

Why Do So Few Minority People Visit National Parks? Visitation and the Accessibility of “America’s Best Idea”

By: Joe Weber and [Selima Sultana](#)

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Abstract:

It has been said that national parks are “America's Best Idea,” they are among the most famous and instantly recognizable places in the country, and they attract visitors from all over the world. Yet visitors to these sites are overwhelmingly white. A number of theoretical perspectives have been proposed for the absence of minority visitors, including socioeconomic marginality, differing cultural norms, and the lingering legacy of discrimination, but geography is not one of the usual explanations. Given the strong associations between particular regions of the country and the locations of parks, as well as the uneven spatial distribution of population, the absence of geography as an explanation is striking. We examine this issue with the expectation that geography is an important part of the explanation for low minority visitation rates. Put simply, do potential minority visitors live anywhere near national park units? Are they more likely to visit the ones to which they live nearest? This study uses the geographic concept of accessibility to examine the spatial relationships between national parks and potential minority visitors. Accessibility was measured using driving times between each of 285 parks and county populations, with the results compared to a visitation database compiled for fifty-one park units. There is clearly a relationship between park visitation and the location of minority populations, in the sense that racial or ethnic minorities are disproportionately represented at closer and smaller national parks.

Keywords: accessibility | national parks | race

Article:

It has been said that national parks are “America's Best Idea,”¹ as they are “Absolutely American, absolutely democratic, they reflect us at our best rather than our worst” (Stegner 1998, 135), and they display “some of the central values and experiences in American culture” (Nash 1970, 726). The national park system (Figure 1) includes instantly recognized

places of incomparable beauty (Figure 2) and sites of unparalleled historical significance to Americans and others (Figure 3). These sites include not just the fifty-eight national parks that most often represent the entire system in the public imagination but also another 337 national monuments, battlefields, historic sites, memorials, recreation areas, parkways, lakeshores, seashores, rivers, and park units with other designations that preserve American culture and history and provide valuable outdoor recreation opportunities. Yet visitation to all of these sites has been and remains overwhelmingly a practice of the white population. A 2003 survey of visitation found that 36 percent of non-Hispanic whites visited a park unit in the last two years, compared to 33 percent of Native Americans, 29 percent of Asian Americans, 27 percent of Hispanics, and only 13 percent of African Americans (Solop, Hagen, and Ostergren 2003). A 2009 survey reported similar results (P. A. Taylor, Grandjean, and Gramann 2011). The assertions that national parks reflect central values of American culture and that public land is open to all are obviously questionable with such low levels of visitation and park experience by much of the population. Although concern over limited participation of minorities can be traced back to the nineteenth century (Sax 1976), it has been more pronounced in recent years in a number of newspaper articles and other media outlets that have continually raised this question: Why do so few African Americans, Hispanics, Asian Americans, and Native Americans visit national parks (e.g., Smith 2008; Fimrite 2009; Khokha 2009; Navarro 2010)?



Figure 1. The United States national park system. *Source:* National Park Service.

A number of explanations have been proposed, including limited economic resources for long vacations and differing recreational priorities and norms (Carter 2008), yet the influence of geography and whether parks are simply out of reach of these populations is rarely among the explanations and remains an untested hypothesis (Bultena and Field 1978; Byrne and Wolch 2009). Although national parks are scattered throughout the country, many of the largest

and best known are located in the interior West, such as the Grand Canyon, Yosemite, and Yellowstone (Figure 1), where African American populations are relatively small (Figure 4A). Large numbers of Hispanics are located closer to these more popular parks (Figure 4B), and although still underrepresented by visits to parks, their visitation occurs at a rate twice that of African Americans. Asian Americans and Native Americans also exhibit very uneven population distributions as well (not shown), with distinct concentrations in certain areas that can be expected to play a role in their park visitation patterns.



Figure 2. Visitors at Grand Canyon National Park. *Source:* National Park Service.

Although much attention has been directed at affordability, cultural preference, and discrimination as reasons for low participation in national park recreation by the minority population, the role of relative location or accessibility has not yet been investigated. This article examines this issue using a fundamental geographic concept and measure, accessibility, to explore the spatial relationships between parks and potential minority visitors. Accessibility measures are useful for understanding equity issues and the extent to which certain populations have limited access to destinations or recreation opportunities such as local parks or other services (Kwan and Weber 2003). Although issues limiting travel to parks have been discussed in a qualitative manner for selected places (e.g., Roberts 2007), no research has used accessibility to fully explore the relationship between the access of minority populations to national park units at the national level and visitation. Here, we suggest that the uneven geographic relationships between the locations of parks and people, and differing experiences of mobility by different populations, will be evident in a stronger relationship between accessibility and visitation for minorities than for whites. Specifically, we address two questions: (1) Are national parks accessible to areas where racial and ethnic minorities live? (2) Does park visitation reflect local minority population patterns?

These questions should be investigated from at least three important perspectives: equity, the continued economic and environmental health of national parks, and public health. Renewed interest in African American underparticipation in outdoor recreation began during the Civil Rights era and was spurred by the need to redress socioeconomic inequalities between African

Americans and whites (Meeker 1973; Deutsch and Van Houten 1974; Schnaiberg 1975; Washburne 1978). The question of equity in recreation has since been expanded to other populations. There are many equity issues involved with differential use of or access to public facilities such as parks (e.g., Talen 1997; Nicholls 2001; Wolch, Wilson, and Fehrenbach 2005; Timperio et al. 2007; Boone et al. 2009; Joassart-Marcelli 2010; Sister, Wolch, and Wilson 2010; Zhang, Lu, and Holt 2011), although these have so far largely been examined at the local (city and county park) level. National parks are substantial federal investments, with considerable economic impacts on communities (Crompton 2010) as well as the recreation opportunities of citizens. Although many parks are obviously located where the scenery, recreation opportunities, or battles occurred, there is considerable community control over places worthy of national park status, what these facilities should consist of, and where park facilities should be located. If Americans want to continue to claim national parks as the “best idea America ever had” and view them as symbols of democracy and openness, then there remains a necessary question of why racial and ethnic minorities are severely underrepresented as visitors in the national park system.

National park funding and resources depend on visitation (Rettie 1995), and this link between revenue and visitation raises many concerns about future park budgets. Greater visitation leads to more resources to provide for visitor interpretation and safety as well as protect the wildlife, scenery, and other park resources. In 2010 the National Park Service (NPS) received more than 281 million visitors (NPS 2010a), but although visitation rates from 1945 to 1985 increased faster than the total population and peaked in 1985, visitation rates have since declined.² Although it might be the result of economic downturn, if Americans want to preserve the most beautiful places in the country, those caring for parks must find a way to attract people to experience these treasures. Population projections for the next several decades show continued growth in the minority population, with the non-Hispanic white population likely making up only 46 percent of the population by 2050 (Ortman and Guarneri 2009; National Parks Second Century Commission 2010). Although the white population will continue to increase in absolute numbers over time, it is already apparent that visitation rates among this population are falling. Maintaining or increasing visitation to parks will therefore require expanding the population base of visitors, which can only come from expanding the appeal of parks in minority populations. Given the disproportionately low numbers of minorities that currently travel to these parks, if their visits to the national park system continue to be low, then future visitors, funding, and overall support for the parks could continue to decrease and hence the survival of “America's best idea” becomes critical.

Declining visits to national parks are also symptomatic of what Louv (2008) has termed “nature deficit disorder,” in which little time in natural settings results in less interest in outdoor physical activity, a major public health risk, as well as less appreciation for the natural world. Louv (2008) has posited that recent increases in childhood depression and attention-deficit disorder problems might result from this phenomenon. Conversely, there are physical, mental, and emotional benefits to experiencing natural settings, and studies have already shown that nature lovers live longer and healthier lives (Kuo 2010; Coon et al. 2011). Although even a local park can provide these benefits, it is perhaps visits to national parks that can best provide these lasting bonds to nature that will pass from generation to generation (Edmondson 2006).



Figure 3. Martin Luther King delivering his “I Have a Dream” speech on the steps of the Lincoln Memorial, a unit of the national park system, during the 1963 March on Washington. A National Park Service ranger can be seen in the foreground. *Source:* National Park Service.

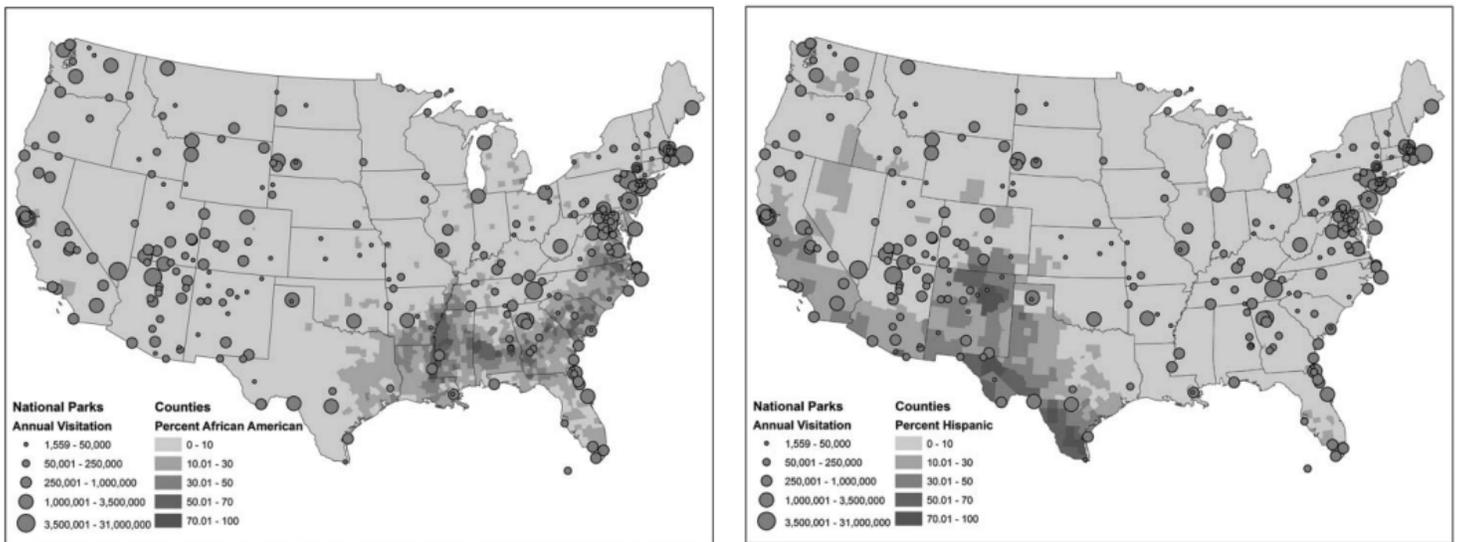


Figure 4. (A) Location and visitation of national parks and the African American population; (B) location and visitation of national parks and the Hispanic population. *Source:* National Park Service.

Table 1. Number, area, and visitation for different designations of national park units

Designation	Abbreviation	Number (2011)	First used	Distribution	Location	Visitors (2008)	Acreage (2008)
National Battlefields	NB	11	1970	Mostly in South	Usually rural	1,528,532	14,545
National Battlefield Parks	NBP	4	1936	Georgia and Virginia	Near cities	2,131,732	15,056
National Battlefield Site	NBS	1	1890	In South	Rural	Not counted	1
National Military Parks	NMP	9	1890	Mostly in South	Rural	4,564,033	41,900
National Historical Parks	NHP	45	1934	National	Many in cities	27,304,519	173,709
National Historic Sites	NHS	78	1938	National	Many in cities	9,385,959	37,506
International Historic Sites	IHS	1	1984	Maine	Rural	Not counted	45
National Lakeshores	NL	4	1970	Great Lakes	Suburban or rural	3,403,376	228,995
National Memorials	Nmem	29	1925	National	Mostly urban	29,507,434	10,588
National Monuments	NM	74	1906	National	Urban or rural	21,610,296	2,027,865
National Parks	NP	58	1872	National	Usually rural	61,159,714	52,095,046
National Parkways	Nparkway	4	1933	Most Southeast	Mostly rural	30,165,232	177,340
National Preserves	Npreserve	18	1974	Alaska, West, South	Rural	2,790,473	24,157,571
National Reserves	NR	2	1978	Idaho, Washington	Rural	85,893	33,740
National Recreation Areas	NRA	18	1946	National	Usually rural	49,584,382	3,700,277
National Rivers	Nriver	5	1972	South, MN, MO	Rural	4,538,091	426,349
National Wild and Scenic Rivers	NWSriver	10	1976	National	Rural	1,281,000	319,914
National Scenic Trails	NST	3	1983	Eastern US	Rural	Not counted	239,659
National Seashores	NS	10	1937	Mostly Atlantic/Gulf coasts	Rural	15,909,135	595,014
Other Designations		11				9,903,148	36,827

Source: National Park Service. Distribution and location based on authors' research.

The Changing Geography of the National Park System

Since Yellowstone National Park was created in 1872, the number and designation of parks has proliferated, reaching an official count of 395 park units by October 2011 (Table 1). These units are classified by nineteen designations, including National Parks, Monuments, Historic Sites, Rivers, Battlefields, Memorials, and Lakeshores. These reflect the purpose of a park unit as well as the changing political realities of the park system. The National Park designation accounts for fifty-eight units and the greatest number of visitors and acreage. In 1906 the category of National Monument was created by the Antiquities Act (Rothman 1989; Harmon, McManamon, and Pitcaithley 2006), originally to protect archaeological sites. Other units also have distinct origins, with National Parkways, Seashores, Lakeshores, and Recreation Areas being added in the 1930s and 1940s when interest in promoting outdoor recreation became important (Ise 1961). These units remain among the most popular in the park system and if visitation to these designations were aggregated would account for over 36 percent of total system visitors. Many National Battlefield Sites and National Military Parks were transferred from the War Department in the 1930s, although additional units were created by the NPS. National Historic Parks and Sites have been created since the 1930s to preserve sites associated with American history and important individuals and together represent the most numerous type of park unit, although a small total acreage. More recently, National Preserves have been used to protect large areas while still allowing activities such as hunting not usually allowed in park units (Rettie 1995). In this research all of these types of areas will be collectively called park units (and where National Parks are treated separately this term is capitalized).³

The original park units were located in the Western United States, as they were created from the public domain (land owned by the federal government following the Louisiana Purchase and

other expansions to the country's territory). In the 1930s the national park system spread eastward when Great Smoky Mountains, Shenandoah, and Mammoth Cave were created from land purchased from private landowners in an effort to broaden the political constituency of parks (Ise 1961; Foresta 1984). The transfer of Revolutionary and Civil War battlefields from the Army to the NPS increased the number of eastern units, as did the creation of Seashores and National Historic Sites. The vast majority of park acreage in the forty-eight contiguous states remains in the West, however.

The diversity of park types and locations has been matched by thematic diversity, and units associated with racial and ethnic minorities have become increasingly common. The first site specifically devoted to an African American was George Washington Carver National Monument (NM) in Missouri, created in 1943. Other sites followed over the next several decades, and the 1990s saw a rapid increase in African American sites, including most recently the Port Chicago Naval Magazine National Memorial (NMem) created in 2009 and the Martin Luther King, Jr., NMem on the National Mall in Washington, DC (added in 2011). A wide range of Native American sites exist within the national park system. A park preserving the spectacular cliff dwellings at Mesa Verde was created in 1906 and was followed by a long line of parks protecting Native American ruins. Many of these units are in the Southwest, and the northern Great Plains has many sites that preserve battlefields and other violent clashes between Native Americans and the United States. Other racial or ethnic groups are not as well represented in the park system. Although several missions and sites associated with early Spanish explorers exist, there are no sites specifically honoring Hispanic individuals, culture, or history. In 1952 the first of several sites preserving traditional Hawaiian culture were established. Manzanar National Historic Site (NHS) established in 1992 and Minidoka Internment Camp (created in 2001) preserve World War II sites associated with Japanese Americans, but no other Asian American groups are directly represented by the national park system.

From a geographical perspective, the spatial distribution of national parks relative to the concentration of population matters, as proximity can be expected to bring more visitors to the parks. As a result, an important trend beginning in the late 1950s was the idea of bringing the parks to the people, especially urban populations with limited outdoor recreation opportunities (Bultena and Field 1978; Foresta 1984; Zube 1995). Several urban National Recreation Areas (NRAs) were created to serve these populations (Gateway in New York City and Golden Gate in San Francisco in 1972, Cuyahoga Valley between Cleveland and Akron in 1974, and Santa Monica Mountains in Los Angeles in 1978). Many other park units, including Guilford Courthouse National Military Park (NMP) in Greensboro, North Carolina, also serve as urban parks, although there might be conflicts between the official park mission and the desires of local residents as to appropriate use of the site.

The units of the national park system are among the most diverse set of places to be found within the United States, varying tremendously in size, physical geography, land use, management objectives, and cultural significance (Dilsaver 2005; Dilsaver and Wyckoff 2005). Although the “Crown Jewels” remain the great outdoor parks such as the Grand Canyon, Yellowstone, and Yosemite, almost 400 other places preserve smaller landscapes or natural features such as Rainbow Bridge NM or the unique flora of Organ Pipe Cactus NM. Additionally, other sites in the national park system preserve important moments in American history, such as *Brown v.*

Board of Education NHS, or commemorate the lives of great individuals, such as Martin Luther King, Jr. NHS. Interpretation of the parks, the means through which information is presented to the public in museums, lectures and guided tours, maps, signs, brochures, and the Internet, has also changed, and many parks contain multiple themes that increasingly include the topic of race and ethnicity.

National Parks and the Missing Minority Visitors

Four theoretical perspectives about the lack of minority participation in outdoor recreation activities such as visiting national parks have been developed (Floyd et al. 1994; Floyd 1999; Carter 2008; Byrne and Wolch 2009). These are the marginality, subcultural or ethnicity, assimilation, and discrimination hypotheses. Each of these presents a different explanation for low minority visitation and whether or how it can be changed (Floyd 1999).

Marginality/Elitism Hypothesis

The marginality hypothesis was first elaborated by Washburne (1978) and holds that although minorities have a comparable interest in engaging in recreation activities, such as visiting parks, they have socioeconomic constraints (especially income, time, and lack of a car) that prevent them from doing so (Floyd 1999, 2001). Lack of awareness of parks or their recreational opportunities might also be a problem for them (Edmondson 2006; Johnson et al. 2007). Although the automobile has long been credited for greatly reducing the economic barriers to experiencing national parks (James 1924), lack of transport options among minorities and low-income populations has been noted as a relevant barrier in several studies (Everhart 1972; West 1989). The outcome is that the economically disadvantaged are not a significant part of the statistics of national park travel. If these socioeconomic constraints were to be removed, minority visitation should increase. The absence of minorities from parks cannot therefore be taken to represent absence of interest.

The very idea of national parks has been criticized for having its roots in elitist preserves at least since the late nineteenth century (Sax 1976; Bultena and Field 1978; Kafarowski 2003; Byrne and Wolch 2009). The origin of the national park idea was in early travelers' experiences of America's wilderness, with artists and writers emphasizing the exceptional beauty of these remote places as pristine wilderness (Mels 2002), linking these places to those who had the taste and ability to experience these areas. The automobilization of American society throughout the twentieth century made travel to national parks much easier and more affordable and has led to a more middle-class clientele for national parks (Pomeroy 1957; Jakle 1985; Rothman 1998; Shaffer 2001). In the last half-century, however, tourism has shifted again, with travel as a form of status seeking for those with the time and money to indulge in it. Long vacations in expensive and remote park lodges provide a marker of status out of reach of the middle class (Rothman 1998). There has therefore been a persistent discussion on whether an image of elitism associated with national parks is keeping people away, and some research has indicated that the social contexts are more important than economic issues in influencing whether someone will visit a national park or not (Bultena and Field 1978). For example, studies of wilderness users have indicated that more highly educated persons tend to visit these areas (Chen 2009).

Subculture/Ethnicity Hypothesis

Leisure activities might be a significant part of cultural identity, and the subculture or ethnicity hypothesis holds that different groups have different values and interests, including those toward parks and nature. Differing attendance at national parks might therefore represent different views about the attractiveness of these places or different levels of interest in visiting them. These divergent interests are independent of any socioeconomic differences that might exist. Recreation studies have shown that African Americans are less likely to engage in hiking, camping, or other park-related activities but more likely to engage in team sports (Washburne 1978), supporting this hypothesis.

Geographers and others have long demonstrated that concepts like nature and wilderness are highly variable within and between cultures, by race and ethnicity, and by gender, and these will vary over time (Nash 1967; Tuan 1977; Vale 2005). One explanation for differential visitation rates is therefore that whites are said to value nature and wilderness more than minorities (Buijs, Elands, and Langers 2009). Minorities such as African Americans “may have a very different historical relationship to wildlands and nature in comparison to the white northern European tradition, which may be responsible for white American values relating to wildland recreation activities” (Washburne 1978, 177). Rather than freedom and fun, parks might represent servitude, hard work, and fear of violence due to their associations with slavery and the Jim Crow era (Meeker 1973; Chen 2009). These values are perpetuated in magazine advertisements showing only whites in wilderness or park areas (Martin 2004). As a result, African Americans might still feel uneasiness in wildlands. Differences in leisure travel between African Americans and whites have been examined by Carter (2008), who found that whites are more likely to travel for vacations, whereas African Americans are more likely to visit friends or relatives. African Americans travel in larger groups than whites, and African Americans are less likely to fly but more likely to use buses (often on church trips) or cruise ships during their travel. African Americans travel farther than whites regardless of income. This is supported by evidence that among those who travel, spending while on vacations is about the same regardless of race (Agarwal and Yochum 1999). This implies that if African Americans are not visiting parks at the same rate, it is because they are not interested in doing so, although there is also the question of whether they are familiar with opportunities to do so (Edmondson 2006; Johnson et al. 2007).

Similar evidence exists for other groups. Visitation to federal recreation lands by Hispanics in California and the Southwest has been found to be significantly greater than by African Americans in the Southeast (Johnson et al. 2007). Hispanics do not participate in outdoor physical activity at the rates whites do but are more likely to picnic and watch sports than others (Stodolska, Shinew, and Li 2010). Beach activities vary by race, with Hispanics more interested in water sports and African Americans engaging in fishing (Wolch and Zhang 2004). Hispanics of different origin (Mexicans and Cubans) might have considerably different values (D. S. Carr and Williams 1993). For example, Hispanics of Central American origin tended to have more homogenous attitudes toward nature than Mexicans (Roberts 2007). Asian Americans likewise cannot be viewed as a homogenous group, as those with ancestry from different countries have been shown to have different values and interests and with higher income and more educated Asian Americans more likely to visit natural areas (Winter, Jeong, and Godbey 2004). These

studies described similarities and differences between groups; they did not, however, offer theoretically satisfying explanations for why these differences exist (Arai and Kivel 2009).

Research also involves explaining why recreation participation and preferences vary by ethnic groups and has suggested that various groups perceived different benefits from recreation (Oh and Ditton 2009). Whereas Western culture places more importance on individual accomplishment and personal needs in recreational activities, non-Western cultures might place more value on group and family cohesiveness and belonging. A recent study (Spiers and Walker 2009) examined how ethnicity and leisure satisfaction affects happiness and quality of life among European Canadians and Chinese Canadians. For European Canadians, leisure satisfaction is experienced in conjunction with goal achievement, whereas for those of Chinese ancestry it is associated with personal relationships (Spiers and Walker 2009), suggesting that in Asian collectivist cultures satisfying relatedness needs might be more important than personal gain. Similarly, research shows that regardless of race and ethnicity, visitors showed similar patterns of interest in nature conservation (Oh and Ditton 2009).

This perspective suggests that low visitation by the minority population exists because national parks, and the particular set of activities they offer, do not reflect the interests and identity of minorities. This in turn implies that park facilities, programs, and perhaps rules should be adjusted to meet the needs and preferences of minorities; but even so, minorities might still not visit parks at the rates that whites have. This hypothesis does not offer direction for identifying and measuring specific aspects of racial or ethnic cultural variables that influence visitation and national park use patterns, however.

Cultural Assimilation Hypothesis

The assimilation hypothesis holds that as minority groups take on the characteristics of the majority group, they will come to share its values (Floyd 1999; Logan, Alba, and Zhang 2002). This implies that minorities will gradually take on the positive association with outdoor recreation and wilderness shown by many whites. Although this hypothesis appears to have received less attention than the others, there is some support for this view. D. S. Carr and Williams (1993) show that Mexicans and Central Americans in the United States have different attitudes toward visiting national forests. Families that have more recently arrived in the United States had different perceptions and attitudes toward outdoor recreation than those that had been in the country for several generations. For example, those born in a different country were more likely to be part of an organized group than native-born Hispanics. This line of research has been criticized, however, for using whiteness as the norm for the minority population and in fact preventing their full participation by denying the uniqueness of culturally distinct recreational-based activities (Arai and Kivel 2009).

Discrimination Hypothesis

A fourth explanation for low visitation by minorities is discrimination and its legacy. In fact, the NPS itself might contribute to, or have been, a part of the problem, as discrimination was present from the beginning of the national park idea in 1872 (Phillip 2000). The ideal of wilderness was viewed as “white,” as the creation of most Western parks such as Yellowstone and Yosemite

required the displacement of resident Native Americans (Keller and Turek 1998; Spence 1999; Burnham 2000). Aside from Canyon de Chelly NM, which remains under the ownership of the Navajo Nation (Brugge and Wilson 1976), Native Americans have remained as residents only in Death Valley National Park (Figure 5), where the Timbisha Shoshone continue to live, although with most traditional hunting and gathering practices restricted (Catton 2009). Native Americans remain involved in legal battles at sites such as Devils Tower and Rainbow Bridge National Monuments (known by local Native Americans as *Mato Tipila* and *Nonnezoshi*, respectively) to restrict visitors from locations or activities that interfere with traditional religious practices (Sproul 2001; B. Taylor and Geffen 2003).



Figure 5. Entrance to Death Valley National Park and the Timbisha Shoshone homeland.
Source: Wikipedia.

In the 1930s several parks were created in the Southeast, where Jim Crow ideologies led the building of constraints on African American visitation into the park landscape, sometimes with separate park administrators (Byrne and Wolch 2009). Because Great Smoky Mountains and Shenandoah National Parks were created from land purchased by the states and then donated to the NPS, the states were able to insist that Jim Crow laws be instituted in the parks (Young 2009). Segregated facilities were discussed for these parks, but due to limited visitation by African Americans these were often seen as unnecessary. The Lewis Mountain Negro Area in Shenandoah National Park (Figure 6) opened in 1940 with a campground and coffee shop and was the largest segregated facility within any park. It was officially desegregated in 1942 (Rugh 2008; Young 2009) and remains in use today as the Lewis Mountain area. Segregated facilities also existed at state parks throughout the Southeast and were not desegregated until the 1960s in several states (J. T. Taylor 1956; O'Brien 2007).



Figure 6. Lewis Mountain Negro Area, Shenandoah National Park. *Source:* National Park Service.

In some areas African Americans were present from the beginnings of the park, but their presence was later erased. At Mammoth Cave in Kentucky, local African Americans were pioneer guides, but they were displaced once the park was created (Algeo 2010). African Americans have likewise been present at Rocky Mountains National Park since its creation, but as workers, not as tourists (Erickson, Johnson, and Kivel 2009). Even when no discrimination exists at the present time, limited attendance by minorities might remain as a legacy of discrimination. A growing literature has examined the African American experience at tourist attractions such as former plantations (Alderman and Campbell 2008; Alderman and Modlin 2008; Butler, Carter, and Dwyer 2008). These often minimize any mention of slaves or use euphemisms for them and their living and working conditions. Minorities often experience discomfort or anxiety while traveling and might not feel welcome or safe in remote rural settings (Carter 2008). This was especially the case in the first half of the twentieth century, when long-distance travel by automobile was not easy for African Americans (Foster 1999). In one study, Asian Americans, Hispanics, and especially African Americans reported uncomfortable encounters in parks (Roberts 2007), and there is also some evidence that white park visitors experience some discomfort around non-white visitors (Stanfield et al. 2005).

Geography and Race

From a geographical perspective, the spatial distribution of national parks relative to the concentration of population influences the visitation rates to parks (Zhang, Lu, and Holt 2011). Not being nearby one of the magnificent national parks such as Grand Canyon and Yellowstone might mean that national parks have no relationship to minorities' lives and would not be thought of as a destination (Edmondson 2006). Although substantial research has shown that the low participation of minorities, and particularly African Americans, in employment or in visits to local parks results from their lower level of access to those jobs or recreational facilities (e.g., Talen 1997; Mitchelson and Lazaro 2004; Zenk et al. 2005; Sultana and Weber 2007), there is little work examining the role of geography in national park visitation patterns (Wolch and

Zhang 2004). Put simply, do African Americans, Hispanics, Asian Americans, and Native Americans live anywhere near national park units? Are they more likely to visit the park units they live near?

The role of distance in recreation travel behavior is mixed (Hanink 1995; McKercher, Chan, and Lam 2008; Nicolau 2008). Although distance decay relationships have in the past been relied on for tourism or recreation demand models, this must take into account many household and contextual factors (Fesenmaier and Lieber 1985). Having to travel farther distances or for a longer time can obviously be an impediment or deterrent to travel (McKercher, Chan, and Lam 2008), yet travel can also be an enjoyable experience and a recreational act in itself (Hanink and White 1999). Willingness to travel can also be expected to be influenced by a range of individual household factors, such as purpose of the trip, income, number of children, age, travel mode, and population of home city (Nicolau 2008). Wolch and Zhang (2004) found that the likelihood of visiting the beach declined with distance (despite few people reporting transport problems), although this was one of many explanatory variables, including race, income, the presence of children, and environmental attitudes. Another study found that African Americans in Alabama were more likely to live in counties with fewer national parks and forest units, wilderness areas, and hiking trails (Chen 2009). Johnson et al. (2007) found that awareness of recreation opportunities differed by region within the country, with easterners less aware than those living in the West and greater awareness relating to stronger likelihood of visiting federal lands. As national parks and other public lands are heavily concentrated in rural areas of the West, far from many minority populations, this implies that geography is essential to understanding variations in visitation.

Several surveys of park visitors and nonvisitors (NPS 2001; Solop, Hagen, and Ostergren 2003) showed that among nonvisitors, over a third (39 percent in 2000, 37 percent in 2003) indicated that parks were too far to visit. This was the most common response in 2000 and second most common response in 2003. Lack of time (being “too busy”) ranked second in 2000 and first in 2003. The effects of distance on park visitation vary by race and ethnicity. In 2003, white, non-Hispanic respondents gave distance as the most common reason for not visiting a park, whereas for Hispanics (37 percent) and African Americans (42 percent) it was the second most common response (Solop, Hagen, and Ostergren 2003). A California study also showed that visitors to wilderness areas closer to cities differed from those in more remote wildernesses (Ewert 1998). In both cases whites made up the vast majority of visitors, but closer areas were more diverse than farther ones (76 percent of visitors at closer areas were white, compared to 89 percent at farther ones). Hispanics made up only 10 percent of visitors at the closer areas, but 0.9 percent of those to the farther ones. Likewise, African American visitors made up 0.7 percent at the closer areas and none at the farther areas. Proximity to parks or other natural areas is clearly a great concern, although the effects of distance are obviously influenced by a variety of factors.

These reports show that distance appears to be less of a concern to whites than Hispanics and African Americans, although Carter (2008) looked at African American–white travel differences for all leisure purposes and concluded that median miles traveled by African Americans is greater than for whites, regardless of median family income. This makes distance relationships with minority populations complicated by trip purpose and their geographic location. Minorities will travel farther than whites if they live farther from destinations, as many do, yet can still be

expected to find distance a constraint to visiting parks (Bultena and Field 1978; P. A. Taylor, Grandjean, and Gramann 2011).

There is no study that has examined these issues comprehensively at the national scale in a way that will allow the proximity of populations to all national parks, as well as the relative location of population and ethnic groups and parks in different areas of the country, to be assessed. Studies of race, ethnicity, and accessibility to recreation have tended to be geographically limited to areas where a particular group is concentrated (Gomez 2008; Zhang, Lu, and Holt 2011). Nor is there any study that has investigated quantitatively whether there is a relationship between the minority population's access to national park areas and their visitation to the national parks. Therefore, there is an enormous gap in our understanding of this issue. We therefore aim to do this using the accessibility methodology and data described in the following section.

Methodology and Data

Accessibility is a fundamental and straightforward geographic concept that has been developed in multiple ways (Kwan 1998; Kwan and Weber 2003). The most significant differences in how the concept is applied depend on whether it is used to measure the accessibility of people or places. In the case of the former, space–time measures allow the movements and constraints on movements of individuals to reveal their ability to reach and make use of a variety of services, destinations, or contacts. This approach has shown that household responsibilities and time constraints, especially the number of hours worked per week and presence of children, are crucial to understanding an individual's accessibility (Kwan 1998, 1999; Weber 2003; Weber and Kwan 2003; Yu and Shaw 2008). In contrast, measuring the accessibility of places evaluates the proximity of a set of origins to a set of destinations. Origins might represent facilities or aggregate populations (commonly for census zones such as tracts), which are considered of interest to planners or policymakers, whereas the destinations would typically represent places that are considered desirable to be near, such as jobs, services, or recreational opportunities. This approach can measure the extent to which certain aggregate populations or residential areas have access to destinations or opportunities such as parks or other services and to compare the levels of access among different populations or locations. For our analysis, the power of space–time accessibility measures is not necessary because we will measure accessibility for an origin set (national parks) to population locations, which is not affected by the individual's daily activities and constraints. Therefore, an aggregate accessibility measure will suffice.

The potential measure of accessibility, an aggregate measure, is used to evaluate varying levels of park access to minority populations across the nation. It evaluates accessibility as the sum of the attractiveness or size of a destination divided by distance to that destination, with higher values indicating higher accessibility (Stewart 1947; Harris 1954; Stewart and Warntz 1958; Warntz 1964; Kwan 1998; O'Kelly and Horner 2003). In this case the accessibility of park i is the sum of the population of county j divided by the distance between them, with a standard distance decay value of two:

$$\text{Accessibility}_i = \sum \text{population}_j / d_{ij}^2 \quad (1)$$

In this research the accessibility of each park to each racial or ethnic group is measured, allowing accessibility to be directly related to visitation. County population centers were calculated in

geographic information systems (GIS) and used to represent the location of population as this research examines all groups at the national level. Representing areas such as national parks presents difficulties due to their much larger sizes and the longer distances driven to reach them. Representing parks with a point at their major destination or attraction (Paul and Rimmawi 1992; Hanink and White 1999; Hanink and Stutts 2002; Weber 2008) is an efficient method. The location of the visitor center within each national park unit open to the public was therefore used in this research as the origin location. Almost every park has a visitor center, which typically includes a museum, restrooms, and bookstore and might be adjacent to lodging, campgrounds, restaurants, and other services. These are key destinations that will represent many parks in the minds of visitors, unlike wilderness areas or national forests, for which other methods might be more appropriate (Crawford 2006; Zahran et al. 2008). Using these points avoids problems associated with measuring distances to large and irregular spatial units such as national parks (Weber 2008). One visitor center was used for each park, except the North and South Rims of the Grand Canyon National Park, which were treated separately, as were the Mississippi and Florida units of Gulf Islands National Seashore. This resulted in a set of 285 parks in the forty-eight contiguous states. Those parks representing linear areas (rivers or parkways) were excluded. A single point at the Lincoln Memorial represented all Capitol-area parks.

Highway network-based measures are essential to ensure that distances reflect those actually traveled by visitors. Highway driving times between each county population centroid and park in the forty-eight contiguous states were measured using GIS, using the National Highway Planning Network (NHPN) from the Bureau of Transport Statistics (2007). Travel time is used because it has been noted that travel time rather than distance is a better indicator for travel decision making (Dubin 1991; Johnston-Anumonwo 1995; Sultana 2005). Travel times were constructed from information about road types (freeways, other four-lane roads or two-lane roads, urban or rural, and state speed limits). Several parks could only be reached by ferry boat or minor road not in the NHPN network, so these were added and coded with appropriate travel times.⁴

Once accessibility has been computed, it can be compared with data on park use by minorities. Data on park visitation are, however, quite limited. Every year the Park Studies Unit of the University of Idaho carries out a number of visitor surveys in selected parks (Park Studies Unit, University of Idaho 2010). These are conducted by trained workers who visit the park to distribute questionnaires that are completed and mailed in by respondents. The questionnaires are tailored to the needs of each park and typically include questions about visitor home state, places in the park visited, transport used to get to the park, number of people in the park, perceptions and experience of the park, and some limited information about the respondents, including age. Since 1999 about half of the surveys have included questions about the race and ethnicity of the respondent, although these results are not cross-tabulated with any other information, including country of origin. The racial composition of visitors for selected parks might therefore be influenced by international visitors not treated separately in this study, although in most cases the numbers of such visitors were low (Table 2) and overwhelmingly from Canada, Western Europe, or Australia/New Zealand. The surveys tend to be completed by a small number of visitors during a single week, however, and more comprehensive surveys at individual parks could identify larger international components as well as a different racial and ethnic mix of visitors. The results could also be influenced by tour buses disgorging large numbers of visitors at one time, but there is no way to correct for this. These surveys represent the only source of

information about the racial and ethnic classification of visitors to specific park units for a large number of parks and are used here with these issues in mind.

Of the 111 surveys for which data are available as of mid-2010, sixty-two include race and ethnicity questions, representing fifty-one different parks in the forty-eight contiguous states (Table 2). These report percentages of visitors that are Hispanic or non-Hispanic, and by nonwhite racial group (Black or African American, Asian, American Indian or Native Alaskan, and Native Hawaiian or Pacific Islander).⁵ These surveys, collected between 1999 and 2010, were used in this research to compile a visitor database for fifty-one park units. For these fifty-one places, an average of 93.37 percent of visitors reported themselves as white, 3.75 percent were Hispanic, 3.53 percent were Asian American, 2.1 percent were Native American, 2.06 percent were black or African American, and 0.24 percent were Native Hawaiian or Pacific Islander.

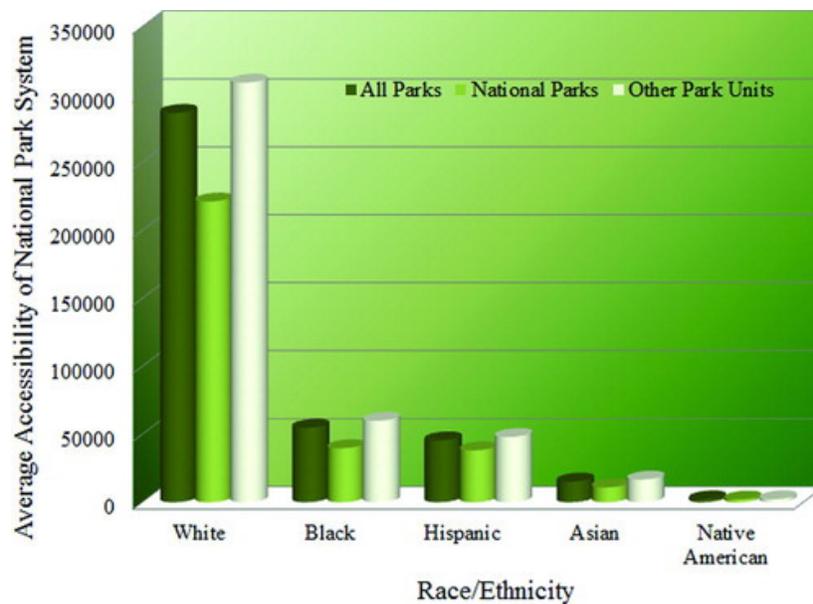


Figure 7. Average accessibility to racial and ethnic groups by designation. *Source:* National Park Service.

Results

Spatial Variation of Accessibility and Race

Our accessibility calculation results suggest that the accessibility of all 285 park units to populations varies by racial and ethnic group (Figure 7). As expected, accessibility of parks to the white population is highest, followed by African Americans, although their accessibility is only about 19 percent that of whites. The average accessibility level of parks to Hispanics is 16 percent that of whites, slightly less than that for African Americans. The accessibility rating for Asian Americans is 5 percent that of whites, reflecting the much smaller number of Asians in the United States, and accessibility to Native Americans was about 0.78 percent that of parks to whites, as they have the smallest population and are the most spatially concentrated of the groups examined.

Table 2. The fifty-one park units with visitation data by race and ethnicity

Park name	Year	Race							N for question	% of visitors international
		Not Hispanic	Hispanic	White	Asian	Black	Native American	Native Hawaiian and Pacific Islander		
Agate Fossil Beds NM	2007	4	96	95	3	1	3	1	753	6
Badlands NP	2000	1	99	95	2	1	2	0	632	7
Big Cypress NPRES	2007	3	97	96	1	1	4	0	1,717	14
Boston NHP	2009	5	95	96	4	1	0	0	1,917	14
Catoctin Mountain Park	2002	1	99	89	5	3	1	0	450	—
Chickasaw NRA	2005	5	95	93	1	1	12	0	453	1
Colonial NHP	2001	4	96	95	1	1	3	0	435	3
Congaree NP	2005	3	98	97	2	1	2	0	312	5
Cowpens NB	2003	2	98	98	1	2	1	0	293	—
Crater Lake NP	2001	3	97	92	5	1	3	0	425	7
Cumberland Gap NHP	1999	2	98	93	1	0	2	0	351	—
Cuyahoga Valley NP	2005	0	100	97	1	1	1	0	863	1
Dayton Aviation Heritage NHP	2004	0	100	96	2	4	1	0	760	—
Devils Postpile NM	2006	9	91	93	5	0	2	1	256	6
Everglades NP	2008	7	93	98	1	1	1	0	2,082	20
Fire Island NS	2008	5	95	97	2	1	0	0	2,072	3
Fort Larned NHS	2009	2	98	98	1	0	2	0	652	3
Fort Sumter NM	2005	1	99	97	0	3	1	0	360	<1
Fort Union Trading Post NHS	2007	2	98	95	1	0	3	0	752	3
George Washington Birthplace NM	2004	3	97	97	2	3	4	0	189	—
Gateway NRA	2003	9	91	82	5	15	1	1	434	—
Glen Canyon NRA	2007	5	95	96	1	1	3	0	2,855	16
Great Sand Dunes NP & PRES	2002	5	95	91	2	1	2	1	353	4
Great Smoky Mountains NP	2008	2	98	98	1	0	1	0	2,228	2
Homestead NM of America	2009	1	99	97	1	1	2	0	688	0
Hopewell Furnace NHS	2002	1	99	90	2	0	0	0	247	4
Independence NHP	2007	5	95	94	3	3	1	0	2436	7
Indiana Dunes NL	2009	6	94	95	3	2	1	0	1,745	2
John F. Kennedy NHS	2006	5	95	82	15	3	1	0	295	14
James A. Garfield NHS	2009	2	98	96	3	1	0	0	613	2
Johnstown Flood NMEM	2005	1	99	99	1	0	0	0	224	2
Knife River Indian Villages NHS	2003	1	99	99	1	0	3	0	259	—
Mammoth Cave NP	2006	3	97	92	3	2	1	0	430	3
Manzanar NHS	2004	7	93	69	31	1	4	1	252	3
Minuteman Missile NHS	2009	2	98	97	3	1	0	0	698	3
Mojave NPRES	2003	7	93	96	2	1	4	0	356	5
Monocacy NB	2006	3	97	97	3	0	1	0	247	1
Mount Rainier NP	2000	2	98	94	6	1	1	1	745	6
Mount Rushmore NMEM	2007	4	96	96	1	1	3	1	2,168	5
Nicodemus NHS	2005	2	98	65	0	37	4	0	201	<1
Pinnacles NM	2002	7	93	94	8	1	3	1	360	—
Pipestone NM	2002	1	99	94	1	0	6	0	308	4
Rainbow Bridge NM	2007	5	95	96	1	1	2	1	1,295	4
Saint-Gaudens NHS	2004	1	99	98	3	0	1	0	280	—
San Francisco Maritime NHP	2005	7	93	90	8	1	2	1	457	18
Sequoia NP	2002	10	90	93	6	2	3	1	276	10
Stones River NB	2002	1	99	95	1	0	1	0	282	—
Women's Rights NHP	2009	0	100	95	3	1	1	0	651	5
Yellowstone NP	2006	3	97	95	3	0	2	0	829	10
Yosemite NP	2008	16	84	88	10	1	3	0	1,461	9
Zion NP	2006	5	95	92	8	1	2	1	579	25

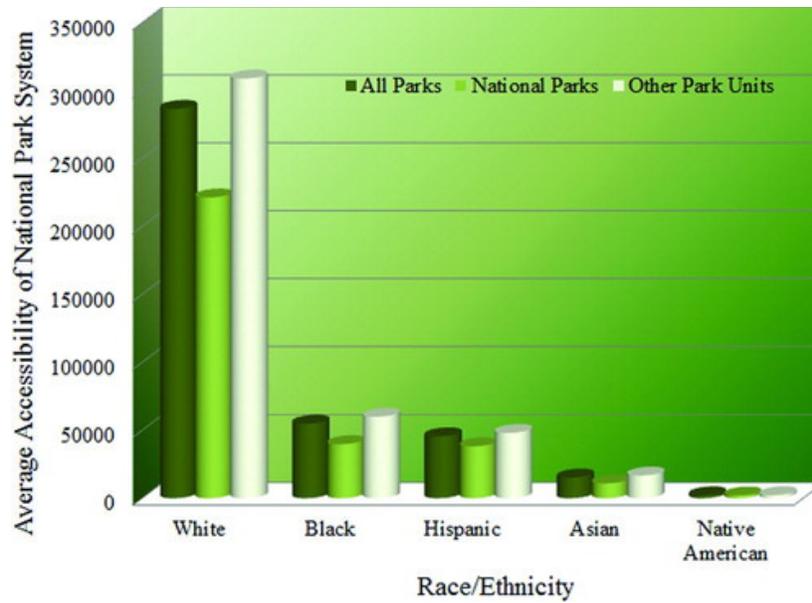


Figure 7. Average accessibility to racial and ethnic groups by designation. *Source:* National Park Service.

The accessibility results closely match the population distribution of each minority population. Parks in the Southeast, Northeast, in Midwestern cities, and in West Coast cities such as Los Angeles and San Francisco have the highest accessibilities to African Americans (Figure 8A). Park units in the interior West, northern plains, and parts of Texas have much lower accessibility. The smaller parks, battlefields, and historic sites of the Eastern United States clearly have higher accessibility to African Americans than the larger Western parks.

Accessibility to Hispanics is greatest in California, the Southwest, south Florida, and the Northeast (Figure 8B). The lowest values are in the northern Plains states, northern Mountain West, and Pacific Northwest, although a few rural Southern parks and Northeastern parks have low values. Many large Western parks, as well as numerous small monuments and historic sites, are close to the Hispanic population in the Southwest and California.

The distribution of the Asian American population results in bicoastal accessibility peaks, with the West Coast and Northeast having the highest values, although much of the East has substantial values (Figure 8C). The lowest values are found in the northern Plains states, Mountain West, south Florida, and a few rural pockets of the interior West. Even more than the Hispanics, Asian Americans are close to many large Western parks, as well as numerous small monuments and historic sites in the Southwest and California.

Accessibility to Native Americans shows a pattern considerably different from the other groups (Figure 8D). Parks in the Southwest, near Oklahoma, and a few other widely scattered locations are closest to Native American populations. Florida park units and many others in widely scattered rural areas are remote from Native Americans.

San Juan Islands NHP, located northwest of Seattle, Washington, has the lowest total accessibility to minority populations, followed by several other Pacific Northwest parks.

Theodore Roosevelt Birthplace NHS has the highest, followed by several other New York City units. Gateway NRA in New York City is the fifth most accessible park. From these accessibility patterns it would be expected that the Northeastern and California parks would have the most diverse attendances, whereas those located in the Pacific Northwest, northern Plains, and Mountain West should have the least diverse visitation. This expectation can be examined for selected parks using visitation statistics.



Figure 8. Accessibility of parks to (A) African American population; (B) Hispanic population; (C) Asian population; and (D) Native American population. *Source:* Park Studies Unit, University of Idaho.

Spatial Variation of Visitation and Race

Actual visitation patterns to parks are often quite different from those of accessibility. The African American population is heavily concentrated in the Southeast, an area where few of the fifty-one parks in the sample are located, and in northern and West Coast metropolitan areas

(Figure 9A). African American visitation ranges from zero at thirteen parks (including Yellowstone) to 37 percent of all visitors at Nicodemus NHS in Kansas, although all but eight parks have 2 percent or less (and the average is 2 percent). Fifteen percent of the visitors to Gateway NRA in New York City are African American, the only other park with more than 10 percent African American visitation. Dayton Aviation Heritage NHP is the next largest, with 4 percent. In the summer of 2008 African Americans made up less than 1 percent of visitors to Great Smoky Mountains, a number not substantially different from the 0.15 percent of visitors recorded in 1938, a time when park facilities were segregated and African American vacation travel was extremely limited (Young 2009). Nicodemus NHS has much higher visitation than accessibility would predict, whereas several Northeastern parks have much lower African American visitation than would be expected due to their proximity.

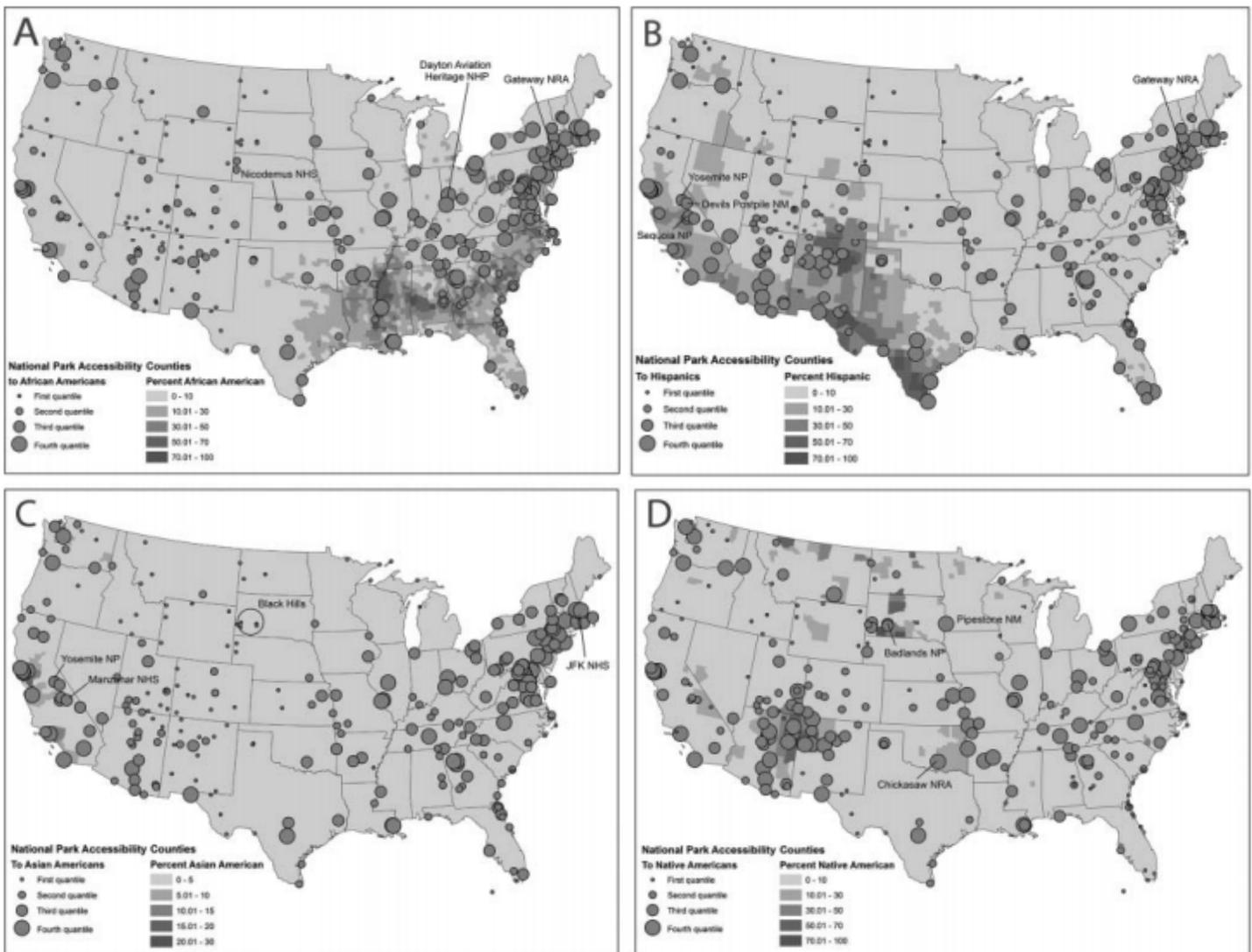


Figure 9. (A) African American population and visitation; (B) Hispanic population and visitation; (C) Asian population and visitation; and (D) Native American population and visitation. *Source:* Park Studies Unit, University of Idaho.

For Hispanics (Figure 9B) the most popular parks were in California: Yosemite NP (16 percent of visitors), followed by the nearby Sequoia NP (10 percent) and Devils Postpile NM (9 percent), as well as Gateway NRA at 9 percent (although this park was also a favorite for African Americans, it is striking that no Hispanic visitors were recorded at Dayton Aviation Heritage NHP, and no African American visitors were found at Devils Postpile). No Hispanic visitation took place at Women's Rights NHP and Cuyahoga Valley NP. The average percentage of Hispanic visitors at the fifty-one parks surveyed was 3.72 percent. The highest values are apparent in California, south Florida, Chicago, and New York City, which closely matches the Hispanic population (although representing several different groups of Hispanics). The pattern of Hispanic visitation is quite similar to that predicted by accessibility, except for lower values in Northeastern cities.

Asian American visitation (Figure 9C) percentages averaged 3.45 percent of all visitors and were greatest at Manzanar NHS (31 percent), John F. Kennedy NHS in Boston (15 percent), and Yosemite NP (10 percent). No Asian American visitors were recorded at Nicodemus NHS (the top African American site) and Ft. Sumter NM. This pattern broadly reflects the distribution of the Asian American population within the United States, which is heavily concentrated on the West Coast and in the Northeastern cities. Zion in southern Utah and several parks around the Black Hills and Yellowstone were outliers to this pattern. Like that of Hispanics, Asian American visitation is similar to what would be expected by accessibility, with the exception of slightly higher values for Yellowstone and near the Black Hills of South Dakota.

Table 3. Spearman's correlation coefficients between accessibility of all the national park system to population groups

Visitors %	Accessibility of all national park units to population					
	All population	White	Black	Hispanic	Asian	Native American
All visitors	0.076	0.014	0.045	0.291**	0.211	0.208*
White	0.055	0.088				
Black	0.278**		0.287**			
Hispanic	-0.169			0.551***		
Asian	0.032				0.561***	
Native American	-0.559***					0.119
N	51	51	51	51	51	51

Note: Shaded areas highlight the relationship between accessibility and visitation by specific race/ethnic group.

*Correlation is significant at the 0.10 level (one-tailed).

**Correlation is significant at the 0.05 level (one-tailed).

***Correlation is significant at the 0.01 level (one-tailed).

Native American visitation (Figure 9D) averaged 2.08 percent of all visitors and was greatest at Chickasaw NRA (12 percent and located within the territory of the Chickasaw Nation) and Pipestone NM (6 percent). No Native American visitors were recorded at six sites, all in the Midwest or Northeast, except for Minuteman Missile NHS in South Dakota. This Cold War-era nuclear missile silo is near Badlands NP (where 2 percent of the visitors were Native American) and the Pine River Indian Reservation, suggesting that the low levels of Native American visitation resulted from lack of interest rather than lack of proximity. Native American visitation was apparent at sites adjacent to large concentrations (especially Chickasaw) but could also be found in areas far removed from the population. Several parks show substantial differences between accessibility and visitation, such as Big Cypress National Preserve (NPres) in Florida,

which had a higher Native American visitation than its low accessibility would suggest, and Northeastern parks, which were lower than their accessibility would predict.

Does Accessibility Explain National Park Visitation?

The results were compared to the sample of visitor surveys from fifty-one parks to determine the utility of geographic accessibility in explaining levels of (and variations in) African American, Asian American, Hispanic, and Native American visitation. The fifty-one parks have average accessibility values similar to the entire set of 285 park units, suggesting that they are fairly representative of all park units. It appears that older, larger parks attracting more visitors are overrepresented in the sample, however.

Spearman correlation coefficients were computed between accessibility and visitation for the fifty-one park units (Table 3). The results show that although there is no significant correlation between white visitation and accessibility to whites or Native Americans, African Americans, Hispanics, and Asian Americans do show moderate and significant positive correlations, with values ranging from 0.287 for African Americans to 0.561 for Asian Americans. African Americans, Hispanics, and Asian Americans are more likely to make up a larger percentage of visitors to parks that are closer to larger African American, Hispanic, or Asian American populations. These results indicate that these groups are more likely to be among the visitors to closer parks. The relationships for Hispanics and Asian Americans are strongest, perhaps reflecting concentrations of these populations in the Southwest and California and in the Northeast, areas that are strongly represented by the fifty-one park units in the analysis. This matches the patterns identified on the maps, although for African Americans this correlation is weak.

Table 4. Spearman's correlation coefficients between accessibility of national parks to population groups

Visitors %	Accessibility of National Parks to population					
	All population	White	Black	Hispanic	Asian	Native American
All visitors	0.051	-0.073	-0.169	0.147	0.402*	0.147
White	0.332	0.290				
Black	0.199		0.033			
Hispanic	-0.095			0.606***		
Asian	-0.456**				0.488**	
Native American	-0.257					0.386*
N	14					

Note: Shaded areas highlight the relationship between accessibility and visitation by specific race/ethnic group.

*Correlation is significant at the 0.10 level (one-tailed).

**Correlation is significant at the 0.05 level (one-tailed).

***Correlation is significant at the 0.01 level (one-tailed).

Although all national park units are managed by the same agency with the same mission, the public often differentiates between those park units designated as National Parks and others (Foresta 1984; Rettie 1995). Interestingly, although accessibility levels clearly differ between National Park and nonpark units (Figure 7), visitation shows little difference (Figure 10). It is also interesting that accessibility differences between whites and minorities are much less than those between whites and minorities for visitation. The location of these units clearly differs,

with nonpark units (battlefields, historic sites, recreations areas, lakeshores, monuments, etc.) being located closer to populations than National Parks. Given that many National Parks are located in rural areas, this is not surprising. That visitation levels should be similar (and higher for African Americans and Native Americans to nonpark units) indicates that these less famous members of the national park system are just as, or even more important to, attempts at encouraging minority visitation. The difference between Figures 4 and 8, however, also shows that accessibility alone cannot explain all of the differences between white and minority visits to parks, as some receive a considerably higher level of visitation than proximity alone would indicate.

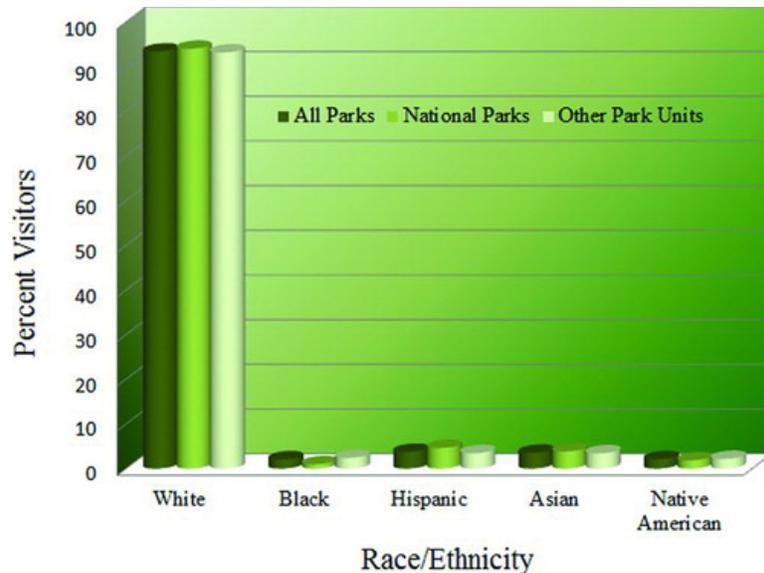


Figure 10. Average visitation by racial/ethnic groups to national parks and other park units. *Source:* National Park Service.

The fourteen National Parks within the sample of fifty-one units were therefore examined separately to identify how visitation and accessibility differ by designation (Table 4). Hispanics and Asian Americans continue to show significant correlations, with Hispanics increasing in the strength of their relationship, and Native Americans also show a significant relationship. For nonpark units (Table 5), African Americans, Hispanics, and Asian Americans have significant relationships, including the strongest values for African Americans (0.360) and Asian Americans (0.695). Hispanics have a stronger relationship to National Parks (0.606) than to other park units (0.583); their concentration in California and proximity to Yosemite and Sequoia as well as to Everglades and Great Sand Dunes might help account for this. In contrast, African Americans and Asian Americans have stronger relationships to nonpark units, such as historical sites. This might be explained by lingering negative associations with nature and wilderness (Carter 2008).

Do Age and Size of the National Park Units Have Effects on Accessibility and Visitation?

The fifty-one park units investigated here are not homogenous but represent a variety of purposes, ages, sizes, and recreational opportunities. These parks were created between 1872 (Yellowstone) and 1998 (Minuteman Missile NHS) and range from 0.04 hectares (0.09 acres; John F. Kennedy NHS) to 898,317 hectares (2,219,791 acres; Yellowstone). Spearman

correlation coefficients were calculated between both visitation and accessibility and the size and age of national park units (Table 6). Newer park units tend to be smaller, reflecting the creation of many small NHSs and monuments in recent decades. Newer parks have lower visitation than older parks, again reflecting the smaller size and lack of familiarity of newer parks compared to the large nature parks of the late nineteenth and early twentieth centuries. Given that many of the most famous parks such as Yellowstone, Yosemite, and the Grand Canyon were among the earliest created as well as the largest, this might be considered the expected or “normal” relationship.

Table 5. Spearman's correlation coefficients between accessibility of other park units to population groups

Visitors %	Accessibility of other park units to population					
	All population	White	Black	Hispanic	Asian	Native American
All visitors	0.272**	0.230*	0.255*	0.470***	0.396**	0.371**
White	-0.080	-0.063				
Black	0.327**		0.360**			
Hispanic	-0.105			0.583***		
Asian	0.298**				0.695***	
Native American	-0.634***					0.118
N	37					

Note: Shaded areas highlight the relationship between accessibility and visitation by specific race/ethnic group.

*Correlation is significant at the 0.10 level (one-tailed).

**Correlation is significant at the 0.05 level (one-tailed).

***Correlation is significant at the 0.01 level (one-tailed).

Table 6. Spearman's correlation coefficient with year of park establishment, park area, and accessibility of parks by population groups and their visitation

Associated variables	All parks that have visitors data by race or ethnicity					
	National parks		Other park units			
	Year of establishment	Area of the park (acres)	Year of establishment	Area of the park (acres)	Year of establishment	Area of the park (acres)
Accessibility of national parks to the population						
All population	0.337**	-0.359**	0.509**	-0.288	0.057	-0.151
White	0.380**	-0.412**	0.591**	-0.446*	0.092	-0.194
Black	0.354**	-0.303*	0.809***	-0.398*	0.005	-0.071
Hispanic	0.141	0.001	0.090	0.086	0.060	0.153
Asian	0.106	-0.200	-0.324	-0.305	0.088	0.005
Native American	0.111	-0.020	-0.037	-0.446*	0.083	0.208*
Visitation						
All visitors	-0.387**	0.524**	-0.523**	0.525**	-0.292**	0.363**
% White	0.136	-0.085	0.518**	0.148	-0.083	-0.093
% Black	0.124	-0.090	0.050	-0.398*	0.171	-0.097
% Hispanic	-0.213	0.321*	-0.313*	0.318*	-0.054	0.348**
% Asian	-0.104	0.019	-0.767***	0.009	0.228*	-0.128
% Native American	-0.159	0.311*	-0.209	0.238	-0.168	0.367**
Association between areas of the parks and year parks were established						
Areas of the parks (acres)	-0.437**	N/A	-0.459**	N/A	-0.282**	N/A
N		51		14		37

*Correlation is significant at the 0.10 level (one-tailed).

**Correlation is significant at the 0.05 level (one-tailed).

***Correlation is significant at the 0.01 level (one-tailed).

Accessibility tends to be greater for newer park units and for smaller parks. These results are consistent with the expansion of the park system and the creation of many smaller historic sites located in or near urban areas. When National Parks and other units are compared separately, these relationships become more pronounced. The correlation between park year of establishment and accessibility to African Americans is exceptionally strong (0.809), indicating that the park system has expanded into areas where this population is located.

The percentage of visitors who are white shows a positive relationship with year established (0.518), indicating that whites are more prevalent at newer National Parks (Table 6). For Hispanics (-0.313) and Asian Americans (-0.767), older parks attract more visitors. Although visitation continues to show a positive relationship with size, the percentage of African American visitors shows an increase for smaller National Parks. Given that many parks dedicated to African American history or individuals were created relatively recently, this might reflect a tendency to visit a more specialized (and newer) set of park units.

Summary of Findings

There is a relationship between park visitation and the location of minority populations relative to that of parks, as the composition of park visitation depends in part on the location of park units relative to particular populations. This in turn varies among racial or ethnic groups. Visitation by African Americans is greater for smaller National Parks but is not related to the size of other units. Hispanics are more likely to visit larger park units and older National Parks. Asian Americans have higher visitation to older National Parks, and for Native Americans visitation is greatest for larger park units but not related to the size of National Parks. The accessibility of African Americans is greater for smaller and newer park units. When National Parks are grouped separately, African Americans are still more likely to visit newer and smaller parks. For Hispanics, visitation is greater for larger park units regardless of whether National Parks are treated separately or not. For Asian Americans, the relationship between visitation and accessibility is strongest for National Parks. For Native Americans, accessibility is lower to larger national parks but higher for larger park units not designated as National Parks.

Much about these relationships clearly remains to be explored and understood, but these findings support the spatial marginalization hypothesis that park visitation patterns can be explained using the proximity of minority populations to park units. As would be expected, there are differences among racial and ethnic groups. For Hispanics the relationship is stronger with National Parks, suggesting that Hispanics prefer large nature parks to smaller historic sites or museums. For African Americans and Asian Americans, the correlations are stronger for nonpark units, indicating a preference for these sites over nature parks or for closer locations. No significant relationships were observed for Native Americans and only one for whites; in the former case it is likely that the visitation levels were too small to identify relationships, and for whites it is assumed that long-distance travel to parks is not a deterrent to visiting them.

Regional differences are apparent, as between the coasts and remainder of the country. Due to the small number of park units in the sample, this was not examined. Regional differences have been noted, however, as westerners were found to be more likely to be aware of and engage in opportunities for recreation in national forests than easterners (Johnson et al. 2007). Given the

prevalence of Hispanics in the Southwest and African Americans in the Southeast, this regional difference might help explain visitation differences among groups. Lists of parks by theme, such as those involving African Americans, have been created. Nicodemus is the only one of the fifty-one to appear on one such list (African American Experience Fund 2008), however, whereas Dayton Aviation Heritage, Nicodemus, and George Washington Birthplace are the only sites included by another (National Parks Conservation Association 2010). For this reason no separate testing was carried out by thematic subcategory.

Conclusions

This research has provided evidence that geographical distance is an important factor for explaining the variation of national park visits and experience by the minority population. Visitation by African Americans, Asian Americans, and Hispanics is related to their proximity to park units. This relationship is not apparent for whites, who make up the greatest number of park users, or for Native Americans, who contribute the fewest visitors. The findings suggest that the 1960s strategy of creating urban recreation areas to bring parks to the people is effective, and the movement of the NPS into cultural and historical themes has also been effective in bringing parks to people. These strategies can be expected to continue to be useful in the future.



Figure 11. The “monument to console the souls of the dead” at Manzanar National Historic Site. It is located in the cemetery where Japanese Americans were buried during their World War II imprisonment. Contemporary Japanese American visitors leave offerings on the shrine. *Source:* Wikipedia.

Proximity is not the only factor, however, and it is not equally important for all parks for all groups examined here. Many of the most popular parks in the system are located along the Appalachian Mountains and in large East Coast cities, such as the Great Smoky Mountains, Blue Ridge Parkway, or the National Mall in Washington, DC, where large populations of African Americans and Hispanics can be found yet are not always reflected in visitation statistics. The

results also offer additional evidence that parks have tremendous and varied significance to different people in different locations, and some have particular and perhaps quite different significance to particular populations that geographers have begun to investigate (Byrne and Wolch 2009). In addition to highlighting the importance of geographical distance between parks and people in understanding national park attendance, this research shows that minority visitation is often greatest at park units with a particular theme. For example, Manzanar NHS in California preserves the site of a concentration camp for Japanese American civilian families during World War II. It attracts a greater percentage of Asian American visitors than any other park unit (however, the visitor survey for the park reported that only 3 percent of its visitors were from another country, and only 0.5 percent of all visitors were from Japan, so the influence of international visitors on this site is much less than expected). The site remains a place of pilgrimage as well as one of contested meanings to whites, Japanese, and Native Americans (Hayashi 2003; Figure 11). Nicodemus NHS preserves buildings in a Kansas town settled by freed slaves after the Civil War and attracts a higher percentage of African Americans than any other unit surveyed. It is not located on a major highway and has limited visitor services. Pipestone NM contains a quarry where stone used to create ceremonial pipes for Native American religious ceremonies has been obtained for hundreds of years. Native Americans continue to visit and work the quarries today. These examples, as well as others not included in the fifty-one park units surveyed, provide strong evidence in favor of the subculture hypothesis, as well as for the existence of separate park systems serving different publics.

Manzanar, Nicodemus, and Pipestone are also small and specialized park units, however. While each of these sites offers examples and urgent lessons of how racial, ethnic, and religious minorities have been treated within the country, but it might be asking too much to expect a large and diverse attendance. Instead, larger, more diversified areas, such as Yosemite and Gateway, located in diverse states or cities on opposite sides of the continent, might offer a stronger model for a multiracial, multiethnic future for the park system, although with more challenges as well. More detailed studies of these parks; what they offer to different racial, ethnic, and other groups; and what has been done to encourage visitation by each of these, including the effect of Oprah Winfrey's October 2010 camping trip to Yosemite, would be immensely useful in understanding these issues.

There are clearly significant limits to what can be found using the quantitative survey data used here and different data are needed for a better understanding of the issues raised here. The park surveys used here do not include important variables such as income or household size and have only limited information about where visitors live. A relatively small number of respondents completed the survey over the course of one week, leaving the data vulnerable to random variations in visitation or even tour busloads of visitors skewing the results. If further gains in the national park visitation of minority groups are to be made, there is a need to make a qualitative leap in our understanding of the range of factors affecting the perspectives of minority populations. Qualitative data regarding particular park experiences and preferences would be helpful and have already been initiated by a few (e.g., Edmondson 2006; McCowen and Laven 2008). Long-distance household travel data that link origins and destinations, such as the National Household Travel Survey, could provide some additional insight into who is using parks and what factors are involved in these decisions. Given the ease and frequency with which African American presences in natural places are rendered invisible (Finney 2010), examining

the construction of parks as “white” places (e.g., Vanderbeck 2006; Carter 2009) would no doubt be a useful undertaking and contribute greatly to an understanding of how minorities perceive parks. Given that research on park carrying capacity requires visitor preferences and attitudes but might assume homogenous visitors (Manning 2007), this is an important topic.

Another issue is that the national park system is not always differentiated from other federal lands, such as national forests, national wildlife refuges, or lands administered by the Bureau of Land Management (BLM). These might offer comparable outdoor recreation experiences, although with different regulations and restrictions, and they are not always distinguished from national parks by visitors. As national forest lands are common in the Southeast where the African American population is greatest, as well as in the Southwest and California (along with BLM lands) where large populations of Hispanics and Asian Americans live, this might influence national park system visitation by offering a large number of competing (and perhaps more desirable) outdoor recreation destinations for minorities (although it could, of course, also inspire additional visits to park units). Additional work is necessary to determine to what extent different federal recreation lands are distinguished by users and how this might influence park visitation.

One limitation of this research is that it did not include the thirty-five park units in Alaska, Hawaii, Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Northern Mariana Islands, yet these areas are the most racially and ethnically diverse parts of the country. Including air travel in the formulation of accessibility would allow these areas to be included. Other significant issues involving visitation to the national park system have not been addressed here. Gender must also be taken account when discussing tourism (Pritchard and Morgan 2000), but there seems to be even less research on gender and national parks than on race or ethnicity. The role of women in creating, managing, and working in national parks has been explored (Kaufman 2006), but women as visitors appears to have been examined largely in regard to perceptions of fear in urban parks (Wesley and Gaarder 2004; Krenichyn 2006). Religion has been an issue in access to national parks and might be more influential in the future. Many Native American groups continue to struggle to have parks containing sacred places returned or managed more respectfully (Sproul 2001; B. Taylor and Geffen 2003). In 2006 a religious organization was prevented from restricting access to Martin's Cove, a federally owned historic site in Wyoming, to those visitors who walked through its church and subjected themselves to religious proselytizing (American Civil Liberties Union 2006). The needs of disabled visitors have not been fully addressed (Marshall 2008). The growing U.S. elderly population will likely lead to changes in park visitation and activities within parks, but this does not yet appear to have been examined. Entrance fees have been a part of national parks since 1908 but remain controversial due to the possibility that they could exclude segments of the population (Ostergren, Solop, and Hagen 2005). Not all park units have entrance fees, and those that do vary widely (e.g., Great Smoky Mountains is free, whereas the Grand Canyon and Yellowstone each charge \$25 per vehicle), and this might have effects on visitation in different areas of the country and further increase attendance variations among geographically concentrated populations. Even one's nationality can be an issue, as Port Chicago Naval Magazine NMem is open only to U.S. citizens due to its location on a military base.

A growing movement exists to encourage African Americans and others to discover and visit the national parks and other public lands (Peterman and Peterman 2009; National Parks Second Century Commission 2010). Raising awareness of the existence of these places and overcoming anxiety is a large part of the effort required. Park managers are well aware of disparities in visitors by race and eager to find ways to promote parks among minority populations (Schuett and Bowser 2006). A major obstacle is the lack of money. Funding for visitor services has declined \$40 million since 2001, potentially halting efforts to attract more diverse audiences at a time when it is more critical than ever.⁶

Although it is tempting to think of the location and number of national park units as fixed, this is not actually the case. New park units continued to be added to the system at a rate of about one per year (Barna 2010), and this will presumably continue, along with park boundary expansions and the designation of new wilderness areas. One way of increasing minority participation in national parks is therefore by increasing the number and type of parks, although, again, funding for this is critically short (National Parks Conservation Association 2010). Nonetheless, the recent growth of Civil Rights sites will likely continue, and the trend of creating presidential sites essentially guarantees a Barack Obama NHS in the future. As of late 2010 an NHS for labor leader and civil rights activist Cesar Chavez is being actively investigated by the NPS (Simon 2010), which would create the first park unit honoring a Hispanic American. Additional Hispanic and Asian American sites might be added in coming decades, and groups as yet unrecognized might also someday be represented. Part of Badlands NP could be transferred to the Lakota Sioux tribe, giving Native Americans a more direct ownership of the national park system (Janiskee 2010). With these changes the national park system can continue to remain relevant to the lives of all Americans and to citizens of other countries.⁷

The history of national parks shows that efforts to open the parks up to more people and encourage greater visitation can contain contradictions not well understood at the time. Park development efforts in the 1920s and the Mission 66 program that sought to rebuild park infrastructure in the 1950s and 1960s did so around the expectation that “nuclear families, with dependable incomes, a family car, and a paid family vacation” would make up park visitors (Foresta 1984, 56). Unfortunately “this view tended to obscure needs and values which were not those of the middle class” (Foresta 1984, 56). These programs might also lead to a counter movement, as when the automobile-oriented Mission 66 program was countered by the Wilderness Act and efforts at promoting scientific resource management of parks by the NPS (Foresta 1984; E. Carr 2007). Efforts to promote wider visitation in national parks by racial and ethnic minorities will achieve little if they are not based on the needs and preferences of these populations, and they can also be expected to be resisted and countered as well, including claims that minority visiting preferences (such as for traveling in large extended families) cannot be accommodated in a park setting or are somehow intrinsically incompatible with the ideals of national parks (for a few examples of these sorts of claims, see Peterman and Peterman 2009).

The national parks are not static or fixed in their composition and interpretation but are in part a mirror of values that Americans cherish (Dilsaver 2009). Declining visitation to parks has allowed special-interest groups representing activities detrimental to park resources, such as snowmobiling, to exert greater influence (Tweed 2010). The parks face many challenges in

coming decades, and loss of support from large segments of the population could be fatal to their existence. Ultimately, it is likely that we must rethink the concept of national parks:

If national parks are to survive in any significant form, their mission and management goals must be redefined, and that redefinition endorsed and accepted by the American public. The parks will have to undergo a metamorphosis that provides them with both new management goals in tune with our contemporary scientific knowledge and a redefined societal role that attracts new generations of users. Nothing less will succeed. (Tweed 2010, 186)

Notes

1. This sentiment was recently popularized by filmmaker Ken Burns's PBS documentary and book (Duncan and Burns 2009) and is also well known from the 1983 essay "The Best Idea We Ever Had" by Stegner (1998) but apparently originated in a 1912 comment by Lord James Bryce, the British ambassador to the United States.
2. There is a debate about long-term shifts away from outdoor activities toward indoor, passive, digitally based recreation (Pergams and Zaradic 2008; Warnick et al. 2010), but this issue is not addressed here.
3. The idea of national parks has spread throughout the world, resulting in a proliferation of designations, management objectives, and standards, the meaning of which differs widely among countries (Frost and Hall 2009). The designations used here for U.S. park units will therefore not translate well into other contexts. The focus here is not on the level of protection for natural resources, as in the classification used by the International Union for the Conservation of Nature and Natural Resources (IUCN 1992), and the units of the U.S. national park system discussed here appear in several IUCN categories. We also recognize that the relationships between indigenous peoples or minorities and parks are an equally or even more contentious issue in many other countries (Zeppel 2009).
4. For long-distance travel incorporating airline travel times into accessibility calculations would be useful. The methodological and computational details of air accessibility would add considerable complexity to the study, however (Grubestic and Zook 2007). Multimodal accessibility calculation has been measured with travel times by appropriate mode between cities (Paez 2004), but for this research travel times must be calculated between each park to each county centroid. This would require a more sophisticated methodology, using either entirely highway or a highway-air-highway route, depending on distance, proximity to airports, flight schedules, and cost, similar to that used by Lewis and Ammah-Tagoe (2007) to estimate shipping routes using highway, air, rail, and water modes. This is beyond the scope of this work, but it is clearly an important issue for further research.
5. The racial categories used in the surveys are consistent with that of the 2000 census except that there are no Other or Two or More Races categories. Respondents were allowed to indicate multiracial status, however, by selecting more than one race, and the numbers do not necessarily add to 100 percent. Although the surveys do include respondents by country of origin, the race

and ethnicity numbers are not broken down by origin and are assumed here to correspond to the U.S. population. Native Hawaiians and Pacific Islanders were not examined in this study due to their extremely small visitation numbers, as they were present at only twelve of the fifty-one park units and averaged only 0.25 percent of all visitors at those.

6. The national parks are also at the forefront of many environmental problems that provide additional challenges to the future of the system. This research in no way denies these issues but suggests that increasing public support for parks is essential to meeting them. Although the reintroduction of wolves to Yellowstone National Park has appropriately received tremendous attention, it can be argued that the presence of African American families in that park might be of far greater significance to the future existence and environmental health of Yellowstone.

7. Three Civil Rights Movement sites in Alabama not part of the national park system are currently under consideration for nomination as UNESCO World Heritage Sites (NPS 2010b).

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