

---

# Parks and Under-served Audiences: An Annotated Literature Review

---

Compiled and written by:

James L. Pease, Ph.D.

Emeritus Assoc. Professor

Natural Resource Ecology and Management

Iowa State University

Ames, Iowa

Email: [jlpease@iastate.edu](mailto:jlpease@iastate.edu)

July, 2011

By contract with Monica Post, MPR Museum Consultants  
on behalf of the National Park Service.

## Contents

	Page
Summary/Abstract.....	1
Introduction to the issue and reasons for this review .....	3
Studies of race and ethnicity prior to Year 2000.....	5
Subsequent studies by group—an introduction.....	15
Cross-cultural studies .....	17
African-Americans .....	24
Hispanics .....	29
Asians .....	34
Native Americans/Aboriginals .....	35
People with disabilities .....	43
Recommended practices .....	47
Conclusion.....	61
Literature cited .....	63

## Summary/Abstract

In the 1970's, there began to be a realization that parks, monuments, and other recreational areas were not visited by people from minority racial and ethnic groups in proportion to their representation in the U.S. population. Parks personnel realized that the demographic trends in the U.S. would accentuate the problem in the decades to come. They worried that, as traditional white, middle class visitors became less dominant in the population, support for parks would erode. Further, if the intention is to have Americans be ecologically and historically literate and parks are to be an important part of that effort, the lack of visitation by other racial and ethnic groups will mean a significant part—maybe a majority—of the population will lack that literacy.

Social scientists studied the problem throughout the last third of the 20<sup>th</sup> Century. While initial studies worried that racial and ethnic minorities didn't have the same concern for the environment as the dominant white culture, later studies showed the fallacy in those early findings. At the end of the 20<sup>th</sup> Century, *Floyd, (1999, 2001)* wrote about the four major theories in the literature that attempted to explain reasons for lower visitation rates to parks and other wild settings among racial and ethnic minorities. The theories explaining such non-use included:

1. the marginality hypothesis (groups lack the resources to participate socially, from past discrimination, and economically);
2. the subcultural hypothesis (racial and ethnic groups have different value systems and socialization practices that preclude some from participation in outdoor recreation, independent of socioeconomic factors);
3. assimilation theory (the degree to which a group is assimilated into the dominant society—acculturated—is reflected in their park use);
4. discrimination hypothesis (park use is affected by actual or perceived discrimination, past discrimination, and institutional discrimination, both real and perceived).

Studies of various sub-groups and cross-cultural studies continued throughout the first decade of the 21<sup>st</sup> Century. While the marginality hypothesis has gained prominence, all four of the explanatory theories have proven to be explanatory for some groups in some locations at some times. The barriers that prevent many underserved groups from using parks, monuments and other recreation areas have been identified. Roberts summed them up well in her 2007 paper:

1. access (including transportation or lack thereof, costs, and fear of the outdoors)
2. communication (including language barriers of printed materials, signs, etc.)
3. fear of discrimination (cultural, actual verbal and non-verbal messages from other visitors, overwhelming posted park rules, signs and brochures not reflective of their culture/race [see McIntosh essay...])
4. lack of knowledge, experience, awareness (what to do, where to go, how to get there, equipment needed, etc.)
5. lack of diversity on staff (their group is not represented on staff or ONLY in janitorial or maintenance positions.)

And while research is continuing to sort out the reasons, more attention is being paid to solving the problem. Potential solutions remain difficult but are possible and are suggested by many authors. They include possible solutions that address each of the major barriers, above. In sum, they involve beginning the hard work of changing the culture of the parks, monuments, and

museums, moving organizations to become a part of the larger community contexts in which they reside, engaging those communities. While each park, museum, historic site, aquarium, nature center, etc. is unique in its geographical context, all can benefit from introspection, examining their unique strengths, the audiences they serve and don't serve, and how to become relevant and valued by a true cross-section of the communities in which they exist. It involves learning more about the multi-cultural context in which they work, valuing that context, forming authentic partnerships, and being open to change. It will cost money to modify the variety of media utilized in these settings and to mentor and change staff. It will mean, no doubt, a great deal of discomfort for many folks. Change is like that. In the end, however, parks, monuments, and museums will be better for it, as will the broader spectrum of people that will come to visit.

This review includes articles from 17 different peer-reviewed journals primarily from the year 2000 to 2010, some conference proceedings, and some technical reports. I have included some articles from somewhat earlier to add some historical understanding. I have also included some chapters from books that I think are particularly useful. Literature citations of nearly 100 articles are included. While this review likely does not include every relevant article published 2000-2010, it is sufficient to give the reader a sense of the current state of the profession in regards to serving currently under-served audiences.

## Introduction to the Issue and Reasons for This Review

Parks and monuments are an important part of the American landscape. They are symbols of our values, representing our natural, cultural, and historical heritage. Whether they are city, county, state, or federal entities, they are a public recognition of that heritage. They are supported them with tax dollars, with volunteer dollars, and with countless hours of volunteer effort.

At the same time, the population is diversifying. Through the first half of the 20<sup>th</sup> Century, the U.S. population was composed primarily of white Euro-Americans, African Americans, and Native Americans. Since then, immigrants from Central and South America and Asia have increased the diversity of the population, racially and culturally. Depending on whose estimates one uses, between the years 2030 and 2050, white Euro-Americans will comprise less than 50% of the population and “minorities” will become the majority. Hispanics, made up of people from a variety of cultures, races, and Spanish-speaking origins, will likely be the largest of the “minorities”.

That changing demography should not be of concern, it is argued. After all, isn't the U.S. a country that is a “melting pot”, made up of immigrants that share a common desire for freedom and are gradually acculturated to a common culture? While some would argue that is what makes up U.S. history, others posit that history is not one of a “melting pot”, but rather of a multi-cultural make-up, with varying degrees of tolerance for differences, racially and culturally.

Whichever version of history one subscribes to, it is clear that the future will challenge the “melting pot” idea. From a parks standpoint, will the future mix of people, a mix of histories and cultures, continue to support the parks and monuments that reflect a set of values that are a product of the first 200 years of nationhood? Will they continue to visit these areas, celebrate their history and their beauty, protect their existence, and provide future support with their money and their time?

This paper attempts to address those questions by looking at what the published literature tells us about demography, the use of parks and other areas by a variety of groups, the values that various groups hold that are consistent with or in opposition to parks and similar areas, and what the literature suggests are practices that National Park Service staff and other people should follow that will enhance the future of the parks, monuments, and other areas.

This review includes articles from 17 different peer-reviewed journals primarily from the year 2000 to 2010, some conference proceedings, and some technical reports. I have included some articles from somewhat earlier to add some historical understanding. I have also included some chapters from books that I think are particularly useful. I have also included some articles from *Legacy*, the magazine of the National Association for Interpretation and from a now-discontinued NAI magazine, *The Interpreter*. *Legacy* is published 6 times per year and contains articles, columns, and commentaries relevant to frontline interpreters, planners, and managers. While it is not a research publication, *per se*, and not “peer reviewed” in a strict sense, it is a “must read” for many natural and cultural interpreters (together, termed “heritage interpreters”) in the frontlines of interpretation. This gives a sense of what they are reading. A literature cited

section of nearly 100 articles is included. In addition to those, I reviewed another 45+ articles that I determined were not directly relevant to under-served audiences. While this review likely does not include every relevant article published 2000-2010, it is sufficient to give the reader a sense of the current state of the profession in regards to serving currently under-served audiences.

## Studies of Race and Ethnicity Prior to Year 2000

*Meeker's 1973* essay was one of the earliest to call attention racial differences in the use of U.S. National Parks. They are, he asserts, the “remnants of the Jeffersonian dream of a garden utopia.” But, he notes that it is a “source of embarrassment” to the National Park Service (NPS) that the parks have not appealed equally to all in the American “melting pot”; rather they are “playgrounds for the [white] middle class”, not for the poor, racial or ethnic minorities.

Meeker noted that the Jeffersonian view of America as a garden was not that of Native Americans—killed and subjugated by Jefferson—nor of black Americans who were the slaves of Jeffersonian America. “It is thus no wonder that the great national parks created by white men in Africa and America have always been difficult for the natives of both places to understand. Their inherited mythology simply does not support the idea of separate value systems for nature and for humanity.” In addition, the author feels, red and black men “have learned in pain that their association with the land is a source of misery and humiliations, not of peace or fulfillment. Black and Indian values today not only lack the pastoral garden imagery reflected in the National Parks, but both are in some ways hostile to that imagery.” The author quotes Eldridge Cleaver—who may or may not be an appropriate spokesman—who said that blacks find solace and release, he says, in the presence of other black people, not in wild national parks. For Native Americans, National Parks are seen as “places of humiliation”, symbols of the white conquering of the West and the destruction of their culture. Perhaps much has changed in the nearly forty years since this paper was published.

Some 15 years later, an essay was written by the associate director of a women’s studies program at Wellesley College (*McIntosh, 1988*). A Caucasian woman, her intention was to bring attention to “white privilege” and how it can color attitudes toward racism and sexism. “I think whites are carefully taught not to recognize white privilege, just as men are taught not to recognize male privilege.” As a white woman, she began to examine her own privilege and came to see it “as an invisible package of unearned assets...a weightless knapsack of special provisions....” By examining it closely, she “began to understand why we [white women] are justly seen as oppressive [to black women], even though we don’t see ourselves that way.” She distinguishes skin-color privilege from class privilege, though the two may overlap. She lists 26 privileges accorded to her solely by her race. She notes that such unearned privileges assert an

unearned dominance, which can easily be taken for granted.

McIntosh intended her provocative essay to stimulate conversation among and between races. It might be useful, in some parks, to have staff read this essay and discuss it. It may help to reveal why some racial or ethnic groups prefer not to visit a park. It may help, perhaps, to redesign them as places more welcoming.

Throughout the late 1980s and 1990s, social science researchers modified their approaches and applied their research methods to human/natural resource interactions. Among their interests were attempts to tease out racial, ethnic, and gender differences in attitudes and behaviors towards parks and other natural resource issues.

At a special session of the 4<sup>th</sup> North American Symposium on Society and Natural Resources in 1993, several authors reported on minorities and the environment. *Dwyer (1993)* used random telephone surveys to sample the outdoor recreation preferences of white, black, Hispanic, and Asian respondents in Illinois. He found significant differences between groups in their preferences for a list of 31 different activities. In particular, he noted differences between blacks and whites, with blacks travelling less to wild outdoor places and more to more developed locations than whites. He also warned against classifying all ethnic groups as “minorities” and lumping them together as such, assuming that, compared to whites, they were all similar. His data found that they were not; rather there were significant differences between all 4 groups in the types and frequency of preferred outdoor recreation experiences.

In another paper from the same symposium, *Schwab (1993)* noted the rise of blue-collar communities and minority communities in fighting for environmental justice in their communities, especially as concerns over industrial pollution and impacts on health and welfare. The author noted that previously, the environmental agenda was dictated largely by national organizations. More recently, however, grassroots movements concerned with their own health and welfare in their communities had captured much momentum. In particular, the author noted the interethnic cooperation that such issues have engendered, putting the focus on solving the problem, rather than an inter-ethnic strife. While class differences did persist (particularly with more middle-class white environmentalists), the inter-ethnic cooperation was considerable.

Another paper at that same conference used focus groups of university students to investigate in more depth the racism

concerns of participants while engaging in various park and forest recreational pursuits (*Blahna and Black, 1993*). They found racism to be both more pervasive and complex than previously thought. They identified 6 different expressions of racism, both institutional and interpersonal: experience of racism from other users; differential upkeep of facilities (especially in local parks); racism from professional park staff; fear of expected racism; socialization from historical racism; and social effects of past economic discrimination.

The authors noted that racism could be overt or covert, personal or institutional. While the overt and personal forms may become less common over time as society becomes more accepting of differences, the institutional barriers were both more disturbing, in some ways, and harder to dislodge. Both the direct experiences and the institutional racism examples the authors cited were particularly poignant. They noted that there were more comments of expected racism than actual experiences. It points, however, to the pervasive nature of racism and the impacts it has on behavior.

The authors looked also at the historical basis for racism and the cross-generational impacts it can have. These authors, however, found it to be more important in local parks, where parks were seen as the “turf” of certain Chicago neighborhoods and were locations of actual violent confrontations in then-recent history. They gave examples, however, of where cultural biases do not coincide with chosen behavior and posit that their research does not support Meeker’s ideas of 2 decades earlier (*Meeker, 1973*) that discussion of recreational differences was ethnocentric. It was simply too simplistic, they found, to attribute differential uses to ethnic preference.

They suggested: more training of existing staff, greater staff racial and ethnic diversity, and more opportunities tailored to attract different ethnic groups to overcome their fears.

In a written introduction to a panel discussion (the transcript of which is *not* included unfortunately), *Sucec (1997)* details the statutory requirements for NPS consultations with tribal groups as well as the complaints about them from both sides, NPS and tribal groups. The author notes that while consultation is required, there was no legislative definition of what that entailed. The independence and uniqueness of Native American tribes means each may need to be approached differently. Timeframes and priorities may be approached differently in the agency and the tribes. Perceptions differ also on how requests are received,

They suggested:  
more training of  
existing staff,  
greater staff racial  
and ethnic  
diversity, and  
more  
opportunities  
tailored to attract  
different ethnic  
groups to  
overcome their  
fears

whether they are taken seriously, and whether or not they are implemented. The author points out that in interpretation, particularly, consultation is critical in order for the information to be accurate and appropriate and dispels myths regarding Native Americans. Funding, time, and logistics are often difficult, but often must be managed due to agency mandates.

Investigating a group of recent immigrants, *Hutchison (1993)* conducted interviews of 125 Hmong households in the Green Bay, WI area. The author noted the strong family and communal relationships that were inherent in Hmong culture, even among those transplanted onto the American landscape. Two primary outdoor recreation activities were especially important: 1) hunting and fishing; and 2) outdoor community events in public parks, especially involving picnicking, soccer, and volleyball (which were segregated by age and gender). He noted that these were similar to Hispanic use of local parks reported by other authors. While hunting and fishing were subsistence activities in Laos, they appear to have become recreational for Hmong males in the U.S., giving them a connection to their past and their Laotian cultural origins. He noted that a major difference from much of the dominant U.S. culture was the emphasis on family and extended family in Hmong culture: recreation and family were not separate, but taken together.

Some authors explored audiences that have been here much longer. *Richter (1996)* wrote of the need to include American Indians as true partners, not just “advisors” on projects that interpret Native American culture and artifacts. The author’s experience as an interpretive planner includes working with Agate Fossil Beds National Monument (NE) to interpret Lakota Sioux culture, photos, and artifacts related to the site. NPS staff cultivated a personal and trusting relationship with tribal elders, meeting with them on the Pine Ridge Reservation and in their homes. The paper details the working relationship that developed between Pine Ridge elders, NPS staff, Lakota educators, artists, and historians to accurately depict and place artifacts in proper context for interpretation. The author indicated how the partnership significantly changed both the artifacts that were used and the historical context in which they were interpreted. Without engaging the Lakota as true partners, the exhibit would likely have created additional resentment and mistrust. As a result, Lakota visitation to the Monument has been noted and future collaboration is planned.

*Ballantyne (1995)* interviewed Aboriginal and non-Aboriginal interpreters (14 total) about interpreting Aboriginal culture in

Australia. It became quickly clear that there were 2 concepts: Aboriginal culture is what existed in the past, pre-European occupation of Australia; and, alternatively, Aboriginal culture is a continuum, including the present and the past, including pre-European and post-European presence, up to the present. The latter was the dominant theme. The conclusion of all was that the wishes and views of indigenous people must be a major consideration in interpreting such people and their culture. Where this does not occur, interpretation may be seen to be exploitive. Further, it must take into account the dominant ways that people understand their culture. In the case of Australian Aboriginals, it was mostly an oral tradition; therefore, they wished to share it orally, face-to-face (guided walks, dance, music, stories, cooking), rather than through signage or books.

Importantly, if Aboriginal culture is seen as both past and present, as evolving and contemporary, then it must include the impacts of European occupation on that culture, the contributions to Australian society that Aboriginals have and continue to make, and be willing to confront the controversies as well—the missions, the stealing of children, the massacres, the murders, the alcoholism, the poverty. These things are not easy for visitors—who may NOT want to be more than voyeurs—or white Australians and Aboriginals to confront. However, it will hopefully help in reconciliation.

There was also consensus: certain sites and information are sacred and will not be shared. Thus, interpreters must adopt a consultative approach with Aboriginals, including planning, design, content, and management. [It's happening across much of Australia right now: APS is gradually giving total management of Uluru (previously called Ayers Rock) to local Aboriginals.]

Implications for U.S.: there is a need to adopt a more consultative approach in interpreting and managing parks and sites involving Native Americans and African Americans. We need to be willing to confront uncomfortable realities and histories in the spirit of reconciliation. There are Civil War sites, for example, that have a wholly different meaning to African Americans to which dominant white culture—Confederate *or* Union—may be oblivious.

A survey of 77 nature centers in Florida in the 1990s (*Jacobson, et al., 1997*) found that those centers had few minority staff—even fewer in front-line education positions, served mainly school groups (often with large minority populations), and offered very few programs that attracted minority adults. Two thirds of the

We need to be willing to confront uncomfortable realities and histories in the spirit of reconciliation. There are Civil War sites, for example, that have a wholly different meaning to African Americans to which dominant white culture—Confederate *or* Union—may be oblivious.

surveyed centers, in fact, offered little or no encouragement for minority participation in programs while another third offered specially designed programs for culturally diverse audiences. Further, most programs contained little or no emphasis on knowledge or attitude formation about local environmental problems or human-environment interactions. They cited findings of other authors that minority groups were often more engaged in environmental issues that were locally based.

The authors offered suggestions for minority participation improvement: more minority staff as role models; basing programs on topics relevant to their environments; and transportation arrangements to the centers for minorities from surrounding communities.

Minority staff interviewed at the centers felt that to improve minority involvement, children needed more long-term involvement and childhood experiences, more school experiences. They also suggested more adult education, linking involvement to environmental improvement on the local level and the use of more experiential approaches. The authors suggested that the more relevant a program is—something beyond nature awareness—the more likely it is to attract broader audiences. They suggest that more training for interpreters in take-home messages may be necessary to get them to move beyond knowledge-based nature awareness programs.

*Lewis and James (1995)* wrote a commentary on the state of environmental education (EE) relative to its alleged inclusiveness. The authors noted that the lack of diversity in various curricula (emphasizing the values and lifestyles of mostly middle class white people) may restrict the diversity of people involved in the field—which in turn impacts perceptions of inclusiveness and people not entering the field. The authors called for increasing the racial and cultural diversity of those who were setting the agendas for EE. While they referred primary to EE in formal school-based programs, it certainly could be applied to EE in non-formal environments, as well, including parks, nature centers, visitor centers, etc. They refuted misconceptions concerning the interests of minorities in environmental issues and environmental careers, which issues in EE that get attention have “universal appeal” and that EE programs have appeal to all. They suggest, instead, that educators recognize the social, economic, and political components of environmental issues and draw educators from other, more diverse, fields of study to broaden their perspectives. [Interestingly, they do not suggest drawing from NGOs or environmental justice groups beyond the

The authors offered suggestions for minority participation improvement: more minority staff as role models; basing programs on topics relevant to their environments; and transportation arrangements to the centers for minorities from surrounding communities.

“educational” community.]

*Bixler and Floyd (1999)* authored a study on the “disgust sensitivity” (DS) of 450 Texas middle school children. They found that students with a high DS disliked activities that required any manipulation of organic materials. They did not differ, however, from students with low DS on activities that required only observation. Similarly, the high DS students chose, for an aquatic invertebrate activity, waters where they were least likely to be successful in finding invertebrates: clear, no algae, easy lakeshore access. Though they classified the students as being from rural or urban schools, they gave no analysis that indicated whether or not that was a correlational factor.

The implications for interpreters, I would suggest, are that if they are having difficulty attracting certain groups to their facility, they might explore if “disgust sensitivity” of the group could be a factor. While I have found no research, to date, that would indicate the disgust sensitivity based on race or ethnicity, there is research to indicate that urbanization and the lack of contact with wild things while young can be a factor (*Chawla, 1998*) leading them to avoid facilities that are “wild” and, therefore, “dirty” or “disgusting”. Since most interpreters with whom I am familiar have extremely low DS scores—in fact, often reveling in things many find appallingly disgusting like insects, snakes, slugs, dirt, swamps, and the like—it is often difficult to understand or tolerate others’ disgust in them. We may need to examine our programs—or at least their names and how we present them and market them—if we want to attract groups that may have high “disgust sensitivity.”

In a book by *Uzzell and Ballantyne (1998)*, the authors recount what they call “hot interpretation”—involving the emotions in interpretive presentations to provoke understanding and involvement. Through relevant examples, they reveal the impacts of time and distance from an event and how visitor engagement depends in large part on the degree to which they might be involved in an event or the symbolism of a site. Audience, as usual, is critical. “The recency of hot events can make interpretation difficult as they cannot easily be placed in larger historical continuity and context.”

The authors also reflect on the abstraction of events that are “placeless” and whether and how they might or might not be interpreted. Related to that is the proximity effect, well-known in sociological studies: that is, problems viewed locally are not considered as problematic as those seen at greater distances, allowing individuals to absent themselves from responsibility for local problems and push it off to governments and “others” with

We may need to examine our programs—or at least their names and how we present them and market them—if we want to attract groups that may have high “disgust sensitivity.”

more distant problems. They suggest hot interpretation helps people move to action locally and gain empathy for others globally.

They suggest that “hot interpretation” ought to be used “wherever we find a conflict between people” where interpretation can serve “a community development function”. [That might be stretching it a bit, I believe, especially where inexperienced, insensitive, or lesser skilled interpreters are involved.] They give examples of how interpretation has helped heal in post-Apartheid South Africa and helped Aboriginal communities in Australia to get out the stories they desire to tell about the impact of European settlement on their culture and communities, to remember that past, not forget about it. They note that such uses are not sensationalistic, an attempt to increase tourist numbers; rather, they posit that hot interpretation, properly handled, can help people more fully understand and more deeply appreciate a site—to bring people together in understanding and not encourage division.

An article by *Vial (1999)* emphasized the integration of cultural and natural environments in interpretation. The author concludes that they are inseparable, that to ignore the relationship between people and the land is to “tell only part of the story.” She notes that naturalists would never exclude a plant or animal species simply because it was rare. Similarly, she reasons, minority populations should be treated with at least the same respect.

*Zelezney, et al. (2000)* went beyond the ethnic and racial differences and explored gender differences in environmentalism. They concluded from three studies that women have stronger environmental attitude and behavior scores than men, with behavior stronger than expressed attitudes. They reported on studies that show consistency across age and across 15 countries. They explain this gender difference on the basis of a third study that showed that women were socialized to be more “other-oriented” and thus more socially responsible, although only 5% of the variance in male-female NEP scores and 6-8 % of the variance on other scores was accounted for by gender.

*Gomez (1997)* stated that marketers of recreation sites often fail to understand minority attitudes and perceptions of a destination. He noted that, while marketers will consider time and disposable income, they were not accustomed to looking at language or perceived discrimination as barriers. He noted that marginality theory shows that leisure norms were different in minority population than in traditional U.S. white populations due to cultural and value differences. He noted that previous research

was focused almost exclusively on black-white differences on a racial basis, not on a broader set of minorities that, for example, includes Hispanics or Asians. He felt that ethnicity must be a factor in future research. Some studies were criticized, he noted, for not focusing on the impact of discrimination in recreational choices and for making assumptions about ethnic groups being homogenous across regions. There is diversity *within* groups, as well.

He noted that the trend to multiculturalism, rather than the supposed “melting pot”, is a challenge for tourism marketers and that it is changing the landscape rapidly. The future, he noted, is for sites/destinations to appeal to a multicultural (and multi-lingual) market.

At the end of the decade, *Floyd, (1999, 2001)* wrote about the four major theories in the literature that, to date, attempted to explain reasons for lower visitation rates to parks and other wild settings among racial and ethnic minorities. The author noted that the 1997 NPS Strategic Plan labeled the low use of NPS sites by racial and ethnic minorities “an important cultural and social issue.” The theories explaining such non-use included:

1. the marginality hypothesis (groups lack the resources to participate, socially, from past discrimination, and economically);
2. the subcultural hypothesis (racial and ethnic groups have different value systems and socialization practices that preclude some from participation in outdoor recreation, independent of socioeconomic factors);
3. assimilation theory (the degree to which a group is assimilated into the dominant society—acculturated—is reflected in their park use);
4. discrimination hypothesis (park use is affected by actual or perceived discrimination, past discrimination, and institutional discrimination, both real and perceived).

Though hampered, in my opinion, by using only papers from four major leisure studies journals, the author did a good job of gathering and summarizing a lot of the research in the arena from the 1960s through the mid-1990s on race, ethnicity, gender, and park visitation. He noted that, in particular, studies of park use and recreation preferences tended to concentrate on differences between African Americans and Whites and only more recently had included studies on Hispanics, Asians, Native Americans, and others or gender differences. Most studies had found substantial and demonstrable differences between white and black populations in particular. He also noted differences, especially

with studies of Hispanic Americans use of parks, in the *style* of use, rather than on under-representation relative to their population. Especially noted were studies showing large extended family use of parks.

“Without greater visitation and interest from among those populations that are growing most rapidly, national park programs over time are likely to be supported by a smaller and shrinking segment of the U.S. population. The major challenge for NPS, in light of these trends, is to make the national parks more accessible and appealing to an increasingly multicultural society.” (Floyd, 2001, p 43).

Conducted in 1999 and 2000, *Rodriquez & Roberts’ (2002)* report summarized the literature, to that year, of studies in the areas of race, class, and gender in relation to participation in outdoor rec activities. The report synthesized site visits to 3 NPS regions, information acquired on those visits about interpretive and outreach programs for underserved audiences from those visits, and the literature search to obtain a state of the knowledge through year 1999 and resulting recommended research agenda. The authors attempted to limit studies to research that encompassed all three aspects of race/ethnicity, gender, and social class, but little research encompassed all three variables simultaneously.

The authors found that several themes emerged. One was the inadequacy of knowledge about the preferences for park and recreation activities among minority communities. Another involved inadequate research on the effectiveness or impact of park interpretive programs. There was also concern expressed about how deeply NPS staff cared about diversity matters, especially since they were often “top-down” mandates. The authors also found the published literature to be lacking in understanding the recreational desires of many under-served groups and the degree to which they are attached or felt affiliation or alienation from parks.

The NPS regions reported a number of challenges to their programs. In common among them were:

1. Need for additional and more diverse staff;
2. Building relationships with community groups where distrust still exists;
3. Creating an atmosphere that is welcoming for diverse groups;
4. Transportation of under-served groups to sites;
5. Lack of sufficient resources to achieve legislated mandates.

The authors concluded that many NPS units were “serious” about being inclusive and about increasing service to under-represented

In common among NPS Units were:

1. Need for additional and more diverse staff;
2. Building relationships with community groups where distrust still exists;
3. Creating an atmosphere that is welcoming for diverse groups;
4. Transportation of under-served groups to sites;
5. Lack of sufficient resources to achieve legislated mandates.

audiences. They felt, however, that it was “too early” to judge success of the programs. What was important, the authors felt, was “their intentions to be inclusive” and their “level of interest”, not necessarily the results.

### **Subsequent Studies by Group—An Introduction**

By year 2000, then, the concern for visitation of parks and other areas by people that were a true cross-section of American society was well established in the literature. Social researchers had several working hypotheses as to why parks and monuments were less visited by some racial and ethnic groups and, when they did visit, that their use patterns were different. Work on those hypotheses continued into the last decade, 2000-2010. I present a review of several cross-cultural studies first and then studies that involved particular groups. While I have concentrated on studies that concern primarily North American groups, I have included a few from other countries where they contain relevant issues or perspectives that I believe might be helpful.

There are a number of initials referred to in these next few sections. They represent a small sample of the “alphabet soup” that social scientists use. Some clarification is in order.

“NEP” refers to the “New Ecological Paradigm” (which replaced the earlier “New Environmental Paradigm”), which many social scientists argue emerged in the 1970s in the American public. The NEP scale emerged in the late 1970s and 80s: given changing circumstances in the environment (increased pollution, overpopulation, fewer technological “quick fixes”, etc.—or, at least, more awareness of these things), it was argued that a new worldview was emerging called the New Environmental Paradigm, later called the New Ecological Paradigm. The scale developed was meant to measure various aspects of human relationships with nature, seeing humans as part of nature, responsible for stewardship and preservation of nature.

“HEP” refers to the “Human Exception Paradigm” and is a scale that purports to measure people’s attitudes in relation to the environment. However, this scale tends to measure the degree to which people believe in dominance over nature, their separateness from nature, and humans’ right to change nature to meet human needs. In that sense it measures attitudes in opposition to the NEP.

“NSRE” is short for the National Survey on Recreation and the Environment, a survey conducted in the U.S. every few years. It uses

telephone surveys to randomly sample a cross-section of over 50,000 U.S. residents. Respondents are asked questions regarding outdoor recreation participation, environmental attitudes, natural resource values, constraints to participation, and attitudes toward management of public lands.

“TEK” refers to “Traditional Ecological Knowledge”, argued to be possessed by various aboriginal groups that lived for thousands of years (in the U.S., Canada, Central and South America, Australia, and some other countries) prior to European colonization. It is argued that TEK is the knowledge that was passed on through stories and other socialization in those cultures that taught how to manage the natural resources (or, collectively, “the land”) in a way that sustained those civilizations for thousands of years. TEK is often portrayed as in opposition to Western scientific knowledge, though some have argued they are “parallel ways of knowing.” Some researchers also refer to this as “IK” for “Indigenous Knowledge”.

## Cross-Cultural Studies

During the first decade of the New Millennium, a number of researchers used a variety of methods to try to tease out both the barriers to participation and the types of uses that various minority groups bring to parks. The attempt is to differentiate them, if possible, from the Whites that have traditionally used parks. By doing so, researchers hoped to help park managers overcome barriers, provide adequate facilities, and communicate more effectively with those groups.

A paper by *Solop, et al. (2003)* was based on the 2000 National Park Service (NPS) Comprehensive Survey of the American Public that phone interviewed over 3,500 U.S. households. Among the findings were that 32% reported visiting an NPS unit in the previous 2 years, including 36% of white non-Hispanics, 33% of American Indians, 29% of Asian Americans; 27% of Hispanic Americans, and 13% of African Americans. Important barriers to visitation included costs, lack of information about what to do in parks, and travel distance. Crowding was a barrier to some. African Americans were three times as likely as whites to say that they received poor service from park employees and felt uncomfortable as visitors to the parks.

Data from the NSRE and NEP was used to track demographic differences, recreation activities, and stated environmental positions based on race, country of birth, and other demographic factors (*Cordell, et al., 2002*). They found, among other things, that the fastest growing recreational activities to be bird watching, hiking, backpacking, and snowmobiling. They also found Americans to be strongly environmentally oriented, according to agreement with the NEP. When correlating attitudes and activities with race, origin, and culture, the authors found large differences in NEP score trends with race and age. They predict rising income will find the changing population to recreate more in parks and other areas and have “greener” environmental attitudes.

A study by *Johnson et al. (2004(a))* used national data (from the 2000 NSRE) from telephone surveys to ~3,500 U.S. households to examine ethnic differences in the NEP in 4 aspects: environmental reading, household recycling, joining environmental groups, and participation in nature-based outdoor recreation. They found blacks and foreign-born Latinos scored lower than whites. Asian-Americans and US-born Latinos were found similar to U.S. whites in environmental concerns. African-Americans were least similar to whites among the ethnic groups. But, differences between whites and the other groups varied,

depending on the environmental behavior. [Of course, the NEP is a U.S. white construct, based primarily on the rise of the U.S. environmental movement in the 1960s and argues that it brought a fundamental shift in attitudes toward nature.]

These authors believe that it is not reasonable to assume that all sub-groups—in this case, ethnic groups—in a country would hold the same worldviews, given that they have different positions, incentives, and attitudes within the culture. That is, in a multicultural society, sub-cultures might have entirely different worldviews. Given measures of differences between U.S. culture and other cultures in environmental beliefs, it is reasonable to expect that immigrants from those cultures might also score differently. They seem to.

The authors also note that some have argued that the human/nature holism attributed to Eastern cultures is really more of a Western construct than an oriental reality—in fact, environmental degradation by humans takes place everywhere.

All NEP scores were positive, with foreign-born Latinos slightly lower, as per other studies. Not surprisingly, they found within-group variation in environmental attitudes and behaviors to vary with income, gender, age, and other factors. They are not homogenous based on ethnicity.

Since the idea of wilderness was tied so closely to the ideals specific to the American identity (especially in the 20<sup>th</sup> century), the values associated with wilderness are often described as cultural constructions. Further, it is arguable that wilderness is a creation of white, upper income, educated, predominantly male Americans and have value to them and not others within American society.

Whether wilderness “sustains the human spirit” is the question addressed in a paper by *Johnson, et al. (2004(b))*. Using the NSRE, the authors compared the idea of “wilderness” among U.S.-born minorities and immigrants. They found immigrants are less likely to find an on-site use value (an active use value) for wilderness. Among U.S.-born groups, blacks were as likely as whites to value continued existence of wilderness (a passive value). They also found that blacks, Latinos, and Asian Americans were less likely to have visited a wilderness than whites and women less likely than men. Immigrants who had lived in the U.S. longer (and thus, more acculturated) were more likely to have visited a wilderness.

Results were mixed as to whether “wilderness” is a value held

mostly by native-born white male Americans. While immigrants were less likely to express agreement on some items, it was not clear-cut. Black responses were least similar to those of native-born whites. The authors argue that geographical differences may give blacks less access to wilderness areas than whites. Native-born Latinos' support for wilderness was similar to that of native-born whites. Asian Americans were more likely than whites to express high existence and intrinsic values to wilderness. So, while current use is concerned, wilderness is a white value; however, there is little difference in other values between native-born whites and other native-born racial/ethnic groups. Similarly, few differences were found between native-born Americans and immigrants, especially those that have lived here the longest. While whites visit wilderness more than other groups, the value of wilderness is similar across all groups.

*Parker and Winter (1998)* studied 6 heavily used recreation sites in southern California using trailhead observation and on-site surveys followed by mailed surveys later. They collected 141 total mail surveys from a sample that was 73% Anglo, 12% Hispanic, 9% Asian, 3% African American, and 4% mixed or other. This reflected higher diversity than other wildernesses but lower than that of the area surrounding in southern CA. They found education levels of the wilderness users higher than the general public but it did not differ by ethnic group. They found that very few (4%) had contacted the Forest Service prior to visiting; rather, friends and family were most frequently reported source of information by both Anglos and Hispanics, followed by maps and trail signs and road signs. Both Anglos and Hispanics wanted materials to take with them (maps, brochures.)

A study by *Whittaker, et al. (2005)* used polls across a 21-year period to model a variety of pro-environmental positions among Latino, African-American, and non-Hispanic white people. The results found growing support for such issues among Latinos but little evidence for it in African-American populations. Further, they reason that Latino concern is especially proximate in nature, relating best to issues of immediate concern to their communities, rather than more distant or esoteric issues. [A problem with this study, in my mind, is that it only tracks responses to 6 questions on 8 polls over the time period. Also, the wording of some questions is problematic: "Spending on Environment" is worded as "amount of state tax money for environmental *regulations*", not other environmental spending, like parks, for example.]

"The presumption that non-Hispanic whites are more environmentally aware and concerned than either Latinos or

African-Americans appears, at the very least, over-stated and outdated, and perhaps, simply wrong. On four of the six measures of environmental attitudes, whites are trending away from pro-environment positions. On a fifth—opposition to drilling—all three groups appear to be trending together. And even in the one instance where white support is increasing as minority support remains flat or declines—environmental spending—over the entire timespan of the data, both Latinos and African-Americans were more supportive than whites.” (p. 445)

The authors found that the “hierarchy of needs” approach is not supported: if anything, minority respondents, who are often the most economically deprived and least well-educated, are more concerned with environmental issues, not less than whites. Both Latinos and African Americans are increasingly concerned with toxics and other pollution.

*Bechtel, et al. (2006)* looked at over 1350 undergraduate students’ responses to questions on the NEP/HEP scales in 4 different countries: U.S., Japan, Peru, and Mexico. They found that U.S. students confirmed what other studies have found, that U.S. students are dichotomous relative to the two scales. However, students from other countries were not consistently dichotomous in all three factors of the scale (humans separate from nature, a balance between human needs and nature preservation, and the need to impose limits on human impact on nature.) It indicates that there is a diversity of environmental belief structures among different national groups—that each group develops idiosyncratic belief structures about the world.

Another paper makes a similar argument that many aspects of discourse on the environment fail to take into account cultural differences (*Kato, 2002*). Many environmental issues contain strong cultural components that are not universal around the world. He argues that the environmental community often fails to take into account the local cultural context in which an issue occurs, creating misunderstanding and mismanagement. He notes, for example, the individual rights perspective in the West whereas the Asian context is collectively oriented. It’s not, he notes, that Asians are less environmentally aware; rather, it is a difference in the preferred approach or mode of action that separates East from West. He believes that all environmental educators need a strong education in cross-cultural awareness and alternative perspectives.

A number of researchers have studied populations in areas of the country that have higher non-white populations. These studies reveal interesting

He believes that all environmental educators need a strong education in cross-cultural awareness and alternative perspectives.

trends that assist understanding.

A Texas study used focus groups of blacks and Latinos in areas nearby a nature center to discover what are the barriers to their use of the center (*Rideout and Legg, 2000*). It showed that outdoor recreation and interpretive programming needs differed among various ethnic and racial groups. It found that African Americans, in particular, were fearful about a number of natural inhabitants found in wild areas. The authors also found that racial discrimination may be an over-whelming barrier to many. Latino adults were especially interested in children's programs—indicating a strong family orientation--and in programs about plants. Native American adults were most interested in walking, hiking, camping and canoeing.

The authors suggest that park and rec managers should consider outreach programs targeted at and personal invitations for minority participants to help them to feel welcome and comfortable in park settings.

A 2001 study of 566 users of National Forest sites near Los Angeles looked at visitor use patterns as well as information needs and search behaviors related to obtaining information (*Thapa, et al., 2002*). It studied current users and respondents were 22% Hispanic, 13% other (including Blacks and Asians), and nearly all were from southern California.

Whites generally used all information sources (brochures, maps, bulletin boards, guidebooks, personal contact with rangers, etc.). Hispanics were the least likely to approach rangers or other personal information sources. Other minority groups were least likely to use bulletin boards. Flyers and brochures were likely to be used by all groups. The authors noted the lack of information in anything other than English and the lack of personnel that were non-white or spoke Spanish. The most common source of information in all groups was family and friends. At that time, the internet, television, and radio were the least likely to be used and least trusted sources of information.

*Gobster (2002)* summarized the results of a survey of 898 users of a large, multi-use urban park in Chicago, including Black, Latino, Asian, and White users. Sampling was zoned to obtain samples that were approximately 20-30% in each category, even though current use of the park was dominantly by Whites. Results showed that non-White users came from greater distances, more often arrived by car, used the park less frequently and tended to visit in larger, family-oriented groups than White

The authors suggest that park and rec managers should consider outreach programs targeted at and personal invitations for minority participants to help them to feel welcome and comfortable in park settings.

park users. While all groups used the park for core activities like walking, swimming and sunning at the beaches, picnicking, going to the zoo, relaxing, and biking, there were differences between groups. All minority groups were more likely than Whites to engage in “passive” activities like socializing, festivals, and watching sports. Whites were more likely than other groups to be engaged in jogging, walking, and biking. Differences in active sports participation included basketball for Blacks, soccer for Latinos, and volleyball and golf for Asians. Whites and Latinos were more active in swimming and Asians more active in fishing. When asked about park amenities that need improving, all mentioned litter and vandalism and cleaner restrooms. Whites were more than twice as likely as other groups to mention safety concerns. All three non-dominant groups mentioned discrimination complaints, mostly by other users or police, which had occurred in the park.

This study is perhaps the first to actually attempt to distinguish sub-groups within racial groups, recognizing that ethnicity is tied as much to location or origin as race. The author found differences in park use and activities by ethnic groups within the races. As a result, he warns against stereotyping by racial group. While differences were found, similarities between groups were strong: people want beautiful, clean, safe places in which to recreate. Also, all activities are popular for some people within all groups. There is often more variation within a group than between groups, so caution is urged in interpreting beyond the data.

A study by *Sadisharan (2004)* used a mailed questionnaire to residents of Atlanta and Philadelphia, both metro areas with large ethnic populations. A total of 1513 questionnaires were returned. Whites, Hispanics, and Chinese were most likely to visit parks with 1 or 2 others, whereas African Americans and Hispanics and Koreans were more likely to visit with 3 or more companions. Social activities, physical exercise, and food-related activities were most popular with all groups. The least popular activity with all ethnic groups was education and experiential activities, though Hispanics were more likely to participate in land and water experiences. No evidence was found for gender, age, education, or income to affect park usage. The evidence of larger family group activities taking place among all ethnic groups than in whites is consistent with other studies. The author suggests that management of parks might consider change to accommodate them.

A report compiled by *Roberts (2007)* for the Golden Gate

While differences were found, similarities between groups were strong: people want beautiful, clean, safe places in which to recreate.

National Recreation Area in San Francisco had three primary research goals:

- 1) To discover the racial, ethnic and cultural patterns in use and non-use of the park;
- 2) To discover what the barriers were perceived to use or visitation for these people and,
- 3) To learn how best to engage some of the local under-represented groups in park projects.

They used 8 focus groups of 99 minority people (Latino, African American, and Asian) in the SF Bay area. The majority (2/3) had never used any of the park areas. The author noted that many comments referred to parks in general and not just Golden Gate parks areas, so they should be more generally applicable in park planning efforts.

While there was a general misunderstanding or lack of knowledge about who manages these resources (revealing a communication problem/PR problem for the agency), there were 5 broad areas of barriers to park use identified:

1. access (including transportation or lack thereof, costs, and fear of the outdoors)
2. communication (including language barriers of printed materials, signs, etc.)
3. fear of discrimination (cultural, actual verbal and non-verbal messages from other visitors, posted park rules overwhelming [communication], signs and brochures not reflective of their culture/race [see McIntosh essay...])
4. lack of knowledge, experience, awareness (what to do, where to go, how to get there, equipment needed, etc.)
5. lack of diversity on staff (their group is not represented on staff or ONLY in janitorial or maintenance positions.)

When they don't feel welcome, it stretches into other parks, as well.

They expressed that there is much heterogeneity across Latinos, depending on country of origin. Management decisions should not be based on homogeneous assumptions within an ethnic group. Many in all three groups expressed that media reports about violence that takes place in parks reinforces fears they already have. All three groups were strongly family-oriented, a fact sometimes not acknowledged by the park as a barrier. Also, connecting with children through the schools could be important: if kids are excited about going to a park, more likely that parents and other family members will go along.

A study by *Taylor (2008)* looked at minority students in

There were 5 broad areas of barriers to park use identified: access; communication; fear of discrimination; lack of knowledge, experience, awareness; lack of diversity on staff.

environmental fields. Findings show that minority students are interested in building careers in the environmental fields want jobs in the environmental sector of the job market. The study also showed that minority environmental professionals have been successful at securing careers in the environmental sector and making them long-term careers.

Cross-cultural studies indicate that, while there are differences in attitudes and park uses between members of the dominant white culture and other racial and ethnic groups, the differences often depend on how they are measured. Further, the differences are not unidirectional and appear to be as varied within an ethnic group as between them. The next section will review studies that are based on comparisons between white and specific racial and/or ethnic groups.

### **African-Americans**

While early studies of racial differences in attitudes and behaviors tagged African Americans as “less environmentally concerned” than whites, beginning in the 1990s through the present, many studies have shown otherwise. The studies below use a variety of methods to examine black/white environmental attitudes and behaviors as well as depictions of blacks in popular media.

*Parker and McDonough's (1999)* studied over 500 African American and White Americans in a phone survey in Detroit, across all income groups. (Used pre-tests in writing and in person with predominantly low-income black groups to develop questions and methods—indicating the importance of question phrasing that is culturally appropriate.) They used the NEP, an Environmental Issue Scale (EIS), an Environmental Behavior Index (EBI), and an Environmental Structure Scale (ESS—to measure powerlessness) in their research.

NEP—Blacks and whites both scored moderately positive on the NEP, with no significance difference between them.

EIS—Blacks scored significantly higher than whites on 5 of 10 issues and had higher mean scores on 8 of 10 issues.

EBI—whites scored slightly higher than blacks, but results are not unidirectional (scores reversed on some items)

ESS—no significant difference between blacks and whites.

Analyses showed that as feelings of empowerment increased on the ESS, so did their positive environmental behavior.

Unlike earlier studies, this study showed that African Americans and Euro-Americans in Detroit exhibit similar levels of environmentalism though they are sometimes expressed

differently in terms of environmental behavior.

Using the NSRE, a phone survey of over 17,000 people, *Johnson, et al. (2001)* compared the constraints that blacks, women, and people from rural areas felt to participating in various recreational activities. Controlling for age, income, and types of activities, they found race and rural residence were not found to be significant in whether individuals feel constrained to participate in their favorite outdoor recreation activity. The most common constraints to all were time, money, outdoor pests, and lack of companions to recreate with. The authors concede that historical patterns of discrimination may have an impact on the preferences for recreation activities. Non-participating blacks were found to be significantly constrained by personal safety concerns and lack of companions.

*Adeola, (2004)* reexamined data from 1972-2002 General Social Surveys, especially the “Environmental Module” of that survey that reflected the themes of environmental concern, risk perception, and pro-environmental behavior. All but 6 years in that time period were available. That sample, over all years, was ~84% white, ~14% black, ~2.5% other races. Results showed that Blacks registered higher means for 10 of 11 items than whites. White respondents also were more skeptical than blacks of the idea that modern science will solve all environmental problems. Blacks were more favorable toward increasing expenditures on improving and protecting the environment and parks and recreation areas. Blacks in this study held somewhat anthropocentric worldviews when economic issues were involved and biocentric worldviews when economic sacrifices were not involved. Whites scored significantly lower on risk perception and attitudes toward technological and environmental risks relative to Blacks. So, despite historical, sociological, and contextual differences between blacks and whites in American society, no one racial group can lay claim to being more or less environmentally inclined than others.

A study by *Martin (2004)* used content analysis of over 4,000 advertisements from 3 magazines (*Time, Outside, and Ebony*) to contrast use of Black and White models. It found Black models rarely are used in outdoor recreational settings while Whites regularly are. Blacks are portrayed primarily in urban or suburban settings as opposed to Whites portrayed more often in more natural, wild settings. Because leisure activities are learned behavior, the author speculates that such stereotyping may influence how the two races perceive wilderness recreation or wilderness in general. The author speculates that if wild areas are

perceived as White areas, then Blacks may avoid them to avoid potential discrimination, perceived or real. He also poses that such avoidance might also reflect protection of their personal racial identity.

A study by *Payne (2002)* examined the results of a 2000 telephone survey of 688 Cleveland area residents (Blacks and Whites only) about the perception of need for additional parks and types of recreation activity preferred for those parks. With race, age, and residential location as variables, the study found that age was the strongest predictor of support for parks. Younger adults, residents farther from existing parks, and Blacks were more likely to indicate that more parkland is needed. Blacks and older adults tended to prefer a more recreational function for the park than a conservation function. Both older adults and Blacks were less likely to have visited a park in the last 12 months. Older adults of both races were also less likely to prefer additional parkland.

*Lee (2008)* used the NEP and other questions to determine environmental attitudes and behavior in 292 African American students from a Texas historically black university in Houston. Students were enrolled in many majors and several colleges. The study measured their NEP scores and found them to be modestly pro-environmental, though slightly below that measured in other studies of college students and adults, though it matched scores on some of the 15 items with other studies. This study showed a low correlation between attitudes [at least those measured by the New Ecological Paradigm Scale] and actual behaviors. Behavior scores—as measured by recycling behaviors of certain materials—was low (13-15%) even though Houston has curbside recycling and about 23% of Houstonites participate. The study also looked at where they get their environmental information: mainly TV and the Internet, with newspapers and government sources coming in a distant last.

The author noted that educating the minority population on environmental issues is especially urgent in Texas, where the majority of residents will be minorities by 2010. More recent studies find that minorities have a similar or higher level of concern than Whites because they are disproportionately exposed to environmental hazards. Environmental justice concerns arose in late 1980s with studies showing toxic waste sites were often in the most economically challenged neighborhoods. This study's findings suggest that although both Whites and minorities have environmental concerns, they may have different environmental priorities and behavioral types. The author suggested, "Effective

education may have to emphasize different benefits, such as health and economic gains, that may result from pro-environmental policies.”

The author also made several relevant suggestions:

- 1) EE projects should partner with community and religious groups, with which African Americans are closely allied;
- 2) To increase conservation behaviors in this age group, organize on-line;
- 3) Environmental educators should develop messages about environmental behaviors that associate them with better physical health and quality of life for minority communities.

Data from a 2004 NSF report and US Census Bureau report that blacks make up 13% of US population but only 6% of federal science and engineering workforce and less than .5% of the federal environmental workforce. *Quimby, et al. (2007)* reported on research at a Maryland university, tracking the predictors of success in undergrads choosing environmental science careers. They surveyed 124 whites and 37 ethnic minorities. Minority students saw more barriers to pursuing a career in environmental sciences than whites and had less interest in environmental sciences. However, the study found no differences between races in identification with role models in environmental careers nor any differences on measure of support for pursuing a career in them.

The following articles, while not research, add to our understanding of African-Americans’ use of parks, recreation areas, and historical sites and how interpreters are dealing with new stories being told in those sites.

*Morris (1998)* wrote of attracting African-American audiences to heritage sites and notes reasons why they often do not frequent them in proportions equal to their population in regional areas. The author points out that African Americans do travel distances and times and in percentages equal to or greater than Caucasian Americans. She indicated that Arkansas tourism data show that resident blacks were traveling out of state (77%) rather than vacationing within the state. She noted that if their sites (in this case, state parks and historic sites) were public institutions and funded by public tax dollars, that they were failing in their mission to serve all state residents.

The author noted several reasons why African Americans visited in much lower proportion: past history of discrimination or

The author also made several relevant suggestions:  
1) EE projects should partner with community and religious groups, with which African Americans are closely allied;  
2) o increase conservation behaviors in this age group, organize on-line;  
3) Environmental educators should develop messages about environmental behaviors that associate them with better physical health and quality of life for minority communities.

exclusion of blacks from sites; road signs in the area that proclaim the presence, and even public sanction of, the Ku Klux Klan; and the lack of diversity in staff and visitors making blacks feel unwelcome. She suggested several solutions, including: being aggressive in inviting under-served audiences to our sites; seeking out partner organizations from minority communities; developing programs and events with minority interests in mind; providing internships specifically for minority students; development of new and revision of old exhibits to be certain all stories are told, even if controversial.

At Harper's Ferry National Historical Park, *Mast (2011)* showed how they have involved local middle school students in telling the stories associated with the site. The students interviewed the rangers, wrote the scripts, designed the sets, acted, video-recorded, edited, and produced podcasts that told the stories of the site. The author noted, "students themselves are more likely to watch videos made by peers rather than those of professional historians." "Of the Student, By the Student, For the Student" started in 2009, with the goal of looking at history through students' eyes. Now in their 3<sup>rd</sup> year, the students have produced podcasts that tell stories of John Brown's 1859 raid on Harpers Ferry, the election of 1860, and the opening of the Civil War. All podcasts, 16 so far, have become a regular part of the official interpretive program at Harper's Ferry and can be downloaded on-line. While the author gave no details on how often or by whom they have been downloaded, he implied that it has been successful at inspiring an historical interest in many more students besides those that participated in the actual productions.

In her 2003 commentary, *Gantt-Wright* points out that in the history written by the dominant group in the U.S., the "first" and "most respected" environmental writers and philosophers were white males. This has continued up through the 1980s and beyond, despite the contributions of G. W. Carver, Zora Hurston, Ellie Ruley, R.S. Duncan and others. The author claims from her own experience that African Americans are indeed interested and concerned about both environmental justice issues and about open space. She also notes the role of popular media—especially in ads [see *Martin, 2004*]  
—in propagating the myth that African Americans are not environmentally interested.

*Trickey-Rowan and Miller (2007)* tell the story of the desegregation of Central High School in Little Rock, Arkansas in 1957 and the struggles, then and now, of change. The authors tell of the challenges interpreters face at the site, now a National Historic Site, that still evokes strong emotions and how they

She suggested several solutions, including:

- being aggressive in inviting under-served audiences to our sites;
- seeking out partner organizations from minority communities;
- developing programs and events with minority interests in mind;
- providing internships specifically for minority students;
- development of new and revision of old exhibits to be certain all stories are told, even if controversial.

allow those emotions to be expressed.

*Huso (2006)* tells the story of the change in interpretation at an NPS historic plantation from one where the slave quarters were ignored and overgrown to one that incorporates the buildings and slave life fully into the story. The author notes that visitation has changed dramatically as well, from 100% white visitation to one that is now about 50% African American. The story of this plantation is particularly compelling as it covers two different periods of plantation history, one under the Spanish and one under American laws. Slave treatment was vastly different and the story more complex. This site tries to bridge the gap and find new ways to interpret slavery.

In another story of interpretation of slavery in the U.S. [this whole issue of *Legacy* is themed “interpreting slavery”], *Blizzard and Ellis (2006)* detail how first-person, living interpretation is done at Historic Williamsburg. Critical reflection of American society is a goal, be it “troubling or triumphant”. Part of that history includes the painful remembrance of slavery. The author noted that “Interpreters of slavery have no easy job. There is difficulty breaking through myths visitors hold onto about slavery to reveal what is true....” The article gives voice to those African American interpreters who endure frustration, anger, and myth. It reminds the reader also that slavery still exists in parts of the world in new and even more sinister forms, and that we must continue to try to enlighten people to see the humanity in us all.

What these more recent studies demonstrate is that the findings of researchers and others of earlier decades that African-Americans were less environmentally aware or concerned than whites has either changed, or that earlier studies were flawed in design or construct. Whatever the case, recent studies show clearly that blacks and whites in the U.S. have similar attitudes and concerns about the environment, though their participation in a variety of outdoor activities *vis-à-vis* parks does seem to differ.

## Hispanics

The fastest growing sub-section of the American population is Spanish-speaking people. Variously called “Hispanic” or “Latino” to attempt to refer to different ethnic groups within the larger group, they are growing as a result of immigration from Mexico, Cuba, Central, and South America and from young born in the U.S. In some states, people of Hispanic origin already exceed 50% of the population and by 2050 are predicted to make up about a third of the total U.S. population. As recent

immigrants, most Hispanics speak Spanish as either a first or second language. (Though Brazilians speak Portuguese, they do not make up a large portion of immigrants to the U.S. at this time.) Due to the nature of Spanish colonialism, Hispanics are a broad mix of races, with origins that include African, aboriginal, and European. While predominantly Catholic, they are not exclusively so. Because they originate from a number of North, Central, and South American and Caribbean countries, they are culturally diverse and come from histories that include colonialism, slavery, independence, and, often, military rule.

Despite their varied origins, demographers and social researchers tend to treat Hispanics as a single entity. But the results of that research, as we'll see, shows that, while Spanish is a unifying language, they think and often behave differently.

A study by *Schultz, et al. (2000)* examined the ecological beliefs of foreign-born Latinos taking an ESL course in California. Like previous studies, it found that Latinos (from Mexico down through Central and South America) scored higher on the NEP scale than a sample of U.S. Americans taking a Spanish course at the same school. Differences within the Latino sample did exist, and the authors attribute this to the degree of acculturation: less acculturated Latinos scored higher than more acculturated Latinos. Even given that, though, the differences of the Latinos remained. They reason that the difference is due to enculturation: U.S. residents have a stronger tendency to see humans as apart from nature and not as subject to Nature's rules, a key aspect of the NEP. Latinos tend to think more collectively than acculturated Americans, to see a stronger interrelatedness of humans with the natural environment. Americans are more strongly individualistic in their worldviews, a characteristic associated with lower scores on the NEP scale.

What does this mean for interpreters? It means that marketing must change. It means that, in order to attract Hispanics to visitor and nature centers and events, we must begin to think what is appealing to groups. Latinos are particularly family-oriented, so thinking about events that are appropriate for extended families (e.g. a wide range of ages), pricing them by the family instead of the individual, and about things that reinforce the worldview that is more expansive than the one we've grown up with. Given that many interpreters already score high on the NEP scale, that last one should be easy.

*Chavez (2003)* conducted in-depth interviews, in Spanish, with 58 Mexican-Americans in 4 families that were using National Forest sites in southern California. Families felt that leisure was

It means that, in order to attract Hispanics to visitor and nature centers and events, we must begin to think what is appealing to groups.

important to their family, helping in family bonding. As with other studies of Hispanics, they included nuclear and extended family members. Most significantly, the National Forests were especially important for their perception of safety—safer than their local communities—and for retaining a sense of place, reminding them of their homeland and ability to pass on their love of the land and the river to their children.

*Hong and Anderson (2006)* used interviews with fifteen Latino community leaders and ten Latino parents to discover why they were not using a Minnesota nature center. The authors found differences between the two interview groups, with the leaders speaking English and long a part of the West St. Paul community and the parent group speaking mostly speaking Spanish and newer arrivals.

The primary factors for non-use were: 1) lack of familiarity with the nature center by Latinos; 2) cultural differences/disconnect (especially no staff that spoke Spanish and no Spanish language programs or materials [or displays, trail guides, etc.]; and 3) cost, especially since prices were per individual and Latinos tend to have large, extended families and lower incomes. As an example of cultural difference, because of lack of Latino or Spanish-speaking staff, parents were afraid there would “be no one there to greet them” or they would have difficulty locating things [no Spanish signage] like bathrooms.

The center was perceived, by Leaders, as a “place for white folks with money”; older, established Latinos remembered actual previous discriminatory experiences between communities, even though they felt “things have changed”—those things were still remembered though and lead to discomfort (West St. Paul is traditionally white while the west side of St. Paul is racially diverse).

Suggestions included:

- 1) Collaborate with other organizations that already are working in the Latino community;
- 2) Get involved in the Latino community, events, neighborhoods, organizations [establish some credibility!]*—develop a relationship with the community;*
- 3) Offer scholarships or “family” pricing instead of individual pricing;
- 4) Hire some Latino or at least Spanish-speaking staff and offer some Spanish language programs and literature [and signage!] At least recruit some volunteers to help translate and/or teach such programs

•Collaborate with other organizations.

•Get involved in the Latino community,

•Offer scholarships or “family” pricing.

•Hire some Latino or at least Spanish-speaking staff and offer some Spanish language programs.

•Change “outreach” to going into the Latino community and getting involved and *invite* them to the Center.

•Recruit Latino mothers and grandmothers who are most active in their children’s lives.

- 5) Change “outreach” from brochures and advertisements [also not in Spanish] to going into the Latino community and getting involved and INVITE them to the Center.
- 6) Recruit Latino mothers and grandmothers who are most active in their children’s lives.

In a study of 422 randomly selected Mexicans (ages 16-72) from Hermosillo, a medium-sized city in northwestern Mexico, *Corral-Verdugo and Armendariz (2000)* used NEP-HEP scales to typify their attitudes toward the environment. The authors found that they had a high adherence to pro-environmental beliefs but also believed (HEP) that sustainable human use of resources is OK. Unlike in the U.S., where this utilitarian outlook is separate from ecological beliefs, Mexicans in this sample don’t apparently see them as conflicting. (Bechtel saw similar results in Brazilian students.)

*Desjean-Perrotta, et al. (2008)* used a “draw-write” exercise to look at pre-service teachers’ concepts of the environment. They found them to be largely lacking in sophistication, approximately at the level of the students they will likely teach and, therefore, unable to meet the standards set by NAAEE [North American Association for Environmental Education] for environmental educators. They had an anthropocentric view of the environment. Further, they found that neither ethnicity nor dominant residential experience (urban, rural, suburban, etc.) predicted their success in the test. It was a primarily Hispanic institution with ~50% being Hispanic. [I’m not sure it proves anything except providing a counter argument to the idea that non-white urbanites are less environmentally literate than whites. The authors did not test cognitive questions, however....]

A study by *Aguilar and Krasny (2011)* looked at after-school Hispanic environmental clubs in 3 middle schools on the Texas Gulf Coast to see how they fit the “community of practice” theoretical framework. (They did.) Several important aspects were identified that made them fit: jointly negotiated goal(s) of the club (opportunity to develop joint enterprise); membership was free-choice and roles of leadership were negotiable (mutual engagement); the tools/language they used to communicate among the group included field trips, Spanish/English spoken (shared repertoire); and participants understood the connection of the learning in the club to their lives (learning as a social process). “Thus, identity building, developing partnerships, and building community are important elements of the club.” It’s about science learning (in this case, Gulf environmental problems and solutions) but it’s about more than science. [To reach such

To reach such groups, interpreters need to look to how what they have to offer might help to build community, in addition to teaching about the resource.

groups, interpreters need to look to how what they have to offer might help to build community, in addition to teaching about the resource.]

This study demonstrates an example of how EE programs can contribute to the social process of learning, not just to the learning of science concepts. There is a potential problem, though, in using this concept in agencies with set agendas: “our study illustrates that joint enterprise will not necessarily be that prescribed by the teacher or director [*or agency*], but rather, emerge from negotiations through the interaction among members to meet *their* needs.” (emphasis mine). Such an approach, however, can provide the agency or organization an opportunity to help young people find connections between science and the issues that are relevant in their lives. That is no small accomplishment.

Lastly, a paper by *Guerrero, (2003)* is an explanation of the process they are engaged in, not the usual results-oriented paper. It’s labeled as a “research note” and describes the evolving process they are using for understanding the worldviews of 3 indigenous groups in Columbia. She notes that the three communities “maintain distinctive man-society-nature relationships and management of their natural resources.” The methodology they’ve been using has been multi-disciplinary (from sociology, anthropology, psychology, administration and design) and, most importantly, has involved students from the indigenous groups that are attending the university as co-investigators. Most notably, they are maintaining the oral traditions of the groups, interacting with them while trying to find a way to record the on-going conversation and stories. They note that this process finds that “orality, a characteristic of Amerindian peoples, is a process of construction and re-creation of a more complex, deeper, and richer perception of the world than researchers had imagined.”

This observation rings true as I read papers from other continents, other cultures, as well: the aboriginal world-view is originally perceived as simple and un-scientific. What they find, however, is that it is far from simple. While it may not be as linear as Western constructs, it contains far more depth of ethical, social, and relational content than they had believed.

The author also noted that in all three of the co-researchers’ intensive diaries, that memories of discrimination from the dominant society were recurrent. It reminded the professors of the degree to which alternate worldviews are so often easily dismissed by the dominant culture.

Perhaps more importantly, she noted how the process had changed them all. At the beginning, they began with the normal linear expectations of progression toward expected outcomes. As they left themselves truly open, however, to the conversations and experiences, the process “became an end in itself....the significance of the group encounters and the collective sessions were highlighted as a way of making explicit what we were constructing.”

### **Asians**

Studies of Asian use of parks, museums, and other areas are usually not done independently of other ethnic groups; rather, they are folded into cross-cultural studies already cited.

An exception to this trend is an article by Hutchison (1993) in which the author looked at Hmong use of parks and wild areas. He found that strong family relationships dominated their use of parks with large, extended family groupings for picnics, soccer, and volleyball and that hunting and fishing were important particularly to males in this recent immigrant group, just as it was in their Laos home culture. (See page 8 for more details.)

Other studies are more cross-cultural and include various “Asian” groups in their study groups. They include: *Bechtel, et al., 2006; Blahna and Black, 1993; Cordell, et al., 2002; Dwyer, 1993; Gobster (2002); Johnson, et al., 2004(a) and 2004(b); Roberts, 2007; Sasidharan, 2004; and Thapa, et al., 2002.* Dwyer warned in his 1993 paper against assuming that all members within an ethnic group are alike. *Gobster (2002)* found that all park activities were popular with some members of all ethnic and racial groups and urged caution in interpreting such data by groups. Johnson and colleagues in their 2004 paper using the NSRE contended that it was unreasonable to assume that all members of ethnic sub-groups in a country of immigrants like the U.S. would hold the same set of values. Still, most studies still lump together all Asians, be they from China, Japan, Thailand, Laos, India, or any number of other Asian countries. To do so masks the wide differences in religions, languages, cultures, and belief systems that are present across that continent. (The same, perhaps, could be said of Central and South America, though there are stronger similarities between those countries due to colonization than there is across Asia.)

With that caveat in mind, these studies, for the most part, find that Asian immigrants and other Asian-Americans tend to use parks somewhat similarly to Hispanics--that is, large, extended family groups use parks for picnics and sports. As a group, Asian attitudes, as measured by NEP scores, were positive, often higher than other white Americans,

indicating moderately strong support for the environmental values measured by that scale. Johnson et al. (2004(b)) found that Asian Americans tended to assign high existence and intrinsic values to wilderness, higher than in other groups. Most authors who examined it, however, found within-group variation in environmental attitudes and behaviors to vary with income, gender, age, and other factors. They are not homogenous based on ethnicity.

## Native Americans/Aboriginals

Native Americans and other Aboriginal populations have been looked at by a variety of research methods. This section includes both research projects and essays that I believe are also enlightening. I have included the latter to acknowledge the storytelling—in this case, essay writing—tradition of most aboriginal cultures. Most of the articles in this section are not of Native American research origins. Included are articles from Canada, Australia, and South Africa that, if we apply the lessons in them, I believe can be instructive to us.

*Henn, et al. (2010)* reviewed the current scope, extent, and intent of the use of Traditional Ecological Knowledge in 69 national parks in the western U.S. The authors noted that TEK is being looked at increasingly to provide additional perspectives on and methods of natural resource management, to aid research, and to facilitate a degree of reconciliation between native peoples and government. The paper detailed both challenges and advantages. The authors collected data from some 44 projects incorporating TEK in 37 parks. Only 20 parks reported integrating TEK into natural resource management projects.

The authors noted that incorporating TEK is more than just collecting some additional information from tribal members; rather it is a process of working in collaboration with tribal members to see whether, how, and when to use TEK to manage cultural or ecologically significant resources. Institutional inertia, lack of knowledge of how to work with tribes, a lack of trust, and resistance from individual managers were all identified barriers to the use of TEK. Improvement of relations with tribes and actual resource improvements with the use of TEK were identified as benefits. The authors recommended additional documentation of the results of TEK projects to convince more NPS parks to participate.

An article by *Bengstrom (2004)* summarized a content analysis of news articles from Native American periodicals that contained comments related to natural resource management. The author

Institutional inertia, lack of knowledge of how to work with tribes, a lack of trust, and resistance from individual managers were all identified barriers to the use of TEK.

noted the value of understanding all community perspectives when making management decisions. Major themes included the importance of traditional knowledge, spiritual values, environmental justice and racism, and ecosystem management, very different from those in traditional natural resource publications read by most managers. The emphasis on traditional knowledge, however, did not devalue scientific knowledge. The writers did not see them as necessarily dichotomous. Similarly, spiritual values were integrated with many other themes, especially with subsistence uses and traditional knowledge. However, the disrespect shown by agencies for those spiritual values, the author reasons, has led to must distrust of natural resource agencies.

Additional important themes included the link between tribal sovereignty and management of natural resources (often seen as critical to the very survival of native people), the importance of subsistence uses, and economic benefits and values (which are also viewed as needing to be compatible with their spiritual values.) “Natural resource managers and policymakers need a clearer understanding of the perspectives of underserved communities in order to manage public lands in ways that are responsive to all stakeholders.” The author warned against assuming homogeneity, however, across tribes or locations.

Once one wades through the academic-ese and the (peculiar to the American ear) South African phrasing, *Van Damme and Neluvhalani's* (2004) research is a fascinating paper on the state of research into indigenous knowledge (IK) in southern Africa. It demonstrated that IK (or, in the authors' preference, “indigenous ways of knowing”) was thrust into the spotlight in EE at the 1992 Rio Earth Summit, as part of a blueprint for sustainable development in chapters 26 and 36 of Agenda 21 (United Nations Conference on Environment and Development, 1992) and the NGO Forum at Rio de Janeiro, 1993. The idea was that it might enable societies to “learn from traditional skills to manage complex ecological systems.” The 1987 World Commission on Environment and Development encouraged agencies to adopt approaches that “link humanity with its ancient origins.” The Rio Summit furthered this idea that “indigenous knowledge could play a positive role in development and in response to environmental issues and risks....”

It appears that the use of indigenous knowledge has had much more impact in other countries than in the U.S. This paper identified some of the on-going tensions in the arena of IK: Does institutionalizing it, for example, de-contextualize it and make it

less valuable/applicable? Is IK in opposition to science or are they parallel ways of knowing? How can we use IK and not devalue it by taking it out of context and making it subject to the “market”?

The idea is to try to avoid making IK just another commodity, removing it from its context and native language. If one looks at globalization, the reality is that it encourages cultural and economic homogenization and commodification of cultural identities, not heterogeneous co-existence. To have IK become a part of the dominant Western science, technology, and capital market would suffocate it. So, to explore indigenous ways of knowing means, the authors believe, to keep it as much in context as possible. The difficulty is that educational institutions “tend to treat knowledge as objective and universal rather than as relative, tacit and contextual.” This makes studying IK and trying to apply it in EE becomes difficult, to say the least. Our tendency toward technological fixes for both social and environmental problems is contrary to this. The authors point out that IK cannot be contrasted with science as though IK “lacks scientificity”; rather, that they may be parallel ways of looking at the world. IK systems, rather, are embedded in “the cultural web and history of a people, including their civilization, and form the backbone of the social economic, scientific and technological identity of such people.” As such, to remove IK from its context may render it meaningless.

They explained that their research has led them to conclude that, “by their very nature, indigenous ways of knowing are multifaceted...often drawing on personal experience and historical story....” [Thus, it seems to me they might be ideally suited for interpretive, non-formal education as opposed to the formal classroom. It is more than just extracting some tidbits of knowledge and teaching them as “new solutions”; rather, it must be contextual. That context is what interpretation is all about.]

An Anishinaabe university student studying science, *Simpson (2002)* wrote about what she saw as critical components of post-secondary environmental education for Canadian Aboriginal students to prepare them to face critical environmental problems. She noted that “Aboriginal Nations still do not have control over their Traditional Territories. We are still not able to make decisions about how our land will be used, or not used, how we will govern, and to a large extent, how our children will be educated.” Aboriginal college graduates are prepared by colleges to contribute to the dominant society but not to contribute to traditional Aboriginal cultures and communities. The majority of

university programs are directed towards the learning needs of non-Aboriginal students, not Aboriginals. The knowledge they acquire may or may not have applicability to the situations they face in their communities. If they are to become the environmental problem solvers within Aboriginal communities, the situation must change, she posited.

Among the environmental problems they are facing are oil-related toxins in the Arctic, global warming, industrial contamination of water, flooding from hydroelectric plant construction, commercial cutting of forests and mining and resulting wastes, impacts of biotech on traditional seed stocks, fishing rights, and others. She noted that such struggles often find them fighting multinational corporations and government agencies for their land. “Protecting our Traditional Territories is paramount for our cultures and Nations to flourish. Our spiritualities, identities, languages, and systems of governance come from the land. The sustenance of our wisdom, worldviews, philosophies, and values comes from the land. The source of our knowledge and our teachers themselves come from the land and the spirit-world it encompasses.”

The author has much experience in building Indigenous knowledge and ways of knowing and learning into post-secondary educational programs. Particularly important components include: including Elders as wise experts, providing guidance and direction [and all that that implies]; grounding programs in Indigenous philosophies of education, flexible, hands-on, life-long, and containing a strong spiritual element; incorporating Indigenous ways of teaching and learning, with ceremony and storytelling being important elements, process being as or more important than content; use of Aboriginal language in teaching to maintain cultural identity; connecting directly to the land for extended periods of time, often with their children in tow; and “making room for resistance” in order to further “decolonization” in their thinking and empowering them to move toward a future of their own choosing. Achieving any of these—let alone all of them—in the context of modern university systems is no easy task.

In terms of science, the author noted that the relationship between Aboriginals and science is complex, involving science as a tool of the colonizers, the lab-lecture approach, and conflicts in worldviews all providing barriers to education of Aboriginals in science. [Interpreters have skills that may help bridge the gaps: they are storytellers, believe that process is as important as content, and teach in, not just about, the environment. Seems like a natural.]

Interpreters have skills that may help bridge the gaps: they are storytellers, believe that process is as important as content, and teach in, not just about, the environment. Seems like a natural.

*Takano, et al. (2009)* studied an Alaska school's implementation of a place-based education program that tried to restore into the curriculum Indigenous people's closeness to the land. It integrates culture, environment, and people into a single approach and restores sustainability and pride in the land. It replaces the dichotomy common in Western thought between humans and nature that leads, it is thought, to an exploitive relationship to nature. Instead, it approaches learning more holistically, the interdependence of all things being emphasized. The original study took place in 2002 and was followed up in 2007. It used an ethnographic approach, mixing participant observation, interviews, written surveys, conversations, and writings to explore the life in the village and the impact of educational change.

The place-based curriculum included "subsistence" as a subject, and combined in-class and outside activities that were longer, including nights out and journeys as long as 1-2 weeks. It also included extensive journaling, photos, and computer use to document their education, and presentations at the end. Their in-class activities were based primarily on their outdoor education, not vice versa. Subjects were taught in the context of the outdoor activity (i.e. lamprey food webs, berry picking, rabbit snaring, fish trapping, moose hunting, camping, etc.)

Over the period of this research, the reputation of the school changed from one of destroying community values to one of supporting community values and re-establishing a connection to their traditional way of life in the context of the modern world. It improved student attitudes toward school, increased motivation, and improved reading and writing quality. State-mandated standardized test scores improved, the only school in the district to reach the standards. The author noted that the community now feels a part of the school, taking an "ownership" in the education of the students, instead of apart from it.

A study by *McNamara and Prideaux, (2010)* examined the alleged adequacy of interpretive materials (signage, etc.) at sites in Cairns region of northeastern Australia. The researchers also used observation and timing of people at displays in public versus commercial sites. Unfortunately, they equate "behavior change" with actually reading the displays, so it has little to do with real behavior change (though "attitude change" seems to be "reported attitude change" and reasonably interpreted.) Also, I believe they don't understand (or properly report) active versus passive pursuits.

The essays that follow come primarily from interpreters and environmental educators, many of whom work in the frontlines of education and directly with various indigenous people. Their experiences may have much to teach us.

*Beckford, et al. (2010)* wrote an essay suggesting the incorporation of indigenous knowledge, stories, and values into science, not as a point/counterpoint but rather as co-equal ways of knowing. The authors felt it would help teach lessons of environmental stewardship and sustainable behavior. The authors wrote mainly about an on-going relationship between the Walpole Island First Nation (WIFN) (southwest Ontario) and the University of Windsor. They used interviews that were conversational and free flowing that were consistent with the oral traditions of the indigenous people.

While Western science is portrayed as “open, systematic, objective, rational, and intelligent”, indigenous knowledge is seen as “closed, parochial, and unintellectual.” Rather, the authors believe that “aboriginal epistemologies can provide a framework for engendering an ethic of stewardship and sustainability.”

A common sentiment of the WIFN community was the idea of lands being held in trust for future generations, not for the present. That is not to say there aren't environmental problems: there are, but many are thrust upon them (chemical spills, intensive agricultural chemical use, etc.) “The link between environmental quality and human quality of life is important and can be made at a young age by introducing children to aspects of indigenous ecological relationships.... Aboriginal perspectives can also be used to teach children to see the natural world in contexts other than purely economic terms and to temper the overwhelming anthropocentric analysis of Western cultures and societies.” The authors suggested, for example, that incorporating stories of Inuit and Cree who live in the Canadian Arctic can enlighten people about the real impacts of climate change: they “contain a rich source of cultural evidence of climate change manifested in impacts on hunting, trapping, fishing, and ecosystems.”

They warned against seeing all aboriginals as inherently benign to nature and exemplary environmental stewards. However, they felt that incorporation of aboriginal knowledge “provides a point of reference for critical self-reflection within conventional North American culture and education on the relationship between values, attitudes, and the environment.”

*James, (1999)* explored the plans to interpret one of the Christian missions in South Australia that accepted and educated “the Stolen Generations” of Aboriginal children from the 1930s into the 1990s. Some of the former children who were raised at the Mission established a committee to oversee the mission’s site. They wanted to establish an interpretive center that tells both the Mission story and the Aboriginal story. “The challenge is to uncover a way [maybe *ways*] to preserve, conserve, and interpret the mission culture, with is part of their history, in an interpretive center that maintains the integrity of that history”—ugly as it is. Both the Brethren church and Aboriginals saw the value in not only preserving the mission heritage but also interpreting that heritage to a broader South Australian community and to visitors. Themes will include both the historical and cultural aspects of the mission but will also need to include the concepts of Aboriginal culture as a living and contemporary culture that has moved on from those times.

The author pointed out that the *process* of conducting the research may be as important as the interpretive *products*, especially in regards to respecting Aboriginal methods and timelines for decision making—making certain they are “culturally appropriate.” [I have to wonder how it turned out, since this was in 1999.]

*Spoon’s (2010)* article is an interview with an anthropologist who gave a keynote at the NAI annual conference in fall 2010. He noted: “The policies of land managers often do not include humans. Customarily, they look at nature as ‘other than humans themselves’ or they create a nature/culture dichotomy.” In working with native peoples and their stories, he says that not all information can be shared with the public and that doing so is hurtful to native people. He told of working with several Native groups and giving the Forest Service input on an Environmental Impact Statement and subsequently on a team building an interpretive building. He commented that the Native nations had never previously been asked to be involved in a project at that level “where they were asked to participate early enough whereby there is adequate time to participate in meaningful ways.” It was such a positive experience, they are now being asked to be part of other projects in the area. He reflected that it was difficult for both the federal agencies and the tribes to get past the preconceived opinions they had of each other. The federal mandate of consultation is understood as just that, a mandate. What really are needed though are relationships between individuals in both groups that build trust. He believes in what

He reflected that it was difficult for both the federal agencies and the tribes to get past the preconceived opinions they had of each other.

these Native people want: “They want the Native perspective to be respected and to provide inspiration, but they do not want their culture misappropriated.”

An interpreter at an historic site, *Stimson (2010)* wrote how interpreting sacred places provides particular challenges. “We as interpreters...provide opportunities for our audiences to make their own intellectual and emotional connections with not only the past but also contemporary Native cultures....Our audiences may grasp the irony that a nation founded on religious freedom would ban the religious practices of its native peoples.” She noted the inconsistency of policies that ban various Native practices at some sites and not white activities at others, creating confusion and distrust. Skillfully using interpretive techniques to present conflicting ideas of land use and management may help emphasize universal concepts and create understanding where none existed before.

An article by *Benton (2007)* detailed how, through research, two NPS historic sites have used important consultations with descendants of the peoples that lived at those sites to change language, modify their understanding, and improve their sensitivity and respect in their interpretation. The author noted that, “Unfortunately, myths regarding indigenous cultures continue to perpetuate misunderstandings of people whose descendants are alive today and thrive near some of the sites being interpreted.” He described how respectful consultation with Native peoples has substantively changed the interpretation at several historic sites.

The NPS response to the Lewis and Clark Bicentennial is detailed in *Wilcox (2005)*. It told of the creation of the COTA (Circle Of Tribal Advisors) from all the tribes contacted by the L&C expedition. Different than in the past, the NPS creation of the Voyage of Discovery II exhibit allowed Native peoples to tell their own stories in relation to L&C, sharing their viewpoints. Telling the full story, with all its implications, is not as comfortable to some, to be sure, but its more honest and accurate, says NPS Hidatsa interpreter Gerald Baker, and accuracy is what people want.

## People with Disabilities

"People with disabilities" is a phrase encompassing a wide range of physical and mental conditions. In relation to parks, however, most recent research in interpretation and parks journals pertains to the use of parks by the ~15 million people in the U.S. with various visual impairments.

In a 2001 paper, *Silverman and Masberg* conducted phone interviews of 40 blind or visually impaired people who had visited one or more of 6 Indiana sites. They noted that the need to conserve valuable resources (often artifacts) and protect them from wear and deterioration usually prevents handling and other tactile experiences at many heritage sites. Thus, the visually impaired are limited in the ways they can experience the sites. Thus, the story—the narrative—of a site quickly became the most important way in which these folks experienced a site. Central to that story for them, was the opportunity to engage in something tactile related to that story: artifacts, models, etc.. So, too, was auditory narration, comments from accompanying (often sighted) people, sounds from the site like creaking floorboards, wind, bird songs, etc. These opportunities for engagement—or lack of them—invariably colored the experience of these folks and formed their memory of it. Interestingly, few of the interviewees mentioned learning or other types of experience as outcomes of the experience. The authors speculated that learning, in fact, might be constrained by the inconsistent availability of experiences that enhance learning in the visually impaired.

*Ziebarth's (2011)* as yet unpublished study used a focus group to learn what vision-impaired people have to recommend about Smithsonian displays and exhibits. While the author warned against generalizing to all vision-impaired visitors, the study represents a portion of the population of visitors to museums. The focus group suggested that both high quality Braille and audio versions of print brochures and other information should be available (not all vision impaired people are Braille-literate) and that they should be able to keep Braille brochures, just as sighted visitors keep brochures for souvenir value. They suggested cross-translating, just as is done with high quality bilingual publications. Audio files should be considered for access in DAISY (Digital Accessible Information System) over the Web or through other digital devices. Downloadable podcasts are an important emerging technology, as long as websites have assistive technology.

The authors speculated that learning, in fact, might be constrained by the inconsistent availability of experiences that enhance learning in the visually impaired.

Participants had useful critiques of some tactile exhibits. Most preferred an accompanying audio to help orient them and provide directions for tactile use of exhibits and suggested that provided Braille and raised letters must be of high quality. The degree of independence desired varied with the vision-impaired visitor, just as it does with sighted visitors. All agreed that tactile exhibits are critical to enjoyment and understanding. Also, proper training and enthusiasm of museum staff is an important element, just as it is to sighted visitors, and incorporating the affective aspects of a place or item is essential. As with all visitors, way-finding is important and this vision-impaired group felt that tactile way-finding was an important aspect of independence.

A project by *Fuller and Watkins (2011)* emerged from the observation that museums, visitor center, historic sites, zoos and aquariums seldom offer accessible exhibits to the visually impaired. The goal was to develop exhibits that, when touched, would activate an accompanying audio program. Tactile elements are usually replicas or models of the original objects. The authors noted that such exhibits make the messages more powerful for all visitors, not just the visually impaired. This project took place at an aquarium and tested types of tactile representations and the use of textures to represent colors. Results found that full-round models with complex textures yielded the best understanding and the more interest in participants (assuming the visitors all have good touch sensitivity.) The results are now incorporated into an exhibit at an aquarium where the fish models are full size and full-round.

The authors cautioned about the adoption of strict guidelines for tactile exhibits, preferring instead to trust the creativity of design and interpretive professionals. However, they suggested that exhibit design teams contain a visually impaired member, that tactile elements be considered a part of the exhibit from the beginning as part of a multi-modal learning strategy, that tactile elements also include accompanying audio interpretation that can be easily heard, that tactile elements be as 3-dimensional as possible, and that tactile elements use textures to represent color or pattern changes to the visually impaired. All of these suggestions follow Universal Design principles.

A paper by *Landau (2011)* reported on existing and possible multi-sensory way-finding techniques for museums and other indoor facilities that enable them to achieve full status as ADA-accommodating. Included is information on tactile maps that are taken with the visitor, fixed position maps (near-horizontal is

As with all visitors, way-finding is important and this vision-impaired group felt that tactile way-finding was an important aspect of independence.

better than vertical) and talking kiosks throughout a facility, talking 3D scale models for way-finding (incorporating Braille identification panels), and various hybrids of these ideas. The author offers no research-based analysis of these various models but encourages designers and museum personnel to incorporate them into museums and other facilities.

A study in Grand Canyon National Park (*Levy and Falzarano, 2010*) involved the use of visually impaired teenagers paired with sighted students to map the acoustic characteristics of 7 different locations along the river. By utilizing their hearing skills to survey sounds, the visually impaired students not only learned about soundscape problems in the canyon, but became more aware of natural sounds around them as well as human-caused ones.

An article by *Johnson (2003)* detailed the creation of a trail in Dinosaur Hill park (on BLM land) that is fully accessible and tactile for use by the blind. It demonstrated the ability of a partnership between agencies and underserved groups to create trails that are useful by all. The raised edge on the trail edge provided guidance for the use of canes, a cable guide for those without, an all-weather trail surface made for ease of walking, and tactile signs with raised, rather than Braille, letters made for ease of reading by sighted and unsighted people. Dinosaur bone replicas were placed along the trail to, again, provide a tactile experience applicable for all trail users.

The author of a dissertation, *Crowest (1999)* reviewed the literature (very incompletely, in my opinion) and conducted 3 case studies at three different facilities to discover what they revealed about the senses of hearing and smell in relation to learning. He found that, when carefully conceived and applied, the incorporation of smells and audio components (especially audio guides) into exhibits enhanced visitor experience, time spent in the exhibits by visitors, and the attractiveness of exhibits to visitors. They can increase motivation and learning, and improve visitor interaction with the exhibits. The author noted that the most widely used definition of interpretation, that of Freeman Tilden, is notably free of any bias toward the visual sense; rather it spoke of the importance of the total experience, not of an object or a label by itself. The author pleaded that, as society moves to reinvigorate museum education, that we move beyond the word-based learning of labels and incorporate senses other than sight into the visitor experience, not just to make it more fun, but rather to improve learning and involvement for all visitors.

In one of the few current articles I found on hearing impairments, a commentary by *Medlock (2003)* encouraged interpreters to don a set of soundproof ear protectors and check their own facilities and programs, seeing how interesting and communicative they are to those who are deaf or hard-of-hearing. What services are provided? How welcoming is it? She also suggested the use of closed-captioning, use of sign-language by interpreters, making activities hands-on, and making certain that audio interpretation is also available in print.

## Recommended Practices

In a book chapter published in 2000, *Chavez* advised that recreational professionals must pay attention to the changes in U.S. demography lest they risk ignoring and alienating a very significant portion of the population. While she advised we pay attention to these changes, she cautioned that the labels we use (race, ethnicity, black, white, Asian-American, Hispanic, etc.) are sociological constructs, not absolutes. She warned against assuming they are homogenous groups. The articles reviewed in the previous six sections based on those groups I believe demonstrate that is largely the case.

Hispanic and Asian American recreationists, for example, tend to participate in large, extended family groups. Thus, we must consider the site, it's size, and the social aspects of what we are planning. But, current participation patterns may not reflect the future. As Dwyer noted back in 1993, lack of participation may be the result of racism, fear, lack of resources, or fear of discrimination. History shows that those things can and will change.

Of the several hypotheses proposed to explain differences between racial and ethnic groups in recreation participation, the *theory of marginality* has been prominent. It posits that, since many such groups are economically disadvantaged (for a variety of reasons,) that economics limits their participation. The *ethnicity theory* indicates that the reasons for lack of participation are cultural—history, family structure, values, socialization, etc. Research has shown that neither, alone, fully explains differences in participation and that both likely play a part. Further, *selective acculturation* of some groups and *perceived discrimination* also play a part. Whatever the cause, however, program providers and park managers have to deal with it, discover the barriers, and overcome them or risk losing a major portion of the population. In particular, if one of our major goals is to have an ecologically literate public (and a historically literate one) we must reach all Americans, not just the white ones.

The solution, *Chavez (2000)* suggested is to “invite, include, and involve” members of such groups at all levels and in all aspects of the organization. [While she suggests “surveys” to understand the needs and desires of potential user group, this may not be the best way to reach some groups, even if it is done in their first language. I believe partnering with elders, other existing groups, etc. in their community, may be better.] Similarly, she suggested educating existing staff, hiring minority staff [easier said than done], and learning to communicate in the

ways the various groups prefer [which often is NOT via brochures, etc. but rather interpersonally—which means involving oneself in the community, gaining some credibility.] If trying to communicate in a language other than English, she suggested *back-translating*, translating first from English to, say, Spanish by one person, and then back to English by another. Lastly, she suggested that a fourth “I” might be required: *innovate*. Find novel ways to meet their needs. Don’t be afraid to try something new.

This section, then, examines potential solutions to the problem of overcoming barriers to participation in parks, museums, historic sites, and other non-formal environments by groups that currently underutilize such facilities relative to their representation in the population. We shall first examine examples from the literature that show the results of inviting participation in planning, research, and other efforts to engage people in their own education.

*Powell and Vagias’* 2010 article in *Park Science* dealt with the advantages and disadvantages of collaborative efforts between researchers, park managers, and “stakeholders”. While it does not address similar collaborative efforts in the interpretive world, the lessons learned may be similar. This paper concerned the involvement of off-road vehicle (ORV) associations in the design and conducting of ORV impacts at a national park. More specifically, the research measured the impact of the *Tread Lightly!* educational program. The involvement, while difficult, enhanced trust, engendered more support from the ORV community, and improved the scientific understanding of the ORV community. The authors pointed out that NPS is attempting to move beyond the “parks as islands” paradigm and attempting to apply an ecosystem approach with adaptive management. The research is on-going.

A study by *Thelen and Thiet (2008)* was designed to try to gather data on the validity of data collected by citizen scientists, often the most contentious aspect of the program within the scientific community. It also tested whether such projects increase participant support for some projects. They found no significant differences in data quality and increased support for the project among volunteers, though sample size was extremely small. They pointed out, however, that some volunteer citizens need and want more supervision while conducting sampling or identifying specimens. The authors indicated that sustained contact with professionals should be an option for some studies. Hands-on training is essential. Whatever the quality of the data, the authors felt that the support engendered for restoration projects with the community is a vital component and outcome of citizen science

projects. Such citizen science is one way to involve stakeholders in a park or other interpretive facility. When dealing with under-served groups, the type and duration of training and personal follow-up by agency staff are critical ingredients.

A 2006 article by *Barnett* described (in general terms without getting into the actual curriculum) an urban ecology program and its effects on the interest of urban kids in science. They built whole curriculum on the question: what is the health of Boston's urban ecosystem? They encouraged the students to find out, starting in their own neighborhoods.

They provided transportation money and field equipment (Boston schools lack both transportation dollars and laboratory equipment in their schools...) and teacher support in the form of a field assistant. The latter served to model field behavior and scientific inquiry for both the students and the teachers, lessening the teachers' concerns about behavior management of students in the field. This was gradually reduced as teachers gained experience and confidence.

They found that students changed their perspectives on environmental stewardship as the program went on, gaining some "ownership" of their field sites and wanting to clean them up. Students and teachers both increased confidence in "doing science". Teachers had the trust of the program to alter aspects of it and integrate it into existing curricula. The authors pointed out that "in the current age of district and state standardized examinations, teachers have less and less freedom regarding the material they are expected to cover. Thus, it has become critical for us to develop strategies that integrate the [program] into existing curricula. To achieve this goal, we have relied on providing a structure for supporting field study and on teacher professional judgment and expertise." They *trusted* the teachers!

"Perhaps most important was that science became accessible to urban youth through observations, discussion about real-world problems affecting their neighborhoods, and sustained involvement in locally relevant scientific investigations throughout the year."

The author of a 2004 Master's thesis, *Atiti* did a masterful of showing how to take a fairly normal interpretive process of working with teachers and make it academically relevant by imbedding peer-reviewed references and jargon into the process. Basically, he used a 3-step process with a group of 12 Kenyan teachers from 2 high schools in Nairobi; 1. Tour 5 interpretive

"Perhaps most important was that science became accessible to urban youth through observations, discussion about real-world problems affecting their neighborhoods, and sustained involvement in locally relevant scientific investigations throughout the year."

facilities and review their trails, brochures, signage, etc. (“interpretive capital”); 2. Help the teachers understand interpretive techniques and identify, with them, what the needs of their students are for environmental learning (“reflecting”, through workshops, on the “mutually reciprocal aspects” of EE and interpretation); and 3) developed school based outdoor learning labs (in this case, a trail through a forest arboretum and a botanical garden) and recreated interpretive media appropriate to them, drawing on materials reviewed earlier.

The process, he pointed out, was more important than the products, moving teachers from an “expert model” of their usual curricula to a “participatory action research process” in order to foster environmental learning. The ultimate result, he noted, was that “finding solutions *with* teachers is more empowering than finding solutions *for* them.” He noted that, like schools, more interpretive facilities also usually rely on the expert model for determining what and how to interpret, rather than a participatory model. The implication is that maybe interpretive facilities should try a more participatory model.

A study by *Knapp (2005)* was based on visits to and interviews with interpreters, and observation of interpretive programs at 5 national parks. What he noted is the disconnect between what interpreters *say* they want to do—connect with the visitor—and what they actually do—lecture at them. To correct this, he recommended we adopt a constructivist approach to learning, that is, *interact* with our visitors (the learners). It makes interpretation more difficult, perhaps less predictable, to be sure. It requires more skill in asking the right questions, giving positive feedback, and truly interacting with the audience. Constructivist learning theory says that learning is an active process, not a passive one. It posits that learners—perhaps especially those we call visitors who come to us voluntarily and not necessarily to learn—select and modify information to their own needs and wants. Thus, as interpreters, we can seldom control what a visitor learns. We can, however, skillfully guide their learning by asking the right questions, giving information when necessary, and interacting *with* them. It’s a dialogue, not a lecture.

*Tsevreni (2011)* wrote that, if you want kids to learn the action step of EE, you have to truly have them participate as full members, facilitating their “action competence”. He detailed the steps he took in working with 60 9-12 year olds in Athens, Greece elementary school. He posited that EE is dominated by a proclivity for scientific knowledge and fails to critically identify the social and political dimensions of environmental problems.

As interpreters, we can seldom control what a visitor learns. We can, however, skillfully guide their learning by asking the right questions, giving information when necessary, and interacting *with* them. It’s a dialogue, not a lecture.

Those aspects, he said, are not subject to experts but to society at large and call for their participation. Children, too, he reasoned, need to “develop their own power to shape their lives, comprehend the sources of beliefs and values and the interests they support, and reflect on the forces that restrict their lives and on democratic alternatives.” [In the end, the city ignored them. I wonder what that taught them....]

A study in Maryland’s Chesapeake Bay looked at the impacts of a 5-day residential EE program on middle school students (*Stern, et al. 2011*). The program focused on three main outcomes in the students: environmental responsibility, character development and leadership, and attitudes towards school. They used pre-, immediate post-, and 3 months post-experience evaluations of students. In particular, the authors looked at urban (primarily African American) students versus rural students and the differential impacts of the program on them.

The curriculum at the site was experiential in all aspects, taking Hungerford’s environmental issue approach that involves a multidisciplinary approach to investigating issues that matter to the students’ lives at home. The authors found that gains in environmental responsibility and character/leadership were retained through the 3-month post-experience period but that gains in attitudes toward school returned to pre-experience levels. Urban students exhibited significantly more positive scores on all measures at all points of measurement, including pre-experience scores, indicating urban students had a stronger sense of environmental responsibility. The authors suggested that the curriculum’s focus on local environments and communities helped make it more relevant for students. They also suggested that the curriculum’s specific linkage between students’ on-site and home lives may have had longer-term impacts for the students.

A long-time heritage interpreter, *Arning (2009)* recounted his experience in building partnerships in the process of interpreting at several historical sites. He noted how the field has changed, now including “people long denied their identity [who] were now a part of a modern-day community willing to embrace their story and build on it. Sharing stories and spaces, often difficult ones, can still manage to bring diverse communities together.” He demonstrated how it is possible to open interpretive sites to multiple stories and multiple perspectives on those stories, as well. While those perspectives have always existed, he said, “not all were given equal airing.”

He also noted what he perceived as changes in learning. So much more information is now readily available today, accessible by so many means. But people have also become more sophisticated, he felt, in their learning. In particular, he found visitors want not only to be transported back in time by a good story, but also they want to be participants in that story, engaged fully in it. It demands more of the interpreter, requiring him/her to skillfully handle an audience with a lot of give and take. He noted that “21<sup>st</sup> century values do not always translate to a 19<sup>th</sup> century world.” Understanding slavery of that time, for example, requires multiple perspectives, which may be uncomfortable for many visitors. Participating in the story helps visitors gain those perspectives.

*Kohl and Eubanks (2008)* proposed a model of interpretive planning that causes visitors to be more engaged in the site and thus, in conservation behaviors. This, then, leads managers to value interpretation more, put more credence and resources into it, and thus, improves the quality of interpretation in the long run. They suggested that interpretive programs be planned to include specific conservation objectives related to the site—e.g. what should/could people DO as a result of having new information, new stories—that results in the audiences’ increased likelihood of participating in conservation of the site. They argued that “the urgency of heritage loss requires this participation.”

*Blum, N. (2009)* used an ethnographic approach (an iterative process, using in-depth interviews, participant observation, and review of both published and grey literature and extended living in the community for a broader understanding of context) to understand two different approaches to EE. One, at the Monteverde Cloud Forest Reserve, focused on a science-based approach that emphasizes animals, habitats, and sees humans as largely interfering with the survival of others. The other, at the Santa Elena Reserve, focused more on a community development type of approach, using issues of environmental degradation, social inequalities, communication, diversity, and community relations, seeing humans as part of the ongoing ecology of the community. These differences, the author pointed out, are reflected in ongoing theoretical debates in EE academic community. The differences also reflect, she believed, the social status/position of the two different organizations within the community: the Monteverde is older, well-established, scientifically and socially connected to organizations and individuals around the world who can be powerful in bringing about pressure locally for or against certain policies or programs; the Santa Elena is newer, more based socially and politically in

Costa Rica, and less powerful, politically, within decision-making structures of the community.

She made this distinction not so much to frame the theoretical argument, but rather to ground EE in the social context: “The research suggests that while theoretical discussion about the relative merits of diverse approaches to environmental teaching and learning is important, if that analysis is not situated within a particular social, economic, and political context, it is likely to reveal relatively little about how or why particular perspectives on environmental education may dominate or remain marginal in a specific place.”

A quote from Luis, the EE coordinator at Santa Elena: “When I started working in environmental education 15 years ago, most programmes focused on teaching information about environmental issues, but after a few years I started to wonder if this was enough to achieve change. Now I believe that discussion of environmental topics has to be connected to the social reality in which people live.” In other words, the learners must be involved in determining what is relevant to them.

*Blackburn's 2004* essay is not research, but made some excellent points about history and memory. History, he noted, “is a dynamic process whereby the meanings of seeming immutable events change over the course of time. Memory is a more personal process that attaches meaning to the past....” Often, the two are in conflict. The example is of the Enola Gay and the public argument that ensued when the Smithsonian wanted to debate the wisdom of dropping the bomb. More to the point of NPS, they are challenged to bring the issue of slavery to Civil War battlefield sites. It is opposed by those who are reinterpreting history and unwilling to debate it, except on their terms. This places interpreters in a difficult spot. The author reminded us to “gain a more sophisticated knowledge of the resource and of the audience.” This includes acknowledging the complexity of many historic sites and obtaining an in-depth knowledge of the site, together with its many nuances and interpretation. The interpreter can then bring those nuances to the story. Just as important, however, is knowledge of the potential audience that goes beyond mere statistical demographics. He suggested bringing all the stakeholders to the table during the planning process so that we gain a perspective on the various meanings a site or event has to different entities. It makes historical and cultural interpretation more complex, to be sure, but it makes it more honest.

It appears that Chavez' advice back in 2000 to "invite, include, and involve" people in their education by having them included on the ground floor of institutional support is supported by the research. People must be involved in the parks. But as *Rodriguez and Roberts* reported in their (2002) State of the Knowledge report to NPS, the parks must also be involved in the community. They noted that in instances where local communities were directly involved in planning, decisions, and programs, effectiveness is increased. Such partnerships are succeeding in making parks more relevant and used by under-served groups. They noted the need, within NPS, of moving parks "out of their boundaries" to create interactions with the communities that surround them. "Parks must become part of the community fabric that they serve...an integral part of the larger physical and cultural landscape" of the communities in which they reside. Failing that, parks become irrelevant to the communities around them, fail to attract "non-dominant" audiences, and fail in attracting a diverse staff. Is that important?

*Taylor (2007)* detailed a national survey of 1,239 college students in 9 environmentally related majors and their recognition and valuing of the salience of 20 factors in seeking employment. Nearly all assigned importance to diversity and equity factors, but there were differences by gender and by ethnic group, with blacks and Latinos ranking it higher than whites.

She pointed out that if environmental organizations and EE in general, truly want to attract minorities into their workplaces [she wrote a thorough history of the research in this area, showing that they have a poor record of attracting minorities into their workforces] they must undergo fundamental structural changes that will "allow diversity to flourish". The author wrote of the importance of framing diversity and equity initiatives so that all members of the organization realize how the institution benefited from diversity initiatives. "Emphasizing the broad benefits of diversity efforts is important because those initiatives lose support and salience if individuals see them as punishing or excluding one group while benefiting others."

She believed that many students will look for diversity characteristics in organizations when they are ready to join the workforce. That should alert potential employers that diversity and equity are important to environmental students in the pipeline, especially minorities and women. She offered some suggestions to organizations seeking to improve the diversity in their workforce:

1. Collaborate with more minority environmental professionals to accelerate the process of diversity.
2. Create a workplace that has fairness and equity as driving

"Parks must become part of the community fabric that they serve...an integral part of the larger physical and cultural landscape" of the communities in which they reside.

- factors.
3. Socialize and mentor all new colleagues to help them maximize their potential for success.
  4. Make certain people have equal chances at taking on leadership roles and on being promoted.

In 2009, the National Academy of Science published a potentially important book entitled *Learning in Informal Environments: People, Places and Pursuits*. One chapter of the book was particularly relevant to this review, Chapter 7, “Diversity and Equity” (Bell, et al., 2009). This whole book on informal science learning is relevant to many science, visitor, and nature centers across the country. Chapter 7, in particular, deals with the special challenges of being from “the non-dominant culture”, including women, people with disabilities of various kinds, and various non-white racial and ethnic groups. The authors noted that, if culture is seen as a non-static entity, something that is influenced not only by where one lives but also by the people with whom you associate, that it is constantly evolving and changing, relative to access and opportunities. Thus, any group that has a shared affiliation might have shared cultural characteristics and values. On the other hand, they warned against treating culture as a homogeneous configuration of factors and assume that every member of a particular group is the same. They pointed, for example, to the fact that over 500 Native American tribal affiliations are recognized in the U.S. with over 50 different language groups represented. To believe that all share a common set of values or history is folly.

Some educators believe that science is a single set of practices that define a “culture of science” that doesn’t necessarily reflect the values of the dominant culture. The authors were skeptical of that view and noted that it is just such views that have brought practices that are inadequate to bring change to the systemic factors which prevent non-dominant groups from engaging much in science. Non-formal learning, if it desires to, can bridge that gap, opening up an understanding of science to non-dominant groups. The environment in which such learning takes place, however, must be *welcoming* to them. Science learning then is seen as a socio-cultural activity. The authors considered, for example, the “border crossing” that must be done by women, Native Americans, and people with disabilities to access science learning [perhaps, though, it is more than just adaptive technologies], to learn the language and the culture of Western science. [Unfortunately, it appears that the authors are either not familiar with or consciously ignore the interpretive literature because most of their section on urban/rural differences in

Non-formal learning, if it desires to, can bridge that gap, opening up an understanding of science to non-dominant groups. The environment in which such learning takes place, however, must be *welcoming* to them.

children concentrates on anthropocentrism in young children, not on performance in informal environments.]

The authors made note that informal settings are themselves “embedded in cultural assumptions” that reflect the dominant culture. People from non-dominant cultures are, therefore, suspicious or feel alienated from such institutions. That is reinforced by lack of diversity on staffs, cultural irrelevancy, language inabilities of staff and exhibits, and environments that are not welcoming to alternate cultural practices.

“Outreach”, which many such institutions try, implies the same dominance, the authors insisted. Seeking out partnerships in the communities, on the other hand, implies that the communities have something to offer to the institution, giving those communities some implied ownership in the institution and encouraging change. The authors suggested that goals should be determined with the interests and concerns and input of non-dominant groups, if the institution truly wants to attract and serve those groups. “There is no cultureless or neutral perspective on learning or on science....” Science, by its very nature, is most often seen as another aspect of the dominant culture. If we want currently under-served groups to participate, the presentation of science in informal environments must change to incorporate more of their cultures and values. We must better understand how culture shapes learning, both at the personal and group levels.

Unfortunately, the chapter itself is problematic, however. It talks about informal environments and learning and the problems of the dominant culture of science not talking to non-dominant cultures. Yet, in the 11 pages of references, there are no references from the informal science community! Not a single article referenced comes from journals of the interpretive or environmental education community. All references are from the traditional formal science community—yet another case of “do as I say, not as I do”.

In a follow-up to the 2009 book on *Learning Science in Informal Environments*, the National Academy published a another book in 2010 to make their findings more accessible to those practitioners who work in non-formal environments. The book does seem to accomplish that, though I still found it to ignore much of the literature in informal science journals, many of which are reviewed in this document. Like the “mother book”, this one uses Chapter 7 to address underserved audiences (*Fenichel and Schweingruber, 2010*). In particular, it used case studies to make the point that including diverse audiences at all levels—planning, staff, administration, advisory committees, partnerships—

People from non-dominant cultures are, therefore, suspicious or feel alienated from such institutions. That is reinforced by lack of diversity on staffs, cultural irrelevancy, language inabilities of staff and exhibits, and environments that are not welcoming to alternate cultural practices.

enhances the use of exhibits and sites by diverse audiences.

The authors indicated that, in the effort to bring science to the public, social, political, economic, cultural, historical and systemic factors often intervene to inhibit the use of informal science learning centers by a variety of “non-dominant” groups. These include, of course, visitors from racial, ethnic, social, disability, and sometimes gender groups.

As in the earlier chapter (*Bell, et al., 2009*) the authors pointed out the misperception of “outreach”. When institutions or agencies realize they have underserved audiences, they often approach it with “outreach”, taking science into the schools and other places in those underserved communities. The authors pointed out that this often simply reinforces that the science institution is, indeed, out of reach of the non-dominant communities. True partnerships and collaborative efforts are more likely to produce results that incorporate the community and increase learning.

One case study is the Vietnamese Audience Development Initiative in the San Jose (CA) Children’s Discovery Museum (CDM). They brought in advisors from the Vietnamese community, held focus groups in the community, and sought to understand the factors that encourage and discourage the use of the CDM by the Vietnamese community. As a result, a new exhibit opened that incorporated many Vietnamese cultural icons, had exhibit text in Vietnamese and English, and had elements that were family-friendly and hands-on. The summative evaluation yielded strong results, though there were generational issues that reflected the degree of acculturation within the Vietnamese community.

Another case study involved people with disabilities who now make up about 18 percent of the U.S. population. The authors pointed out that the use of Universal Design principles benefit everyone, not just those with physical or sensory disabilities. The Boston Museum of Science created an exhibit on making models that was accessible to visually or auditory impaired people and those in wheelchairs. They created an advisory group of many such individuals, representing a variety of communities in the area. The resulting exhibit incorporated multiple sensory elements. Summative evaluation showed that, while it is probably not possible to make every exhibit relevant and accessible to every visitor, the effort will mean that if enough options are available, the exhibit is much more equitable to all and learning improves. It’s not, a participant noted, so much a matter of “creating a checklist” for centers; rather, it’s a change of mindset, choosing to engage with communities.

A third case study involved the integration of Native Americans’

If we want currently under-served groups to participate, the presentation of science in informal environments must change to incorporate more of their cultures and values.

perspectives into the language of science. The Blackfeet Native Science Field Center in Montana teaches not only biology and ecology but incorporates history, culture, language, and spiritual elements into the teaching. By including elders and other community members in the planning and role-modeling, the program is building an interest in science among native people.

In their “Things to Try” section, the authors suggest four items:

- 1) think about design elements (icons, materials, languages, etc.) that are reflective of different cultural groups you are serving;
- 2) build true partnerships with local communities;
- 3) learn about cultural differences in learning;
- 4) work with other informal learning centers to coordinate and/or cosponsor programs and activities.

In 2009, several authors wrote a guide that, while particular to California, contains a wide variety of advice to practitioners and managers for reaching under-served audiences from culturally and racially diverse backgrounds (*Roberts, et al. 2009*). It does an excellent job at bridging the research/practice gap that often exists in agencies. The best practices contained in this document are centered around a primary concept: “Reaching out to a continuously changing population through education and engagement, as well as cultivating mutual respect and understanding are key ways to proceed.” The authors posited that “no demographic trend is of greater important to national forest [or other agencies] managers and leaders than the immense growth of cultural diversity.”

The vast majority of their recommendations in sections on communication, facilities and services, partnerships, and civic engagement are applicable across the country and across facilities and agencies. They are based on and consistent with all that I have read to date, representing the “best practices” for reaching under-served audiences. While each park, museum, historic site, aquarium, nature center, etc. is unique in its geographical context, all can benefit from introspection, examining their unique strengths, the audiences they serve and don’t serve, and how to become relevant and valued by a true cross-section of the communities in which they exist.

Unfortunately, although this is a 2009 document, some of the web links recommended are either already out of date or discontinued. I found this particularly true with recommended NPS sites. It can be downloaded from: <http://www.fs.fed.us/publications/>

“Reaching out to a continuously changing population through education and engagement, as well as cultivating mutual respect and understanding are key ways to proceed.”

*Roberts (2007)* suggested that park folks—particularly diverse park personnel—need to get into the community to promote and invite folks, make them a part of committees, teams, boards, advisory groups and the like. Simply putting out printed information is *not* enough. Make their stories also part of the park’s story.

The author summarized what needed to be done to better connect with under-served groups in the San Francisco Bay area. Paraphrased, it can apply to sites across the country:

- Acknowledge that you are attempting to grow in better understanding and connecting people to parks. Provide acknowledgement for the incremental successes and best practices that you may currently use.
- Make strategic investments to insure all community groups have park information, announcements and brochures printed in appropriate languages other than English that include culturally appropriate design contexts. Work on your signs, as well.
- Work on designating key community and park linkages (e.g., ‘hubs’ and trailheads with community-based organizations) that reflect welcoming and safe opportunities for individuals and groups to meet and enjoy parks with family or friends.
- Explore ways to address transportation issues and increase access without cost burden whenever possible (seek out and use appropriate partners/sponsors).
- Seek culturally diverse outreach staff liaisons to work on bridging the gap with various ethnic communities.
- Survey organizations in the community to determine levels of interest and then working with those most interested.
- Work with school groups to get children interested through school programs and career days.
- Contact media outlets in the community that are used by various groups, as well as providing personal invitations where and when possible through community-based organizations.
- Create employment and internship programs targeting youth from those communities. Advertise these and all job opportunities in publications and other outlets that are used by the ethnic communities.
- Work with specific journalists/announcers/other media that are from the communities to get the word out about the park and opportunities.
- Offer incentives for first-time attendees—offer family rates!
- ENGAGE the local communities in the park—ask them to be on boards, committees, etc. Value them!
- Make sure stories that are told are inclusive, not just those of the dominant culture.

Finally, think *from the perspective* of those underserved groups in relation to your park:

- What does it have to do with our lives?
- Does it affect the air we breathe, the food we eat, our health, and our children's education?
- Does it have an impact on our community? Our society?
- Does it illuminate issues that are important to our community?
- How does it impact local life?

## Conclusion

All people want beautiful, clean, and safe parks and other areas to recreate in, spend time in, and share with their family and friends. In a country with a history of immigration from many other lands and cultures, with a history of colonization and driving out of existing aboriginal peoples and cultures, with a history of the importation of slaves from other lands that did work many colonists would not, it should not surprise us that today, that same multicultural society has multiple views on those things we identify as uniquely “American”. Our parks, our historic sites, our museums, our zoos and aquaria are all products of the “dominant culture” of the time they were created. As that dominant culture changes, we are confronted by the fact that many groups—some newcomers, some long residents not part of that dominant culture—don’t feel welcome in those sites and perceive barriers that we often can’t even imagine.

So, after all this, what barriers are identified that prevent many underserved groups from using parks, monuments and other recreation areas? Roberts summed them up well in her 2007 paper:

1. access (including transportation or lack thereof, costs, and fear of the outdoors)
2. communication (including language barriers of printed materials, signs, etc.)
3. fear of discrimination (cultural, actual verbal and non-verbal messages from other visitors, overwhelming posted park rules, signs and brochures not reflective of their culture/race [see McIntosh essay...])
4. lack of knowledge, experience, awareness (what to do, where to go, how to get there, equipment needed, etc.)
5. lack of diversity on staff (their group is not represented on staff or ONLY in janitorial or maintenance positions.)

These five barriers present themselves in various ways to various groups at various sites. We see one or more of them evidenced in the studies presented in this review.

*Leftridge, (2005)* wrote an insightful article about what he calls “thin-slicing” (from Malcom Gladwell’s book, *Blink: The Power of Thinking Without Thinking*.) What he’s speaking of, relating to interpretation, is that 6<sup>th</sup> sense many visitors seem to have about when something is going to be good (or bad), worthwhile or a bore. Thin-slicing may be, in fact, what keeps some visitors from partaking of our sites and programs. Perhaps they perceive in our marketing, in our signs, in our volunteers, in our program descriptions that they are not welcome. They bring to our sites their own lifetimes of experiences, their abilities to notice subtleties, their “thin-slicing”. And then they make a decision whether they are interested in hearing our messages, our stories, or even in visiting our sites at all. Our own perceptions of our sites are, very likely, different than theirs. Perhaps we need to find out what they perceive.... In fact, *Chavez (2000)* said, speaking to interpreters: “Do not presume that racial and ethnic groups attach similar meanings to a place or service that you do.”

The solutions, as usual, are not as simple as identifying the barriers because they involve a change in *us*, as planners, as interpreters, as managers. It means that we have to make new efforts to overcome these barriers. As many of the papers reviewed here demonstrate, however, attempts to overcome barriers are happening at many sites in the U.S. and other countries. It takes time, effort, resources, and intestinal fortitude. It often means letting go of what we think we know and truly opening ourselves to others’ ideas, others’ stories, others’ ways of approaching history, culture, and the environment.

If we remain truly open to communicating with those who are not now comfortable using our sites and facilities, we must also remain open to new *ways* to communicate, as well. In some cases, we may well reach an end that we do not anticipate. The standard, linear design of brochures, displays, trailside exhibits, etc. may, in fact, *not* communicate with the people we desire to reach. We must be open to that, to the reaching of other conclusions. It may be, for example, that with some groups, the oral tradition, the story told out-loud, may be the best communication method possible. That may mean that, instead of investing in media, we really need to invest in people, great interpreters, great story-tellers, some at least that come from communities that either do or once surrounded or occupied our sites.

A short article appeared in *The Interpreter* a few years ago (*Whipple, 2005*). It was intended especially for beginning interpreters, but was also a good reminder to well-seasoned ones. In order to create visitors who care about our sites, we must have staff—volunteer and professional—who authentically care about visitors, who welcome them, make them feel welcome, fulfill their needs, and thank them for coming. She cites Maslow who, in 1954, postulated his “Hierarchy of Needs” that showed that before someone can learn, become aware, and attain “self-actualization”, they must fulfill their basic physical needs and psychological needs for safety. “It means we must always be sure to mix our interpretation with good old-fashioned hospitality. We must exceed our visitors’ expectations every day or risk losing their support for our organization and our resources.” That seems simple enough—or is it?

In their report to NPS on their 1999-2000 study, Rodriquez and Rogers (2002) indicated that in instances where local communities were directly involved in planning, decisions, and programs, effectiveness was increased. Such partnerships were succeeding in making parks more relevant and used by under-served groups. They note the need, within NPS, of moving parks “out of their boundaries” to create interactions with the communities that surround them. “Parks must become part of the community fabric that they serve...an integral part of the larger physical and cultural landscape” of the communities in which they reside. That effort must continue and it must succeed.

## Literature Cited

- Adeola, F.O. 2004. Environmental and risk perception: empirical analysis of black and white differentials and convergence. *Soc. and Nat. Res.* 17:911-939.
- Aguilar, O. M. and M. E. Krasny. 2011. Using the communities of practice framework to examine an after-school environmental education program for Hispanic youth. *Environ. Ed. Res.* 17(2):217-233.
- Arning, C. 2009. Telling stories in someone else's house. *Legacy* 20(2):18-23.
- Atiti, A.B. 2004. Mobilising interpretive capital with teachers for transformation of school grounds in Kenya. *Environ. Ed. Res.* 10(3):371-386.
- Ballantyne, R. 1995. Interpreters' conceptions of Australian aboriginal culture and heritage: Implications for interpretive practice. *J. Environ. Ed.* 26(4):11-17.
- Barnett, M., C. Lord, E. Strauss, C. Rosca, H. Langford, D. Chavez and L. Deni. 2006. Using the urban environment to engage youths in urban ecology field studies. *J. Environ. Ed.* 37(2):3-11.
- Bechtel, R.B., V. Corral-Verdugo, M. Asai, and A. G. Riesle. 2006. A cross-cultural study of environmental belief structures in USA, Japan, Mexico, and Peru. *Intern. Jour. Psychol.* 41:145-151.
- Beckford, C.L., C. Jacobs, N. Williams and R. Nahdee. 2010. Aboriginal environmental wisdom, stewardship, and sustainability: Lessons from the Walpole Island First Nations, Ontario, Canada. *J. Environ. Ed.* 41(4):239-248.
- Bell, P., B. Lewenstein, A. W. Shouse, and M. A. Feder, Eds. 2009. Chap. 7: Diversity and Equity, IN *Learning Science in Informal Environments: People, Places, and Pursuits*, pp. 209-247, The National Academies Press/USA, Washington, D.C., 352 pp.
- Bengstrom, D. N. 2004. Listening to Neglected Voices: American Indian Perspectives on Natural Resource Management. *J. Forestry* Jan/Feb. 2004:48-52.
- Benton, G. 2007. Interpreting with respect at two National Park Service sites. *Legacy* 18(5):22-29.
- Bixler, R.D. and M.F. Floyd. 1999. Hands on or hands off? Disgust sensitivity and preference for environmental education activities. *J. Environ. Ed.* 30(3):4-11.
- Blackburn, M.K. 2004. History, memory and interpretation. *Legacy* 15(5):32-34.
- Blahna, D.J. and K.S. Black. 1993. Racism: A concern for recreation resource managers? pp 111-118, IN P.H. Gobster (Ed.), *Managing urban and high-use recreation settings*. U.S. Forest Service, General Technical Report NC-163, pp. 111-118, St. Paul, MN.
- Blizzard, T. L. and R. Ellis. 2006. Interpreting slavery in Virginia's colonial capital. *Legacy* 17(1):24-31.
- Blum, N. 2009. Teaching science or cultivating values? Conservation NGOs and environmental education in Costa Rica. *Environ. Ed. Res.* 15(6):715-729.

- Chavez, D. J. 2003. Mexican-American Recreation: Home, Community and Natural Environment. USDA Forest Service, Pacific Southwest Research Station 13 pp. Accessed from: [www.hicsocial.org/Social2003Proceedings/Deborah%20J.%20Chavez.pdf](http://www.hicsocial.org/Social2003Proceedings/Deborah%20J.%20Chavez.pdf)
- Chavez, D.J. 2000. Invite, include and involve! Racial groups, and leisure. IN M. Allison and I. Schneider (Eds.), *Diversity and the recreation profession*, pp. 179-194. State College, PA: Venture Publishing.
- Chawla, L. 1998. Significant Life Experiences Revisited: A Review of Research on Sources of Environmental Sensitivity. *J. Environ. Ed.* 29(3):11-21.
- Cordell, K., C Betz and G. Green. 2002. Recreation and the environment as cultural dimensions in contemporary American society. *Leisure Sciences*. 24:13-41.
- Corral-Verdugo, V. and L.I. Armendáriz. 2000. The “new environmental paradigm” in a Mexican community. *J. Environ. Ed.* 31(3):25-31.
- Crowest, R. 1999. Making Sense: Multisensory interpretation and the visitor experience. Dissertation, University of Surrey, UK. 58 pp.
- Desjean-Perrotta, B., C. Moseley and L.E. Cantu. 2008. Preservice teachers’ perceptions of the environment: Does ethnicity or dominant residential experience matter? *J. Environ. Ed.* 39(2):21-31.
- Dwyer, J.E. 1993. Outdoor recreation participation: An update on Blacks, Whites, Hispanics, and Asians in Illinois. IN P.H. Gobster (Ed.), *Managing urban and high-use recreation settings*. U.S. Forest Service, General Technical Report NC-163, pp. 119-121, St. Paul, MN.
- Fenichel, M. and H. A. Schweingruber. 2010. *Surrounded by Science: Learning Science in Informal Environments*. National Research Council. National Academies Press. Washington, D.C. 240 pp.
- Floyd, M. 1999. Ethnic and Racial Diversity of National Park System Visitors and Non-Visitors. Technical Report, NPS Social Science Research Review 1(2). 24 pp.
- Floyd, M. 2001. Managing National Parks in a Multicultural Society: Searching for Common Ground. *The George Wright FORUM* 18(3):41-51.
- Fuller, R. and W.R. Watkins. 2011. Exhibit design relating to low vision and blindness research on effective use of tactile exhibits with touch activated audio description for the blind and low vision audience. National Center on Accessibility, the National Park Service and the U.S. Access Board, Washington, DC. 12 pp. In review.
- Gantt-Wright, I., J. Ringo, W. Rosenbaum, and P. Mohai. 2003. African Americans and the environment. *Environment* 45(6):41-45.
- Gobster, P. H. 2002. Managing Urban Parks for a Racially and Ethnically Diverse Clientele. *Leisure Sciences*, 24:143–159.
- Gomez, E. 1997. The role of multiculturalism in tourism/recreation marketing and planning efforts. IN W.F. Kuentzel (Ed.), *Proceedings of the 1996 Northeastern Recreation Research Symposium*, Bolton Landing, NY, March 31-April 2, 1996. U.S. Forest Service, General Technical Report NE-232, pp. 55-59. Radnor, PA: North East Forest Experiment Station. US Forest Service.

- Guerrero, O.M.B. 2003. Visions of the environment through three Colombian ethnic groups: A contribution from research to environmental education. *Environ. Ed. Res.* 9(3):385-389.
- Henn, M., D. Ostergren and E. Nielsen. 2010. Integrating traditional ecological knowledge (TEK) into natural resource management: Perspectives and projects within western U.S. national parks. *Park Sci.* 27(3). 10 pp.
- Hong, A. and D.H. Anderson. 2006. Barriers to participation for Latino people at Dodge Nature Center. *J. Environ. Ed.* 37(4):33-44.
- Huso, D. 2006. Beyond moonlight and magnolias: The new interpretation of plantation society. *Legacy* 17(1):16-23.
- Hutchinson, R. 1993. Hmong leisure and recreation activity. pp. 87-92 IN P.H. Gobster (Ed.), *Managing urban and high-use recreation settings*. U.S. Forest Service, General Technical Report NC-163, pp. 119-121, St. Paul, MN.
- Jacobson, S.K., J.J. Arana and M.D. McDuff. 1997. Environmental interpretation for a diverse public: Nature center planning for minority populations. *J. Interp. Res.* 2(1):27-46.
- James, J. 1999. Culturally sensitive research: Interpreting Umeewarra Mission. *J. Interp. Res.* 4(1):77-79.
- Johnson, C., J. Bowker, J. Bergstrom, and H. K. Cordell. 2004(a). Wilderness values in America: Does immigrant status or ethnicity matter? *Soc. Nat. Res.* 17(7):611-628.
- Johnson, C.Y., J. M. Bowker, and K. Cordell. 2001. Outdoor recreation constraints: An examination of race, gender, and rural dwelling. *Southern Rural Sociology* 17:111-133.
- Johnson, C.Y., J.M. Bowker and H.K. Cordell. 2004(b). Ethnic variation in environmental belief and behavior: An examination of the New Ecological Paradigm in a social psychological context. *Environ. Behav.* 36(2):157-186.
- Johnson, W. 2003. A tactile tale of accessibility—the Dinosaur Hill trail. *Legacy* 14(4):30-35.
- Kato, K. 2002. Environment and Culture: Developing Alternative Perspectives in Environmental Discourse. *Can. J. Environ. Ed.* 7(1):110-116.
- Knapp, D. 2005. Do what we say, not what we do: Making the case for a constructivist interpretive approach. *Interpreter* 1(2):20-21.
- Kohl, J. and T. Eubanks. 2008. A systems-based interpretive planning model that links culturally constructed place meanings and conservation. *J. Interp. Res.* 13(2):59-74.
- Korteweg, L., I Gonzalez and J. Guillet. 2010. The stories are the people and the land: Three educators respond to environmental teachings in Indigenous children's literature. *Environ. Ed. Res.* 16(3-4):331-350.
- Landau, S. 2011. Exhibit design relating to low vision and blindness: Tactile mapping for cultural and entertainment venues. National Center on Accessibility, the National Park Service and the U.S. Access Board, Washington, DC. 13 pp. In review.
- Lee, E.B. 2008. Environmental attitudes and information sources among African American college students. *J. Environ. Ed.* 40(1):29-42.

- Leftridge, A. 2005. Signals. *Interpreter* 1(3):2-3.
- Levy, L. and S. Falzarano. 2009. Visually impaired students help collect acoustic data in Grand Canyon National Park. *Park Sci.* 26(3): 3 pp.
- Lewis, S. and K. James. 1995. Whose voice sets the agenda for environmental education? Misconceptions inhibiting racial and cultural diversity. *J. Environ. Ed.* 26(3):5-12.
- Martin, D.C. 2004. Apartheid in the great outdoors: American advertising and the reproduction of a racialized outdoor leisure identity. *J. Leis. Res.* 94.
- Mast, B. 2011. The Civil War through the lens of an adolescent. *Legacy* 22(3):12-15.
- McIntosh, P. 1988. White privilege: unpacking the invisible knapsack. Accessed from: [www.utoronto.ca/acc/events/peggy1.htm](http://www.utoronto.ca/acc/events/peggy1.htm)
- McNamara, K.E. and B. Prideaux. 2010. Reading, learning and enacting: interpretation at visitor sites in the Wet Tropic rainforest of Australia. *Environ. Ed. Res.* 16(2):173-188.
- Medlock, C. 2003. Opening doors-environmental interpretation for the deaf and hard-of-hearing. *Legacy* 14(4):24-25.
- Meeker, J.W. 1973. Red, white, and black in the national parks. *North American Review* 259(Fall):3-7 or 258:6-10.
- Morris, J. 1998. Attracting an African-American audience. *1998 Interpretive Sourcebook, Proceedings of the National Interpreters Workshop* pp. 3-5.
- Parker, J.D. and M.H. McDonough. 1999. Environmentalism of African Americans: An analysis of the subculture and barriers theories. *Environ. and Behav.* 31:155-177.
- Parker, J.D. and P.L. Winter. 1998. A case study of communication with Anglo and Hispanic wilderness visitors. *J. Interp. Res.* 3(1):55-59.
- Payne, L., Mowen, A., and Orsega-Smith, E. 2002. An examination of park preferences and behaviors among urban residents: The role of residential location, race, and age. *Leisure Sci.* 24:181-198.
- Powell, R.B. and W.M. Vagias. 2010. The benefits of stakeholder involvement in the development of social science research. *Park Sci.* 27(1): 7 pp.
- Quimby, J.L., N.D. Seyala and J.L. Wolfson. 2007. Social cognitive predictors of interest in environmental science: recommendations for environmental educators. *J. Environ. Ed.* 38(3):43-52.
- Richter, T. 1996. A sense of justice—A sense of excellence: Working together with American Indians. *1996 Interpretive Sourcebook: Proceedings of the National Interpreters Workshop*, pp. 15-17.
- Rideout, S. and M.H. Legg. 2000. Factors limiting minority participation in interpretive programming: A case study. *J. Interp. Res.* 5(1):53-58.

- Roberts, N. S. 2007. *Visitor/Non-visitor use constraints: Exploring ethnic minority experiences and perspectives*. General Technical Report submitted to Golden Gate National Recreation Area and Golden Gate National Parks Conservancy, San Francisco, CA: San Francisco State University. March 2007. 68 pp.
- Roberts, N. S., D. J. Chavez, B. M. Lara, and E. A. Sheffield. 2009. *Serving culturally diverse visitors to forests in California: A resource guide*. United States Department of Agriculture--Forest Service, Pacific Southwest Research Station, General Technical Report PSW-GTR-222. 76 pp.
- Rodriquez, D. A. and Roberts, N. S. 2002. *The association of race/ethnicity, gender, and social class in outdoor recreation experiences*. National Park Service Social Science Program, State of the Knowledge Report. 92 pp.
- Sasidharan, V. 2004. Ethnicity and urban park use: A cross-cultural examination of recreation characteristics among six population subgroups. IN *Abstracts of the Fourth Social Aspects and Recreation Research Symposium*, San Francisco, CA, Feb. 4-6, 2004, p. 5, Albany, CA: Pacific Southwest Research Station, US Forest Service.
- Schultz, P.W., J.B. Unipan and R.J. Gamba. 2000. Acculturation and ecological worldview among Latino Americans. *J. Environ. Ed.* 31(2):22-27.
- Schwab, J. 1993. Interethnic cooperation in challenging industrial pollution. pp. 130-132. IN P.H. Gobster (Ed.), *Managing urban and high-use recreation settings*. U.S. Forest Service, General Technical Report NC-163, pp. 119-121, St. Paul, MN.
- Silverman, L.H. and B.A. Masberg. 2001. Through their eyes: The meaning of heritage site experiences to visitors who are blind or visually impaired. *J. Interp. Res.* 6(1):31-47.
- Simpson, L. 2002. Indigenous environmental education for survival. *Can. J. Environ. Ed.* 7(1):13-24.
- Solop, F. I., K. K. Hagen, and D. Ostergren. 2003. *Ethnic and Racial Diversity of National Park System Visitors and Non-Visitors*. Technical Report National Park Service Social Science Program and the Social Research Laboratory, Northern Arizona University. 16 pp.
- Spoon, J. 2010. Interpreting indigenous relationships with ancestral landscapes. *Legacy* 21(5):8-11.
- Stern, M.J., R.B. Powell and N.M. Ardoin. 2011. Evaluating a constructivist and culturally responsive approach to environmental education for diverse audiences. *J. Environ. Ed.* 42(2):109-122.
- Stimson, N. 2010. Interpreting reverence in American Indian sacred sites. *Legacy* 21(5):16-17.
- Sucec, R.1997. The 'What-for's' and 'How-to's' of American Indian consultation. *1997 Interpretive Sourcebook: Proceedings of the National Interpreters Workshop*, pp. 10-11.
- Takano, T., P. Higgins and P. McLaughlin. 2009. Connecting with place: Implications of integrating cultural values into the school curriculum in Alaska. *Environ. Ed. Res.* 15(3):343-370.
- Taylor, D.E. 2007. Diversity and equity in environmental organizations: The salience of these factors to students. *J. Environ. Ed.* 39(1):19-43.
- Taylor, D.E. 2008. Diversity and the environment: Myth-making and the status of minorities in the field. *Res. on Soc. Problems and Public Policy* 15:89-148.

- Thapa, B., A. Graefe and J. Absher. 2002. Information needs and search behaviors: A comparative study of ethnic groups in the Angeles and San Bernardino National Forests, California. *Leisure Sci.* 24(1):87-107.
- Thelen, B.A. and R.K. Thiet. 2008. Cultivating connection: Incorporating meaningful citizen science into Cape Cod National Seashore's estuarine research and monitoring programs. *Park Sci.* 25(1): 16 pp.
- Trickey-Rowan, S. and L. A. Miller. 2007. Central to history. *Legacy* 18(6):32-37.
- Tsevreni, I. 2011. Towards an environmental education without scientific knowledge: An attempt to create an action model based on children's experiences, emotions and perceptions about their environment. *Environ. Ed. Res.* 17(1):53-67.
- Uzzell, D. and R. Ballantyne. 1998. Heritage that hurts: interpretation in a post-modern world IN Uzzell and Ballantyne (Eds.), *Contemporary issues in heritage and environmental interpretation: Problems and prospects*. London: The Stationery Office.
- Van Damme, L.S.M. and E.F. Neluvhalani. 2004. Indigenous knowledge in environmental education processes: Perspectives on a growing research arena. *Environ. Ed. Res.* 10(3):353-370.
- Vial, R. 1999. People, places, and cultural diversity in the natural environment. *1999 Interpretive Sourcebook, Proceedings of the National Interpreters Workshop*. 123-124.
- Wallace, V.K. and D.J. Witter. 1990. Urban nature centers: What do our constituents want and how can we give it to them? *Legacy* 2(2):20-24.
- Whipple, K. 2005. Creating visitors who care. *Interpreter* 1(5):4-5.
- Whittaker, M., G.M. Segura and S. Bowles. 2005. Racial/ethnic group attitudes toward environmental protection in California: Is "environmentalism" still a white phenomenon? *Pol. Res. Quart.* 58:435-447.
- Wilcox, J. 2005. In the eye of the beholder—Interpreting the Native American perspective on the Lewis and Clark Bicentennial. *Legacy* 16(2):22-29.
- Zelezny, L. P Chua, and C. Aldrich. 2000. Elaborating on gender differences in environmentalism. *J. Social Issues* 56:443-457.
- Ziebarth, B. 2011. Exhibit design relating to low vision and blindness what visitors with vision loss want museums and parks to know about effective communication. National Center on Accessibility, the National Park Service and the U.S. Access Board, Washington, DC. 26 pp. In review.