areas. For example, a recent study of diversity in environmental institutions (Taylor 2005) found that one-fourth of 29 government agencies surveyed and more than one-third of 129 mainstream environmental organizations surveyed had not hired any minorities in the past 3 years. The same study also discovered that 22 percent of government agencies and 33 percent of mainstream environmental organizations have no minorities on staff.

These statistics are particularly alarming given the large number of retirements at the federal level. For example, at the U.S. Department of Agriculture Forest Service (Forest Service), over 50 percent of the leadership in key areas will become eligible to retire by the end of 2007 (Renewable Natural Resources Foundation 2003–2004). In some key career paths, the projections for turnover are significant—where entomologists (81 percent), foresters (49 percent), engineers (40 percent), and wildlife biologists (35 percent) are all expected to retire in significant numbers.

In the educational arena, many of the subdisciplines have faced declining enrollment of minority students in agriculture and natural resources (Renewable Natural Resources Foundation 2003–2004) and even graduates of these programs are not choosing governmental employment. During the period 1993-2000, only 9.4 percent of the 182,519 degrees awarded in agriculture and natural resources were awarded to racial/ethnic minorities (Food and Agricultural Education Information System 2000).

With the aforementioned dynamics in mind, what are the specific factors that can be used to attract minority students to the agriculture and natural resources field? What are the factors that influenced students to choose agriculture and natural resources as their career? What are students' perceptions of the field? What are the barriers to pursuing degrees in agriculture and natural resources? Determining the specific strategies most effective in recruiting underrepresented students requires an understanding of not only how students chose a career in agriculture and natural resources, but also students' perception of their respective field. In this paper, I examine the factors that influenced their choice of agriculture and natural resources as a college major and perceptions of agriculture and natural resources careers.

The research on career choices made by students entering college has been extensive. In the area of agriculture and natural resources, several studies have identified numerous factors influencing this decisionmaking process including values, financial incentives, exposure to agriculture, and family (Wildman and Torres 2001); and visiting with former graduates, campus visits, printed university publications, visits with professors, career opportunities, and academic reputation (Washburn et al. 2002). An early study by Wakefield and Talbert (2003) of past Negro Farmers of America members found that the teacher was a strong influence in their participation with the Future Farmers of America after the merger of the two organizations in 1965. Talbert (1997) and Talbert and Larke (1995) identified additional factors influencing student interest in agriculture. Previous research indicates early introduction of minorities to agriculture and natural resources through high school counselors (Leatherberry and Wellman 1988, Wellman 1987) and youth programs will increase minority participation. However, Jones and Larke (2001) and Mitchell (1993) suggested that minority students often decide to select an agriculture career later in their lives, and often transfer into the discipline after their freshman year.

Perceptions and attitudes of minorities toward agriculture and natural resources careers have been researched. Findings from a 1995 study by Warlow et. al. concluded that the lack of minority professionals in agriculture who can serve as role models was seen as a significant barrier to encouraging minority youth to pursue agricultural careers. Leatherberry and Wellman (1988) reported African American students knew little about the skills needed by a wide range of natural resource professionals, the jobs available, and the wages earned in those careers.

Methods

Data were collected at the 2000 Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS) national career fair and conference. The mission of MANRRS is to promote academic and professional advancement by empowering minorities in agriculture, natural resources, and related sciences. The MANRRS program began as a vision shared by a group of agriculture students and faculty members at Michigan State University and Pennsylvania State University in 1986. Their goal was to develop a partnership between minority agriculture and natural resources students and professionals from academic institutions, government, and industry. Their commitment led to the first national MANRRS conference, held at Michigan State University in 1986. Currently, the organization just held its 23rd annual conference and had over 900 students and professionals attending from more than 50 collegiate and high school chapters (representing 1862 and 1890 land

grant institutions and tribal colleges), governmental agencies (e.g., Forest Service and National Park Service), private corporations (e.g., Archer Daniels Midland Company) and nonprofit organizations (e.g., Environmental Careers Organization). Given that the total MANRRS student membership was the population under study, a convenience sample was preferred. In all, 227 completed surveys were obtained.

Instrument

A survey was developed for this study following an indepth literature review. The following measures were used for the study:

- Factors of Influence—A 3-point Likert scale (1 = strong influence to 3 = no influence) to determine the major interpersonal influences on students when deciding a college major. For example, items included mother, other relative, high school teacher, college advisor, and person employed in the profession. Additional items included intrapersonal and structural influences. These included personal concern for the environment, availability of scholarships, and ability in science skills.

- Perceptions of Agriculture and Natural Resources—Students indicated the degree to which they agreed or disagreed with issue statements using a 1 to 5 scale where 1 = strongly agreed and 5 = strongly disagree. These statements included: (1) Most agriculture and natural-resources-related careers are in low-paying jobs, (2) Most agriculture and natural-resources-related careers involve working outdoors, and (3) Most members of minority groups have a negative image of agriculture and natural-resource-related careers.

- Recommendations to Promote Diversity—This measure included a 5-point Likert scale and had nine items included. Examples include active recruiting of minority students for positions, forming minority support groups for minority employees, and establishing mentoring programs in the workplace.

- **Open-Ended Questions**—These were provided for students to express personal feelings and experiences regarding recruitment, retention, and barriers of increased participation by minorities in agriculture and natural resources.

Face validity and reliability for this section of the survey were established during a pilot test of nine University of Minnesota MANRRS student chapter members not included in the final survey population. Reliabilities on the pilot data were 0.79 (field perceptions) and 0.92 (barriers). The final data set yielded reliabilities of 0.72 and 0.89, respectively.

Results

The following tabulation presents demographic characteristics of the study participants (n = 227). The majority of the respondents were female (55.1 percent) and African American (81.8 percent). Students in the sample were more likely to live in a city or town during their childhood (41.3 percent) and had a total household income between $50,000 and $75,000 (30.4 percent). Sixty percent of the students held a sophomore or junior class standing and 60 percent had a 3.0 grade point average or higher. Almost half of students were agriculture majors (48.8 percent), followed by those majoring in forestry and natural resources (21.6 percent).

	Percent
Gender	
Male	44.9
Female	55.1
Race/ethnicity:	
African American	81.8
Hispanic/Latino	9.3
Native American	3.1
Asian American	0.9
White/European	0.4
Other	4.4
Location of childhood home:	
On a farm/ranch	11.1
Rural area	14.2
Suburb	18.7
City/town	41.3
Major metro area	14.7
Household income:	
Less than $25,000	24.9
$25,000–$50,000	23.2
$50,000–$75,000	30.4
Over $75,000	21.5

	Percent
Current class standing:	
1st year (freshman)	11.5
2nd year (sophomore)	30.4
3rd year (junior)	31.7
4th year (senior)	15.4
Graduate	6.2
Other	4.8
Academic major:	
Agriculture, general	48.8
Forestry/nat res	21.6
Animal science	12.8
Wildlife and fisheries	5.3
Food science/tech	4.4
Plant sciences	2.1
Other	4.8
Grade point average:	
4.0	0.5
3.5–4.0	22.1
3.0–3.5	37.4
2.5–3.0	30.6
2.0–2.5	8.6
Below 2.0	0.5

Factors Influencing College Major Decision

Respondents indicated that their mother ($M = 2.0$; SD = 0.8) had the strongest influence on their decision of agriculture or natural resources as a college major (table 12-1). Other persons that had some influence on their decision in choosing a college major included persons employed in the profession ($M = 2.1$; SD = 0.9), college of agriculture/natural resources recruiter ($M = 2.2$; SD = 0.8), college advisor (M = 2.3; SD = 0.9), and their high school teacher ($M = 2.2$; SD = 0.9). Those persons with some or no influence included minister ($M = 2.8$; SD = 0.4), college admissions personnel ($M = 2.5$; SD = 0.6), high school administrator ($M = 2.5$; SD = 0.7), and father ($M = 2.4$; SD = 0.7).

Respondents' "personal concern for the environment" ($M = 1.7$; SD = 0.6) had a strong influence on their choice of agriculture and natural resources as a career (table 12-2). Other strong influences included availability of scholarships in chosen major ($M = 1.8$; SD = 0.8), and availability of jobs after graduating from high school ($M = 1.8$; SD = 0.8). Availability of minority student clubs ($M = 2.4$; SD = 0.7) and ease of courses/programs of study ($M = 2.4$; SD = 0.8) were viewed as factors with some or no influence on their interest in agriculture and natural resources careers.

Respondents were also given the opportunity to indicate the extent to which different resources used by colleges influenced their decision on a major (table 12-3). This was based on a 1 = not at all to 5 = very much scale. A college visit ($M = 3.5$; SD = 1.5) and a conversation with current students in the major ($M = 3.3$; SD = 1.7) had the most influence on their decision. Respondents indicated brochures ($M = 2.5$; SD = 1.7) had very little influence on their decision on a major.

Perceptions and Attitudes Toward Agriculture and Natural Resources Careers

Respondents were asked their perceptions of agriculture and natural resources careers using 25 statements (table 12-4). The top five statements that the majority of students agreed upon included: "People with college majors in the sciences such as chemistry, genetics and biology can find agriculture and natural resources-related careers" ($M = 2.1$; SD = 0.8), "Graduates with degrees in agriculture and natural resource-related majors are able to pursue science oriented careers" ($M = 2.2$; SD = 1.1), and "Professional degrees in agriculture and natural resources are required for professional advancement" ($M = 2.4$; SD = 1.0), "Minority groups lack information about agriculture and natural resource careers" ($M = 2.5$; SD = 1.2), and "The media generally portrays agriculture and natural resources in a positive light" ($M = 2.7$; SD = 1.0).

Table 12-1—Influential persons on students' choice of college major

Statement	Mean[a]	Standard deviation	Rank
Mother/female guardian	1.96	0.80	1
Person employed in career	2.09	.88	2
College recruiter	2.19	.83	3
College advisor	2.26	.85	4
High school teacher	2.29	.85	5
Brother/sister	2.32	.80	6
Friends	2.34	.67	7
College professor	2.35	.80	8
High school counselor	2.39	.77	9
Relative	2.42	.72	10
Father/male guardian	2.43	.67	11
High school administrator	2.53	.72	12
College admissions	2.54	.61	13
Minister	2.84	.41	14

[a] Scale: 1 = strong influence, 2 = some influence, and 3 = no influence.

Table 12-2—Influential factors/issues on students' choice of college major

Statement	Mean[a]	Standard deviation	Rank
Personal concern for the environment	1.74	0.63	1
Availability of jobs after graduation	1.77	.79	2
Availability of scholarships in major	1.79	.83	3
Outdoor recreation activities	1.81	.83	4
Prestige of career I can enter with major	2.02	.80	5
Money I can earn after graduation	2.02	.76	6
Ability to use special talents	2.05	.73	7
Ability to use science skills	2.06	.79	8
Organized youth programs	2.16	.82	9
Rural family life	2.17	.78	10
Participant in natural resource programs (e.g., 4H)	2.20	.75	11
Past work experience	2.21	.86	12
Volunteering in enviro. organizations	2.26	.81	13
Ease of courses/program of study	2.38	.83	14
Availability of minority student clubs	2.41	.66	15

[a] Scale: 1 = strong influence, 2 = some influence, and 3 = no influence.

Table 12-3—Influential resources on students' choice of college major

Resource	Mean[a]	Standard deviation	Rank
Brochure	2.59	1.70	1
Visits with minority faculty/staff	2.87	1.70	2
Visits with non-minority faculty/staff	3.19	1.78	3
Other	3.33	2.08	4
Career fairs	3.34	1.66	5
Participation in minority organizations	3.36	1.70	6
Conversations with students in the major	3.38	1.69	7
Visit to the college	3.57	1.54	8

[a] Scale: 1 = not at all, 3 = very little/some, and 5 = much/very much.

Table 12-4—Perceptions of agriculture and natural resource careers based on agreement with statements

Statements	Mean[a]	SD[b]	Rank
People with college majors in the sciences such as chemistry, genetics and biology can find agriculture and natural resources-related careers	2.1	0.83	1
Graduates with degrees in agriculture and natural resource-related majors are able to pursue science oriented careers	2.2	1.08	2
Professional degrees in agriculture and natural resources are required for professional advancement	2.4	.96	3
Minority groups lack information about agriculture and natural resource careers	2.5	1.21	4
The media generally portrays agriculture and natural resources in a positive light	2.7	.99	5
Most agricultural and natural resources-related careers involve working outdoors	2.7	1.17	6
Most agriculture and natural resource-related careers require graduate training in fields such as genetics, microbiology, and chemistry	2.8	.89	7
In general, agriculture and natural resource-related careers have a positive image in most minority communities	2.8	.71	8
Most members of minority groups have a negative image of agriculture and natural resources-related careers	2.8	.80	9
Graduates with college degrees in agriculture and natural resources-related majors are sought after by many multinational corporations	2.9	.90	10
College graduates who major in agriculture and agriculture-related majors earn salaries as high as those earned by graduates in most other majors	3.0	.96	11
Graduates with college degrees in agriculture and natural resources-related majors often pursue business careers	3.1	.81	12
The number of job opportunities in agriculture and natural resources-related careers are declining	3.1	1.02	13
Most people choose careers in agriculture and natural resources because they can be their own bosses (by owning their own farm, ranch, etc.)	3.1	.86	14
Agriculture and natural resources occupations are generally viewed with the same level of prestige by the general public, as are other occupations	3.1	1.07	15
Most careers in agriculture and natural resources are very dependent upon weather conditions such as drought and floods	3.3	1.21	16
Most agriculture and natural resource-related careers involve or require manual labor	3.3	1.40	17
Most agriculture and natural resources-related careers are not attractive to members of minority groups	3.4	1.06	18
People with agriculture and natural resources-related careers often work in urban areas	3.4	.90	19
Natural resource professionals are ethnically representative of the U.S. population	3.4	1.17	20
Most graduates of agriculture and natural resources-related programs lack skills for careers outside of agriculture	3.6	.89	21
Most agriculture and natural resource career graduates are in low paying jobs	3.6	.74	22
Agriculture and natural resources related careers are not attractive to females	3.8	.95	23
There is little opportunity for advancement for people employed in agriculture and natural resource-related careers	4.2	.92	24
Most agriculture and natural resources-related careers do not require education beyond high school	4.4	.79	25

[a] Scale: 1 = strongly agree; 2 = agree; 3 = neutral; 4 = disagree, 5 = strongly disagree.

[b] Standard deviation.

The five statements that the respondents most disagreed with include: "Most agriculture and natural resources-related careers do not require education beyond high school" ($M = 4.4$; SD = 0.8), "There is little opportunity for advancement for people employed in agriculture and natural resource-related careers" ($M = 4.2$; SD = 0.9), "Agriculture and natural resources related careers are not attractive to females" ($M = 3.8$; SD = 1.0), "Most agriculture and natural resources careers graduates are in low paying jobs" ($M = 3.6$; SD = 0.7), and "Most graduates of agriculture and natural resources-related programs lack skills for careers outside of agriculture" ($M = 3.6$; SD = 0.9).

Barriers to Attracting Minorities to the Field

Respondents were given the opportunity to discuss what they felt is the greatest barrier to attracting racial/ethnic minorities to pursuing a degree in the field. The following themes were identified by the respondents' comments: lack of information, internal agency/organization diversity, perceptions of careers, and historical cultural perceptions. Each of these will be discussed below.

Respondents felt that a major barrier to choosing agriculture and natural resources as a career is the lack of information being provided to students and the greater public. Several strategies were suggested by the students to overcome this barrier. One student stated that "getting the information to minorities seems to be the problem." This perception is supported by other students' comments:

Just introducing them to work in the field.

Lack of information that is circulated through minority communities to help the people understand the many different things they can do within the majors.

Negative perceptions of careers in agriculture and natural resources are also a major barrier to recruitment and retention of minorities. Of the comments provided, several revolved around negative perceptions of pay, remote job locations and availability, perceived career status, and African American cultural history. For example,

Black Americans historical experience (slavery and sharecropping) and the misperception [misconception] that there is no money to be made and lack of prestige.

Minorities feel that the field has a lot of low paying, boring jobs in which they will be overworked.

Students also provided examples of personal barriers/obstacles that were faced as a minority student in the field of agriculture and natural resources. These barriers included interpersonal factors from individuals of influence such as family and friends; discrimination and racism in educational institutions, professional settings, and surrounding communities; and organizational acculturation. Many students commented on perceived discrimination and cultural insensitivity in professional settings.

> I have been in a racist environment where I was talked about behind my back by my supervisors and other fellow employees.

> That I am always looking over my shoulder and don't feel as an equal.

> A little people believe we [minorities] get the job based on our race and not our ability.

> People not really giving me a chance because of my color.

> Lack of inclusion with nonminority departmental students. (within the higher educational institution.)

In addition, some students felt a sense of "isolation" or "being exiled" when participating in student internships or other work experiences.

Lack of support from family and friends was experienced by several students. The students commented that lack of information about the field and its opportunities led to "parents and friends not being supportive" and "A lot of people tell me that I won't make any money and I'll be forced to work in the field cutting down trees for the rest of my life."

Strategies to Promote Agriculture and Natural Resource Careers Among Minority Students

Respondents were asked their perceptions of strategies to promote diversity in agriculture and natural resources careers. Table 12-5 shows summary statistics and rankings for the perceived strategies to promote diversity. The top three statements agreed upon by the respondents included: "Agency/corporation scholarships for minority students in college" ($M = 1.41$; SD= 0.6), "Agency/corporation development and support of minority student internships" ($M = 1.55$; SD = 0.8), and "Providing outdoor experiences for minority youth" ($M = 1.6$; SD = 0.7).

Respondents were also provided with open-ended questions to provide recommendations to agencies to overcome recruitment and retention barriers. Several respondents felt that agencies and corporations could improve recruitment by starting at an earlier stage in the educational career of students.

Several respondents felt that agencies and corporations could improve recruitment by starting at an earlier stage in the educational career of students.

Table 12-5—Strategies to promote diversity in agricultural and natural resources careers

Statement	Mean[a]	SD[b]	Rank
Agency/corporation scholarships for minority students in college	1.41	0.62	1
Agency/corporation development and support of minority student internships	1.55	0.75	2
Providing outdoor experiences for minority youth	1.6	0.65	3
Active recruiting of minorities for available positions	1.71	0.85	4
Agency/corporation sponsored continuing education programs for employees	1.72	0.76	5
Establish partnerships with minority professional organizations	1.73	0.89	6
Agency/corporation sponsored cultural diversity programs that demonstrate the value of an ethnically diverse workforce	1.90	0.79	7
Establishing minority mentoring programs in the workplace	1.99	0.99	8
Forming minority support groups for minority employees	2.21	1.02	9

[a] Scale: 1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree.
[b] Standard deviation.

> You can improve the numbers by getting to them [students] in high school before they enter college by implementing or supporting programs for younger students to get introduced to the field.

Additional respondents felt that there should be increased partnership between agriculture and natural resource agencies and higher education institutions.

> Form long-term partnerships with HBCUs [Historically Black Colleges and Universities]—conduct on campus seminars with minority employee representatives and invest in HBCUs. Example is John Deere's support of Iowa State ag [riculture] program.

> Give more resources to HBCUs and recruit at these schools.

Internal strategies were suggested by respondents that could be used to increase cultural competency within the agency/organization. These included, "trying to make minorities feel comfortable," "establish support systems in the workplace or a mentoring program," "by advancing the pay in agriculture and natural resources," "providing extra incentives to work in particular fields," "recruit students earlier and provide support at the new job," and "educate the employees about diversity." Several external strategies were suggested to educate the community on the field and the opportunities available. These strategies include:

> They should find some way to let the public know of all the advancements in the field.

Promote ag [riculture] in a positive light.

Educate the black community.

One respondent disagreed with any type of strategies that could be deemed as targeting only minority groups. This respondent stated, "I don't think special catering should be done just because one is a minority, but on the basis of ability."

Conclusion

Despite the positive perceptions of agriculture and natural resources among MANRRS students, professional organizations and agencies need to continue to address the inclusion of minorities in the field. This paper has described some of the major influences on minority students' choices for professional careers. The role of the female parent/guardian and the high emphasis on visits with employees already in the field had a strong influence for many MANRRS students in choosing their professional career. These findings were inconsistent with previous studies, which suggested high school counselors as a major influential source. The attitudes and perceptions of agriculture and natural resource careers were also presented. The respondents for this study had positive perceptions of the field and consistently ranked agriculture and natural resources careers as prestigious as other careers. This result is similar to what Talbert et al. (1999) suggested, that professional organizations like MANRRS provided an excellent foundation not only for increasing students' perceptions of the field positively but also provided numerous opportunities for college students to gain entry into top graduate schools around the country or agriculture-related careers in government, private industry, or higher education. Despite the barriers cited in the literature, many of the MANRRS students held highly satisfactory career perceptions that may be due to their participation in MANRRS and/or their commitment to their chosen major. Given this, several strategies are worth considering in providing entry not only into the field on a collegiate level but also professional:

- Increase of minority professionals in the field that can serve as mentor for prospective professionals at the collegiate level and incoming field professionals.
- Initiate minority community-based programs that connect institutions of higher education and agencies/organizations with prospective minority college students. Special emphasis should be placed on the family as an influential context. This will assist minority community members in gaining a greater understanding and appreciation for agriculture and natural-resources-related careers. This technique is currently being used among U.S. governmental agencies and private organizations. For example, the Forest Service "More

Kids in the Woods" national program has several grant recipients that are providing programming in minority, low-income communities to introduce the outdoors to minority children and youth.

- Introduce agriculture and natural resources careers at all stages of career development (Jones and Larke 2005) to encourage entry into the field. Many organizations are nationally developing environmental youth programs to introduce young people to the outdoors (e.g., urban 4H, Outward Bound, and Environmental Careers Organization) and have had great success. However, despite their success in introducing young people to the outdoors and developing personal concern for the environment, few young people are choosing agriculture and natural resources as a career. Additional curriculum reviewing career options along with environmental stewardship could address this issue.

- Establish mentoring programs on the collegiate and professional level for minorities in agriculture and natural resources.

- Continue with existing and establish new partnerships with minority-serving institutions.

Future research should replicate this study with other national minority student organizations (e.g., National Hispanic Environmental Council and National Tribal Environmental Council) to examine whether the findings are valid, which would increase the generalizability. In addition, future studies should continue to investigate career choice influences to examine other factors that influence minority agriculture and natural resource students' perceptions of the field and their entry and retention into the professional realm. The author hopes that this information can provide government, private industry, or higher education institutions with a glimpse not only of the experiences that led minority students to choosing agriculture and natural resources careers but also how they feel about the field to ensure the future of agriculture and natural resources.

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Section V:
Environmental Belief Studies

Chapter 13:
Connecting Latinos With Nature

Deborah Chavez[1]

Abstract

Experts around the world have identified ecosystem services that benefit humans. Ecosystem services provided by natural areas include cultural (such as providing outdoor recreation locations) and regulating (such as protecting water quality) services. It is important to understand both public perceptions about the importance of particular ecosystem services and the availability of natural areas to provide these ecosystem services. This study of Latino recreationists to Forest Service day use sites in two canyons in southern California examined these perceptions. These Latino respondents strongly agreed with the importance of managing natural areas for several of the cultural services items and almost all of the regulating services items. In order of importance, they felt it was most important to manage natural areas for regulating services such as protection of water quality, protection of wildlife, improved air quality, and protection of plants, as well as cultural services such as swimming, visitor safety, camping, day hiking, picnicking at developed sites, scenic values, stream play, and watching wildlife. The Latino respondents also felt that more areas needed to be set aside for particular regulating and cultural services. In order of most needed, these included protection of water quality, protection of wildlife, improved air quality, and protection of plants, as well as visitor safety, watching wildlife, swimming, camping, picnicking in developed sites, scenic values, stream play, and educational purposes.

Keywords: Outdoor recreation, Latino, ecosystem services.

Introduction

Ecosystem services is a term used to describe the benefits to people from natural areas (Millennium Ecosystem Assessment 2005). Services to humans can range from food production to water purification to aesthetics. The Millennium Ecosystem Assessment (MEA) was initiated in 2001 to assess the consequences of ecosystem change for human well-being and the scientific basis for actions needed to enhance the conservation and sustainable use of those systems. The assessment involved more than 1,300 experts worldwide. Key messages from the assessment (2005) included the following:

[1] Supervisory social scientist, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Riverside, CA; e-mail: dchavez@fs.fed.us.

- Everyone in the world depends on nature and ecosystem services to provide the conditions for a decent, healthy, and secure life.

- Humans have made unprecedented changes to ecosystems in recent decades to meet growing demands for food, fresh water, fiber, and energy. But at the same time, they weakened nature's ability to deliver other key services such as preservation of air and water, protection from disasters, and the provision of medicines.

- Pressures on ecosystems will increase globally in coming decades unless human attitudes and actions change. Measures to conserve natural resources are more likely to succeed if local communities are given ownership of them, share the benefits, and are involved in decisions.

Ecosystem services can be categorized as cultural services (such as providing outdoor recreation locations), regulating services (such as protecting water quality), provisioning services (such as timber for houses and paper), and supporting services (such as nutrient cycling) (see fig. 13-1). These services are important because they are linked to human well-being (MEA 2005). In particular, the items in the top of the figure are linked to security (personal safety, secure resource access, security from disasters), basic material for a good life (adequate livelihoods, sufficient nutritious food, shelter, access to goods), health (strength, feeling well, access to clean air and water), and good social relations (social cohesion, mutual respect, ability to help others). These all contribute to freedom of choice and action.

It is unclear how familiar urban residents are with the ecosystem services provided by natural areas. Research conducted in southern California addressed beliefs about natural areas and how those areas should be managed. The original study included all visitors to the research sites although this chapter includes only the Latino visitors. Objectives of the study were to understand human connections to public lands (e.g., do they spend a lot of time or little time in natural settings, such as woods, mountains, desert, lakes, ocean), their perceptions about how natural areas ought to be managed (e.g., for long-term study of the relationships between weather, fire patterns, plants, animals, and soils or open to outdoor recreation opportunities), and their perceptions about whether there are currently enough natural areas set aside for particular purposes (such as for camping or for the protection of wildlife). Latino respondents were chosen because they are the largest and fastest growing population in California as well as in other states. There are approximately 12 million Latinos in California (about a third of the population); by 2025 this is expected to grow to 21 million people (about 40 percent of the population) (Smith 2004). Knowing their opinions and beliefs is essential to serving and providing information to Latinos about ecosystem services.

Ecosystem Services

Provisioning	**Regulating**	**Cultural**
Food	Climate regulation	Aesthetic
Fresh water	Flood regulation	Spiritual
Wood and fiber	Disease regulation	Educational
Fuel	Water purification	Recreational
	Supporting	
	Nutrient cycling	
	Soil formation	
	Primary production	

Figure 13-1—Ecosystem services components.

Methods

A self-administered survey was provided to recreation visitors at day use sites on the San Antonio and San Gabriel Canyons on the Angeles National Forest in southern California in summer 2005. Both canyons are within an hour's drive of more than 10 million people. Survey instruments were available in English and Spanish. Respondents (n = 509) filled out the surveys onsite and returned them to data collection team members. Response rate was 56 percent. Data were entered, coded, and analyzed using SPSS. From these data, we separated Latinos (n = 301) from other respondents in order to assess the opinions of Latinos.

Particular items in the instrument measured two components of ecosystem services. Most items measured the "cultural" component given their focus on recreational opportunities (such as camping) (see table 13-1 for list of items). Five items measured "regulating" services (such as improved air quality). This list of items was used in two sets of questions. The first set of questions asked how important it is to manage natural areas for each item (5-point Likert-type scale; a score of 1 meant that respondents strongly disagreed with importance whereas 5 meant they strongly agreed with importance), and the other asked if there are enough natural areas available within this urban landscape for each purpose (3-point Likert-type scale; a score of -1 meant fewer areas were needed and a score of 1 meant more areas were needed).

Results

Demographic Measures

The majority of Latino respondents were male (62 percent). The Latino respondents averaged 33 years of age (n = 286; SD = 9.9). Most of the Latinos spoke Spanish as

their primary language (48 percent). Others spoke English (23 percent) or both English and Spanish (24 percent). Nearly half of the Latinos read Spanish (48 percent). Others read English (29 percent) or both English and Spanish (18 percent).

Group Characteristics, Use Levels, and Activities

Most Latino respondents were recreating with family (74 percent) and/or friends (44 percent). Less than 5 percent were recreating alone or were with an organized group. Most groups stayed 4 or more hours (34 percent planned to stay 4 to 6 hours, and 33 percent planned to stay more than 6 hours) at the day use sites. More than two-thirds were repeat visitors to the sites (68 percent), and more than three-quarters planned to return to the day use sites within the next year (82 percent). More than one-third visited other natural area sites within the past year (36 percent). The most frequently mentioned activities participated in while on the visit included picnicking (56 percent), swimming/wading (36 percent), hiking (27 percent), camping (27 percent), spending time in camp (27 percent), photography (19 percent), fishing (15 percent), nature study (13 percent), and rock climbing (13 percent). About half spent a lot of time in natural settings (46 percent), and half (51 percent) said they think of themselves as part of nature, not separate from it.

Ecosystem Services

Respondents were told that the Forest Service manages public lands, including natural areas that are set aside for various purposes. For each item on a list (some were cultural services and others were regulating services) they were asked how much they agreed or disagreed that it is important to manage natural areas for that particular item. They were also asked to think about each item and indicate if more areas are needed for that purpose, if there is the right amount set aside now, or if there are too many areas set aside for that purpose.

Cultural services—
For this survey the MEA (2005) component focused mostly on recreational opportunities (see table 13-1 for full list of items). The items the Latinos considered most important (ranked from 1 = strongly disagreed with importance to 5 = strongly agreed with importance) to manage natural areas for are these: swimming (4.6), visitor safety (4.6), camping (4.5), day hiking (4.5), picnicking at developed sites (4.5), scenic value (4.5), stream play (4.5), and watching wildlife (4.5) (see table 13-1). Similarly, respondents reported more areas need to be set aside for visitor safety (0.8), watching wildlife (0.8), swimming (0.7), camping (0.7), picnicking at developed sites (0.7), scenic value (0.7), stream play (0.7), but also educational purposes (0.7) (ranked on scale of -1 = fewer areas needed and 1 = more areas needed).

Table 13-1—Average scores on ecosystem services component measures of cultural services and regulating services by the importance of managing areas and the availability of natural areas

Service	Importance for managing area[a]		Natural areas available[b]	
	Mean	*Number*	*Mean*	*Number*
Cultural:				
Camping	4.5	272	0.7	267
Day hiking	4.5	269	.6	239
Educational purposes	4.4	267	.7	245
Fishing	4.1	251	.5	244
Horseback riding	4.0	255	.4	232
Mountain bike riding	4.0	261	.5	240
Picnicking at developed sites	4.5	278	.7	263
Scenic value	4.5	264	.7	256
Sightseeing	4.3	262	.6	239
Snow play	4.4	266	.6	248
Stream play	4.5	275	.7	262
Swimming	4.6	275	.7	268
Visitor safety	4.6	283	.8	265
Watching wildlife	4.5	275	.8	269
Off-highway vehicle riding	3.6	246	.3	238
Regulating:				
Improved air quality	4.5	268	.8	245
Long-term biological studies	4.2	250	.6	233
Protection of plants	4.5	285	.8	268
Protection of water quality	4.6	283	.8	271
Protection of wildlife	4.6	277	.8	269

[a] Rated on a scale of 1 to 5, where 1 = strongly disagree with importance and 5 = strongly agree with importance.

[b] Rated on a scale of -1, where -1 = less areas needed and 1 = more areas needed.

Regulating services—

For this survey the MEA (2005) component focused mostly on natural resource protection (see table 13-1 for full list of items). The items considered most important to manage natural areas for are protection of water quality (4.6), protection of wildlife (4.6), improved air quality (4.5), and protection of plants (4.5). Similarly, respondents reported the need for more areas set aside for protection of water quality (0.8), protection of wildlife (0.8), improved air quality (0.8), and protection of plants (0.8).

Conclusions

Experts around the world have identified ecosystem services that benefit humans (MEA 2005). These ecosystem services are provided by natural areas, such as those managed by the Forest Service. It is important to understand both public perceptions about the importance of particular ecosystem services and their perceptions

about the availability of natural areas to provide these ecosystem services. This study of Latino recreationists to Forest Service day use sites in two canyons in southern California examined these perceptions.

The Latino respondents were mostly repeat visitors to these sites who had also been to other recreation sites in the last year and had plans to visit these canyons again within the next year. A majority of respondents said they spent a lot of time in natural settings.

These Latino respondents strongly agreed with the importance of managing natural areas for several of the cultural services items and almost all of the regulating services items. In order of importance, they felt it was most important to manage natural areas for regulating services such as protection of water quality, protection of wildlife, improved air quality, and protection of plants, as well as cultural services such as swimming, visitor safety, camping, day hiking, picnicking at developed sites, scenic values, stream play, and watching wildlife.

The Latino respondents also felt that more areas need to be set aside for particular regulating and cultural services. In order of most needed, these included protection of water quality, protection of wildlife, improved air quality, and protection of plants, as well as visitor safety, watching wildlife, swimming, camping, picnicking in developed sites, scenic values, stream play, and educational purposes.

Although these services were not defined as "cultural" or "regulatory" to the Latino respondents, the results suggest that the ecosystem services provided in natural areas resonate with them. Therefore, managers of these natural areas in southern California might want to consider communication and educational programs focusing on describing the benefits to Latinos from natural areas, especially emphasizing regulating and cultural services. It might be an opportunity to increase knowledge levels about what natural areas do for people. Awareness can lead to an informed public and protected natural areas.

In order of importance, they felt it was most important to manage natural areas for regulating services such as protection of water quality, protection of wildlife, improved air quality, and protection of plants, as well as cultural services such as swimming, visitor safety, camping, day hiking, picnicking at developed sites, scenic values, stream play, and watching wildlife.

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Chapter 14: Wildland Recreationists' Natural Resource Management Purposes and Preferences: A Connection to Environmental Identity

Patricia L. Winter[1] and Deborah J. Chavez[1]

Abstract

Wilderness and day use recreationists' preferences for natural resource management and their perceptions of purposes for management are examined in this paper. Environmental identity (EID) salience is used to help shed light on variations in recreationists' preferences for how natural resources should be managed. Findings from two studies are reported; the first was from a survey of urban-proximate wilderness visitors, the second from visitors to day use areas. Both studies were conducted on national forest lands. The two studies incorporated similar items to allow comparisons. In both cases, recreationists were asked to evaluate the relative importance of natural resource areas for low-impact recreation opportunities, high-impact recreation opportunities, and for environmental protection purposes. In addition, they were asked to indicate if more, less, or the same amount of area should be set aside for each of these purposes. Strong support for environmental protection purposes was found in both studies. Support for additional areas allocated to environmental protection and low-impact recreation was also found, particularly among the day users. Our findings indicate that management of recreation opportunities can include considerations of sustainability as important to recreationists. Environmental identity seemed helpful in understanding management preferences in that significant relationships between high environmental identity and support for natural resource protection were revealed. The EID scale worked well among White respondents as well as among groups of color. The environmental identity construct may be of assistance in furthering our understanding of land management preferences and provides an additional point of context beyond place attachment.

Keywords: Environmental identity salience, management preferences, recreationists.

[1] Winter is a research social scientist and Chavez is a supervisory social scientist, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Wildland Recreation and Urban Cultures Research Unit, 4955 Canyon Crest Drive, Riverside, CA 92507-6099; e-mail: pwinter@fs.fed.us, dchavez@fs.fed.us.

Introduction

Dunlap (1992) documented the environmental movement's success in gaining public attention and support to address ecological problems. However, the gap between this expressed concern and actual social change to solve major environmental problems remains (Dunlap 1992). A number of factors influence individual action and help explain the gap between environmental attitudes and behaviors (Ajzen 1988, Gardner and Stern 1996, Nickerson 2003). A strong relationship between attitudes and behaviors exists when attitudes are based in knowledge, are clear, and are developed through direct experience with the attitude object (Zimbardo and Leippe 1991).

A newly emerging approach to the question of understanding environmental responsibility is the inquiry into environmental identity. Clayton (2003) has discussed environmental identity as part of a person's self concept derived from their connection to the natural world. The Environmental Identity (EID) salience scale was created to assess the role that the natural environment might play in a person's self-definition (Clayton 2003). Linking environmental behaviors to (EID) salience moves beyond an assessment of general attitudes and toward the centrality of an individual's attitudes about the environment in their daily lives. In essence, the scale determines how connected to the natural environment an individual perceives herself to be. EID might shed light on variations in environmental behaviors and choices that impact the natural environment. Environmental identity was significantly correlated with ecocentrism (the perspective that the natural environment is of primary concern) as well as environmental behaviors during scale development (Clayton 2003).

The Present Study

A study was conducted involving visitors to urban-proximate federally designated wilderness areas and day-use areas to examine natural resource management perceptions and preferences. The goal was to ascertain the purposes these visitors felt were most important for natural resource areas. Additionally, we wanted to know whether or not the current amount of area for those purposes was viewed as adequate. We aimed to inform decisionmaking in an area not currently open to recreation–the San Dimas Experimental Forest. The experimental forest is located in a large urban area and may hold many interests for that surrounding population. Knowing what recreationists visiting surrounding forests view as important purposes for management, as well as knowing perceived need for areas for various purposes, can help inform choices about what San Dimas will be managed for beyond its continuing role as an experimental forest.

A modified version of the EID scale was used in a survey of visitors on national forest lands. Two studies are reported, the first conducted with urban-proximate wilderness visitors and the second with visitors to dayuse areas. Selected comparable items are reported for the purpose of understanding the relationship between EID and recreationists' management preferences.

Methods

Procedure for Study 1

Visitors appearing to be age 16 or older intercepted at selected wilderness trail-heads on summer weekends and week days were invited to participate in a brief survey. The final onsite survey items were an invitation to participate in a mailed survey, with a request for a mailing or e-mail address. Respondents were also asked to indicate whether they would prefer an English or Spanish version of the mailed survey. Each respondent who volunteered to complete the mailed survey received one, according to their expressed preference. Mailings followed a modified Dillman procedure, with an initial mailing, a postcard reminder 10 days later to nonrespondents, and later a second mailing of the full survey to nonrespondents. Response rate for the wilderness onsite survey was 43.0 percent, and of those, 58.2 percent agreed to participate in the mailed survey; 28.0 percent of the original respondents completed the mailed survey.

Respondents for Study 1

The onsite survey was completed by 368 respondents, most of whom were male (66.0 percent) and had graduated from college (54.0 percent). Most were White (58.0 percent), although 14 percent of respondents were Hispanic, 9 percent were Asian, and 10 percent identified with multiple ethnicities. A subset (n = 103) of the onsite wilderness survey respondents completed the mailed survey and was similar to the onsite respondents, although a greater percentage was White.

Procedure for Study 2

Visitors appearing to be age 18 or older encountered at selected day-use locations were invited to complete a self-administered survey. Selected locations included picnic areas, trailheads, open space areas, an off-highway vehicle staging area, and a Forest Service visitor center located in San Gabriel and San Antonio Canyons on the Angeles National Forest. The response rate in this survey was 56.0 percent.

Respondents for Study 2

A total of 509 forest day users completed the survey. Most respondents were male (62.5 percent), Hispanic (55.0 percent), and had completed at least 1 year of college (56.1 percent).

Surveys

In both studies, the surveys were available in both English and Spanish. The Spanish versions were verified through back translation using an alternate translator. Two surveys were used in study 1. The onsite wilderness survey was brief and included items asking about recreation visitation, who respondents were recreating with, activities engaged in, and sociodemographics. The mailed wilderness survey and the onsite day-use survey asked for what purposes public lands should be managed (such as recreational uses or environmental protection, shown in the following list).[2]

It is important to manage natural areas for:

- Environmental protection (6 items)
     Improved air quality
     Long-term study of the relationships between weather, fire patterns, plants, animals, and soils
     Protection of plants
     Protection of water quality
     Protection of wildlife
     Scenic value

- Low-impact recreation (10 items)
     Camping
     Day hiking
     Educational purposes
     Sightseeing
     Snow play
     Stream play
     Swimming
     Watching wildlife
     Picnicking at developed sites (with grills/tables/toilets)
     Gathering (of minerals, plants, and other items for recreational purposes)

- High-impact recreation (4 items)
     Horseback riding
     Mountain bike riding
     Off-highway vehicle riding
     Fishing

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[2] Rated on a scale from 1 to 5 where 1 = strongly disagree, 3 = neither, and 5 = strongly agree.

Twenty purposes for natural resource management were queried. The items were combined in three subscales representing environmental purposes (PURENV, 6 items), low-impact recreation purposes (PURRECLO, 10 items), and high-impact recreation purposes (PURRECHI, 4 items, table 14-1). Respondents were also asked their opinions about the amount of areas available for each purpose (using the same list provided for management purposes). Respondents could indicate that there should be less (-1), the same (0), or more (+1) area. Items were combined in three comparable subscales, representing the sum of the items (AMTENVSUM-measuring the amount of areas for environmental purposes, 6 items, AMTRECLOSUM-measuring the amount of area available for low-impact recreation uses, 10 items, AMTRECHISUM-measuring the amount of area available for high impact recreation uses, 4 items, table 14-2).

Table 14-1—Land management purposes subscales

Study	Subscale[a]	α[b]	Mean	n
1	PURENV	0.92	4.67	102
	PURRECLO	.85	4.45	102
	PURRECHI	.76	3.89	102
2	PURENV	.89	4.52	498
	PURRECLO	.90	4.38	500
	PURRECHI	.76	3.71	488

[a] PURENV measures support for management of natural areas for environmental protection purposes, PURRECLO for low-impact recreation purposes, and PURRECHI for high-impact recreation purposes.
[b] Chronbach's alpha reliability for each subscale.

Table 14-2—Amount of area subscales

Study	Subscale[a]	α[b]	Mean	n
1	AMTENVSUM	0.87	3.35	99
	AMTRECLOSUM	.87	3.81	98
	AMTRECHISUM	.76	-.33	83
2	AMTENVSUM	.87	4.25	481
	AMTRECLOSUM	.88	5.77	486
	AMTRECHISUM	.77	1.01	474

[a] AMTENVSUM measures the amount of area desired for environmental purposes, AMTRECLOSUM for low-impact recreation purposes, and AMTRECHISUM for high-impact recreation purposes.
[b] Chronbach's alpha reliability for each subscale.

In addition to these questions about management, a modified version of the EID scale was included (table 14-3) to assess respondents' connection to nature. This modification involved a reduction in the number of items and a minor re wording of one item. Modification was necessary to reduce respondent burden and add clarity for a diverse recreating public. Responses on management purposes and the EID scale were then compared among groups (wilderness vs. day use, Whites vs. non-Whites) and examined for their relationship to each other.

Table 14-3—Environmental identity scale

Environmental identity (EID) scale item[a]	Study 1 wilderness users[b] Mean (N, SD)	Study 2 day users Mean (N, SD)
I spend a lot of time in natural settings (woods, mountains, desert, lakes, ocean).	5.91 (101, 1.29)	5.01 (494, 1.83)
I think of myself as part of nature, not separate from it.	5.76 (101, 1.45)	5.13 (485, 1.77)
When I am upset or stressed, I can feel better by spending time outdoors "communing with nature."	6.25 (102, 1.25)	5.81 (494, 1.55)
I have a lot in common with environmentalists as a group.	5.03 (101, 1.68)	4.53 (483, 1.85)
I believe that some of today's social problems could be cured by returning to a more rural life-style in which people live in harmony with the land.	4.91 (101, 1.96)	5.00 (495, 1.88)
Learning about the natural world should be an important part of every child's upbringing.	6.54 (102, 0.88)	6.07 (492, 1.33)
I really enjoy camping and hiking outdoors.	6.73 (102, 0.60)	6.11 (485, 1.36)
Sometimes I feel like parts of nature–certain trees, or storms, or mountains—have a spirit of their own.	4.82 (102, 2.09)	4.98 (490, 1.98)
I would feel that an important part of my life was missing if I were not able to get out and enjoy nature from time to time.	6.53 (102, 1.10)	5.91 (490, 1.49)
I have never seen a work of art that is as beautiful as a work of nature, like a sunset or mountain range.	5.69 (102, 1.80)	5.68 (490, 1.65)
EID average score[c]	58 (102, 9.52)	53.25 (499, 12.23)

[a] Adapted from Clayton (2003). Rated on a 1 to 7 scale, where 1 = not at all true of me, 4 = neither true nor untrue, and 7 = completely true of me.

[b] Study 1 respondents rated all EID items higher on average with the exception of two items: "I believe that some of today's social…" and "Sometimes I feel like parts of nature…"

[c] Is the average sum across all respondents on the EID scale.

Results

Public Land Management Purposes

The environmental purpose subscale was assigned the highest ratings among the three purposes in both studies, indicating agreement that natural resource areas should be managed for environmental protection purposes, with low-impact recreation purposes second in priority ratings.

The ratings on these subscales were also examined to contrast Whites with groups of color. Although we recognize that people of color are not homogeneous in their perspectives toward land management, we had limited numbers of respondents within the various ethnic/racial categories; therefore, all people of color were considered as one group. No significant differences were found in land management purposes in study 1 by ethnic/racial group (*t*-tests, $p > 0.05$, table 14-4).

Table 14-4—Management purposes and amount of areas needed for each purpose by Whites and people of color

Study	Subscale		Mean	n	t_{df}	p
1	PURENV	Whites	4.63	82		
		Non-Whites	4.79	20	1.07_{100}	0.29
	PURRECLO	Whites	4.40	82		
		Non-Whites	4.65	20	1.55_{100}	.12
	PURRECHI	Whites	3.84	82		
		Non-Whites	4.07	20	$.91_{100}$	.37
	AMTENVSUM	Whites	3.70	80		
		Non-Whites	4.28	18	$.98_{96}$	.33
	AMTRECLOSUM	Whites	2.88	81		
		Non-Whites	5.50	18	2.79_{97}	< .01
	AMTRECHISUM	Whites	-.46	76		
		Non-Whites	.24	17	1.36_{91}	.18
2	PURENV	Whites	4.60	162		
		Non-Whites	4.46	296	-1.88_{389}	.06
	PURRECLO	Whites	4.27	162		
		Non-Whites	4.43	297	2.21_{457}	.03
	PURRECHI	Whites	3.42	162		
		Non-Whites	3.85	287	4.15_{447}	< .01
	AMTENVSUM	Whites	4.32	158		
		Non-Whites	4.17	285	$-.69_{441}$	.49
	AMTRECLOSUM	Whites	4.96	159		
		Non-Whites	6.20	288	3.49_{445}	< .01
	AMTRECHISUM	Whites	.28	155		
		Non-Whites	1.35	282	5.65_{435}	< .01

Sufficient numbers of respondents in study 2 facilitated comparisons (maximum of 297 people of color and 162 Whites). People of color rated low-impact recreation purposes higher on average than did Whites (PURRECLO, table 14-4). They also assigned higher priority to high-impact recreation purposes (PURRECHI, table 14-4). Ratings on environmental purposes (PURENV) were not significantly different.

Amount of Area

To compare support for amount of each type of area, we divided the sum of area ratings within each subscale by the number of items (to standardize the scores). In study 1 we found through this step in the analysis that the greatest support of wilderness respondents was for additional areas for environmental purposes (mean = 0.63, SD = 0.38, n = 98), followed by low-impact recreation purposes (mean = 0.33, SD = 0.37, n = 99). The overall trend was for a reduction of areas for high-impact recreation among the wilderness visitors surveyed (mean = -0.08, SD = 0.48, n = 93). In study 2, we found some similarities to study 1, in that increase in the amount of area for environmental purposes was most supported by day users (mean = 0.71, SD = 0.36, n = 481), followed by amount of area for low-impact recreation (mean = 0.58, SD = 0.36, n = 486). Although least supported, a marginal addition to high-impact recreation areas was the outcome for the day users surveyed in study 2 (mean = 0.25, SD = 0.49, n = 474).

Similar to our examination of land management purposes, we examined ratings on each of these subscales for amount of area contrasting Whites and groups of color by using *t*-tests. For study 1, we found that people of color were more likely than Whites to agree that more areas were needed for low-impact recreation (AMTRECLOSUM). No other differences were significant (again, the low numbers of respondents constrained these tests). In study 2, respondents of color were more likely than Whites to indicate that more areas were needed for both low- and high-impact recreation (AMTRECLOSUM and AMTRECHISUM, table 14-4). No differences were found when we compared Whites and people of color on amount of area needed for environmental purposes.

For study 2, we found that people of color were significantly more supportive of additional areas for both low- and high-impact recreation opportunities (AMTRECLOSUM and AMTRECHISUM) when compared to Whites. No significant differences were found in levels of support for additional areas for environmental protection.

In study 1 we found that the greatest support of wilderness respondents was for additional areas for environmental purposes, followed by low-impact recreation purposes. In study 2, we found some similarities to study 1, in that increase in the amount of area for environmental purposes was most supported by day users, followed by amount of area for low-impact recreation

Environmental Identity Scale

The modified EID scale (adapted from Clayton 2003) showed some similarities and differences between the two studies' respondents (table 14-3). With the exception of two items, study 1 respondents indicated greater agreement with the individual statements than did study 2 respondents, suggesting that wilderness users perceived a stronger connection to nature. Both groups were equally likely to agree that they had not seen a work of art as beautiful as nature.

The EID score—

EID score was calculated from the mean of responses to the items within the scale. The EID items fit together reliably as a scale (EID study 1 $\alpha = 0.84$; EID study 2 $\alpha = 0.88$). EID score was higher for the wilderness visitors than it was for day users (table 14-3). Average EID score was not significantly different when comparing Whites and people of color from study 1; however, it was significantly higher for Whites in study 2, where Whites had a higher EID score, suggesting a stronger connection to nature.

Environmental Identity Score and Purposes

In study 1, respondents' EID scores were significantly and positively correlated with managing for environmental purposes (PURENV, $r = 0.24$, $p < 0.05$), and with amount of area needed for environmental protection (AMTENVSUM, $r = 0.30$, $p < 0.01$). The EID score was not correlated with ratings of managing public lands for low- or high-impact recreation purposes, or with ratings on need for area (more or less) for low- or high-impact recreation.

In study 2, EID scores were significantly and positively correlated with managing for environmental purposes (PURENV, $r = 0.40$, $p < 0.01$), managing for low-impact recreation management purposes (PURRECLO, $r = 0.28$, $p < 0.01$), need for more areas for environmental protection (AMTENVSUM, $r = .026$, $p < 0.01$), and need for more areas for low-impact recreation (AMTRECLO, $r = 0.11$, $p = 0.01$). The EID score was not correlated with ratings on managing public lands for high-impact recreation purposes, or with ratings on amount of area needed for high-impact recreation.

Using a median-split score for each EID revealed a significant difference between respondents with low and high EID scores in study 1. Among those with higher EID scores, greater agreement with importance of environmental purposes was found (PURENV, low EID average = 4.53, high EID average = 4.80; $t = -2.37$, $p = 0.02$). In addition, we found greater support for additional areas for environmental protection (AMTENVSUM, low EID average = 3.10, high EID average = 4.51;

$t = -3.24$, $p < 0.01$). Other differences between those with low and high EID scores were not significant.

In study 2, those with higher EID scores were more in agreement with managing natural resources for protection purposes (PURENV, low EID average = 4.28, high EID average = 4.77; $t = -7.43$, $p < 0.01$) and low-impact recreation (PURRECLOSUM, low EID average = 4.23, high EID average = 4.55; $t = -4.90$, $p < 0.01$). No difference was found on support for high-impact recreation purposes. Support for more areas for environmental purposes was also higher among those with higher EID scores (AMTENVSUM, low EID average = 3.86, high EID average = 4.64; $t = -3.93$, $p < 0.01$).

Discussion

We contacted two separate populations of recreationists in the studies reported on, using a modified EID scale and sets of items that addressed natural resource management purposes as well as amount of natural areas available for various purposes.

Respondents were most supportive of managing natural areas for environmental purposes. Support was also indicated for low-impact recreation purposes, and much less support from respondents for high-impact recreation purposes. Although Whites and people of color in both studies agreed that environmental protection should be a primary purpose for natural resource areas, people of color were more supportive of low- and high-impact recreation purposes. Further examination of these trends would be helpful in understanding if there is, in fact, shared agreement across ethnic/racial categories that environmental protection should be a central priority for natural resource management. Our findings suggest this may be the case. Additional support for this contention comes from our assessment of the amount of area needed for various purposes, which demonstrated support for additional areas for environmental purposes. Some support for additional areas for low-impact recreation was also found among both sets of respondents. It should be noted, however, that we did not ask respondents to make a choice among the purposes, rather they considered each independently. If tradeoffs are an issue, the selection of purposes might be different. In addition, the study 1 sample was relatively small, and both sets of respondents were from one region within southern California. Other geographic areas using respondents visiting natural resources other than national forest lands might yield different results. Additionally, larger samples from groups of color would facilitate breaking out findings by ethnic/racial groups to further our understanding of how non-Whites differ. Even then, members from various subcultures within a particular racial group (e.g., Asians) would be important to consider.

Our investigation into EID revealed its relationship to recreationists' ratings of purposes for natural resource management as well as amount of area that should be allocated for various purposes. Differentiation in the ratings of management preferences by level of EID is promising, demonstrating an application to furthering our understanding of public preferences for resource management. Of particular interest is the potential stability of EID and its utility as an alternate or complementary measure to be paired with meaning of place. Place attachment and place meanings have been shown to be particularly influential in public response to management alternatives and collaborative endeavors (e.g., Gunderson and Watson 2007). However, place meanings are linked to specific areas. If EID were paired with place meanings, one might gain a global perspective on individual response as well as a more specific one.

Conclusions

The EID scale appears to be valuable in shedding additional light on public preferences for natural resource areas, as well as interest in additional resource opportunities. The modified version provided a reasonable approach to the measurement of one component of environmental values and attitudes, assessing personal connection to the land. It was useful among groups of color and seemed to hold similar properties, increasing its value in our diverse society. Given its brevity and apparent relationship to other environmental attitudes as demonstrated in our findings, this modified scale is of interest in future research on natural resource management.

The support for management of natural resources for environmental protection purposes is of particular interest to natural resource managers. Findings suggest our respondents highly value these purposes. Although support for additional areas for environmental protection and low-impact recreation was evidenced, particularly among the day users, a lack of support for high-impact recreation areas was found. Managers might reference these findings in allocating some areas for more of a natural resource protection focus. It should be noted that we did not incorporate a large number of user groups that engage in high-impact recreation and that we did not ask respondents to make tradeoffs between the various use types. We also did not evaluate preferences of surrounding communities who might not go to these areas but may still have an opinion about their management.

The support and interest in areas for environmental purposes is reassuring and suggests these publics share the goals of the Forest Service in caring for the land and providing recreational opportunities in a sustainable manner.

The EID scale appears to be valuable in shedding additional light on public preferences for natural resource areas, as well as interest in additional resource opportunities. The modified version provided a reasonable approach to the measurement of one component of environmental values and attitudes, assessing personal connection to the land.

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Section VI:
Communication Studies

Chapter 15: Forest Visitation, Media Consumption, and Diverse Publics: Lessons for Outreach

William Crano,[1] Ryan Quist,[2] and Patricia L. Winter[3]

Abstract

In spite of a continuingly diverse public, particularly in urban areas, the majority of forest visitors are White. Researchers have offered up a number of factors that reflect differing motivations and constraints to national forest recreation among individuals from a variety of racial backgrounds. Some of these constraints may be addressed through improved communication with diverse publics, best understood through a needs analysis.

This paper presents findings from a needs analysis conducted among residents of Los Angeles County. Individuals identified as Asian, African American, Latino, or White participated in a telephone survey. Findings reveal differential use of media among respondents, including significant differences in the number of hours per week that respondents watched television and listened to the radio. However, no differences in the hours spent reading magazines or newspapers were revealed. Aside from the differences in media types, specific outlets respondents reported also differed, as demonstrated by radio station programs listened to and newspapers read. A strong pattern of ethnic media use was indicated among Latino and African American respondents. Findings suggest that ethnic media may be one form of contact to focus on for communicating with diverse publics. The use of print media and getting the word out through community contacts is also recommended. Although the Internet was mentioned as a trusted source of information for respondents, differential access and familiarity of use, as well as the possible geographic specificity of Internet reliance, suggests caution. Our findings on media usage, including preferences for ethnic media, may be generalizable across recreation venues outside of the Los Angeles Basin and national forest lands, providing assistance for program managers interested in outreach to diverse publics.

Keywords: Diversity, media, ethnic media, barriers, communication.

Researchers have offered up a number of factors that reflect differing motivations and constraints to national forest recreation among individuals from a variety of racial backgrounds. Some of these constraints may be addressed through improved communication with diverse publics, best understood through a needs analysis.

[1] Professor of psychology, School of Organizational and Behavioral Sciences, Claremont Graduate University, 150 E 10th St., Claremont, CA 91711; e-mail: william.crano@cgu.edu.

[2] Assistant professor of pharmacy practice and administration, Western University of Health Sciences, 309 E Second Street, Pomona, CA 91766, e-mail: rquist@westernu.edu.

[3] Research social scientist, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Wildland Recreation and Urban Cultures Research Unit, 4955 Canyon Crest Drive, Riverside, CA 92507-6099; e-mail: pwinter@fs.fed.us.

Introduction

Motivations and Barriers/Constraints to Forest Visitation

National forests are important resources for all citizens, but with minor exceptions, research suggests that visitors to the forests are drawn largely from the White majority (Outdoor Industry Association 2004, Tierney et al. 1998). Researchers have offered many reasons for the underrepresentation of communities of color among forest visitors, including varying motivations for taking trips and constraints experienced by diverse publics.

Motivations for taking vacations or day trips differ by ethnicity. For example, Tierney et al. (1998) found that African Americans took vacations or daily excursions because they wanted to visit a safe place, to rest physically, or to challenge themselves. Latino respondents, conversely, vacationed or took day trips to be with family, to learn about a new culture or area, to develop new skills, to teach others, to maintain ties with their culture, or to meet new people.

The literature also outlines specific reasons for **not** visiting recreation areas based on ethnicity. Barriers and constraints specific to communities of color have been reported as agency culture (Roberts 2003, Tierney et al. 1998), historical context (Roberts 2003), perceived and actual discrimination (McDonald and McAvoy 1997, Tierney et al. 1998), language barriers (Allison and Hibbler 2004, Winter et al. 2004), concerns about safety (Johnson et al. 2001, Scott et al. 2004), lack of awareness of opportunities (Roberts 2003, Scott et al. 2004), lack of discretionary funds (Scott et al. 2004, Tierney et al. 1998), lack of transportation (Scott et al. 2004, Tierney et al. 1998), lack of someone to recreate with (Johnson et al. 1998, Tierney et al. 1998), and cultural preferences for the built environment (such as more development of picnic spaces) versus what is found in natural resource recreation settings (Floyd 1999, McDonald and McAvoy 1997). A lack of information onsite has also been reported as a constraint to outdoor recreation participation among ethnic minorities (Winter et al. 2004).

Agency culture is seen as a barrier for multiple reasons including the underrepresentation of non-Whites as employees delivering and managing recreation opportunities, communication and education methods that are a poor fit with the needs and preferences of communities of color, planning for a "traditional White" visitor experience, and a general lack of feeling welcomed (Allison and Hibbler 2004, Roberts 2003, Tierney et al. 1998).

Historical context has been discussed by Johnson et al. (1998) as emerging from the history of slavery among African Americans in the United States, resulting in a negative relationship with the natural resource base; and for Native Americans as a

result of the loss of land and limitations on traditional uses on lands (McAvoy et al. 2003, Roberts 2003).

More indepth discussions of barriers to recreation participation among communities of color appear elsewhere (see Johnson et al. 1998, McAvoy et al. 2003, Tierney et al. 1998). However, for the purposes of this paper, two constraints are of particular interest: concerns related to agency culture regarding communication and education methods. Both can lend valuable insights into reports of lack of information as a constraint to outdoor recreation. Of particular interest are these barriers and constraints because they lie within the purview of the Forest Service. Given the agency's role in providing services and opportunities within public land management, these topics are of significance. The present research explores racial/ethnic variations in outdoor recreation, including communication-related issues, to further our understanding of some of the underlying factors at work in minority underparticipation.

Media and Usage

One possible way to address the racial/ethnic imbalance in forest usage is through the use of the media. If the media can be used to persuade the citizenry that forested areas are a valued public resource, to be used by all, it might be possible to address a portion of the earlier-noted racial and ethnic differences in usage. This possibility raises a number of interesting questions. For example, is information about the Forest Service being adequately disseminated in minority communities? Can the media be used to help address possibly underserved communities? Further, are there better ways of making known to these communities the many resources and opportunities for recreation that are available in the national forests? In short, do we need to do a better job of disseminating the Forest Service's message to a diverse public?

This study investigated ways that people of both majority and minority racial/ethnic status acquire information about the national forests. Assuming differences in how this information is acquired, a second goal of the research was to determine the best ways of reaching the underserved audience (or audiences). If racial/ethnic minority groups do not acquire information in the ways that citizens of majority status do, then supplying information via alternate channels may be the optimal way of reaching these underserved groups.

In the United States, the government often has called upon the mass media to ameliorate important social problems or to publicize interventions taken to improve the public good. The current National Youth Anti-Drug Media Campaign is a case in point (Eddy 2003). Millions of dollars are being spent in this campaign

in an attempt to attenuate drug usage among the Nation's youth. Using mass media for this purpose may prove a risky strategy, however. Although mass media campaigns have at times been effective, for some topics (e.g., health promotion) (Atkin and Arkin 1990, Brown and Walsch-Childers 1994), the media sometimes are quite ineffective, resulting in large expenditures with no positive outcomes (Crano and Burgoon 2002). It has been suggested that many intervention failures are the result of a misdiagnosis of need (Selnow and Crano 1987). An approach widely recommended to avoid such problems is a needs analysis, in which the felt needs of the directly affected community are assessed in a scientifically rigorous manner (Crano and Brewer 2002). Information derived from needs analysis allows programs to be designed (or disseminated) to best serve affected publics, and such programs are almost invariably more successful than those programs that omit this step (Crano 2003).

The needs-analysis approach seems to be an appropriate way to address the interests of this study. We need to know how people from underserved ethnic/racial communities obtain information about recreation outlets, with special focus on the national forests. Researchers have only begun to study cultural and ethnic differences in self-exposure and responsiveness to media sources (Selnow and Crano 1987), however, and what little is known does not provide much comfort (Brodie et al. 1999, Crano and Burgoon 2002, Dennis and Wartella 1996, Hofstetter et al. 1995, Wolitski et al. 1996). Recent research on acculturation and responsiveness to media (Dawson et al. 1996, 2003) suggests that the most marginalized members of society are the **least** likely to profit from standard mass media social intervention programs. Why this is so is not clear, but it is reasonable to speculate that non-Whites may use different sources of information (compared to Whites) when learning about social programs and interventions (see, for example, Brodie et al. 1999 and Huerta and Weed 2000). To address this potential problem, the current study was designed specifically to assess the sources of information that non-Whites do use regarding recreation programs.

Method

Participants

Our approach involved surveying a large, randomly sampled group of people who we pre-identified (with some degree of certainty) as being of White, Latino, Asian, or African American descent. On the basis of census tract information (and, in the case of the Hispanic subsample, surname), we developed an initial respondent sampling frame. Our aim was to obtain responses from 200 adults from each of the

four ethnic/racial groups noted here (a total of 800 respondents). The interviewers requested information regarding race and ethnicity from respondents to ensure the accuracy of our categorization system.[4]

We selected participants from a random quota sample of phone numbers in Los Angeles County, California, yielding 195 Latino, 200 African American, 195 Asian, and 202 White[5] respondents, all residents of the diverse Los Angeles (L.A.) Basin[6] (Struglia et al. 2003). The mean age of these respondents was 47.98 years (SD = 19.60).

Interview

The telephone interview protocol included closed-ended questions designed to assess:
- Ethnic identity and fit of ethnic category

- Information sources regarding outdoor recreation opportunities ("Now I am going to name some common sources of information. I'd like you to tell me how frequently you use these sources of information about outdoor recreational opportunities," included a list of 16 sources and a rating scale from 0 = never to 3 = very frequently)

  Open-ended questions focused on:
- Sociodemographics (respondents' immigrant status, their country of origin)
- Primary language spoken at home and primary language of reading materials at home
- Media usage
- Media preferences, television channel preferences, radio station preferences, newspapers/magazine preferences
- Most trusted source of information regarding outdoor recreation opportunities
- National forest visitation, and reasons for not visiting the national forests

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[4] The initial categorization was meant as a first step. The more direct assessment is used to pinpoint respondents' ethnic/racial categories. The authors recognize the distinction between ethnicity (Hispanic, non-Hispanic) and race. However, in our effort to approach ethnic identity in meaningful, easily understood categories, we selected the four ethnic/racial groups indicated. This approach to categorization mirrors that frequently found in ethnic identity literature, and self-identification from our respondents affirmed selection of these labels as fitting their perceptions of self.

[5] Variations from the planned N (of 200) came about as a result of missing data or, in the case of White respondents, because of a minor miscount that resulted in data being collected on 2 more respondents than planned.

[6] These respondents provided complete information in the interview.

Procedure

A stratified random sample was not possible because ethnic/racial information was not available from respondents prior to their interviews. Consequently, following a random selection of phone numbers, quotas were applied so that phone surveyors would inquire regarding a participant's ethnicity near the beginning of the call. Seventy-three surveys (37 percent of Latino respondents and 9 percent of total respondents) were conducted in Spanish.

A total of 21,196 randomly sampled phone numbers were dialed at least once in obtaining the sample of approximately 200 respondents per group. The most common reasons for not completing a survey were no answer/answering machine/busy signal (9,136 phone numbers) and disconnected phone numbers (3,639 calls). A response rate was calculated including only phone calls that were eligible for surveying. This would exclude calls for which no one met ethnic or age (18 years and older) eligibility requirements, and phone calls for which no one was home or available to participate in the survey. There were 3,678 calls that met the eligibility criteria during which an individual was invited to participate in the study. Of these, 792 individuals completed surveys. By this criterion, the response rate was 21.5 percent. Surveys only partially completed (51 calls) were considered nonresponse. Data from incomplete surveys were not used.

Results

Sociodemographic Characteristics of the Four Groups

Respondent age differed by ethnic/racial group, $F(3, 773) = 27.67$, $p = 0.001$. African American and White respondents ($M = 54.49$, SD = 18.99, n = 190 and $M = 53.36$, SD = 19.74, n = 200, respectively) were older than the Asian and Latino respondents ($M = 43.65$, SD = 19.67, n = 192 and $M = 40.26$, SD = 15.94, n = 192). Just over half (51.5 percent) of Latinos spoke primarily Spanish in their home, and almost half (47.4 percent) of Asians spoke a language other than English or Spanish in the home. The percentage of respondents living outside of the United States for a majority of their lives varied by ethnic/racial group as well (30.3 percent of Asians and 28.6 percent of Latinos had lived elsewhere, while only 4.5 percent of Whites and 2.0 percent of African Americans reported having lived elsewhere).

Perceived fit of ethnic/racial description differed by group as well χ^2 (9, n = 757) = 35.532, $p = 0.001$. Respondents identifying themselves as White felt the description fit them better than for the other groups (very well at 26.1 percent and perfectly at 70.9 percent), followed by Asian (27.3 percent selected very well and 57.2 percent selected perfectly), Latino (very well at 28.6 percent and perfectly at

54.7 percent), and African American respondents (very well at 33.5 percent and perfectly at 47.5 percent).

Media Usage

A comparison of the four ethnic/racial groups (Latino, African American, Asian, and White) on general media usage revealed significant differences in the number of hours per week that respondents watched television, $F(3, 788) = 5.87$, $p = 0.001$, and listened to the radio, $F(3, 787) = 4.86$, $p = 0.002$ (table 15-1). Differences by ethnic/racial group in hours spent reading magazines or newspapers per week were not statistically significant. For all four groups, television viewing had the highest average number of hours reported.

Television Viewing by Ethnic/Racial Group

African American respondents reported the greatest average number of hours per week watching television (20.03 hours, table 15-1), Asian respondents reported the fewest hours of television watching (13.05), and Latino (16.38) and White respondents' (16.70) viewing times fell between that of African American and Asian respondents. Hours of television viewing differed significantly by ethnic/racial group, with African Americans reporting significantly more hours than Asians (table 15-1).

Radio Listening by Ethnic/Racial Group

Latino respondents reported the greatest number of hours devoted to radio listening (14.48 hours, table 15-1), followed by African American (12.85) and White respondents (11.49). Asian respondents reported the least number of radio-listening hours (8.43). Hours listened to the radio differed significantly by ethnic/racial group, with Latinos reporting significantly more hours than Asians (table 15-1).

A comparison of the four ethnic/racial groups (Latino, African American, Asian, and White) on general media usage revealed significant differences in the number of hours per week that respondents watched television and listened to the radio.

Table 15-1—General media usage, by ethnic group

Media type	Latino	African American	Asian	White	ANOVA *p* level
	- - - - - - - - - - *Mean number of hours per week (SD; n)* - - - - - - - - -				
Watch TV	16.38	20.03[b]	13.05	16.70	0.01
	(15.43; 195)	(20.36; 200)	(14.33; 195)	(15.26; 202)	
Listen to the radio	14.48[a]	12.85	8.43	11.49	.01
	(17.51; 194)	(18.23; 200)	(14.26; 195)	(14.58; 202)	
Read magazines or newspapers	5.44	6.82	7.02	7.68	.27
	(11.05; 194)	(10.0; 200)	(12.66; 195)	(12.07; 201)	

[a] Significantly higher than Asians, based on Scheffe's test at $p < 0.01$.
[b] Significantly higher than all three groups, each based on Scheffe's test at $p < 0.05$.

The range and types of radio stations listened to differed by ethnic/racial group. Summarizing only those categories with 10 percent or more within each ethnic/racial group (the full data on programming types reported is available upon request), Latinos were most likely to listen to ethnic radio stations (37.8 percent), rhythm and blues (R&B) programming (15.1 percent) or rock (10.5 percent, out of 304 reported stations, falling into 11 categories of programming). (The source for types of programming, call letters, frequency, description of station and geographic location was www.shgresources.com/ca/radio.) The majority of African American respondents reported listening to radio stations with R&B programming (51.2 percent), jazz (14.5 percent), or news/talk radio (13.7 percent), based on 248 radio stations reported, falling into seven categories. Asian respondents reported listening to news/talk (19.8 percent), adult contemporary (15.0 percent), top 40 (12.8 percent), R&B (11.5 percent), or rock radio stations (10.6 percent), based on 227 reported stations, falling into 12 categories. White respondents reported listening most often to radio stations with news/talk (25.8 percent), adult contemporary (14.0 percent), and rock (13.6 percent) programming, based on 279 reported stations.

Magazine/Newspaper Reading by Ethnic/Racial Group

There were no significant differences between ethnic/racial groups regarding time spent reading magazines or newspapers, $F(3, 786) = 1.31$, $p = 0.27$. The number of hours spent reading magazines or newspapers ranged between approximately 5 and 8 hours per week.

Types of magazines read were diverse and numerous. However, the titles reported by ethnic/racial group revealed that Latino and African American respondents read several magazines designed for an ethnically based audience. Among Latinos, approximately one-fifth (19.7 percent) of the magazines listed are designed for a Latino audience and many are in Spanish (these sources include Tele Novela, Vanidades, Cosmo en Español, Latina, Mi Gente, Mira!, and Selecciones). Among African Americans, more than one-third (43.4 percent) of magazines mentioned are designed for an African American audience (these sources include Ebony, Essence, Jet, Black Enterprise, and Black Business Journal).[7]

Respondents reported having read a number of different newspapers; however, the L.A. Times (63.3 percent of newspaper mentions), La Opinión (6.6 percent of newspaper mentions, 30.3 percent of Latino mentions), and the L.A. Daily News (6 percent of newspaper mentions) were the most frequently reported.

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[7] Readers wishing to see the full list of magazines reported within each group may contact the third author.

Sources of Information for Outdoor Recreation Opportunities

Respondents indicated their sources for outdoor recreation information (table 15-2). Responses were measured on a four-point Likert-type scale, ranging from "never" (0) to "very frequently" (3), resulting in ordinal variables; consequently, parametric tests may not have been appropriate. Table 15-2 presents significance levels for both parametric analysis of variance tests as well as the results of nonparametric Kruskall Wallis tests. Regardless of test, the pattern of results was consistent. The least relied upon sources of information about outdoor recreation opportunities for all groups were health care providers and billboards (table 15-2).

The results are generally consistent with the findings reported earlier on media usage. For example, African American respondents reported that television was a more frequent source of information than did the other ethnic/racial groups, whereas Asian respondents reported that television was less frequently used as a source of information about outdoor recreation when compared to the other ethnic/racial groups. Latino respondents reported that radio was a more frequent source of information on outdoor recreation activities than the other groups. There were no significant differences between groups in reliance for recreation information gathered from community organizations, neighbors, or other friends.

Other data regarding sources of information for outdoor recreation activities may facilitate our understanding of general media usage. There were no significant differences between groups in the number of hours spent reading magazines or newspapers. However, when asked about newspapers versus magazines separately, White respondents appeared to rely on newspapers for recreation information more frequently than did members of the other ethnic/racial groups (table 15-2). Whites reported significantly more reliance on newspapers than did African Americans and Latinos. There were no significant differences between the groups in reliance on magazines for information. There were no significant between-group differences on use of other reading materials (e.g., books and pamphlets).

Although there were no significant differences between groups in terms of their dependence on neighbors, work, or health care providers as information sources, significant differences between groups were found for reliance on computers, relatives, and billboards. Asian respondents reported significantly more frequent reliance on computers for information about outdoor recreation opportunities than the other groups (table 15-2). Latino and African American respondents reported more reliance on relatives than Asian and White respondents, although the Latino/Asian comparison was the only statistically significant difference. Finally, African American respondents also reported more frequent reliance on billboards than the other ethnic/racial groups (with the difference between African Americans

Table 15-2—Ethnic differences in the frequency of obtaining information about outdoor recreation opportunities from different sources[a]

Information source	Latino	African American	Asian	White	ANOVA p level	Kruskall Wallis p level
		Mean frequency rating (SD; n)				
Television	1.40[b] (0.90; 193)	1.43[b] (0.97; 200)	1.12 (0.94; 195)	1.25 (0.93; 200)	< 0.01	< 0.01
Radio	1.29[b c] (0.96; 195)	1.19[b] (0.99; 200)	0.91 (0.84; 195)	0.99 (0.96; 200)	< .01	< .01
Newspapers	1.14 (0.89; 195)	1.21 (0.99; 200)	1.24 (0.92; 195)	1.49[d e] (1.01; 200)	< .01	< .01
Magazines	0.90 (0.92; 195)	1.10 (0.97; 200)	1.03 (0.90; 195)	1.13 (0.98; 200)	.07	.07
Billboards	0.68 (0.81; 195)	0.76[b] (0.89; 200)	0.50 (0.67; 195)	0.61 (0.77; 200)	< .01	.04
Health care providers	0.53 (0.81; 195)	0.59 (0.86; 199)	0.48 (0.76; 195)	0.53 (0.78; 200)	.63	.77
Pamphlets	0.81 (0.84; 195)	0.95 (0.95; 200)	0.82 (0.81; 195)	0.92 (0.90; 200)	.29	.49
Books	0.71 (0.71; 195)	0.91 (0.96; 200)	0.88 (0.89; 295)	0.90 (0.99; 200)	.14	.09
Computers	1.12 (1.15; 195)	1.04 (1.11; 200)	1.62[c d e] (1.17; 195)	1.25 (1.13; 200)	< .01	< .01
Relatives	1.25[b] (0.92; 194)	1.22 (0.96; 200)	0.97 (0.93; 195)	1.06 (0.94; 199)	< .01	< .01
Church	0.71 (0.89; 194)	1.14[b c d] (1.08; 200)	0.56 (0.85; 195)	0.63 (0.86; 200)	< .01	< .01
Church friends	0.65 (0.87; 194)	1.04[b c d] (1.04; 200)	0.57 (0.82; 195)	0.70 (0.86; 199)	< .01	< .01
Neighbors	0.83 (0.87; 194)	0.89 (1.07; 200)	0.83 (0.96; 195)	0.80 (0.97; 200)	.80	.86
Work	0.79 (0.86; 194)	0.80 (0.91; 199)	0.68 (0.78; 195)	0.92 (0.94; 200)	.05	.11
Other friends	1.29 (0.91; 194)	1.27 (0.98; 200)	1.47 (0.93; 200)	1.38 (0.89; 200)	.12	.12
Community organizations	0.68 (0.86; 194)	0.90 (1.03; 200)	0.68 (0.81; 195)	0.79 (0.92; 200)	.05	.22

[a] Respondents were asked how often they used each source of information, rating each on the scale where 0 = never, 1 = sometimes, 2 = frequently, and 3 = very frequently.

[b] Scheffe's contrast significantly higher than Asians at $p < 0.05$.

[c] Scheffe's contrast significantly higher than Whites at $p < 0.05$.

[d] Scheffe's contrast significantly higher than Latinos at $p < 0.05$.

[e] Scheffe's contrast significantly higher than African Americans at $p < 0.05$.

and Asians being statistically significant as shown in table 15-2), although the mean rating suggests minimal reliance on this as an outdoor recreation information source. Within the ethnic/racial groups, the most frequently reported source of information on outdoor recreation opportunities for both Latino and African American respondents was television. For Asian respondents, the most frequent source of information was computers, and for White respondents, the most frequent source of information was newspapers.

Respondents were asked which source of information they trusted the most for information about outdoor recreation opportunities. The greatest proportion of respondents chose the Internet and computers as their most trusted source (24 percent of all respondents listing a trusted source, table 15-3). However, some variations in trusted source by ethnic/racial group were found. For example, Latinos placed family and friends above the Internet as their most trusted source. The third-most trusted source among the groups was newspapers, although Latinos selected television in the same proportion as newspapers.

The greatest proportion of respondents chose the Internet and computers as their most trusted source. However, some variations in trusted source by ethnic/racial group were found. For example, Latinos placed family and friends above the Internet as their most trusted source.

Table 15-3—Ethnic differences in the trust of information source for outdoor recreation opportunities

	Total	Latino	African American	Asian	White
			Percent		
Computers/Internet	24.0	22.6	21.5	27.7	24.3
Family and friends[a]	18.9	23.6	18.0	14.8	19.3
Newspapers	12.4	13.8	11.5	8.2	15.8
Television	7.3	13.8	6.5	4.6	4.5
Magazines	3.0	0.5	3.0	4.6	4.0
Community organizations	1.8	1.5	2.5	1.5	1.5
Pamphlets	1.8	1.5	2.5	1.0	2.0
Books	1.8	1.5	0.5	1.5	3.5
Church	1.6	2.6	2.0	0.5	1.5
Radio	1.3	2.0	3.5	0	.9
Work	< 1.0	0.5	0.5	1.0	.9
Health care providers	< 1.0	0	0	0.5	.5
Billboards	0	0	0	0	0
Other source not listed	12.4	9.2	14.5	17.9	7.9
Don't know/no answer	11.0	6.6	13.5	15.8	11.4
N	792	195	200	195	202

[a] Family and friends represents the combined responses to relatives, church friends, neighbors, and other friends.

National Forest Visitation

There were significant differences linked to ethnic/racial group in national forest visitation (had or had not visited), χ^2(3, n = 788) = 46.06, p < 0.001. White respondents were most likely to have visited national forests (77 percent), followed by Asians (59 percent), Latinos (48 percent), and African Americans (48 percent) respondents.

Those who had visited national forests were asked, "In the last 12 months, approximately how many times did you visit the national forest?"; the median response was 1 time in the last 12 months. Testing via the median test statistic indicated that there were significant differences between ethnic/racial groups in response to this query, χ^2(3, n = 262) = 7.80, p = 0.050. Of those who had visited the national forests, African American respondents traveled to the national forest the least frequently (31.0 percent of respondents were above the median), followed by Latino respondents (37.1 percent). White respondents (49.5 percent) and Asian respondents (54.7 percent) reported the most frequent visits to the national forests.

As reported, there were significant differences between the ethnic/racial groups in frequency of having previously visited the national forests. To establish whether respondents from the various groups were likely to utilize other outdoor resources at frequencies similar to their utilization of the national forests, respondents were asked to report one or more outdoor activities they had engaged in at locations other than the national forests. There were no significant differences among the groups' responses, χ^2(3, n = 792) = 6.32, p = 0.097. Although White respondents were most likely to have visited national forests, Latino respondents were most likely to have engaged in at least one outdoor activity in places other than national forests (90 percent, in comparison with 85 percent for White respondents). This result suggests that Latinos are not averse to outdoor activities; rather, they simply are less likely to go to the national forests to engage in them.

Barriers to National Forest Visitation

Among respondents who had reported visiting national forests, a variety of reasons were given for not visiting the forest more often. Barriers to more frequent visitation[8] included time-related constraints (39.8 percent of the reasons listed, included either being too busy in general, or specific to family, work, or school responsibilities), a lack of interest (16.2 percent), health or physical limitations (9.5 percent), lack of transportation (7.2 percent), a lack of information about outdoor recreation

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[8] These responses went through content analysis procedures using the open-ended answers, developing a first round of categories, and then having an independent rater review category assignment.

opportunities (4 percent), distance to sites (4 percent), age (3.8 percent, discussed in terms of being too old to participate), a lack of money (3.8 percent), fear (2.3 percent, included fear of wild animals, getting lost, or being a victim of crime), no one to go with (2.0 percent), crowds (1.2 percent), and fire-related concerns (0.6 percent, including closures due to fire risk, fear of fire, or recent burns and loss of places to recreate).

An examination of the top five barriers to more frequent visitation to the national forests more frequently showed both differences and similarities among the four ethnic/racial groups (table 15-4). More than half of the reasons listed by Latinos were time constraints, while only about one-fourth of the reasons given by African Americans were time-related. African Americans were the most likely among the groups to mention a lack of interest, and were twice as likely as the other two groups of color to cite this reason. Health or physical limitations represented about one-tenth of the reasons provided by African Americans and Whites, about twice as often as reported by Latinos or Asians. A lack of information was one of the top five reasons among all three groups of color. Lack of money was among the top reasons given by Whites and Latinos. African Americans and Whites cited age. Asians were the only group to list no one to go with among their top five. Fear-related concerns were only among the top five reasons for African Americans.

Table15-4—Top five barriers to National Forest visitation by ethnic group

| Ethnic group | Ranking of barriers[a] | | | | |
	First	Second	Third	Fourth	Fifth
Latinos	Time	Transportation	Lack of interest	Lack of information/ health or physical limitation	Lack of money
Percent	52	10	8	5	4
African Americans	Lack of interest	Time	Health or physical limitation	Transportation	Fears/age/lack of information
Percent	26	23	14	10	4
Asians	Time	Lack of interest	Too far	Lack of information/ health or physical limitation	No one to go with
Percent	47	13	9.4	6	5
Whites	Time	Lack of interest	Health or physical limitation	Lack of money	Age
Percent	37	17	12	7	6

[a] Multiple entries appear in cells when more than one type of barrier was listed by the same proportion of respondents in an ethnic group.

Discussion

These findings offer many interesting and potentially useful insights for the resource manager interested in making the national forests more available to the population at large. These results, consistent with expectations based on earlier studies (e.g., Johnson et al. 2001, Scott et al. 2004, Tierney et al. 1998) revealed that White respondents were significantly more likely than the other groups to report having visited a national forest in the past, whereas African Americans and Latinos were significantly less likely to have done so, and Asian respondents were intermediate to these groups. This same pattern was found in our analysis of the number of times in the past 12 months that respondents had traveled to the national forests.

In addition to differences in participation rates among the groups, this study also assessed respondents' general media consumption patterns. Assessment of media consumption patterns disclosed strong and statistically significant differences among the groups. The results of the present investigation suggest that television might be the most optimal means to reach African Americans when choosing among forms of media, whereas for Latinos, radio might prove a more optimal medium of mass information diffusion.

The variations in outlets, and specific outlets within media type add an additional layer of complexity. Findings suggest that ethnic media would be an effective means of contacting our non-White respondents. A reliance on ethnic media was also reported in Winter et al. (2004) among Asian Americans in the San Francisco Bay Area. Tailoring the outlet to meet the needs of ethnic/racial minorities seems appropriate based on our findings.

Respondents' reports of sources of information they would trust the most lead to an additional recommendation for forest managers. Community networks may be an effective means of information dissemination, based on our finding that family and friends were the most trusted source among all four ethnic/racial groups studied. African American respondents favored interpersonal methods of information search. For example, relatives, church, and church friends were significant sources of information for African American participants; only Latino respondents were comparable in terms of their dependence on relatives for information. In a number of studies, onsite recreationists reported family and/or friends as their primary source of information about recreation opportunities and the recreation setting where they were contacted (Chavez 2001, Parker and Winter 1998). Latinos typically have a greater proportion of reliance on family and friends as their primary source of information than do Whites and other ethnic/racial groups. The prior onsite studies cited had too few African Americans to be able to draw conclusions about reliance on relatives and friends, making the present study particularly valuable.

Respondents' reports of sources of information they would trust the most lead to an additional recommendation for forest managers. Community networks may be an effective means of information dissemination, based on our finding that family and friends were the most trusted source among all four ethnic/racial groups studied.

The overall expressed trust in the Internet and computers as the most frequently cited source among three of the four respondent groups may lead one to conclude that the Internet is the ideal venue for contacting potential recreationists (Latinos chose family and friends instead). A national survey on Internet users and nonusers suggests that the Internet is more important than other forms of media as an information source (Lebo 2004). However, a cautionary note should be added here about the Internet as a primary and trusted source of information. Research on access to the Internet suggests that non-Whites are less likely to use the Internet (particularly Latinos and African Americans) than are Whites (Spooner 2003). The bulk of non-Internet users report that they do not use the Internet because of a lack of a computer, or lack of a computer good enough to access the Internet (Lebo 2004). Findings are inconsistent regarding actual levels of use of the Internet and access to the Internet. Lebo (2004) reported that over three-fourths of Americans use the Internet, whereas Spooner (2003) suggested that number is just over half of American adults (59 percent of males and 54 percent of females used the Internet in 2001). Geographic differences may also account for the high trust of the Internet expressed in this study, where L.A. basin residents may have greater access than found in other regions of the United States.

The concern over geographic differences in Internet use extends to other outlets as well. It would be important to examine use of ethnic and mainstream media on a broader scale, outside of the L.A. basin, to ensure that a portion of the findings cannot be attributed to the types and range of media available to our respondents. Additionally, the response rate suggests some caution, particularly because we were unable to conduct a nonresponse bias check. We would need to be sure that our participants were not uniquely different from those unwilling to participate in a telephone survey in some way that would be associated with media use or national forest visitation.

Conclusions

This study was undertaken to assess ethnic/racial differences in forest visitation and to determine media consumption differences that might have relevance to forest use. The results reported here should prove useful in delivering messages targeted to the specific interests and the specific media used by one or another of the groups studied here. The analyses provide useful information for the manager interested in getting the word out about outdoor recreation opportunities and subsequently influencing the rates at which people of various ethnicities take advantage of national forest recreation opportunities in southern California. The data on media usage, especially preferences for ethnic media, are generalizable across recreation

opportunity venues in the L.A. basin, so that managers of natural resource settings outside of national forest lands may also learn from these results. Findings suggest that managers in other geographic areas might also consider use of ethnic media and community networks for outreach to diverse publics.

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Chapter 16: Routes to Communicating About Outdoor Recreation With Diverse Publics: What We Know About Media

Patricia L. Winter,[1] Jessica Skenderian,[2] and William Crano[3]

Abstract

This paper examines the issue of outreach to diverse publics as a central concern to natural resource recreation management. Increasing diversity across the Nation has been accompanied by an underrepresentation of communities of color among outdoor recreation populations in natural resource settings. Mass media may be an excellent way to conduct outreach, but the current investment in media addressing diverse publics is discouraging. Patterns of media use and variations by different ethnic groups in levels of use, as well as various ethnic groups' documented preference for ethnic media are presented. Purposes of media use, as well as trust and reliance in various sources of recreation information are also noteworthy considerations in developing an outreach strategy. Finally, we present some suggestions that may be of assistance to natural resource managers for reaching specific subpopulations, including the value of ethnic media, the potential utility of community networks such as churches, and the use of the Internet.

Keywords: Ethnic/racial diversity, broadcast media, print media, ethnic media, outreach.

Patterns of media use and variations by different ethnic groups in levels of use, as well as various ethnic groups' documented preference for ethnic media are presented.

Introduction

Recreation Participation and Ethnic/Racial Diversity

The U.S. population is ethnically and racially diverse. According to the 2000 Census, 69.1 percent of the population identified themselves as non-Hispanic White, and 12.5 percent as Hispanic or Latino descent. Irrespective of ethnicity, 4.5 percent of the population identified themselves as Asians and Native Hawaiians/ Pacific Islanders and 12.9 percent of the population identified themselves as Black or African American (U.S. Census Bureau 2001). Although the United States has a long history of national ethnic and racial diversity, these figures represent a considerable increase in the non-Hispanic White population since 1950 (Cordell et al. 2004).

[1] Research social scientist, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Wildland Recreation and Urban Cultures research unit, 4955 Canyon Crest Drive, Riverside, CA 92507-6099; e-mail: pwinter@fs.fed.us.

[2] Doctoral student, e-mail: jessica.skenderian@cgu.edu.

[3] Professor of psychology, School of Organizational and Behavioral Sciences, Claremont Graduate University,150 E 10th St., Claremont, CA 91711; e-mail: william.crano@cgu.edu.

Despite this diversity, White people participate in land-based outdoor recreation at much higher rates than do groups of color. For example, according to the National Survey on Recreation and the Environment, 37.6 percent of non-Hispanic Whites reported visiting a wilderness or primitive area, compared to 22.3 percent of Latinos, and 26.6 percent of Asian Americans (Cordell et al. 2004, 2005). In general, nonparticipants are more likely to be female, older, more ethnically diverse, and less affluent (Floyd 1999, Lee et al. 2001, Outdoor Industry Association 2004).

Non-Whites have reported a lack of information as a constraint to outdoor recreation participation (Crano et al. 2005, Scott et al. 2004, Tierney et al. 1998). Winter et al. (2004) examined constraints to visiting the Golden Gate National Recreation Area and reported that perceived constraints were affected by income levels, education levels, linguistic acculturation, ethnic group (four Asian American cultural groups) and gender. Also among these constraints was a lack of information. A lack of information was among the top five barriers to national forest visitation reported by Latinos, African Americans, and Asians, but not Whites, in a study of Los Angeles basin residents reported by Crano et al. (2005). Similarly, Scott et al. (2004) reported that Latinos and African Americans were more likely than Whites to indicate information and access constraints as barriers to use of outdoor recreation facilities. However, it should be noted that a lack of information is not always reported as a greater constraint to minorities than to Whites. For example, Mowen et al. (2005) reported that cost, lack of public transportation, no way to get to parks, and fear of crime were significantly more likely to be reported as a constraint to park use among African Americans than Whites. A lack of information was not significantly different in this particular study.

Mass Media and Diverse Publics

Popular mass media may be one method of informing visitors and potential visitors about outdoor recreation opportunities. Print media, radio and television spots, and Internet sites are all ways of reaching large populations, and represent an untapped source for diverse communities. A study by the Association of Hispanic Advertising Agencies (2002) examined the percentage of national advertising investment allocated to Hispanic television and print media in comparison to the percentage of advertising investment allocated toward television and print media overall (Hispanic plus general market). The results indicated that to reach the Hispanic market effectively, at least 8 percent of an advertiser's budget should be spent on Hispanic advertising; however, only 3.2 percent of total national and business marketing dollars is devoted to this population. In addition, although total spending for advertising in the United States in 2004 was about $236.7 billion, advertisements

specifically targeting African Americans approximated only $1.8 billion (Price 2005). This bias in advertising spending may help to explain differences in media use patterns among various ethnicities.

Studies assessing media usage patterns indicate that many individuals prefer broadcast (i.e., television and radio) over print media (La Ferle and Lee 2005). Although television is the primary form of media used among most ethnic groups, differences regarding the use of radio, Internet, and print media have been uncovered (Albarran and Umphrey 1993, Bickham et al. 2003, Blosser 1988, Delener and Neelankavil 1990, La Ferle and Lee 2005). For instance, Delener and Neelankavil (1990) examined media preferences among Hispanic and Asian populations. Although they found similarities in that the participants tended to use the major forms of broadcast media for entertainment or news, both groups indicated that they preferred television more than any other medium. In regard to differences between the groups, they found that Latinos (69.7 percent) were more likely to use radio for entertainment compared to Asians (56.7 percent), and that Asians were more likely to use newspapers as information sources (58 percent) compared to Latinos (54 percent).

In another study, La Ferle and Lee (2005) examined English language media use patterns among Anglo Americans, African Americans, and Hispanic Americans. They discovered that all of the groups spent the most time with the major forms of broadcast media and the least time with print media (i.e., least amount of time was spent reading newspapers). Significant differences were found among the groups, in that African Americans (51 percent) reported watching television more hours (3 or more) during a typical weekday compared to Anglo Americans (39.2 percent) and Hispanic Americans (32.4 percent). The results also indicated that African Americans (47.1 percent) listened to the radio more hours (3 or more) during a typical weekday compared to Hispanic Americans (38.5 percent) and Anglo Americans (37.2 percent).

A recent study by Crano et al. (2005) investigated media use patterns among a sample of African American, White, Asian, and Latino residents of Los Angeles. The findings from their study mimic the results of previous research. Specifically, the results indicated that among the participants in that study, the most hours per week were spent watching television. African-Americans reported the greatest number of hours of television watching (20 hours) and Latino respondents reported the greatest number of hours listening to the radio (14.5 hours) compared to the other ethnic/racial groups in the study. There were no significant differences between ethnic groups regarding time spent reading magazines and newspapers. Their results also illustrated that the types of radio stations and print media differed

with each ethnic group; in particular African American and Latino respondents indicated a preference for ethnically based media (i.e., media directed toward a specific ethnic group that is typically written or broadcast in a language native to the group or targeted to a specific cultural base associated with an ethnic group) over mainstream media (such as English language media or media targeted to a White majority).

Other studies have found that various ethnic groups, such as Hispanic, African American, Asian American, Arab American, and Native American groups, prefer ethnically based media (Hsu 2002, La Ferle and Lee 2005, Los Angeles Sentinel 2005, Vicuna 2005, Winter et al. 2004). For instance, a study conducted by the New California Media (2005) surveyed 1,895 Hispanic, African American, Asian American, Arab American, and Native American adults in the United States. The results indicated that 45 percent of all African American, Hispanic, Asian American, American Indian, and Arab American adults prefer ethnic television, radio, or newspapers in comparison to their mainstream media sources. These results suggest that 29 million adults (45 percent of the 64 million ethnic adults studied), or 13 percent of the entire adult population of the United States, prefer ethnic media to mainstream television, radio, or newspapers. These variations in use of media ethnic groups' documented preference for ethnically based media have been linked to differences in perceived credibility of various outlets (Beaudoin and Thorson 2005), levels of trust in various media sources (Sizemore and Milner 2004), and maintenance of culture (Dahan and Sheffer 2001, Jeffres 2000, Johnson 2000). The results of the New California Media study indicate that advertisers should not only focus on the most common form of media being used (i.e., television, radio, newspaper) but also consider the preferred type of media (i.e., ethnically based vs. mainstream media) of the targeted population.

It is evident that differences in media use among various ethnic groups exist. Messages conveyed through the media must take these differences into consideration to reach ethnically diverse audiences successfully (Campanelli 1991, Marin 1994). La Ferle and Lee (2005) argued that a clear understanding of media use patterns associated with ethnic groups will "help make better media decisions and ensure the effective communication of advertising messages" (p. 141). This is particularly important in social marketing contexts, in which advertising is used to communicate programs and public services that are offered to all ethnicities, such as messages that the Forest Service might want to promote to publics.

Sources of Information Relied Upon and Trusted

Another consideration in selection of a communication route is identifying the information sources most relied upon and most trusted. In other words, aside from general media use, we need to understand sources that publics tell us that they use to gather information about outdoor recreation opportunities, as well as which sources they trust the most. Sources of information that recreationists rely upon have also been shown to differ by ethnic and racial group. In a number of studies, family and/or friends have been reported as recreationists' primary sources of information about recreation opportunities and recreation settings (Chavez et al. 1993, Chavez et al. 1994, Crano et al. 2005, Parker and Winter 1998, Simcox and Hodgson 1993). However, Latinos typically rely more on family and friends as their primary information source than do other ethnic/racial groups.

For instance, Crano et al. (2005) examined the most trusted source individuals, who had varying ethnic/racial backgrounds, listed for outdoor recreational information. The results indicated that sources differed greatly by ethnic/racial group. For example, African Americans were more likely than other groups to rely on church as a source of information. In the same study, respondents were asked which source of information they trusted the most. The greatest proportion of respondents chose the Internet and computers as their most trusted source. The second most-trusted source among all groups except Whites was family and friends (among Whites the second most-trusted source was newspapers).

Trust in the Internet as reported by Crano et al. (2005) corresponds with a national survey on Internet users that revealed the Internet as an important information source when compared to other forms of media (Lebo 2004). However, some caution is in order, as research has shown a lesser likelihood among Latinos and African Americans to have access to, and consequently to use the Internet (Spooner 2003). Effects of restricted access among groups of color are compounded by the lack of ethnically targeted Web portals and targeted advertising (Singh et al. 2003).

Although use of the Internet may be increasing, primary uses might not include gathering of outdoor recreation information. Spooner (2003) found that only a small portion of the use of the Internet is for travel information purposes. Primary use was related to e-mail. Similar considerations for television viewing purposes, and exposure to different programming should be taken into account (i.e., Busselle and Crandall 2002). Use of various media outlets should be considered along with the types of information individuals seek from that media form. In addition, the amount of attention paid to information types from the various sources would be important to know (Shah et al. 2001).

Suggestions for Outreach

Use of ethnic media seems paramount in efforts to reach diverse publics. Since ethnically based sources are often judged to be more credible and are attended to more than other outlets among selected communities of color, they represent a valuable resource for information dissemination.

Lessons for outreach efforts of natural resource agencies are numerous. Among them is the importance of investing in varied media outlets, while recognizing that purpose of use of a particular type of media by various ethnic groups may determine the true effectiveness of any one outlet more than simple exposure levels. Further, use of ethnic media seems paramount in efforts to reach diverse publics. Since ethnically based sources are often judged to be more credible and are attended to more than other outlets among selected communities of color, they represent a valuable resource for information dissemination. Ethnic media would extend to Internet offerings as well as more traditional print and broadcast media. Agencies may need to develop particular Web pages that are targeted at an ethnically diverse audience.

The role of media in outdoor recreation decisionmaking for communities of color through selection of a destination is one area where additional research would be of value. Although overall influence of media may be less than family and friends, ethnic media may prove a fruitful outlet. This information would be helpful to natural resource management agencies. In addition, ways to capitalize on community and social networks as information sources might be helpful. The work by Reed et al. (2003) examining the use of churches as a source of engagement of the African American community serves as an example of how this might be done. Recognition of the diversity within racial/ethnic groups also remains an important area of inquiry, given the documented heterogeneity within ethnic/racial groups (see, for example, Kakai et al. 2003, Winter et al. 2004). It is important to understand cultural differences in information-seeking behaviors to effectively reach and serve a diverse public (Kakai et al. 2003).

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Section VII:
Measurement Studies

Chapter 17: Approaches to Measuring Cultural Diversity in Recreation

Chieh-Lu Li,[1] James D. Absher,[2] Yi-Chung Hsu,[3] and Alan R. Graefe[4]

Abstract

Measuring cultural diversity in recreation has become an important topic because of the increasing coverage of and interest in ethnicity and cross-cultural aspects of recreation. Introducing theories and methods from established disciplines other than leisure studies/recreation and park studies is necessary to understand this important issue. In this article, we first define recreation and examine different aspects/domains of recreation cross-culturally. To examine different domains of recreation cross-culturally, we need to have an unambiguous cultural definition as a basis to measure cultural variations. If the definition of culture contains cultural content (e.g., language, religion, family structure, cultural values), then we can specifically examine the influence of cultural content on recreation with various methods. We discuss different methods of measuring culture, emphasizing cultural consensus analysis to estimate the level of within-group or intracultural agreement. We also stress the issue of examining the homogeneity of ethnic groups as "real groups" from a scientific perspective. Finally, we describe approaches to measuring between-group or intercultural variations.

Keywords: Culture, diversity, outdoor recreation, measurement

We discuss different methods of measuring culture, emphasizing cultural consensus analysis to estimate the level of within-group or intracultural agreement.

Recreation as Culture

Recreation has been described as time, activity, or experience apart from obligations, such as work or family, but mostly has been approached from the activity standpoint (Roberts 1978). Culture can be described as shared information and the behaviors and artifacts that are manifestations of that information (Chick 1997). Recreation and culture are interrelated, as culture can be expected to influence recreation preferences and behaviors. From an anthropological perspective, few researchers study recreation, even though recreational activities (e.g., athletic sports, outdoor recreation participation) have been regarded as part of the universal human cultural repertoire. Murdock and Provost (1973), however, pointed out that

[1] Assistant professor, Department of Leisure and Recreation Management, National Chung Hsing University, 250, Kuo Kuang Rd., Taichung 402, Taiwan R.O.C.

[2] Research social scientist, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station; 4955 Canyon Crest Drive, Riverside, CA 92507.

[3] Professor, Institute of Tourism and Recreation Management, National Dong Hwa University, Taiwan R.O.C.

[4] Associate professor, Department of Recreation, Park, and Tourism Management, The Pennsylvania State University, University Park, PA 16801.

such universals rarely, if ever, represent identical culture content. In other words, there may be differences in recreation such as time use and activity participation among various cultural groups. Regardless of the cross-cultural differences that exist, multicultural comparative research in recreation has been rare in both the anthropological and leisure literature (Chick 2000). Research that leads to a better understanding of the relationship between culture and recreation can lead to improved knowledge about managing recreation opportunities and to enhance appreciation of different cultural traditions (Li et al. 2003). Despite the growing interest in cross-cultural aspects of recreation, there is currently no systematic agenda for the anthropological study of recreation (Chick 1998, Hsu et al. 2007, Li et al. 2007c).

Culture Defined

Culture is defined variously. Chick (1997) grouped cultures on the basis of their inclusiveness, and defined culture as mental; mental and behavioral; mental, behavioral, and material; or simply as information. The distinct disadvantage of the second and third definitions is that neither behavior nor artifacts can be explained in terms of culture since they are part of the definition. The final definition, while comprehensive, is problematic because it is difficult to extract the information content from observed behaviors or from artifacts (Li et al. 2007a).

A cognitive theory of culture emerges from Goodenough's (1957) classic definition of culture: it is that which one must know in order to function adequately in a given social system. For example, a highly influential definition of culture proposed by Goodenough (1957) is as follows:

> A society's culture consists of whatever it is one has to know or believe in order to operate in a manner acceptable to its members. Culture is not a material phenomenon; it does not consist of things, behavior, or emotions. It is rather an organization of these things. It is the form of things that people have in mind, their models for perceiving, relating, and otherwise interpreting them (p. 167)

Extending from Goodenough's definition of culture, values and knowledge and beliefs are major components of culture and serve as key features distinguishing cultural groups (Chick et al. 2007). Values are mental constructs and can be defined as enduring beliefs about desired end states and modes of conduct (Hofstede 1980). That is, values are goals for living that define how we want the world to be (i.e., a world view) and principles that guide our behavior (Rokeach 1973). This approach of using values as a core to operationalize culture has also been widely accepted

in psychology, sociology, marketing, and tourism (Li et al. 2007b, Reisinger and Turner 1999, Watkins and Gnoth 2005). The cognitive theory of culture, along with the related methods of cultural domain analysis (e.g., cultural consensus analysis), enables researchers to unambiguously identify shared dimensions of meaning that give structure to cultural domains and simplify measuring culture.

Approaches to Measuring Culture

We contend that culture is learned and consists of specific ideas or knowledge that is shared within a society (Pelto and Pelto 1975). From this perspective, consensus analysis provides a way of measuring culture. Consensus analysis is well established as a means to investigate the degree to which a population or sample share similar understandings of the world (Caulkins 2001, Romney et al. 1986). For different types of recreation, we can imagine a variety of possible outcomes of consensus analysis from specific populations. These include random, patternless responses, bimodal distributions, overlapping subcultures, or high concordance agreement that can be used to identify a cultural pattern (Caulkins and Hyatt 1999). The key task is to emphasize the content of the culture and the selection of productive domains for measuring similarities or differences of culture in recreation. Using the cultural consensus model developed by Romney et al. (1986), we are able to (a) confirm that ideas within some domains are shared, (b) evaluate how that sharing is distributed, (c) estimate how a reasonably culturally competent individual would respond to a set of questions about that domain, and (d) evaluate the construct validity of cultural domains (Handwerker 2002).

Examples of measuring culture using consensus analysis in leisure settings include Chick's (1981) Tlaxcalan Festival study of how festival sponsorships were ranked in terms of what villagers called the escalafón, or graded list or scale. He studied the degree to which a sample of individuals in a Mexican village understood how the local festival system operated. Chick investigated the "real" ranking of the festivals, the degree to which individuals agreed with this "real" ranking, and the overall level of agreement over the ranking. His findings showed that individual informant rankings all correlated significantly with the overall ranking but that some informants were considerably more knowledgeable than others.

Parr and Lashua (2004) studied members of the Recreation Branch of the Ohio Parks and Recreation Association to determine the extent of agreement among leisure services practitioners regarding the meaning of leisure, and to examine how they describe themselves and the body of knowledge related to leisure services. Using Anthropac data analysis software and SPSS, they found high agreement among members, and thus, "culturally correct" definitions of leisure. For example,

respondents supported the "multidimensionality" of leisure as evidenced by their agreement with statements such as "leisure may have different meanings and values, dependent on one's cultural background." When analyzed along with the free-list data, they found the most frequently reported dimensions of leisure paralleled traditional definitions. For example, respondents had a high level of agreement with statements such as "Leisure is a state of mind," and "Leisure is doing a favorite activity."

Li et al. (2007a) also used cultural consensus analyses to examine whether three nominal ethnic groups, Anglos, Hispanics, and Asians, were homogeneous in terms of cultural values as measured by Hofstede's (1980) instrument when used in a national forest recreation setting. The authors argued that if distinctive ethnic subcultures exist, then they should be identifiable by specific measures of languages, religion, family structure, cultural values, and the like. The authors used Handwerker's criteria (2002) of measuring consensus that employs principal components analysis with an unrotated solution to test for differences among the three ethnic groups. The results of cultural consensus analyses showed that none of the three ethnic groups, and none of the subgroups split by age, gender, and generations in the United States within the three ethnic groups, were homogeneous in terms of the cultural values. The authors, therefore, concluded that it is questionable to make comparisons of cultural values if within-group variance equals or exceeds between-group variance. They infer that if the homogeneity assumption of ethnic groups does not hold empirically, then research based on it may be fundamentally flawed. Later, Li et al. (2008), in their research reflections of cross-cultural study for diverse customers, further suggested that it is important to examine the individual dimensions of cultural content such as values or behavior patterns attributed to culture (e.g., perceptions of service quality, behavioral intentions) among ethnic groups if the nominal ethnic groups are, in fact, culturally heterogeneous.

Reliability analysis also provides a way to measure within-sample cultural agreement or intracultural variation (Weller and Baer 2002). It is based on the correlations between the individual variables and the scale calculated from that set of variables. The reliability coefficient (i.e., coefficient alpha or Cronbach's alpha) measures the internal consistency of the scale items and reflects the extent to which they are measuring the same thing. It provides the degree to which the aggregated responses are stable and reliable estimates of "true" answers. In other words, it measures the degree to which subjects would give the same answers on a test if the test were administered repeatedly. In essence, reliability analysis provides information about the reliability and/or validity of the aggregated responses that can be estimated from the level of agreement among informants.

There are other, more complex methods applicable to the issue of measuring culture[5] (e.g., analysis of variance, analysis of covariance, standard deviation, average correlation, discriminant analysis, cluster analysis). For example, Li et al. (in press) used analysis of covariance to compare similarities and differences among census-based ethnic groups in the United States in terms of their perceptions of service quality while controlling for the generations in the United States as a coarse measure of acculturation and assimilation (the covariate). The authors concluded that, compared to Whites and Hispanics, Asians tended to perceive lower service quality in their recreational trips to a national forest. The covariate, however, showed no significant relationship to perceptions of service quality.

Weller and Baer (2001) have also applied some of these methods (e.g., average correlation) to the comparison of amounts of sharing in cultural beliefs about five illnesses across geographic regions and ethnic groups. They concluded that there was a strong pattern of shared beliefs (i.e., high levels of agreement) in the five illnesses selected across samples.

Do Nominal Ethnic Groups Really Exist?

Members of ethnic groups may identify with each other and are generally recognized by others as a distinct group with a specific name. Group identities are constructed on the basis of various traits and experiences. Many of these characteristics are open to different interpretations. Skin color, for example, is an important marker of identity in many societies, but in others, it is of minimal importance. Some researchers stress that ethnicity is socially constructed, with people choosing a history and common ancestry and creating as much difference as possible from others. Many group identities, then, are not based on ascribed traits, per se, but on shared values, beliefs, or knowledge (Nagel 1994). Ethnicity has multiple definitions but most include a basic core of features. The term ethnicity is generally understood in the anthropological literature (e.g., Barth 1996 [orig. 1969]) to designate a population that:

- Is largely biologically self-perpetuating.
- Shares fundamental cultural values, realized in overt unity in cultural forms.
- Makes up a field of communication and interaction.
- Has a membership that identifies itself, and is identified by others, as constituting a category distinguishable from other categories of the same order.

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[5] We acknowledge the existence of other approaches to define culture or measure cultural diversity in recreation that rely on more qualitative or post-modernist approaches such as "fuzzy theory" (Lowen 1996). Although worthwhile, they are beyond the scope of this paper. We hope our results and concerns will be gauged subsequently from within these approaches as well.

Two basic assumptions are commonly made within ethnic leisure research: (a) ethnic groups are culturally homogenous, and (b) if ethnic "behavior" is observed, it must therefore be assumed that it is homogenous and the result of culture (Chick et al. 2007). However, if ethnic groups display within-group variance that equals or exceeds between-group variance in terms of cultural content (e.g., languages, cultural values), then it becomes problematic to compare the cultural content among groups.

Traditionally, the U.S. Forest Service, National Park Service, and other federal and state agencies use census categories to operationalize ethnic groups (Gobster 2007, U.S. Census Bureau 2006). This practice has the effect of asserting that the concept of ethnicity shows that some groups are unitary, i.e., that they compose a bounded, distinctive, and solitary group and that their internal differences do not matter. This is a normal, and perhaps desirable, part of politics and public policy. However, the current uses of census practices may not identify true ethnic groups but rather merely assign categories (Brubaker 2006).

We contend that ethnic groups need to be constructed from a scientific perspective. From a scientific perspective, we need to, first, have a good and clear definition of ethnicity. Then, if that definition includes culture, we need to know what part of culture is presumed to be critical.

We contend that ethnic groups need to be constructed from a scientific perspective. From a scientific perspective, we need to, first, have a good and clear definition of ethnicity. Then, if that definition includes culture, we need to know what part of culture is presumed to be critical. Most definitions of culture have included values, for example, as an important component of cultural content. But, we must make certain that the cultural content chosen, such as values, is, in fact, shared. The degree to which the nominal group categories share values can be determined via cultural consensus analysis or similar methods such as the comparison of group standard deviations and correlations. In other words, we suggest empirically examining the amount of sharing of cultural values or some other cultural content to assess whether a nominal ethnic group constitutes a real group in a scientific way (Chick 2006).

We feel that if an ethnic group lacks the internal consistency of cultural content (e.g., language, religion, family structure, values), they are a group in name only. It seems to us that the concept of ethnicity is too vague if it is not clearly defined and examined with appropriate scientific procedures. If distinctive ethnic subcultures exist, then those subcultures should show cultural consensus in terms of cultural domains. If, however, ethnic groups fail to show consensus in some cultural domains presumed to constitute ethnicity, then the assumption of cultural homogeneity of the ethnic group is violated. If ethnic groups lack cultural consensus on a relevant domain, comparing them on that particular domain may be meaningless (Li et al. 2007a).

Measuring Intergroup Diversity

According to Barth (1996), the cultural content of different cultural/ethnic groups might be similar, and only a few generally recognized items of symbolic values (e.g., ethnic identity) might actually differ among groups. To measure cultural variation across samples, it is necessary to determine both the within- and between-sample agreement levels (Weller and Baer 2002). For example, Moore et al. (1999) used a simple, understandable method where the within- and between-group agreement difference was used to indicate the level of shared beliefs among samples. Specifically, they used the amount by which the within-sample agreement exceeded the between-sample agreement to identify the proportion of beliefs not shared across groups, thus indicating the proportion of beliefs unique to the samples.[6] They then attributed the unique proportion of beliefs to be culturally determined.

Conclusion

Exploring approaches to measuring cultural diversity in recreation has become more important because of the interest in ethnicity and cross-cultural aspects of recreational studies. To understand this important issue, we first need to clearly define and examine different aspects/domains of recreation cross-culturally. To examine different domains of recreation cross-culturally, we need to have an unambiguous cultural definition as a basis to measure cultural variations. If the definition of culture contains cultural content (e.g., language, religion, family structure, cultural values), then we can specifically examine the influence of cultural content on recreation with various methods. We suggest appropriate methods of measuring culture, such as cultural consensus analysis, to estimate the level of within-group or intracultural agreement. We also stress the importance of examining the homogeneity of ethnic groups as "real groups" from a scientific perspective. We described some approaches to measuring between-group or intercultural variations. Our intent is to introduce relevant theories and methods from a cultural anthropological perspective into the recreation discipline and correctively move cross-cultural research in recreation forward. Clearly there are other approaches and techniques and we look forward to future advances in this area of study.

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[6] Description of the mathematics of between-group agreement is beyond the scope of this paper. Details of the calculations are available from the authors.

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