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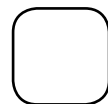
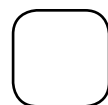
A Note from the Editor

This issue of the *Journal* is a special issue focused on diversity. There are many ways of defining diversity, of considering it in our programming and planning, and of attempting to address it in our overall approach to interpretation. We typically think of diversity in terms of ethnicity, but we also need to think about interpretation and “diversity” in terms of age, gender, political persuasion, culture, accessibility, and programming preferences, to name just a few. Being narrow in definition results in being narrow in perspective. This special issue of the *Journal* introduces three articles that can help us begin the conversation and expand our collective understanding.

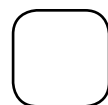
Two of the articles present research conducted in other countries (Sweden and China). Being exposed to research from other countries dealing with the same issues we are facing in the United States can be one way of expanding the conversation and our collective understanding of “diversity.” A minority in one place represents the majority in another, and learning from what other places are doing, how they are doing it, and the impacts that result from it can only inform our collective conversation on diversity.

The final piece in this issue serves as a summative look at the work in diversity over the years in the United States. It will be a great tool and reference sure to have shelf life for years to come. It is such a special piece and the driving influence of this special issue that I have asked a guest to write an introduction for it.

I hope you enjoy this issue, and I look forward to the future developments of our field through your quality submissions to *JIR*.



SPECIAL ISSUE:
DIVERSITY



Introduction

Effectively Connecting with Communities Across Cultures: There's No App for That!

Nina S. Roberts, Ph.D., Professor

San Francisco State University

A dynamic educator and well-known, vibrant speaker, Nina is a professor in the department of Recreation, Parks, & Tourism at San Francisco State University. She is a Fulbright Scholar and experiential educator whose social science research in cultural diversity and parks has been vital to public land managers and community partners. Nina is also director of the Pacific Leadership Institute, an outdoor adventure program in partnership with the Golden Gate National Recreation Area. Her perspectives on diversity, national parks, and use/non-use of public lands have been widely shared through interviews with CNN.com, Boston Globe, L.A. Times, NBC News Bay Area, New America Media, The New York Times, and Public Radio International. She is featured in the landmark book Black and Brown Faces in America's Wild Places, and is well published including numerous journal articles and book chapters about constraints to park use, social and environmental justice, women and girls outdoors, and youth development. Her work provides leaders, park managers and partners with ideas and resources needed to respond more effectively to changing demographics and social trends across the U.S.

“Why do so few minorities visit some parks, public lands, or even wilderness?” is a question that has been asked for decades. Similarly, “Why aren’t there more interpretive rangers from ethnically diverse backgrounds?” Empirical research ranging from interpretation and environmental studies, to outdoor education and adventure recreation, describe experiences of ethnic minorities since the early 1960s and, still today, there is much more to explore. From civil rights to civil disobedience, where have we been? And, from New Urbanism to the New Jim Crow (see Alexander, 2015), where are we going? Ultimately, how do we effectively disseminate information reflecting greater progress, who are we listening to, and what do we do with the information once we get it? People who cannot interpret the reality of racism may be deemed unreliable, while those who want to be part of a larger conversation continue to be invisible. This needs a remedy because our work is also about whose voices matter. This is a time for asking the right questions (or new ones), leading to the right answers, and implementing solid change. Therefore, we need a new map to go on, based on both social and biological dynamics.

Our nation’s natural and cultural resources receive millions of visitors annually yet cultural diversity is lacking among them. Hence, as shown in this excellent annotated

bibliography by James Pease, some people receive a label of underserved, underrepresented, or nontraditional. This doesn't mean they're not "out there" or don't care. The fact demographics are "changing" across the U.S. and around the globe is a reality (e.g., see prb.org; census.gov). Many embrace this truth; others resist and deny it to avoid difficult yet vital decisions. To skeptics, I appreciate your cynicism or uncertainty; we can still be allies if there's a willingness to meet halfway. Challenges abound when distance is maintained or structural barriers create a lack of transparency. Efforts toward a common goal need to show the measures, outcomes, and impacts; with a mutual vision and core value of seeking positive change, anything is possible. From the practical standpoint, we must build awareness as a moral imperative and seek the compelling evidence needed to change policy. No one can go it alone and cooperation proves vital.

Indisputably there is also great work being done; however, I still often hear agencies and organizations occasionally discussing how the "system" is broken. What comprises a system and who sets the policies? People do. Hence, engaging future stakeholders in the promotion of a diverse world is going to be central in the next decade in ways that have duality and are not unilateral. What's missing from the literature is what dedicated interpreters and other park employees are supporting or not supporting within the organization or the field (e.g., programs, activities, initiatives). It's not about "outreach"; it's about building and restoring relationships; only this—and renewed hope—can bring about the balance of nature. From rangers and education specialists to supervisors and managers, there are many positive directions that have received well-deserved kudos. Conversely, there are many "naysayers" who will do all they can to impede progress. Both scenarios are real; I invite everyone to ask themselves if they're willing to meet the status quo head on, or would prefer a complacency and avoidance mode.

Engaging underrepresented communities is as difficult and necessary as protecting our watersheds, restoring habitat, and managing wildlife. The application of the social sciences has a crucial role here. When we recognize we must engage by developing relationships and garnering trust, for instance, or "bring the parks to the people," as many agencies strive to do, then a healthier ecosystem will truly serve us all. Nature knows no boundaries of interpretation; so, why are some public lands sporadically perceived as belonging to a privileged few? How can this be changed? Engagement and dialogue has always been the cornerstone of progress. Social sciences must prevail, but the current methods beg for a change.

Various seminal studies, as shown in the work by Dr. Pease featured in this special issue, have provided tried and true examples leading to such change. Subsequently, rightful attention and visibility is presented here to both convey the historical and persistent constraints and help dispel myths that still exist. On the other hand, it's been tough to get some of these important study results and recommendations into the hands of practitioners to help bridge the gap between research and practice. This work produced by Dr. Pease should encourage interpreters and park managers, for example, to review the findings and suggestions and engage in valuable discourse towards greater action. Similarly, while pioneering initiatives have achieved some notable success, many ethnic minorities are still underrepresented in varied forms of outdoor recreation or participation in various interpretive events across the country. Studies consistently show people of color still at the lowest end of the visitation spectrum; this has generated new inquiries into barriers and perceptions as well as use patterns/preferences for visiting and supporting natural, cultural, and historic sites. This doesn't mean there is no relationship to these places; it simply denotes lack of agency understanding or institutional culture of inclusion.

How these perceptions or use patterns, for instance, may be changing also relates to ethnic minority growth, many of whom will eventually be a more visible part of the public lands system from urban open space to wilderness areas. It is clear minorities are stepping out into the light and growing in numbers and voice until they become the most heard. According to the U.S. Census, this nation will be “majority minority” by 2042, so a cultural transformation is inevitable. How this change will impact our programs, policies, personnel, and management practices relating to interpretation and resource education remains to be seen. Underserved audiences must be embraced yet institutional challenges and personal biases persist coast-to-coast.

Subsequently, connecting people with parks and public lands through interpretation, education, and outdoor recreation provides an open door that is all too often closed. Yet, that assumes people are not already connected in their own way. That is, nature inspires people for very different reasons that are often unknown or misunderstood. Nature, with all its intricacies, does not know the difference between cultures; people are stewards of their own experience. How can agency managers continue to learn from the very communities they are trying to serve? And, noted by the Pew Research Center for Social Trends, are new patterns of migration being accepted? If so how, if not why not? One-in-five (46 million) migrants now live in the U.S., doubling since 1990 (Connor, Cohn, & Gonzalez-Barrera, 2013). Are you ready?

Research has explored concepts from perceived discrimination and socioeconomic indicators to lack of transportation, limited knowledge, and more. As reflected in this annotated literature review by Dr. Pease, the collection of studies has grown, the research is becoming more rigorous, and this topic is receiving much-deserved and growing attention among interpreters, managers, outdoor educators, and related. This does not mean people of color do not value parks and protected areas; hence, there may be a need for greater comprehension of minority experiences. Engaging communities can be challenging, yet efforts are absolutely essential and interrelated, for history has stories we must not forget or ignore. Visitors are one end of the equation, the workforce is the other; the current state of diversity in leadership in this field is not where it needs to be.

Based on data provided by the Bureau of Labor Statistics, 47 percent of people with bachelor's degrees in the workforce are women. Furthermore, Native Hawaiians and other Pacific Islanders had the highest labor force participation rates (71.4 percent) among the race and ethnicity groups, while American Indians and Alaska Natives and Blacks had the lowest participation rates (59.3 percent and 61.5 percent, respectively). The participation rates for Hispanics, Whites, and Asians, were 66.4 percent, 64.0 percent, and 63.9 percent, respectively (BLS, 2013). An often invisible part of the population, still, is that participation rates for people of two or more races was 65.3 percent. Furthermore, from an education standpoint, the freshman class for four-year schools is 38 percent non-white, and for two-year schools, 47 percent non-white. Is the leadership of your agency substantially less racially diverse than the workforce of the United States? If yes, and especially in the near future, what does “working together” mean with numbers like this? Depends who you are.

“Unconscious bias, discrimination, and insular recruiting practices were found to be the three major challenges to hiring, retaining, and promoting diverse talent in the mainstream organizations. Organizations either do not recognize or have been unwilling to act on initiatives that will make them more welcoming to people of color. They have also shown relatively little interest in partnering with and funding organizations that represent people of color...” (Taylor, 2015)

Consequently, future research on connecting with underserved communities should include how the workforce contributes to systemic culture shifts within the organization. Therefore, it is plausible that underrepresentation also erodes engagement, efficiency, and innovation of everyone not in the majority. Not doing the extra work to be more representative leads to a downward spiral in a country where white people will soon be less than 50 percent of the population. Hence, all the special things about park visitors—their race, gender, age, experience or even immigrant status—contribute to the way people look at approaching situations, evaluating solutions, and solving problems. The more differences agencies cultivate the more support they will receive. The more culturally diverse agency staff becomes, the greater the success achieved. Innovation comes with new perspectives; this demands bringing together people with different backgrounds, fresh thinking, and unique abilities. In the world of parks, public lands, and protected areas, generally, it's not just about different use patterns or visitor needs, or even completely about respecting difference; it's about making a difference.

Relevance, diversity, and inclusion may be some of the toughest aspects of interpretation today. Those who do this work comprehend the importance to furthering their agency mission and, frankly, survival. Still, some others believe relevance and diversity are merely code words for time-wasting political hotspots and blowing taxpayer money. Research shows that if we fail to make parks and public lands relevant to a changing America, what's at stake is the continued political and financial support of these extraordinary places. More scholarly articles surface and a surge of media reports on this topic appear regularly. Nonetheless, research is needed to explore the intersection of agency goals, structural constraints, and the visitor experience using a variety of methodological approaches deemed most appropriate for communities of interest. Ultimately, research should continue seeking new tools and processes needed to invest in and make real progress. Recognizing the consequences of inaction, our hard work must endure.

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Parks and Underserved Audiences

An Annotated Literature Review

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Summary/Abstract

In the 1970s, 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 20th 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 20th century, Floyd (1999, 2001) wrote about the four major theories in the literature that attempted to explain reasons for low 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); and
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 21st 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 limitations (including transportation or lack thereof, costs, and fear of the outdoors);
2. communication challenges (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);
4. lack of knowledge, experience, awareness (what to do, where to go, how to get there, equipment needed, etc.); and
5. lack of diversity on staff (their group is not represented on staff or only in janitorial or maintenance positions).

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, and 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 the site exists, 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 people. Change is like that. In the end, however, parks, monuments, and museums will be better for it, as will the broader spectrum of people who will come to visit.

This review includes articles from peer-reviewed journals primarily from the years 2000 through 2010, some non-peer-reviewed journals that interpreters read regularly, some conference proceedings, and some technical reports. Also included are some articles from prior to 2000 to add some historical perspective. Chapters from books relevant to the topic

also are reviewed. While this review does not include every relevant article published, it hopefully gives the reader a sense of the current state of the profession with regard to serving underserved racial and ethnic audiences.

Keywords

underserved audiences, learning, non-formal environments, race, ethnicity, heritage, culture, parks, National Park Service

Introduction to the Issue and Reasons for This Review

Parks and monuments are important parts of the American landscape. They are symbols of our values and represent 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 with tax and volunteer dollars, and with countless hours of professional and volunteer efforts.

At the same time, the U.S. population is changing and diversifying. Through the first half of the 20th 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 may comprise less than 50 percent of the population and “minorities” collectively will become the majority. Hispanics, composed of people from a variety of cultures, races, and Spanish-speaking origins, likely will be the largest of the “minorities.”

Some argue that this changing demography should not be of concern. After all, isn't the U.S. a country that is a “melting pot,” made up of immigrants who share a common desire for freedom and who are gradually acculturated to a common culture? Others posit that U.S. history is not one of a “melting pot,” but rather of a multi-cultural composition, with varying degrees of tolerance for racial and cultural differences.

To whichever version of history one subscribes, it is clear that the future will challenge the “melting pot” idea. From a park's standpoint, will the future mix of people, with 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 the broader public 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 examining what the published literature says about demography, the use of parks and other areas by a variety of racial and ethnic 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 might implement that will enhance the future of the parks, monuments, and other areas.

Early Studies of Race and Ethnicity in Relation to Parks

Meeker's 1973 essay was one of the earliest to call attention to racial differences in the use of U.S. National Parks. Parks are, he asserted, the “remnants of the Jeffersonian dream of a garden utopia.” But, he noted 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 felt, 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 quoted Eldridge Cleaver, 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 whites’ conquering of the West and the destruction of their culture. Whether much has changed in the 40-plus years since this essay was published is up for debate.

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 distinguished skin-color privilege from class privilege, though the two may overlap. She listed 26 privileges accorded to her solely by her race. She noted that such unearned privileges assert an unearned dominance, which can easily be taken for granted.

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 toward parks and toward a variety of other natural resource issues.

At a special session of the 4th 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 are all similar. His data found that they were not; rather, there were significant differences between all four 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 its 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 inter-ethnic cooperation that such issues have engendered, putting the focus on solving the problem, rather than on 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 & Black, 1993). They found racism to be both more pervasive and complex than previously thought. They identified six 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 are 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 about expected racism than actual experiences. This points, however, to the pervasive nature of racism and the impacts it can have on behavior.

Blahna and Black 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, in which cultural biases did not coincide with chosen behavior and posited that their research did not support Meeker’s ideas of two 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 several possible remedies, including more training of existing staff, greater staff racial and ethnic diversity, and more opportunities tailored to attract different ethnic groups to overcome their fears.

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 activities were similar to Hispanic use of local parks reported by other authors. While hunting and fishing were subsistence activities in Laos, they appeared 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 included 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 detailed 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 selection of artifacts that were used and the historical context in which they were interpreted. Without engaging the Lakota as true partners, the exhibit likely would have created additional resentment and mistrust. As a result, Lakota visitation to the Monument was noted and future collaboration planned.

In a written introduction to a panel discussion, Sucec (1997) detailed the statutory requirements for NPS consultations with tribal groups as well as the complaints about them from both NPS and tribal groups. The author noted that, while consultation is required, there is no legislative definition of what that entails. 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 differed also on how requests were received, whether they were taken seriously, and whether or not they were implemented. The author pointed out that in interpretation, particularly, consultation was critical for the information to be accurate and appropriate and to dispel myths regarding Native Americans. Funding, time, and logistics were often difficult, but had to be managed due to agency mandates.

Ballantyne (1995) interviewed Aboriginal and non-Aboriginal interpreters (14 total) about interpreting Aboriginal culture in Australia. It became clear quickly that there were two different frameworks: Aboriginal culture is what existed in the past, specifically 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 through 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 cultures. Where this does not occur, interpretation may be seen to be exploitive. To avoid such exploitation, interpretation must take into account the dominant ways that people understand their culture. In the case of Australian Aboriginals, their heritage was mostly an oral tradition; therefore, they wished to share their culture orally, face-to-face (guided walks, dance, music, stories, painting, 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 may help in reconciliation. There was also consensus that 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.

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 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 often were engaged more in environmental issues that were locally based. The authors offered suggestions for minority participation improvement: hiring more minority staff as role models; basing programs on topics relevant to their environments; and providing transportation 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, including 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 was to attract broader audiences. They suggested 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 (which emphasize 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 primarily to EE in formal school-based programs, the recommendation certainly could be applied to EE in non-formal environments as well, including parks, nature centers, visitor centers, etc. The authors 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 suggested, 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. The authors did not, however, suggest drawing from NGOs or environmental justice groups beyond the “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 score disliked activities that required any manipulation of organic materials. They did not differ, however, from students with low DS scores 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 inverts: clear, no algae, easy lakeshore access. Though the authors classified the students as being from rural or urban schools, they gave no analysis that indicated whether or not that was a correlational factor. While no research has been found, 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 children are young can be a factor (Chawla, 1998), leading them to avoid facilities that are “wild” and, therefore, “dirty” or “disgusting.”

In a book by Uzzell and Ballantyne (1998), the authors recounted what they call “hot interpretation”—using strong emotions in interpretive presentations to provoke understanding and involvement. Through relevant examples, they revealed 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. "The recency of hot events can make interpretation difficult as they cannot easily be placed in larger historical continuity and context." The authors also reflected on the abstraction of events that are "placeless" and discussed whether and how they might or might not be interpreted.

Related to that was 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 more distant problems. Uzzell and Ballantyne suggested hot interpretation helps people move to action locally and gain empathy for others globally. They suggested that "hot interpretation" be used "wherever we find a conflict between people" where interpretation can serve "a community development function." They gave examples of how interpretation has helped heal in post-Apartheid South Africa and helped Aboriginal communities in Australia to share the stories they desire to tell about the impact of European settlement on their culture and communities, and to remember that past, rather than forget it. They noted that such uses are not sensationalistic attempts to increase tourist numbers; rather, they posited that hot interpretation, properly handled, can help people more fully understand and more deeply appreciate a site—to bring people together in understanding rather than encouraging or reinforcing division.

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

Zelezney, et al. (2000) went beyond 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 showed consistency across age and across 15 countries. They explained 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 five percent of the variance in male-female scores and six to eight percent 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 populations 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, included 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 tourism 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 that 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); and
4. discrimination hypothesis (park use is affected by actual or perceived discrimination, past discrimination, and institutional discrimination, both real and perceived).

Though hampered by using only papers from four major leisure studies journals, the author did gather and summarize much 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)

Rodriguez and Roberts’ (2002) report summarized studies in the areas of race, class, and gender in relation to participation in outdoor recreation activities. The report synthesized site visits to three 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 selection of studies to research that encompassed all three aspects of race/ethnicity, gender, and social class, but few research studies 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 also was concern expressed about how deeply NPS staff cared about diversity matters, especially since agency directives were often “top-down” mandates. The authors also found the published literature to be lacking in understanding of the recreational desires of many underserved groups and the degree to which they are attached or felt affiliation with or alienation from parks.

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

1. need for hiring additional and more diverse staff;
2. need to build relationships with community groups where distrust still exists;
3. need to create an atmosphere that is welcoming for diverse groups;
4. need for transportation of underserved groups to sites; and
5. a 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 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 Racial/Ethnic Group: An Introduction

By year 2000, the concern for visitation to parks and other areas by people who 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, their use patterns were different. Work on those hypotheses continued into the decade 2000–2010. A review of several cross-cultural studies are presented first and then studies that involved particular groups. While concentrated on studies that concern primarily North American groups, a few studies from other countries are included where they contain relevant issues or perspectives that may serve to improve understanding of the issue.

A number of acronyms are 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 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, scaling the degree to which subjects see humans as part of nature and the degree to which humans are 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 from a framework opposite of the NEP.

“NSRE” is the acronym for the National Survey on Recreation and the Environment, a survey conducted by the U.S. Forest Service (USDA) 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, constraints to participation, environmental attitudes, natural resource values, and attitudes toward management of public lands.

“TEK” refers to “Traditional Ecological Knowledge,” argued to be possessed by various aboriginal groups that had 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 practices 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 often is 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 brought to parks. The attempt was to differentiate them, if possible, from the whites who traditionally have 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 percent reported visiting an NPS unit in the previous two years, including 36 percent of white non-Hispanics, 33 percent of American Indians, 29 percent of Asian Americans, 27 percent of Hispanic Americans, and 13 percent of African Americans. Important barriers to visitation included costs, lack of information about what to do in parks, and travel distance. Crowding was an impediment to park use by 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 scales were used to profile demographic differences, recreation activities, and stated environmental positions based on race, country of birth, and other demographic factors (Cordell, et al., 2002). The authors found, among other things, that the fastest growing recreational activities were 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 scores based on race and age. They predicted rising income would allow the changing population to recreate more in parks and other areas and have “greener” environmental attitudes.

A study by Johnson et al. (2004a) used national data (from the 2000 NSRE) from telephone surveys to roughly 3,500 U.S. households to examine ethnic differences in the NEP scores in four aspects: environmental reading, household recycling, membership in environmental groups, and participation in nature-based outdoor recreation. They found blacks and foreign-born Latinos scored lower than whites. Asian-Americans and U.S.-born

Latinos had scores similar to U.S. whites in environmental concerns. African Americans were least similar to whites among the ethnic groups. But, the type and extent of differences between whites and the other groups varied, depending on the environmental behavior. Of course, the NEP itself is a U.S. construct, based primarily on the rise of the U.S. environmental movement in the 1960s, and argues that a fundamental shift in attitudes toward nature occurred at that time.

These authors believed 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 from each other. 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. All NEP scores were positive, with foreign-born Latinos slightly lower than other groups, as per other studies. Not surprisingly, they found within-group variation in environmental attitudes and behaviors based on income, gender, age, and other factors. The respondents were not homogenous within their ethnic groups. The authors also noted 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.

Because the idea of wilderness—and thus parks—was tied so closely to the ideals specific to the American identity (especially in the 20th century), the values associated with wilderness often are described as cultural constructions. Further, it is argued that wilderness is a creation of white, upper income, educated, predominantly male Americans and has value to them and not necessarily others within American society.

Whether or not wilderness “sustains the human spirit” is the question addressed in a paper by Johnson, et al. (2004b). 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 than immigrants here for shorter time periods.

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, responses were not clear-cut. Black responses were least similar to those of native-born whites. The authors argued 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, where 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 who have lived in the U.S. the longest. While whites visit wilderness more than other groups, the valuation of wilderness is similar across all groups.

Parker and Winter (1998) studied six 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 percent Anglo, 12 percent Hispanic, 9 percent Asian, 3 percent African American, and 4 percent mixed or other. This reflected higher diversity than for other wildernesses, but lower than that of the population of the surrounding area in southern California. They found education levels of the wilderness users higher than the general public, but not different by ethnic group. They found that only 4 percent had contacted the Forest Service prior to visiting; rather, friends and family were the most frequently reported source of information by both Anglos and Hispanics, followed by maps, trail signs, and road signs. Both Anglos and Hispanics wanted materials to take with them (maps or 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 several environmental issues among Latinos but little evidence for it in African-American populations. Further, they reasoned that Latino concern is especially proximate in nature, as Latinos relate best to issues of immediate concern to their communities rather than more distant or esoteric issues.

“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 also found that the “hierarchy of needs” prediction was not supported: if anything, minority respondents, who are often the most economically deprived and least well-educated, were more concerned with environmental issues, not less, than whites. Both Latinos and African Americans are increasingly concerned with toxins and other pollutants in their environment.

Bechtel, et al. (2006) looked at over 1,350 undergraduate students’ responses to questions on the NEP/HEP scales in four 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). Results indicate 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 made 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. Kato argued that the environmental community often fails to take into account the local cultural context in which an issue occurs, creating misunderstanding and mismanagement. He noted, 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 high non-white populations. These studies reveal interesting trends that assist understanding of racial and ethnic differences.

A Texas study used focus groups of blacks and Latinos in areas near a nature center to discover what the barriers are to their use of the center (Rideout & 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 overwhelming barrier to many. Latino adults were especially interested in children's programs—indicating a strong family orientation—and in programs about plants. The authors suggested that park and recreation 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 examined current users and included 22 percent Hispanic, 13 percent 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). 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 for 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 to 30 percent 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 park users. While all groups used the park for core activities such as 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 such as 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 a need to reduce litter and vandalism and to provide cleaner restrooms. Whites were more than twice as likely as other groups to mention safety concerns. All three non-dominant groups mentioned discrimination, mostly by other users or police, that had occurred in the park.

This study was 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 that have large ethnic populations. Some 1,513 questionnaires were returned. Whites, Hispanics, and Chinese were most likely to visit parks with one or two others, whereas African Americans and Hispanics and Koreans were more likely to visit with three 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 was consistent with results of other studies. The author suggested that management of parks might consider change to accommodate these larger family groups.

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

Roberts used eight focus groups of 99 minority people (Latino, African American, and Asian) in the San Francisco Bay area. The majority (two-thirds) 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 might be more generally applicable in park planning efforts. While there was a general misunderstanding or lack of knowledge by respondents about who manages these resources (revealing a communication or public relations problem for the agency), there were five 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, overwhelming posted park rules [communication], signs and brochures not reflective of their culture/race);
4. lack of knowledge, experience, awareness (what to do, where to go, how to get there, equipment needed, etc.); and
5. lack of diversity on staff (their group is not represented on staff or *only* in janitorial or maintenance positions).

The author expressed that there is much heterogeneity across Latinos, depending on country of origin. Management decisions should not be based on assumptions of

homogeneity within an ethnic group. Many in all three groups expressed that media reports about violence that takes place in parks reinforced their fears. 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 children are excited about going to a park, it is more likely that parents and other family members will go along.

A study by Taylor (2008) looked at minority students in environmental fields. Findings showed that minority students are interested in building careers in the environmental fields and that they 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.

A summative evaluation of a traveling exhibit titled “RACE Are we so different?” was conducted in 2007 by Randi Korn and Associates, Inc. The researchers sampled 116 visitors upon exiting the exhibit, gathering demographic and other information. Visitors were interviewed to measure outcomes of the exhibit. One-third of the sample members were interviewed prior to their exposure to the exhibit. One-third of the sample was interviewed immediately after exiting the exhibit and the final one-third was interviewed via phone several weeks after visiting the exhibit. Findings of the study revealed that visitors to the exhibit improved in understanding that race is a recent human invention and that humans are genetically more alike than different. Timing and tracking observations revealed that the exhibit held visitor attention longer than other exhibits of similar size. The phone interviews showed that visitors retained the information that was learned at the exhibit for at least several weeks after their visit. However, as well as visitors learned these ideas, they did not grasp the concepts of how race informs identity or how racism affects American society.

These 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 at least as varied within an ethnic group as between them. The next section reviews 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 (1999) studied over 500 African American and white Americans in a phone survey in Detroit, across all income groups. (The authors used pretests 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 (EBS), and an Environmental Structure Scale (ESS—to measure powerlessness) in their research. A summary of results showed, by scale, that:

NEP—Blacks and whites both scored moderately positive on the NEP, with no significant 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 although 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 with which to recreate. The authors conceded 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 six years during that time period were available. That sample, over all years, was ~84 percent white, ~14 percent black, ~2.5 percent other races. Results showed that blacks registered higher means for 10 of 11 items than whites. White respondents 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, this study found that 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 three magazines (*Time*, *Outside*, and *Ebony*) to contrast use of black and white models. It found black models rarely were used in outdoor recreational settings while whites regularly were. Blacks were portrayed primarily in urban or suburban settings as opposed to whites, who are portrayed more often in more natural, wild settings. Because leisure activities are learned behavior, the author speculated that such stereotyping may influence how the two races perceive wilderness recreation or wilderness in general. The author speculated that if wild areas are perceived as white areas, then blacks may avoid them to avoid potential discrimination, perceived or real. He also posed that such avoidance might also reflect protection of their personal racial identity.

A study by Payne and Orsega-Smith (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 also were 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 historically black university in Houston, Texas. 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 to 15 percent) even though Houston had curbside recycling and about 23 percent of Houstonites participated. 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 about environmental issues was especially urgent in Texas, where the majority of residents would be non-white 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 the 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 behaviors. 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 online.
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 U.S. Census Bureau report that blacks make up 13 percent of U.S. population but only 6 percent of the federal science and engineering workforce and less than .5 percent of the federal environmental workforce. Quimby, et al. (2007) reported on research at a Maryland university, tracking the predictors of success in undergraduates 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 measures of support for pursuing a career in them.

The following articles, while not research, add to an 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 did not frequent them in proportions equal to their population in regional areas. The author pointed out that African Americans have travel distances and times in percentages equal to or greater than Caucasian Americans. She indicated that Arkansas tourism data showed that resident blacks were traveling out of state (77 percent) rather than vacationing within the state. She noted that the sites (in this case, state parks and historic sites) were public institutions and funded by public tax dollars, yet 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 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 underserved audiences to sites; seeking partner organizations from minority communities; developing programs and events with minority interests in mind; providing internships specifically for minority students; and developing new and revising old exhibits to be certain all stories are told, even if controversial.

Mast (2011) showed how Harper's Ferry National Historical Park has 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. Then in their third year, the students had 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 at that time, had become a regular part of the official interpretive program at Harper's Ferry and can be downloaded online. While the author gave no details about how often or by whom they had been downloaded, he implied that it has been successful at inspiring an historical interest in many more students than those who participated in the actual productions.

In her 2003 commentary, Gantt-Wright pointed 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 through the 1980s and beyond, despite the contributions of G. W. Carver, Zora Hurston, Ellie Ruley, R.S. Duncan, and others. The author claimed from her own experience that African Americans are indeed interested and concerned about both environmental justice issues and about open space. She also noted the role of popular media—especially in ads [see Martin, 2004]—in propagating the myth that African Americans were not environmentally interested.

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

Huso (2006) told the story of the change in interpretation at a NPS historic plantation from one where the slave quarters were ignored and overgrown to one that incorporated the buildings and slave life fully into the story. The author noted that visitation had

changed dramatically as well, from 100 percent white visitation to one that is now about 50 percent 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 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* was themed “interpreting slavery”], Blizzard and Ellis (2006) detailed how first-person, living interpretation is done at Historic Williamsburg. Critical reflection of American society is a goal, they said, be it “troubling or triumphant.” Part of that history includes the painful remembrance of slavery. The authors 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 reminded the reader also that slavery still exists in parts of the world in new and even more sinister forms, and that people must continue to be enlightened to help them see the humanity in all people.

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 analysis. 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. Variouslly 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 percent of the population and by 2050 are predicted to make up about one 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 research show that, while Spanish is a unifying language, Hispanics of different countries of origin 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. As in 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 attributed this to the degree of acculturation: less acculturated Latinos scored higher than more acculturated Latinos. Even given that, though, the differences among Latinos remained. The authors reasoned that the differences were 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.

Chavez (2003) conducted in-depth interviews in Spanish with 58 Mexican-Americans in four families that were using national forest sites in southern California. Families felt that leisure was important to their family and helped with family bonding. As with other studies of Hispanics, these families 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 providing the opportunity to pass on their love of the land and the river to their children.

Hong and Anderson (2006) used interviews with 15 Latino community leaders and 10 Latino parents to discover why they were not using a Minnesota nature center. The authors found differences between the two interview groups. The leaders spoke English and had been a part of the West St. Paul community for many years. The parent group spoke Spanish primarily and were relatively new arrivals to the community. The primary factors for non-use of the nature center were: 1) lack of familiarity with the nature center by Latinos; 2) cultural differences/disconnects (especially no staff who spoke Spanish and no Spanish-language programs or materials (displays, trail guides, etc.); and 3) cost, especially because prices were per individual and Latinos tend to have large, extended families and lower incomes. As an example of the impact 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 amenities such as bathrooms due to the lack of Spanish signage. The center was perceived by the Latino leaders as a “place for white folks with money.” Older, established Latinos remembered actual previous discriminatory experiences and, even though they felt “things have changed,” those experiences still were remembered and led to discomfort. (Part of St. Paul is traditionally white while the west side of St. Paul is racially diverse.) Suggestions that were provided for the center by the leaders and parents interviewed included:

1. collaborating with other organizations that already are working in the Latino community;
2. getting involved in the Latino community, events, neighborhoods, organizations—developing a relationship with the community;
3. offering scholarships or “family” pricing instead of individual pricing;
4. hiring some Latino or at least Spanish-speaking staff and offer some Spanish-language programs and literature and signage, or at least recruiting some volunteers to help translate and/or teach such programs;
5. changing “outreach” from brochures and advertisements—also not in Spanish—to going into the Latino community and getting involved and inviting them to the Center; and
6. recruiting Latino mothers and grandmothers, who are most active in their children's lives, to bring their children to the center.

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 okay. Unlike in the U.S., where this utilitarian outlook is separate from ecological beliefs, Mexicans in this sample didn't apparently see them as conflicting. (Bechtel found 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. The research was conducted at an institution that was nearly 50 percent Hispanic pre-service teachers. The authors found the teachers to be largely lacking in sophistication, approximately at the level of the students they would likely teach and, therefore, were unable to meet the standards set by NAAEE (North American Association for Environmental Education) for environmental educators. The teachers had an anthropocentric view of the environment. Further, the authors found that neither ethnicity nor dominant residential experience (urban, rural, suburban, etc.) predicted teachers' success in the test. The authors did not test cognitive questions.

A study by Aguilar and Krasny (2011) looked at after-school Hispanic environmental clubs in three middle schools on the Texas Gulf Coast to see how they fit the “community of practice” theoretical framework. Several important aspects were identified that were consistent with such a description: goal(s) of the club were jointly negotiated (opportunity to develop joint enterprise); membership was free-choice and roles of leadership were negotiable (mutual engagement); the tools/language 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.” Learning about science (in this case, Gulf environmental problems and solutions) was important, but it was more than science.

Aguilar and Krasny's study demonstrated an example of how EE programs can contribute to the social process of learning and help build community, 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.” Such an approach can provide an agency or organization an opportunity to help young people find connections between science and the issues that are relevant in their lives.

A paper by Guerrero (2003) presented an explanation of the process in which they were engaged, rather than a focus on results. Labeled as a “research note,” it described the evolving process they were using for understanding the worldviews of three indigenous groups in Columbia. She noted that the three groups “maintain distinctive man-society-nature relationships and management of their natural resources.” The methodology the researchers used was multi-disciplinary (from sociology, anthropology, psychology, administration, and design) and, importantly, involved students from the indigenous groups who were attending the university as co-investigators. Most notably, they maintained the oral traditions of the groups, interacting with them while trying to find a way to record the ongoing conversation and stories. They noted that this process found 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 in papers from other continents and cultures as well: the aboriginal worldview is often perceived as simple and unscientific. Guerrero found, however, that it is far from simple. It may not be as linear as Western constructs, but contains far more depth of ethical, social, and relational content than once believed.

Guerrero also noted that in all three of the co-researchers’ intensive diaries, memories of discrimination by the dominant society were recurrent. It reminded the author 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 U.S. parks, museums, and other areas are usually not conducted independently of other ethnic groups; rather, they are folded into cross-cultural studies already cited earlier.

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. Hunting and fishing were important particularly to males in this recent immigrant group, just as it was in their Laos home culture.

Other studies are more cross-cultural and include various “Asian” groups in their study groups. They include: Bechtel, et al., 2006; Blahna & 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 NSRE data, 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.

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

Native Americans/Aboriginals

Native Americans and other aboriginal populations have been studied using a variety of research methods. This section includes both research projects and essays that are enlightening. The latter are included to acknowledge the storytelling tradition—in this case, essay writing—of most aboriginal cultures. Included are articles from studies in the U.S., Canada, South Africa, and Australia that, if the lessons in them are applied, may be instructive.

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 of TEK. 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 determine whether, how, and when to use TEK to manage cultural or ecologically significant resources. Institutional inertia, lack of knowledge about how to work with tribes, a lack of trust, and resistance from individual managers all were identified as 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 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, themes that are 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 the two approaches 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 reasoned, has led to much 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 also are 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.

Van Damme and Neluvhalani (2004) explored the state of research into indigenous knowledge (IK) in southern Africa. They 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...”

The Van Damme and Neluvhalani paper identified some of the ongoing 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 IK be used and not devalued 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 globalization often encourages cultural and economic homogenization and commodification of cultural identities, not heterogeneous coexistence. 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 suggested, 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 difficult. The tendency toward technological fixes for both social and environmental problems is contrary to this. The authors pointed out that IK cannot be contrasted with science as though IK “lacks scientificity;” rather, 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. The authors explained that their research led them to conclude that, “by their very nature, indigenous ways of knowing are multifaceted...often drawing on personal experience and historical story...” Thus, such an approach 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.

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 address critical environmental problems. As an aboriginal, 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 toward 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 these students are to become the environmental problem solvers within aboriginal communities, the situation must change, she posited.

Among the environmental problems Canadian aboriginals are facing are oil-related toxins in the Arctic, global warming, industrial contamination of water, flooding from hydroelectric plant construction, commercial cutting of forests, mining and resulting wastes, impacts of biotech on traditional seed stocks, fishing rights, and others. Simpson

noted that such issues 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.” 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 that all create barriers to education of aboriginals in science.

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;
- 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;
- using 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.

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. The curriculum integrates culture, environment, and people into a single approach in the interest of restoring 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, with the interdependence of all things being emphasized. The original study took place in 2002 and was followed up in 2007. Both 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 extended, including nights out and journeys as long as one to two weeks. It also included extensive journaling, photos, and computer use that students could use to document their education and make presentations. Their in-class activities were based primarily on their outdoor education, not vice versa. Subjects were taught in the context of the outdoor activity (e.g., lamprey food webs, berry picking, rabbit snaring, fish trapping, moose hunting, camping). 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 the 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, making this the only school in the district to reach the standards. The author noted that the community now feels a part of the school and takes “ownership” in the education of the students rather than being apart from it.

The essays that follow come primarily from interpreters and environmental educators, many of whom work in the front lines of education and directly with various indigenous people. Their experiences are relevant in this review.

Beckford, et al. (2010) wrote an essay suggesting the incorporation of indigenous knowledge, stories, and values into science, not as 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 ongoing relationship between the Walpole Island First Nation (WIFN) (southwest Ontario) and the University of Windsor. They used interviews that were conversational and free flowing, consistent with the oral traditions of the indigenous people. While Western science is often portrayed as “open, systematic, objective, rational, and intelligent,” indigenous knowledge is seen often 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. Environmental problems are still many, often thrust upon the community by surrounding land use (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. These stories “contain a rich source of cultural evidence of climate change manifested in impacts on hunting, trapping, fishing, and ecosystems.”

Beckford and colleagues warned against perceiving all aboriginals as inherently benign to nature and as 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.” 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 include both the historical and cultural aspects of the mission, but also will 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 with regard to respecting Aboriginal methods and timelines for decision making—making certain they are “culturally appropriate.”

In a speech to the Australian National Press Club, Casey (2001), the director of the National Museum in Australia, talked about the role of the museum in the ongoing discussion of Australian history and Aboriginals’ place in it. She acknowledged that the museum is “controversial,” but reasons that that is precisely the role it should be playing in the national debate over Australia’s past and its future—offering fodder for the grand discussion and “physical and intellectual space in which such debate could take place.” She asserted that museums should, in fact, always be “in plenty of trouble” by having an “inclusive approach to history” rather than the classical approach of a “master narrative” that imparts the “Truth.” She said that history, in fact, has “no one valid viewpoint,” but rather is complex and can be viewed from multiple perspectives, that “there are few absolute truths in history.” Indeed, if multiple stories are told, rather than only that of the dominant culture, then a wider representation of the community may be attracted. She said “every visitor is different. But for nearly all of them, a museum visit includes the pleasure of recognizing the familiar, as well as the shock of encountering something new... the challenge of understanding that there are many different ways of looking at the world.”

In an attempt to evaluate the effectiveness of an Australian museum’s work with Aboriginal peoples, Kelly, et al. (2006) examined their application of “communities of practice” on learning. Noting that “learning is not just in the heads of the learners but within the process of co-participation” in learning, the authors wrote how the museum focused on the social context of learning, especially in collaboration and consultation with Aboriginals during the period of the previous 20 to 30 years. The authors noted the need for museums to become a part of the larger and complex world in which they exist, including museums taking account of social and political change, community demand, and global change. Museums can, they asserted, become a catalyst. Museums have changed, they claimed, in several ways: becoming externally focused rather than internally driven; becoming consultative and engaged with the community, rather than authoritative; becoming a “living archive” rather than a storehouse; and moving into a broader set of relationships with community members rather than with fewer “stakeholders.” They noted that these changes have caused museums to change from the 19th-century institutions that had an authoritative view of knowledge and learning to a 21st-century community of practice with mutually decided goals and joint learning.

Spoon’s (2010) article interviewed 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 said 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. Subsequently he served 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 that 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 was understood as just that, a mandate. What really was needed, though,

were relationships between individuals in both groups that build trust. He stated what he believes 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 a historic site, Stimson (2010) wrote about 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 who lived at those sites to change language, modify the understanding, and improve their sensitivity and respect in the interpretation of those sites. 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 by Wilcox (2005). It told of the creation of the COTA (Circle Of Tribal Advisors) from all the tribes contacted by the Lewis and Clark 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 Lewis and Clark, sharing their viewpoints. Telling the full story, with all its implications, is not comfortable to some, to be sure, but it’s more honest and accurate, says NPS Hidatsa interpreter Gerald Baker.

Recommended Practices to Partner Actively with Underserved Groups

In a book chapter published in 2000, Chavez advised that recreational professionals must pay attention to the changes in U.S. demographics lest they risk ignoring and alienating a very significant portion of the population. While she advised that more attention be paid to these changes, she cautioned that the labels used (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 sections demonstrate that is largely the case.

Hispanic and Asian-American recreationists, for example, tend to participate in large, extended family groups. Thus, the site, its size, and the social aspects of what is being planned all must be considered. But current participation patterns may not reflect the future. As Dwyer noted in 1993, lack of participation may be the result of past racism, fear, lack of resources, or fear of discrimination. History shows that those things can and will change over time.

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), 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 economics nor culture 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 identify the problem, discover the barriers, and overcome them or risk not serving a major portion of the population. In particular, if one of the major goals is to have an ecologically literate and historically knowledgeable public, all Americans must be reached, not just people from the currently dominant culture and race.

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 groups, this may not be the best way to reach some groups, even if it is done in their first language. Partnering with elders and other existing groups in their community may be better. Similarly, she suggested educating existing staff, hiring minority staff, and learning to communicate in the ways the various groups prefer. This often is not via brochures and signs, but rather interpersonally—which means getting involved 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 Spanish, for example, by one person, and then back to English by another. Lastly, she suggested that innovation is in order, finding novel ways to meet the needs of a particular group.

This section 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. First, examples from the literature are examined that show the summative 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 did not address similar collaborative efforts in the interpretive world, the lessons learned may be transferable. This paper concerned the involvement of off-road vehicle (ORV) associations in the design and management 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 increased 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 ongoing.

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 such a 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 between volunteer and professionally gathered data, and increased support for the project among volunteers, though sample sizes of both groups were 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 was 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 underserved groups, the type and duration of training and personal follow-up by agency staff are critical ingredients.

A 2006 article by Barnett et al. described (in general terms without explaining the actual curriculum) an urban ecology program and its effects on the interest of urban youth in science. They built a whole curriculum on the question: What is the health of Boston's urban ecosystem? The program encouraged the students to find out, starting in their own neighborhoods. The researcher 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, reducing the teachers' concerns about behavior management of students in the field. Field assistant support gradually was reduced as teachers gained experience and confidence.

The authors found that students changed their perspectives on environmental stewardship as the program progressed, 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 confidence to alter aspects of the program and integrate it into existing curricula. The authors wrote 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." The authors stated that "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 demonstrated 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 three-step process with a group of 12 Kenyan teachers from two high schools in Nairobi:

1. toured five interpretive facilities and review their trails, brochures, signage, etc. ("interpretive capital");
2. helped 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, Atiti discussed, 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 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 five national parks. What he noted was 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 adopting a constructivist approach to learning, that is, interacting with 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 visitors who come to parks voluntarily and not necessarily to learn—select and modify information to their own needs and wants. Thus, interpreters can seldom control what a visitor learns. However, they can skillfully guide learning by asking the right questions, giving information when necessary, and interacting with them. It becomes a dialogue, not a lecture.

Tsevreni (2011) wrote that, if one wants kids to learn the action step of environmental education, one has to truly have them participate as full members, facilitating their “action competence.” He detailed the steps he took in working with 60 9- to 12-year-olds in an 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. 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.

A study in Maryland’s Chesapeake Bay looked at the impacts of a five-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 toward school. They used pre-, immediate post-, and three months post-experience evaluations of students. In particular, the authors compared urban (primarily African American) students with rural students to understand the differential impacts of the program on them. The curriculum at the site was experiential in all aspects, using 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 three-month post-experience period, but that improvements 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, especially urban 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 had changed to include “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 also have 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. Such involvement demands more of the interpreter, requiring him/her to skillfully handle an audience with much give and take. He noted that “21st century values do not always translate to a 19th 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 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 (2009) used an ethnographic approach (an iterative process, using in-depth interviews, participant observation, review of both published and gray 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 in Costa Rica, focused on a science-based approach that emphasizes animals and habitats, and sees humans as largely interfering with the survival of others. The other, at the Santa Elena Reserve nearby, 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 the 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, and 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 group 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.” Luis, the EE coordinator at Santa Elena, stated: “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 has relevance about the differences between 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. He used the example 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 position. The author reminded readers 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 to 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 makes it more honest.

Hayward (2010) related his experiences at a multicultural museum exhibition in North Carolina. In particular, he noted how the museum exhibits successfully and constantly engaged the surrounding community in examining itself. Technology that allowed visitors to tell their own stories and become a part of the exhibits was an important ingredient. He described it as more of a “dialogue with the community” than a presentation of its many cultures. He commented how this kept it current and personal, a constant reminder of the drama going on every day in the city around the museum. The community was involved extensively in designing the exhibit and is involved in re-creating it on a regular basis. Thus, the museum exhibit isn't about cultural change; it is part of the change.

The author of a 2005 article (Hein, 2005) posited that museums have a public purpose, that being the progressive education of the communities in which they exist. As such, they must engage those communities in meaning-making; that is, understanding that museum education is more than just showing artifacts and proliferating “facts.” Museum education, the author asserted, is primarily constructivist in nature. Learning is an active process and people bring to that process their own experiences, companions, family backgrounds, previous knowledge, and prejudices. And they then interpret the museum's interpretation in light of those experiences, bringing their own meaning to an artifact, an event, an art work, or a story. That, Hein reasoned, is the point of progressive education: to challenge society to progress from the present to some future. Because of museum education's long association with constructivism—with the thought that process is as important as content—he stated that social action and change are intimately associated with museums and museum education. His examples included several exhibitions and approaches often considered controversial in nature. But that is the nature, he asserted, of museum education and educators should not shy away from it.

It appears that Chavez's advice 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 Rodriquez and Roberts reported in their (2002) State of the Knowledge report to NPS, the parks also must

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 underserved 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, they stated. Failing that, parks become irrelevant to the communities around them, fail to attract “non-dominant” audiences, and fail in attracting a diverse staff.

The importance of diversity was detailed in a national survey (Taylor, 2007) of 1,239 college students in nine environmentally related majors regarding 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, they must undergo fundamental structural changes that will “allow diversity to flourish.” She wrote a thorough history of the research in this area, showing that they have a poor record of attracting minorities into their workforces. 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 factors;
3. socialize and mentor all new colleagues to help them maximize their potential for success; and
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 titled *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 non-formal science learning is relevant to many science, visitor, and nature centers across the country. Chapter 7, in particular, dealt with the special challenges of being from “the non-dominant culture.” The authors noted culture should be seen as a non-static entity, something that is influenced not only by where one lives but also by the people with whom one associates, 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 or assuming that every member of a particular group is the same. They pointed, for example, to the fact that more than 500 Native American tribal affiliations are recognized in the U.S., with more than 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 defines 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 that prevent non-dominant groups from engaging much in science. Non-formal learning can bridge that gap, opening 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 made note that non-formal 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 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, 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 currently underserved groups are to participate, the presentation of science in non-formal environments must change to incorporate more of their cultures and values. How culture shapes learning must be understood, both at the personal and group levels.

In a follow-up to the 2009 book *Learning Science in Informal Environments*, the National Academy published 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 it ignores much of the literature in non-formal science journals, many of which are reviewed in this document. Like the “mother book,” this one uses Chapter 7 to address underserved audiences (Fenichel & Schweingruber, 2010). In particular, it uses case studies to make the point that including diverse audiences at all levels—planning, staff, administration, advisory committees, partnerships—enhances the use of exhibits and sites by diverse audiences. The authors indicate 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 non-formal 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 cited was the Vietnamese Audience Development Initiative in the San Jose (California) 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 varying degrees of acculturation within the Vietnamese community.

Another cited 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 benefits 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 and 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 they cited involved the integration of Native Americans' 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 practices:

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; and
4. work with other non-formal 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 underserved 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 importance 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 others’ recommendations, representing the “best practices” for reaching underserved 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.

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

The author summarized what needed to be done to better connect with underserved 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 use currently.
- Make strategic investments to ensure 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 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 work 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 provide 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 its 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. and value their contributions.
- 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 the park:

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

Summary and Conclusions

All people, regardless of race, ethnicity, background, or national origin, want beautiful, clean, and safe parks and other areas in which to recreate, spend time, and share with their family and friends. In a country like the U.S. 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 be a surprise that today, that same multicultural society has multiple views on those things identified as uniquely "American." Parks, historic sites, museums, zoos, and aquaria are all products of the "dominant culture" of the time at which they were created. As that dominant culture changes, interpreters are confronted by the fact that many groups—some newcomers, some long-time residents not part of that dominant culture—don't feel welcome in those sites and perceive barriers that may be difficult for interpreters to imagine.

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, people, 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);
4. lack of knowledge, experience, awareness (what to do, where to go, how to get there, equipment needed, etc.); and
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. One or more of them are evidenced in the studies presented in this review.

Cultures, even scientific ones, do need to relate to one another. Bell, et al. (2009) wrote a chapter about non-formal environments and learning and the problems of the

dominant culture of science not talking to non-dominant cultures. However, not a single article referenced in that chapter came from journals of the interpretive or environmental education community; rather, all references are from the traditional formal science community. Barriers are often not easily recognizable.

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 wrote of, relating to interpretation, is that sixth 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 visiting sites and participating in programs. Perhaps they perceive in marketing, in signs, in volunteers, in program descriptions that they are not welcome. They bring to 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 the messages and stories interpreters offer, or even in visiting sites at all. Interpreters’ own perceptions of their sites are, very likely, different than those of visitors. Perhaps what is needed is to find out what visitors 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 all, as planners, as interpreters, as managers. It means that overt efforts must be made 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 is “known” and being truly open to others’ ideas, others’ stories, others’ ways of approaching history, culture, and the environment, others’ ways of knowing.

If park personnel remain truly open to communicating with those who are not now comfortable using sites and facilities, they also must remain open to new ways to communicate, as well. In some cases, that may well reach an end that is not anticipated. The standard, linear design of brochures, displays, trailside exhibits, etc. may, in fact, not communicate with the people toward which they are aimed. Parks people 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, parks might better invest in people, great interpreters, great storytellers, some at least who come from communities that either do or once surrounded or lived on the site.

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. To create visitors who care about sites, staff—volunteer and professional—must authentically care about visitors, make them feel welcome, fulfill their needs, and thank them for coming. She cited 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.”

In their report to NPS on their 1999–2000 study, Rodriquez and Rogers (2002) indicated that, in instances in which 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 underserved 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. That effort must continue and it must succeed. Interpreters have skills that may help bridge the gaps: They are storytellers, they believe that process is as important as content, and they teach *in*, not just *about*, the environment.

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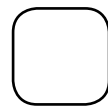
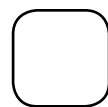
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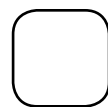
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IN SHORT



Visitors' Satisfaction with Interpretive Services at the Southern Sichuan Bamboo Sea, China

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Introduction

Chinese domestic tourism began booming in the mid-1980s. Increasing incomes and pressures of urbanization prompted people to seek nature-based leisure activities (Xu & Cui, 2013). Consequently, the increasing role of domestic tourism has been recognized in many parts of China (Airey & Chong, 2010). Bamboo forest tourism attractions have developed rapidly since the early 1990s in the southern provinces of China (Dong & Zhao, 2004).

A goal of nature interpretation has been the delivery of high-quality experiences. Quality has been measured in terms of visitor satisfaction (e.g., Manning, 1999; Tonge & Moore, 2007), which is influenced by the importance of a set of attributes and the perceived performance or delivery of those attributes (Bultena & Klessig, 1969; Martilla & James, 1977; Matzler, Bailom, Hinterhuber, Renzl, & Pichler, 2004; Mullins, Schultz, & Spetich, 1987; Oh, 2001; Vaske, Beaman, Stanley, & Grenier, 1996). Although there are no standardized measures of satisfaction, most assessments of satisfaction have been rooted in expectancy theory (Fishbein & Ajzen, 1975), which posits that people engage in activities with the expectation that particular needs, motivations, or other desires will be fulfilled. Chinese visitors' satisfaction with interpretive resources at five sites in the Southern Sichuan Bamboo Sea (i.e., Wangyou Valley, Jade Gallery, Sea View Tower, Tianbao Village, and Sea in Sea Lake) was examined relative to their expectations.

Study Site

Given their distinctive ecological features, and their contribution to Chinese culture (Zhao & Dong, 2006), bamboo forests have become an important part of Chinese nature-based tourism. The Southern Sichuan Bamboo Sea is located in Yibin City in Sichuan Province, China. The attraction, designated as a National Scenic Area in 1988 by the State Council of China, attracts millions of visitors every year. It is possible that visitor numbers may reach unsustainable levels, as the annual growth rate of tourism in this area is estimated to be 17.6 percent. Between January and May 2012, 460,000 tourists visited the Sichuan Bamboo Sea, and contributed \$3.5 million (USD) to tourism revenues (Tourism Administration of Yinbin, 2012). The site offers self-guided and guided interpretive tours. Self-guided interpretation is provided through descriptive signs, the visitor center, the bamboo museum, and published materials related to the self-guided trail. The interpretation delivered by guides is figurative, and is based upon a traditional Chinese approach in which bamboo species and landscape scenes and features are interpreted using stories or poems.

Methodology

An on-site self-administered survey was conducted between April and May 2012. Participants rated 15 interpretive elements using five-point ordinal scales for importance (from 1, not important at all, to 5, very important) and performance (from 1, not satisfied at all, to 5, very satisfied); guided visitors were also asked about six guide-related elements. Importance-performance analysis (IPA) was employed to investigate visitors' satisfaction with interpretive elements, and to determine whether there are differences in the degree of satisfaction of these elements between guided and self-guided tourists. IPA brings importance and performance elements together in a two-dimensional matrix (Oh, 2001; Reino, Mitsche, & Frew, 2007), and has been commonly used in tourism research as a tool to evaluate visitor satisfaction (e.g., Ryan & Sterling, 2001;

Table 1. Importance-performance analysis and gap analysis of interpretive elements (shaded = self-guided visitors).

Elements		Importance		Performance		Gap Value	t
		Mean	SD	Mean	SD		
<i>Guides</i>							
G1	Relevant interpretive messages/ theme.	2.94	1.451	2.63	0.841	0.32	2.903*
		–	–	–	–	–	–
G2	Guide's presentation (attitude, skill).	2.96	1.452	2.68	0.850	0.28	2.720*
		–	–	–	–	–	–
G3	Tour is well organized.	3.00	1.550	2.67	0.823	0.33	3.694*
		–	–	–	–	–	–
G4	Guide's appearance (grooming, uniform).	2.93	0.989	2.65	0.774	0.28	3.001*
		–	–	–	–	–	–
G5	Multiple language support.	2.82	1.100	2.64	0.776	0.18	1.883
		–	–	–	–	–	–
G6	Responsiveness to visitors' inquiries.	2.99	1.542	2.53	0.820	0.47	3.694**
		–	–	–	–	–	–
<i>Signage</i>							
S7	Concise and clear text.	2.85	1.424	2.93	0.918	0.08	-0.695
		2.84	1.507	2.81	0.863	0.03	0.402
S8	Color, material coordination, appropriate height.	2.96	1.260	2.93	0.842	0.03	0.380
		2.91	1.127	2.87	0.829	0.04	0.580
S9	Bamboo theme styling, more interesting.	2.88	1.427	2.80	0.866	0.08	0.748
		2.87	1.281	2.79	0.829	0.08	1.061
<i>Visitor Centre</i>							
C10	Meets a variety of visitor needs.	2.93	1.333	2.73	0.721	0.21	1.867
		2.97	1.409	2.86	0.683	0.11	1.302
C11	Coordinated use of audio-visual equipment.	2.93	1.221	2.73	0.777	0.21	1.922
		2.90	1.101	2.80	0.676	0.10	1.317
<i>Multimedia</i>							
M12	Rich in content, easy to understand and interesting.	2.93	1.346	2.73	0.742	0.20	1.756
		2.93	1.281	2.85	0.679	0.08	0.962
M13	The device is easy to operate.	2.98	1.280	2.84	0.698	0.13	1.252
		2.95	1.310	2.91	0.596	0.04	0.480
<i>Publications</i>							
P14	Comprehensive and multiple languages supported.	2.88	1.265	2.78	0.716	0.11	0.977
		2.95	1.178	2.87	0.634	0.08	1.038
P15	Diversity of media available for purchase (e.g., videos, books, pamphlets).	2.87	1.302	2.71	0.771	0.16	1.451
		2.86	1.208	2.84	0.716	0.02	0.343

* p < 0.01 ** p < 0.001

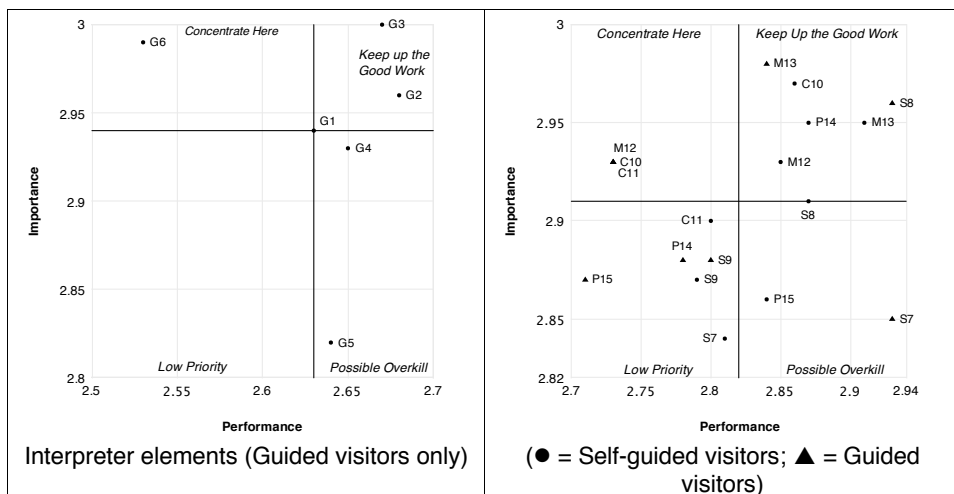


Figure 1. Importance-performance grid of Southern Sichuan Bamboo Sea interpretive features

Randall & Rollins, 2009; Vaske, Kiriakos, Cottrell, & Khuong, 2009; Kwan, Eagles, & Gebhardt, 2010; Ziegler, Dearden, & Rollins, 2012). IPA assumes that performance and importance evaluations are independent, and that the relationship between performance and importance is symmetrical (Mullins & Schultz Spetich, 1987; Oh, 2001; Bruyere, Rodriguez, & Vaske, 2002). We supplemented the IPA with gap analysis to identify differences between importance and performance ratings for guided and self-guided visitors using a paired t-test (Ryan & Sterling, 2001; Ziegler, Dearden, & Rollins, 2012). As the identification of relative levels of performance and importance is central to IPA (Martilla & James, 1977), scale means were employed to inform the placement of matrix crosshairs (Tonge & Moore, 2007).

Results

A total of 355 completed questionnaires were returned (89.2 percent response rate). Respondents were split evenly based on gender (51.5 percent were male), and ranged in age from 19 to 40 years old; 120 visitors were guided and 235 were self-guided; 67.2 percent were from a city within Sichuan province. Visitors' overall satisfaction with their experience was 3.4 ± 0.1 ($n = 355$); there was no significant difference between guided and self-guided visitors ($t(344) = -0.713, p > 0.05$).

Guided visitors' mean ratings of the importance of tour guides was higher than their mean rating of tour guides' performance; gap analysis demonstrated significant differences for five of the six tour guide elements (Table 1). The largest gaps between mean importance and mean performance were found for the responsiveness to visitors' inquiries, the tour is well organized, and the relevant interpretive messages/themes elements. The IPA matrix illustrates that one of the interpretive tour guide elements, responsiveness to visitors' inquiries (G6), requires attention (Figure 1). Respondents were satisfied with the guides' presentation (G2), and the well-organized tour (G3) elements; performance exceeded the importance of two elements, guide's appearance (G4) and multiple language support (G5). No interpretive elements were identified as being of low priority.

The gap analysis did not reveal any significant differences between the mean importance and mean performance interpretive ratings for self-guided elements. The IPA matrix indicates that there were no self-guided interpretive elements that required attention. However, three elements that required attention among guided visitors included meeting a variety of visitor needs (C10), audio-visual equipment (C11), and rich and interesting content (M12).

Conclusion

Visitors' overall satisfaction with interpretive elements at the Southern Sichuan Bamboo Sea was consistent with the importance that visitors ascribed to the different interpretive elements. Of the six guide-related elements, four elements received satisfaction ratings that were less than the associated importance ratings; these elements require further attention by managers. None of the nine facility-related elements had satisfaction ratings that were lower than their associated importance ratings. These findings highlight the need to train guides to better equip them with the skills needed to interpret relevant messages and tour organization and knowledge about bamboo. IPA demonstrated that the visitor center is meeting a variety of visitor needs, the coordinated use of audio-visual equipment, and the content of multimedia elements) were areas where efforts might be concentrated to improve visitor satisfaction.

When China began to introduce interpretive services to national parks and protected areas, there were few evaluations of Chinese visitors' satisfaction of different media (Xu & Cui, 2013). Although this cross-sectional case study is limited by a small sample size, the case of the Southern Sichuan Bamboo Sea identifies the potential to enhance visitor satisfaction through better training of guides in interpretive skills and modern technologies. Although the use of surveys to investigate tourists' characteristics, motivations, and desired experiences is not common in Chinese tourism planning (and may be subject to cultural norms that dissuade people from revealing their true feelings (Cottrell, Vaske, Shen, & Ritter, 2007)), they nevertheless can serve as a bridge between the planning and implementation of tourism strategies (Lai, Li, & Feng, 2006). This case study revealed the need for further research regarding the development of naturally and culturally appropriate and effective interpretation strategies in Chinese bamboo attractions that could engage Chinese visitors, enhance their appreciation of bamboo forests, and encourage awareness and action of sustainable behavior.

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Inspiring the Outdoor Experience: Does the Path Through a Nature Center Lead Out the Door?

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Abstract

This study investigates the visitor experience at a Swedish nature center within a UNESCO biosphere reserve. The question of whether this interpretive facility succeeds in motivating the visitor to get outdoors for a direct experience of nature is explored. Use of the environmental connectedness perspective and concerns about diminished nature experience support the importance of this study. A number of qualitative methodologies are used to investigate the research questions, including thought listing, phenomenology, and field observation. Results indicate that this particular nature center generally succeeded in the goal of inspiring visitors for a direct nature experience. The success in motivating visitors appears to be a result of a number of key variables, including place-based exhibitry, access, and personal visitor factors. Given the setting for this study, we conclude that interpretive nature centers have the potential to play an important role in the re-imagination of urban environments.

Keywords

access, biodiversity, environmental connectedness perspective, Kristianstad Vattenrike Biosphere Area, Naturum, nature, interpretive nature center, thought listing, urban

Introduction

There is a growing concern for both the decline of direct experience people have with nature, and the quality of that experience. This diminished experience may have negative consequences for public awareness and concern about biodiversity loss and ecosystem degradation and at the same time it appears to have a substantial negative impact on human well being (Bratman, Hamilton, & Daily, 2012; Charles & Loge, 2012a, b; Dudley, 2011; Louv, 2005; Pyle, 1993; 2002; Thomashow, 2002). In addition, this diminished experience may result in a lack of engagement in nature conservation and sustainable futures (Folke, et al., 2011; Miller, 2005). At the core of this concern is an essential question about the human relationship with nature, often referred to as environmental connectedness. The environmental connectedness theoretical perspective is represented by a long list of scholarly, empirical, and practical connectedness to nature efforts that emphasize the direct experience of nature, and the possible relationship between the individual and nature that develops from these experiences. “This broad group of connectedness-related ideas ranges from how one thinks about oneself (e.g. identity) to how one conceptualizes one’s relationship with the more than human world (e.g. affiliation or connection)” (Beery & Wolf-Watz, 2014, p 199). The environmental connectedness theoretical perspective represents an important way to reconsider people and nature that opposes a dichotomized framing of nature-culture and considers a more relational perspective (Beery & Wolf Watz, 2014). Feldman (2004) provides an example of such relational thinking via his encouragement to consider many of our wild landscapes “as evidence neither of past human abuse nor of triumphant wild nature, but rather as evidence of the tightly intertwined processes of natural and cultural history” (p. 41). This description of wild landscapes is a fitting one for considering both the human relationship with nature and the role that many nature centers play for interpreting nature, i.e. the weaving together of complex stories of cultural and natural heritage. This role highlights an important opportunity for nature centers to serve as launch points for direct experience of nature.

This study will explore the question of whether a visit to an interpretive-based nature center in a Swedish biosphere reserve, the Kristianstad Vattenrike Naturum, motivates a direct experience of nature. And further, the research will consider specific variables that support the goal of motivating visitors to have a direct experience of nature as an outcome of a nature center visit. As foundation for the study, a consideration of the complex concept of nature, fears regarding a diminished experience of nature, and the Swedish interpretive nature center concept of Naturum will be presented.

Literature Review

What is Nature?

A belief in the power of human experience to unite the ideas of nature and culture provides a basic philosophic foundation for this paper. Therefore, a thoughtful consideration of the meaning of the term *nature* is essential to setting a foundation for this study. Bratman et al. (2012) remind us that the challenge of defining the idea of nature/natural is dynamic

and changes across time, space, and individual. Many disciplinary efforts on this matter reflect an evident Cartesian divide, where *nature* and *culture* are placed in opposition to one another, and where one of them dominates the other (Beery & Wolf-Watz, 2014; Castree, 2005; Hinchliffe, 2007; Rose, 1993; Whatmore, 2002). Head (2000, 2012) makes a strong case for the importance of a conceptualization of nature that integrates the human with nonhuman and emphasizes the real world management consequences of our failure to do so. We wish to present our uneasiness that use of phrases in this text such as, “A concern for a reduced human experience of nature” will result in supporting conceptualizations of nature as somehow exclusive of culture; this is not our intent. We do not solve this conceptual problem but draw support from Castree (2014) who urges that we put less focus on an essential definition of nature, and more focus on perception of and use of the term. Following Castree’s guidance, we present two examples that we feel help orient this current study. One, consider the definition of nature employed by Maller, Townsend, Pryor, Brown, and St. Leger (2006): “an organic environment where the majority of ecosystem processes are present (e.g. birth, death, reproduction, relationships between species). This includes the spectrum of habitats from wilderness areas to farms and gardens” (p. 46). This particular definition is of interest as it spans the “spectrum” from the largely nonhuman (“wilderness”) to the heavily human (“farms and gardens”). Similarly, Bratman et al. (2012) describe nature as: “areas containing elements of living systems that include plants and nonhuman animals across a range of scales and degrees of human management, from a small urban park through to relatively ‘pristine wilderness’” (p. 120). Both of these definitions move us toward a more integrated and relational understanding of nature and culture and avoid complete opposition, or separation of human and nonhuman elements. While the question “What is nature?” will not be answered in this paper, we argue that a relational approach to these ideas is invaluable to nature center interpretation of natural and cultural heritage.

Biodiversity, Urbanization, and a Diminished Experience of Nature

A brief consideration of the contemporary concern for a diminished experience of nature is critical to a full understanding of the importance of nature centers’ potential to facilitate direct experiences of nature. Given the strong biodiversity theme of the nature center considered in this study, biodiversity loss provides an important context for concerns regarding a diminished experience of nature. There is an unprecedented rate of loss of biodiversity across the planet. The Millennium Ecosystem Assessment (2005) reports both a significant decline in biodiversity and a rapid rate of loss. One potential factor in these trends of diminished biodiversity is another global trend, urbanization. Rates of urbanization continue to grow, with 54 percent of the world’s population currently residing in urban areas and projections for this global figure continue to rise (United Nations, 2014). Current rates of urban population in Europe and North America are 73 percent and 82 percent respectively (United Nations, 2014). It has been observed and projected that much of the earth’s current and projected urban expansion will take place in areas where protection of biodiversity is of high priority (Secretariat of the Convention on Biological Diversity, 2012). Given the added concern that the global trend toward urbanization has had a largely homogenizing effect on biodiversity (McKinney, 2006; Miller, 2005), attention to this relationship between biodiversity and urbanization is critical. With the exception of certain successful novel ecosystems (Marris, 2011), much of the nature most people regularly experience is currently, or projected to be, biologically diminished.

Along with the health of the ecosystems themselves, another concern for this biological impoverishment is for its impact on the human experience. A diminished experience of biodiversity contributes to the fear of a shifting baseline (Pauley, 1995), i.e. the idea that the environment encountered in childhood is the baseline against which all future environmental health is judged. Given global trends, if urban areas of diminished biodiversity make up these places of nature experience, then we can anticipate a diminished experience leading to each successive generation creating a new baseline of environmental health, forgetting previous, possibly healthier environmental histories (Kahn & Friedman, 1995; Kahn, 2002). This “environmental generational amnesia” (Kahn, 2002, p. 93) threatens to exacerbate the negative trend in biodiversity seen around much of the world as people come to accept ever-diminished levels of biodiversity as the norm and as a baseline for current decision making and future comparisons.

The Concept and Purpose of Naturum

Naturum is a specific group of interpretive nature centers in Sweden with a name that is designed to evoke nature and space (Naturvårdsverket, 2013). Thirty-two such facilities are located throughout the country as part of educational outreach at Swedish national parks, nature reserves, and other sites of natural/cultural history interest. While the Swedish Environmental Protection Agency (SEPA) owns the rights to the name and sets the common goals for all Naturum programming in Sweden, county administrative boards, municipalities, or foundations manage the sites. The specific mission statement for Naturum interpretation states: “Our mission is to arouse people’s interest in nature. We use inspiring methods to raise knowledge about nature, conservation and human impact on nature” (p. 6). SEPA describes the work of Naturum with a strong emphasis on the idea of these facilities as gateways to nature, for example consider the following passage from the Naturum Handbook: “Naturum shows the way out into nature... visitors will gain knowledge, understanding, and a feel for the value of nature as well as be inspired to get out, take time, and gain a deepened nature contact” (Naturvårdsverket, 2013, p. 15). This effort is described in nine specific points including: “guides visitors about what to see, experience, and do in the area and how to access...” (p. 15). This goal of inspiring nature center visitors to get out into nature has only briefly been studied in the Swedish context. A study of Naturum visitor experience from seven different Naturum sites was undertaken during the summer of 2013 and found that the theme of inspiring visitors to outdoor activity emerged, yet was noted by a minority of visitors (Sandberg, 2014). Beyond the Swedish context, this possible function of nature centers has not been effectively studied. A 1991 analysis from 1,225 nature and environmental education centers throughout the United States did not include motivating an outdoor experience as a specific goal noted by any of the participating centers (Simmons, 1991). Other research into the nature center experience provides consideration of a broad range of nature center sites and visit outcomes, including: impact upon environmental attitudes (Kostka, 1976; Euler, 1989); the usefulness or user-friendliness of interpretive kiosks (Alpert & Herrington, 1998); nature center outreach to urban youth populations (Storksdieck, Pragoff, & Streett, 2003); participation barriers at nature centers (Hong & Anderson, 2006); and community impact of a nature center (Price, 2010). No research was identified, however, that looked at the specific question of the role nature centers play in inspiring a direct experience of nature.

Methods

Study Design

Qualitative methodology and the specific methods of thought listing, phenomenology, and field site observation were used in order to consider the following research questions:

1. Does an informal nature center visit motivate a direct experience of nature?
2. If so, what are the variables that support the nature center goal of motivating visitors to have a direct experience of nature?

Thought-listing

Thought-listing methods encourage participants to share thoughts and ideas stimulated by the informal interpretive experience in the context of short interviews at the conclusion of the visitor experience. Informal experience references the self-motivated and self-directed visitor experience of the exhibits (Jetts & Smith, 2011). Thought-listing interview questions are designed to be broad and simple with only enough direction to encourage the participant to share his or her visit experience. These thoughts and ideas are then evaluated based upon researcher analysis of whether they align with an organization's mission and/or specific goals of interest. Ham (2013) refers to this comparison between response and mission as the "zone of tolerance" or ZOT (p. 149). The degree to which a participant speaks to the mission determines whether this ZOT has been reached. Thought-listing methodology is noted within the literature of heritage interpretation to be useful for understanding the potential ideas, feelings, and behaviors provoked by the visitor experience of an interpretive site (Ham, 2013). The methodology has been successfully applied to questions of heritage interpretation (Bucy, 2005; Ham, 2013; Rand, 2010) and recently applied in a Swedish Naturum context (Sandberg, 2014). The main goal of Sandberg's (2014) study was "to practically test the thought-listing method for qualitative assessment of naturum interpretation" (p. 3). A key result of that study found that thought listing is a useful method for gaining a better understanding of the visitor experience in the Naturum context. In addition to use in heritage interpretation, thought-listing has been used extensively as a method in cognitive psychology (e.g. Broderick, 2005; Lent, Brown, & Gover, 1996; Cacioppo & Von Hippel, 1997; Cadinu, Maass, & Rosabianca, 2005; Lodge, Tripp, & Harte, 2000).

Ham (2013) presents three different degrees of the ZOT idea: unrestricted, wide, and narrow. Unrestricted ZOT is described as visitor response that indicates visitor engagement, i.e. visitors are thinking, making meaning, and drawing conclusions. The wide ZOT is visitor response that reveals an appreciative personal connection to established outcomes. And finally, the narrow ZOT is described as responses that reveal a deliberate reference to a particular desired outcome. The question of whether a visit to the Naturum Vattenrike motivates a direct outdoor experience was established as the criteria for determining whether or not a response fits within a narrow ZOT, i.e. participants will either note the inspiration/motivation or they will not. If participants do not provide a comment within the narrow ZOT, they will be asked a probing question and will either indicate that such inspiration/motivation exists or does not. Positive responses to these probes, i.e. acknowledgement of inspiration or motivation for a direct experience are then noted in a separate category as a narrow ZOT with a prompted response. All responses that did not address research question #1 or directly indicated that the Naturum experience was not a part of a motivation or inspiration for a direct experience of nature were noted as outside the narrow ZOT.



Figure 1. Kristianstad Vattenrike Naturum. Photographs used with permission of Kristianstad Vattenrike.

Phenomenology and Observation

While application of thought-listing methods for data collection and analysis was the primary method used in this study, a general phenomenological coding of the transcripts using Hycner (1985) as a guide allowed for additional themes to be considered in the analysis to address research question #2. Finally, field site observation was used and supplementary data was collected in a field notebook. The purpose of the notebook was to gather relevant study information that fell outside of the interviews. Patton (2002) notes the importance of field notes for the qualitative research process, “They consist of descriptions of what is being experienced and observed...and field generated insights and interpretations” (p. 305). A simple protocol was established to review each of exhibits during the research sessions. For example, this research considered each exhibit with the motivating outdoor experience goal in mind, and notes/observations of any support for that goal were recorded in the field notebook.

Setting and Participants

In addition to the overarching goals of the Naturum program, each individual Naturum facility has its own character and theme based upon the significant and specific heritage setting. The Naturum of the Kristianstad Vattenrike highlights the important, expansive, and biodiverse wetlands and significant water resources of the 100,000 hectares of the lower Helge River watershed and Hanö Bay of the Baltic Sea. The Vattenrike Naturum is

an interpretive facility using both interactive and passive exhibitry in an effort to present key interpretive messages of the Kristianstad Vattenrike Biosphere Area (see Figures 1 & 2). The exhibit space is a large, open room with expansive views of the wetlands just outside the windows. Living elements (such as a fish tank and a macroinvertebrate touch tank) are used to create multi-sensory experiences. Additionally, many of the devices used to represent and interpret the specific places and phenomena of the Vattenrike are electronic media, such as audio recordings, touch screens, and a sensory film experience. Many of the Naturum exhibits are place-based, i.e. they feature the actual designated visitor sites of the Vattenrike. The facility also provides nook-like areas for reading, maps for review, and an activity area for children, as well as extensive visual and written interpretive text exhibited throughout. Numerous bookshelves provide reference material and brochures relating to the Naturum topics.

The population for this study is adult visitors to the Vattenrike Naturum. The Naturum is located in the core area of the Kristianstad Vattenrike Biosphere Reserve Area and immediately adjacent to the city center of the Kristianstad Municipality with a population of 36,000 residents (the greater municipality has an additional 40,000 residents, Statistics Sweden, 2011). The Vattenrike Naturum opened in 2010 and had 160,000 visitors in the first year (Å. Pearce, personal communication, December 16, 2014). Since that initial burst of interest, visitation has remained high, with approximately 130,000 visitors to the Naturum during 2014 (Nordgren, 2015).

Data Collection

Data collection was undertaken during five days in June and July 2014. Dates were chosen to capture both weekend and midweek visitorship and to not coincide with any special Naturum event or Swedish holiday. Visitors at the Naturum were invited to participate after they had been observed in the facility for an extended period of time or appeared to be preparing to leave the facility. Interviews consisted of a number of basic questions focused upon the Naturum visitor experience and exhibitry. The goal of the broad questioning was to invite participants to talk openly about their experience. Prompts were used to encourage clarification when responses were not clear. Initial questions consisted of basic demographic information such as age, residence, and prior visitation and then the following short progression of questions was posed to each participant:

- Tell me about your visit today! Describe any thoughts or feelings about your visit to the Naturum.
- Can you trace these thoughts/feelings to any particular part of the exhibitry?
- Has your visit to Naturum influenced you in any way?
- If there is no mention of outdoor experience during the previous responses, ask directly: Has your visit to Naturum inspired/motivated you to do anything outdoors or to go anywhere outdoors in particular?

Interviews were conducted in a quiet corner of the main exhibit area. Participants were asked for permission for the interviews to be recorded; however, no names were documented. Prior to testing of the questions, interviews were designed to be conducted one on one, but given the Naturum setting and pattern of visitation, many visitors

wanted to participate with a companion, hence 39 interviews and 55 participants). All individual participant comments and opinions were recorded and any differences of opinions or difference of experience in the case of multiple participants interviewed simultaneously was noted to insure all participants' thoughts were included. At the completion of the interview, participants were given the visitor site excursion guide to the Vattenrike in recognition of their participation.

All interviews were transcribed and analyzed using thought-listing methods. Specifically, themes were listed and then evaluated for whether they fit within a narrow ZOT for the question of motivating outdoor experience. Those responses that emerged without interviewer prompting indicated success within a narrow ZOT. When a participant provided an affirmative response to the prompt question regarding motivation for outdoor experience, indicated a conditional narrow ZOT. Those participants that did not mention or acknowledge outdoor experience as a motivated outcome of their experience were noted as outside the ZOT. In addition to the thought-listing analysis, phenomenological coding of data and field observations for the identification of key themes related to research question #2 was considered in the analysis process.

Results

Interviews

The interviews ranged from three to 20 minutes in duration, largely determined by the participant interest in discussing their Naturum experience. Thirty-nine interviews were conducted in both the Swedish and English languages (based upon participant preference) with a total of 55 participants. While the target population for this study was adult visitors to the Kristianstad Vattenrike Naturum, one minor participated in concert with parental participation, thus the actual participant age ranged from 15 to 89, with an average age of 52. Twenty-three participants were male and 32 were female. Thirty-one participants were visiting the Vattenrike for the first time and 24 had visited the Center at least once prior. Forty-six participants were from Sweden, with 22 of that total from the Kristianstad Municipality. Nine participants were from outside of Sweden with the following counties represented: Australia, Denmark, Great Britain, Germany, and the United States.

Zone of Tolerance

Narrow ZOT

Responses were evaluated for whether or not they fit within the narrow zone of tolerance (ZOT), i.e. whether or not they noted motivation for getting out into nature as an outcome of the Naturum visit. Twenty-two, or 40 percent of respondents fell into this narrow ZOT. The following is a sample of responses:

- I have walked the Linnérundan after discovering here that it existed. And in Åhus, I have used the trail at the golf course for exercise (Vattenrike visitor site)...I learned about the trails here...
- I really want to take a trip on the boats! The films have given me a taste to get out in the area and see things!

- Mama is 92 years old and her sister is 97! Ha! But Mama wants to walk, but she must use the roll-walker. She can not walk too far, she doesn't have the energy to go too far...so we will try the Linnérundan as far as she can, but it won't be the whole way! She got the idea here (for the hike).
- We were looking at the map...we have no plans...we go where we find something good...[the exhibit] showed the waterfalls and now we want to go to that place.

While some of the comments indicating a narrow ZOT were general to the entire visit experience, some highlighted the impact of a particular exhibit. The sensory film, the visitor site map, the macroinvertebrate touch tank, etc., were noted in above comments, yet no one particular exhibit emerged as having a significant get-out motivational influence more than any other.

Narrow ZOT with Prompt

During each interview, the question of whether an outdoor experience was motivated by the Naturum visit was asked directly to those who did not provide such a response spontaneously. Twenty-four participants, or 44 percent of the sample, fit in this category. Once prompted, many of these respondents provided an appreciative statement in response to the question of whether they were motivated by the visitor experience to do anything outdoors or to go anywhere outdoors in particular, for example:

- Yes! Every time I come I just want to get outside...
- I think it works! You hear sounds and see birds...and the things that are happening based upon time of year, it gives me ideas for getting out!
- It works well, I think that a person can be given an appetite to get out and see things for real.

Outside the ZOT

Other responses were judged to be outside the ZOT because it was unclear what the participant felt about the Naturum goal of motivating outdoor experience or participants indicated that they don't need motivation. Nine respondents, or 16 percent, fit in this category and provided comments such as:

- It is a bit hard to say...we come from a country where we see a lot of birds, we see a lot of birds even in our yard. So I don't know what to say...
- Hmm, don't know, I can't say that it is the Naturum that inspires me to be out, I get inspiration from nature itself.
- We are outdoors a lot and don't need any motivation to be out.

Other Themes

Access

Beyond thought listing analysis of the participant response, a general phenomenological coding of the transcripts using Hycner (1985) as a guide allowed for other themes to be considered to address research question #2. The most prominent theme to emerge

from the results was access or accessibility in a proximate sense. The physical location of the Naturum was noted to be an important feature given its ability to facilitate visits between the center and nearby nature. The following example comments from participants provide a sense of this access theme from the perspective of a nature center close to city center and a nature center close to nature, as well as a mix of these two measures of accessibility:

- I have taken the train here today and have done it every time I have visited. And then just walk, it is so very close to the station and takes just a few minutes before you are directly out in nature! Only a few minutes! So good for all the people here in Kristianstad, it is a dream location to live.
- I think it is nice that it is situated very close, easy access for almost everyone, situated close to the town or almost downtown.
- I actually came into town to go to the electronics shop, and we had a few hours today, so I wanted to see Kristianstad walk around and one of things here was this place just across from the park, amazing access!
- The whole atmosphere, that it sits here in the middle of the River Helge and yet so close to town and accessible.

Nature People

Many visitors described themselves using the idea of and/or the very phrase of “nature people” and shared that they were out in nature regularly. Here are a few quotes highlighting this theme:

- I am highly motivated, it is integrated into my daily life...
- We are nature people!
- I don't need inspiration to be out. I am out every day to learn, and it is exciting.

These results remind us that the population of visitors of the Naturum may be highly represented by people already engaged in questions of natural history, conservation, outdoor recreation, etc.

Field Notebook Observations

Other results to consider in order to address research question #2 come from the observations recorded in the field notebook. One key theme of observations recorded in the field notebook is evidence of a get out message promoted within the Vattenrike Naturum exhibitry. Significant evidence of this message was noted widespread throughout the exhibitry, and while many of these examples highlight information rather than interpretation, the availability of information in conjunction with the Naturum interpretation appears to be significant. Consider the following examples:

- Map of the visitor sites with an encouraging get-out message featured prominently in the exhibit room. Adjacent to the map is a photo screen with rotating images of each of the Vattenrike's 21 visitor sites.

- Live cam from outdoor sites, e.g. osprey nest featured from Lake Hammar.
- Photos accompanying various Naturum exhibits of actual Vattenrike visitor sites, for example a photo from the Vramsån visitor site at the interpretive fly-fishing exhibit.
- Many topical exhibits about subjects corresponding to a specific Vattenrike place, for example an aquarium showcasing freshwater fish species used the focus of Lake Hammar.
- Prominently displayed daily observation board providing information about flowers in bloom at one of the visitors sites, with the tag line “Out and enjoy!”
- Numerous different brochures in three different locations within the facility, regularly restocked, providing outdoor activity ideas, such as one titled “Out in Skåne,” was noted both on the shelf and in the hands of participants (Skåne is the broader county region in which the Vattenrike is located).

When the above results are analyzed in conjunction with the previously noted results of the ZOT analysis, insight into exhibit contribution to the get-out message is substantial. The following examples from the interviews supports the field notebook observations:

- I have taken the brochures and seen...I think I will walk the trail that leads up to Näsby.
- There are some books on display that have good information about where to walk around. It is always nice to get a sense of where you can walk around.
- These with maps I have picked up [shows brochures/maps to the researcher] I have hiked these loops on the maps, they go in all different directions.

Discussion

While the methods employed in this study do not allow for the results to be broadly generalized to all Naturums in Sweden, or nature centers in general, clear and strong trends have emerged from the data that can serve to deepen understanding of the Vattenrike Naturum visitor experience. Hycner (1985) reminds us, however, that although “...the results in a strict sense may not be generalizable, they can be phenomenologically informative...” (p. 295), thus providing insight and illumination about the Naturum visitor experience. Closely related to the ideas of generalizability, transferability refers to “how well the study has made it possible for the reader to decide whether similar processes will be at work in their own settings and communities by understanding in depth how they occur at the research site” (Bloomberg & Volpe, 2008, p. 78). It is hoped that the application of multiple data collection methods and analyses supports a consideration of how these findings may have relevance beyond the Vattenrike Naturum.

Motivating a Direct Experiences of Nature

Based upon the numerous measures used in this study, it appears the Vattenrike Naturum is successful in motivating direct outdoor experiences of nature. A review of the ZOT

analysis reminds us that 84 percent of participants indicated that the Naturum visit had motivated or inspired a direct experience of nature. In addition, the phenomenological analysis of the interview data, and the analysis of the observations recorded in the field notebook all provide tangible indicators of Vattenrike Naturum success in motivating a direct outdoor visitor experience of nature and point to several key variables for the success, including: place-based exhibitry, accessibility, and personal visitor factors. Each of these factors will be considered along with recommendations for future research to support a deeper understanding or broader transferability of the findings.

Get Out Exhibits

The exhibitry of the Naturum appears to have been designed not only with a get-out message, but rather a specific, place-based, get-out message appears to have been prioritized, i.e. here are the places of the Vattenrike, now go experience them! The message is strengthened if one actually visits one or more of the 21 visitor sites. All of the visitor sites have infrastructure to support recreational experience, such as trails, picnic tables, grills, bird viewing platforms, etc. The Vattenrike Biosphere Area organization highlights the direct experience of nature at the visitor sites for engaging the public, maintaining: “The best way to learn and understand the landscape values is achieved by providing experience and knowledge in place” (Vattenrike, 2014). Many visitors noticed the connection between actual visitor sites and the exhibits in the Naturum and communicated a link between an exhibit and a visitor site they wished to explore. For example, one visitor comment noted two Vattenrike Visitor sites: “I want to get to Härlövs Ängar.... There was a map with pictures and you can see how nice it is and that there is a hiking trail there! I was also reminded of Forsakar...we will get ourselves over there this week too!” Given this type of support for the idea of place-based exhibitry, it would be interesting to ascertain whether any particular exhibit or type of exhibit have a greater impact in motivating direct experiences of nature.

Accessibility

Accessibility facilitating the outdoor experience is another key finding. The strength of this theme cannot be understated, as it emerged without any specific access questions posed.

Visitors marveled at the location and the access to outdoor experience that the location provided, with comments such as: “...that it is so near the center of town, that you can just walk from town! I think it is fantastic!” Access was noted both in regards to its proximity to city center and associated services and access in regard to the expansive wetlands of the Vattenrike Biosphere Area inclusive of trails, a nature reserve, and park space (see Figure 2.). The Kristianstad Vattenrike is quite unique in this respect of proximate access. When compared to the other Naturums in Sweden, no other Naturum is simultaneously adjacent to both the residence of such a large number of local residents as well as to such a significant natural setting. And while it may seem odd to put the relatively small city of Kristianstad into the context of the global trend toward urbanization, we get a different perspective when we consider that Kristianstad city center has a population of 36,000 residents and a population density of 2,019 residents per square kilometer (Statistics Sweden, 2010).

The strength of this theme is noted in related empirical work. Ernst (2012) conducted a nature play needs assessment for preschool aged children and found that in addition to the need for increasing the amount of time pre-school children have for nature play, other



Figure 2. Aerial photo of Naturum and Kristianstad city center. Photograph: Patrik Olofsson

key factors noted included the need to increase access (or perceived access) to natural areas. Similarly, Matteo et al. (2014) emphasized the importance of access via findings that demonstrated that nature-rich routines show a relationship with a child's ability to develop affinity with nature. Despite the obvious difference in focus between Ernst's (2012) study of nature play, Matteo et al.'s study of childhood affinity with nature, and this study of nature center visit outcomes, the findings all relate access to nature as a key part of supporting the beneficial effects of nature on human well-being. Future research should look closely at the specifics of how people access nature centers and whether the specific location of a nature center, in concert with the other noted features of an area, contributes to the livability of a community as implied by the participant in this study who referred to Kristianstad as "a dream place to live" based on his assessment of access and opportunity.

Nature People

It was noted that many of the visitors to Vattenrike Naturum described themselves as "nature people" and this theme points to the possibility that the population of Naturum visitors may be unique and not necessarily representative of the general population. Other factors and demographics may be at work that were not explored in this current study. For example, the south of Sweden is a region with significant recent immigration. Was this group captured in the results? One participant self identified as both a resident of Kristianstad and a recent immigrant from Syria. Does such a demographic have an impact on outcomes? Recent attention in Sweden to questions of ethnicity, urbanization, outdoor recreation, and nature engagement (Jensen & Ouis, 2014) is a good reminder

that the Naturum experience is yet another context for such consideration. In general, a greater understanding about the visitor themselves can support an alignment between message and intended outcomes. Allen (2004) notes that a greater understanding of visitors' diversity of intelligences and learning styles is a key consideration in exhibit design and outcome. Further study with greater generalizability may be able to provide a more detailed picture of who is visiting and provide greater insight into the motivations for their visits. Such information may be able to assist Naturum staff to tailor multiple direct experience of nature messages that may appeal to the full spectrum of Naturum visitors.

Nature Centers are a Critical Link

The success of the Vattenrike Naturum in motivating direct experience of nature is hopeful and the specific variables identified in this section are useful. Future study should explore how these key factors may interact with each other to further support the goal of motivating visitors to have a direct experience of nature. In addition, another specific area of possible future research is deeper consideration for the role of nature center staff to facilitate direct experiences of nature. While interview participants respondents did not mention their interaction with staff during the interviews, the important role that staff working at nature centers can play helping visitors extend the nature center or interpretive experience has been documented previously (Bixler, James, & Vadala, 2011; Erickson & Erickson, 2006). This research along with potential future inquiry is important, as nature centers may be able to provide a critical link in our efforts toward supporting direct human experience of nature.

Conclusion

Given mounting concerns for a diminished experience of nature, we need to broaden our considerations of human relationships with nature and how they can be nurtured. The SEPA Naturum trademark manual, "Curious in Nature" (2011) reminds us to see the Naturum as a gateway to nature, and states that Naturum "shows us the path out into nature" (p. 14) and this emphasis is important. Naturum in Sweden, and interpretive nature centers in other parts of the world, may be able to serve as a critical pathway with an acknowledgement that the ultimate goal is not the content of the nature center itself, but rather the direct relationship between people and nature that can be supported. This role is unique and differs distinctly from other visitor facilities such as museums, zoos, and aquaria. We need nature centers, like the Kristianstad Vattenrike Naturum, that see their goal as beyond the building. Pyle (1993) stated, "Direct, personal contact with living things affects us in vital ways that vicarious experience can never replace" (p. 145). The results of this study indicate that nature centers may be able to open the door to such direct nature contact.

Urban spatial design is a key factor shaping how urban dwellers relate to the landscape (Matteo et al., 2014.); therefore we must rethink and redesign urban areas to feature natural ecosystems and the intertwined processes of natural and cultural history. Gottlieb (2007) promotes an urban nature agenda supporting a reimagining our urban spaces so that we see nature as a part of the urban system. Such creative effort may be able to increase public engagement in urban outdoor spaces, from city parks to nature reserves to abandoned lots. The opportunity to bring people and nature together is an important

positive outcome of urbanization to consider. The work of the Vattenrike, both within the scope of the Naturum and the broader biosphere area objectives, represents such an effort to support biodiversity and ecosystem integrity in close proximity to human residence and daily experience. The intersect of hiking trails, expansive wetlands, a train and bus station, urban park space, and a nature center all within a few hundred meters of each other and immediately adjacent to 36,000 residents is a reminder of this opportunity. The model that Kristianstad Vattenrike presents, along with lessons from other urban places, reminds us that our cities can be rich in biodiversity and contribute important ecological benefits for human well-being (McPhearson, Kremer, & Hamstead, 2013; Nordh, Hartig, Hagerhall, & Fry, 2009; Secretariat of the Convention on Biological Diversity, 2012). Nature centers have an important role in this reimagined urban effort. Nature centers can serve to motivate the public for direct experience of nearby natural places and support the idea of cities as vital ecosystems with the possibility of biodiversity, beauty, and outdoor recreation just beyond the door.

Despite the hopeful results presented in this study, it must be cautioned that simply getting people outdoors for increased experience of nature will not solve our environmental problems. Thomashow (2002) reminds us that our concerns for a diminished experience of nature refers to more than a reduced exposure to local flora and fauna and that it “reflects a decline in specific qualities of attention, ways of learning and thinking about the natural world” (p. 81). Therefore, beyond simply providing greater opportunity for the direct experience of nature, we need to provide experience of nature in deliberate ways with specific outcomes in mind. Nature centers need to be a part of “a network of people, places, institutions, and personal experiences that foster an interest in natural history” (Bixler et al., 2011, p. 35). And beyond interest, if nature centers wish to bridge the nature experience to environmental understanding to pro-environmental behavior progression, we need careful consideration of effective and outcome-based environmental education approaches as recently outlined by Monroe and Krasny (2013). The nature center has a unique opportunity to play a dual role in motivating people out into nearby nature while also being able to help nurture interest and appreciation into understanding and behavior.

Ultimately, nature centers with quality interpretation can help bridge the artificial divide between people and nature, which brings us to a final idea of partnership. UNESCO (2013) describes the biosphere reserves as places “to reconcile conservation of biological and cultural diversity and economic and social development through partnerships between people and nature...” (Biosphere Reserves – Learning Sites for Sustainable Development section, para. 2). The Kristianstad Vattenrike Naturum’s effort supporting access to nature in the urban context is just such a partnership.

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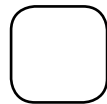
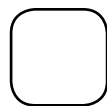
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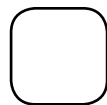
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APPENDIX



Manuscript Submission

Instructions to Authors

Purpose

The purposes of the *Journal of Interpretation Research* are to communicate original empirical research dealing with heritage interpretation and to provide a forum for scholarly discourse about issues facing the profession of interpretation. The *Journal* strives to link research with practice. The *Journal of Interpretation Research* is published by the National Association for Interpretation, the preeminent professional association representing the heritage interpretation profession.

General Information

The primary function of the *Journal* is to disseminate original empirical research regarding interpretation. However, the *Journal of Interpretation Research* takes a broad view of the field of interpretation and publishes manuscripts from a wide-range of academic disciplines. The primary criteria for deeming a manuscript appropriate for the *Journal* are whether it adds to the current state-of-knowledge for practitioners, researchers, academics, or administrators who work in the field of interpretation.

In recognition of how diverse the relevant literature is, the *Journal* will also publish reviews of recent books, government publications, original literature reviews, and bibliographies dealing with interpretation. Abstracts from dissertations, private consultant materials, and reports from public agencies will be published in the *Journal* in a section called “In Short: Reports and Reviews.” This section will also provide an outlet for summaries of research studies with limited scope. Interpretation research often consists of small “in-house” program evaluations and basic visitor studies. The purpose of this section is to communicate current research activities, allow readers to identify colleagues with similar interests, and provide practitioners and administrators with useful information and direction for conducting their own mini-research projects. Submissions for the “In Short: Reports and Reviews” section should be limited to 800 to 1,000 words and will be reviewed by the editor and two associate editors.

Additionally, the *Journal* will publish thought pieces that exhibit excellence and offer original or relevant philosophical discourse on the state of heritage interpretation. The “In My Opinion” section of the *Journal* encourages the development of the profession and the practice of interpretation by fostering

discussion and debate. Submissions for the “In My Opinion” section should be limited to 1,000 to 1,200 words and will be reviewed by the editor and two associate editors.

Research Manuscript Submission Guidelines

All research manuscripts will be reviewed anonymously by an associate editor and by at least two other reviewers. Based on the nature of the manuscript, special efforts will be made to identify well-qualified associate editors and reviewers to evaluate the manuscripts. From the recommendations of the associate editor, the editor will make the final decision of the manuscript’s disposition and communicate this information to the author.

Manuscripts

Manuscripts will be accepted with the understanding that their content is unpublished and not being submitted elsewhere for publication.

- All parts of the manuscript, including title page, abstract, tables, and legends, should be typed in 12-point font, and double-spaced on one side of 8.5" x 11" or A4 white paper.
- Margins should be 1" on all sides.
- Manuscript pages should be numbered consecutively in the top right corner.
- All papers must be submitted in English. Translations of papers previously published in other languages will be considered for publication, but the author must supply this information when the manuscript is submitted.
- Maximum length of manuscripts shall be 30 double-spaced pages (including all text, figures, tables, and citations). The editor will consider longer manuscripts on an individual basis.

Titles

Must be as brief as possible (six to 12 words). Authors should also supply a shortened version of the title, suitable for the running head, not exceeding 50 character spaces.

Affiliation

On the title page include full names of authors, academic, and/or other professional affiliations, and the complete mailing address of the author to whom proofs and correspondence should be sent. An e-mail address and phone and fax numbers should also be included. As all manuscripts will be reviewed anonymously; the name(s) of the author(s) should only appear on the title page.

Abstract

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