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Contemporary challenges of cultural resource management: An inquiry of the role of public support, climate change, and natural hazards in management

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Contemporary issues confront cultural resource management within the National Park Service (NPS) resulting in challenges to restoration and protection. In particular, lack of public support for cultural resources leading to financial struggles, climate change affecting ecosystem dynamics, and natural hazards inducing damage across landscapes, influence cultural resource management. Cultural resources are "historic objects" that reflect the history and heritage of the land. These resources include ethnographic materials and spoken word as representations of cultural meanings that explain connections between native people and landscapes. Such resources illuminate our past as a society, community, and individual, providing understanding for identity and life direction. Challenges to restoration and protection of these resources may lead to permanent loss of historical understanding and landscape meanings. Thus, it is imperative to address these contemporary issues facing cultural resource management for the continued existence of such resources. This paper intends to provide understanding for some of the most pressing challenges of cultural resource management and recommendations for future management consideration.

Modern-day social and ecological challenges to cultural resource management will be examined through inquiry of two case studies. Specifically, minimal public support for cultural resources is a prominent issue with debilitating effects on cultural resources. This is evident at Indiana Dunes National Lakeshore (INDU) where the almost forgotten Chicago World's Fair Century of Progress homes are in dire need of restoration and long-term preservation; however such preservation is limited by financial struggles. In addition, changing landscapes due to climate change and resultant natural hazards are apparent at Mount Rainier National Park (MORA). Recession of glaciers and ice melts has resulted in unpredictable mud and debris flows placing cultural resources at this site in jeopardy. These case studies will illuminate specific challenges faced by the NPS cultural resources management division, current management approaches to address these issues, as well as provide insight for recommendations for future management consideration.

Public support at Indiana Dunes National Lakeshore

Public support for national park units is integral to the future protection of these lands. Such support for national parks manifests in the form of visitation, volunteering, private philanthropy, and advocacy of congressional backing. At INDU, such support is needed to ensure restoration and preservation of cultural resources.

Indiana Dunes National Lakeshore is nestled on the banks of southern Lake Michigan and is fragmented by state-designated protected areas as well as municipal residential communities. One such community, Beverly Shores, is less than two square miles, surrounded by NPS land, and contains access to a cluster of the park's historic structures.

Cultural resources at this park include a collection of historic edifices built for the 1933 Chicago World's Fair. Five homes were constructed in an effort to celebrate a "Century of Progress" by demonstrating modern architectural design, experimental materials, and new technologies (NPS 2007–2008a). At the close of the fair in 1934, Robert Bartlett, a Beverly Shores real estate developer, moved the homes to the lakeshore of Beverly Shores where they were sold, rented, or left vacant for many years (Collins and Nash 2002; Zeiger 2006). In 1976, INDU expanded to include the lakeshore of Beverly Shores and acquisition of the homes began (Zeiger 2006). Under the reservation of use and occupancy program at INDU, home owners continued to live in the houses for a fixed term which lasted up to 25 years (Collins and Nash 2002). Today, the five Century of Progress Homes remain on NPS property and include the Armco-Ferro Enamel House, Cypress Log House, Florida Tropical House, House of Tomorrow, and Rostone House (Zeiger 2006). However, after years of neglect, lack of maintenance, and inoccupation, the homes deteriorated and in 1993 were placed on the Historic Landmarks Foundation of Indiana (HLFI) "Ten

Most Endangered Sites in Indiana" list (Zeiger 2006; NPS 2007–2008a). The HLFI is a not-for-profit statewide preservation organization that protects and restores places of historical and architectural significance (NPS 2007–2008b). Park personnel at INDU recognized the imperative need to preserve the homes; however, it lacked the financial support to do so. Thus, in 1996 the park partnered with HLFI (Collins and Nash 2002). Through a long-term leasing program, HLFI subleases the houses to individuals with previous historic preservation experience and financial capital to fund the restoration of the homes based on the secretary of the interior's standards for the treatment of historic properties (Collins and Nash 2002). Leases span 30 years with allowance for public viewing one day each year.

This partnership reveals success in restorative efforts as well as challenges to cultural resource management. In particular, four of the five Century of Progress homes have been successfully leased under a current 30-year lease agreement for restoration. However, the most prominent of the five homes, the House of Tomorrow, is presently in need of a lessee. The last tenant's agreement was recently terminated due to "unapproved modifications" to the home (Stodola 2008), illustrating potential complications with private restoration. Proposal applications for the rehabilitation of the House of Tomorrow were recently requested (January 30, 2009); interested parties must fund the restoration of the home (estimated at $1.3 million) in lieu of rent. Under this lease-agreement program, the high cost of restoration poses challenges in acquiring willing lessees to fund such projects. In addition to these complications of unacceptable alterations and high costs, other challenges to secure an appropriate and willing lessee consist of the lack of financial incentives and no transference of ownership from NPS to the lessee upon completion of restoration (Collins and Nash 2002). Moreover, this leasing program only allows for public visitation to the homes one day each year. This practice not only limits public education on the historical value of such resources, but also reinforces the concern of privatization of public parks.

Privatization of national parks is a contentious issue and centers on the idea of reliance on private assistance through partnership. In particular, privatization includes influence of interests from philanthropic organizations, commercialization by sponsoring organizations, public outsourcing for concessions and NPS jobs, and preferential treatment for private interests (Wade 2005). Such practices have been criticized for incongruence in upholding the NPS mandate to protect park resources and provide for visitor experience (Wade 2005). As such, a case for privatization can also be made for INDU as reliance on partnership with private philanthropy has led to outsourcing for restoration imposing limitations on visitor experience to park resources.

Support for restoration

The tale of INDU's history illustrates the importance of public support for cultural resource management; specifically, the role of public support in restoration and preservation. The high cost of restoration and lack of federal funding for such preservation practices has rendered assistance through private philanthropy a much needed relief. If not for this support, the physical structure of these homes might have been lost forever. However, the challenges of finding a willing and suitable lessee, given the limitations of the leasing conditions and privatization issues associated with the 30-year long-term lease program, lead to questions about the merits of such a partnership in promoting the enabling legislation of NPS. In particular, the Organic Act provides guidance for managing such resources through preservation and visitor experiences as parks are required "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (16 USC).

With the sentiments of the Organic Act in mind, one question remains: can NPS

trust that a willing investor will be continually standing by to participate in such a long-term leasing program with limiting parameters; and if so, will such partnerships lead to privatization of park resources? Solutions to negate the relevance of such investment and privatization issues lie in defining the role of public support in cultural resource restoration and management. In particular, public support must be generated for cultural resources through interpretation of the necessity of restoration and public involvement in cultural resource management.

Interpretation can be used as a tool to encourage public support for cultural resource restoration and dissuade privatization in the parks. For example, the story of the restoration of the Italian Gardens at the Vanderbilt Mansion National Historic Site in Hyde Park, New York, illustrates interpretation in fostering public support for cultural restoration in the form of philanthropy without privatization.

In its glory days of the late 19th century, the Vanderbilt Mansion housed greenhouses and extensive landscaping (F.W. Vanderbilt Garden Association 2009). However, many years without proper maintenance due to the expense and lack of understanding within NPS at that time of the historical significance of cultural landscapes, left the gardens to suffer great decay (Ketterson 1990). Recognizing the need to rehabilitate the area, park management received a minimal grant to partially restore the gardens and implemented interpretative programs on the historical significance of these cultural resources (F.W. Vanderbilt Garden Association 2009). This led to the formation of a volunteer group in 1984, the Frederick Vanderbilt Garden Association (Ketterson 1990; F.W. Vanderbilt Garden Association 2009). Guided by NPS, this group restored the gardens at the Vanderbilt Mansion. Funded by special events, activities, and donations, this group continues to restore and maintain the gardens (F.W. Vanderbilt Garden Association 2009), while management of the site remains with NPS, allowing for continued public access to cultural resources. Following a similar path for restoration and maintenance of the Century of Progress homes through philanthropy without privatization may be achieved by practicing interpretational strategies that promote the relevance of such resources to contemporary society.

Interpretation is integral to the existence of the Century of Progress homes, as such education "helps audiences care *about* park resources so they might support the care *for* park resources" (NPS 2008b). To ensure the protection of cultural resources through public support, interpretation must focus on identifying why restoration and preservation of cultural resources of the distant and recent past should be of importance to the public. Such practices at INDU might include integrating into interpretation programs the concept that cultural places and materials have value as precious cultural and historical pieces that explain the past (Scott-Ireton 2007) and provide insight into the unique cultural identity of the INDU landscape. In addition, interpretation might focus on influencing public beliefs on the contemporary and personal incentive-based benefits of cultural resource management in an effort to dissuade privatization. Such interpretive learning may foster philanthropy without privatization or congressional support for funding of cultural resource restoration and preservation programs that facilitate greater public access to park resources.

Public involvement in cultural resource management at the individual level also holds relevance in generating support for cultural resource restoration. Providing opportunities for public involvement in cultural resource management projects generates public support for such programs (McManamon and Hatton 2000). In addition, applying an anthropological perspective (i.e., integrating understanding of human meanings into public involvement) to such involvement opportunities would assist in generating a diverse and representative understanding of cultural resource meanings and foster support for the relevance of such resources to contemporary society. At INDU this may be particularly relevant as community residents may hold meanings and values of the Century of Progress homes contained in

stories that have remained untold for lack of opportunity. Strategies to foster such involvement at INDU would include opportunities for joint data collection using ethnographic methods. Incorporating such strategies would assist in enhancing archival collections with untold stories of the park, thus embodying the Century of Progress homes with inclusive and representative cultural meanings. For example, such ethnographic research was conducted at Cane River Creole National Historical Park in Louisiana and revealed biocultural relationships between plantation systems and diverse cultural groups.

The two plantation homes with work quarters on site at Cane River Creole National Historical Park were historically occupied by slaves until abolition, then by laborers and sharecroppers until the mid-1900s (Crespi 1999). Interviews with French Creole heirs of the plantations as well as former laborers and sharecroppers revealed divergent place meanings reflective of ethnic history, culture, and community identity (Crespi 1999). This example illustrates the diverse cultural meanings associated with cultural resources that can remain unidentified if not acknowledged as relevant and deliberately sought. Ethnographic methods to illuminate these diverse place values would prove relevant at INDU as the Century of Progress homes have a rich history linked to American heritage and diversity in occupants. Providing opportunities for public involvement in eliciting such cultural values through ethnographic accounts would assist in advancing support for and promoting the relevance of cultural resource restoration.

Public support ensures the future protection of the Century of Progress homes at INDU. As evidenced, such support comes in the form of public–private partnerships which allow for long-term leasing of the properties. This program reveals many challenges including concern for locating suitable parties to fund and restore the structures without financial incentive as well as concern for privatization of cultural resources. Suggestions to foster public support through interpretation and public involvement may negate the need for a future long-term leasing program and remove concerns for private restoration and preservation.

Natural hazards management at Mount Rainier National Park

Natural hazards, such as earthquakes, floods, hurricanes, landslides, tsunamis, volcanoes, and wildfires are pervasive across North America and produce damage and tragedy across communities and protected areas (USGS 2007). In the context of NPS, such hazards impose on-going damage to cultural resources. For example, the Nisqually earthquake in Washington resulted in significant loss of material history at Olympic National Park and the frequent flooding incidents at Harpers Ferry National Historical Park have rendered impacts to cultural resource infrastructure (Look and Spennemann 2001). Understanding these hazards and their potential damage to cultural resources is important to the protection of cultural heritage.

Mount Rainier National Park is not exempt from concerns of natural hazard impacts on cultural resources. In particular, MORA is named for one of five active volcanoes in the Cascade Range of Washington state (Mastin and Waitt 2004). The potential hazards of Mount Rainier have led to its selection as a Decade Volcano, which is an initiative sponsored by the United Nations to use science and emergency management in reducing loss and destruction from volcanic hazards. In addition, MORA is designated a national historic landmark district. Such designation is granted for the rustic architectural style of park buildings of the 1920s and 1930s, evident in the use of log framing, rough wood siding, cedar shakes, boulder foundations, and stone chimneys. These structures reflect the era of park facility development when structures were meant to harmonize with their natural surroundings (Mount Rainier National Park, n.d.). In particular, 59 of the 208 buildings as well as 33 of the 56 housing units are historic (NPS 2007). A cluster of these buildings are located in the Longmire Historic District where three structures are designated as historic landmarks: the administration building, community building, and service

station (Mount Rainier National Park, n.d.). In addition, historical NPS planning and design principles are evident in MORA's roads, trails, bridges, and campgrounds.

Volcanic hazards at MORA impose the most damaging effects on cultural resources. Such hazards include eruption columns and clouds, volcanic gases, lava flows, pyroclastic flows, volcanic landslides, and lahars (Myers et al. 2004). After an explosive eruption blasts rock and gases into the air, an eruption column forms and rises into the air consisting of small fragments of volcanic glass, minerals, and rock. These eruption columns can increase rapidly in size, extending more than 12 miles above a volcano in less than 30 minutes, and form an eruption cloud. Such clouds can result in ash fall over vast areas, with heavy ash able to collapse buildings. In addition, volcanic gases impose threats to cultural resources. Gases such as sulfur dioxide are emitted when a volcano erupts as well as through cracks in the ground. This gas reacts with water creating acid rain which is corrosive to cultural resource infrastructure. Lava flows also have the capacity of inflicting damage on cultural resources, as molten rock that pours across the landscape from an eruption can be fast-moving and spread across several miles. Pyroclastic flows are high-speed avalanches of hot ash, rock fragments, and gas that flow down the sides of a volcano, reach 1,500 F°, travel 100 to 150 miles per hour, and scythe everything in their path. Volcano landslides consist of rocky material, snow and/or ice moving down the side of the volcano triggered by eruptions, heavy rainfall, or earthquakes. Lahars are one of the most destructive volcanic hazards. These mudflows consist of mud, rock, and water that charge down valleys and stream channels at speeds of 20 to 40 miles per hour, travel more than 50 miles, with enough power to carry buildings downstream and entomb them in mud (Myers et al. 2004). Eruptions can, but are not necessary to, trigger a lahar; such mudflows are also set in motion by glacial snow melt or intense rainfall (Myers et al. 2004; Driedger and Scott 2008; Kennard 2009). These non-eruption lahar triggers result from global climate change which initiates glacial retreats leading to glacial outburst floods and intense rain (Kennard 2009). These volcanic activities have caused devastating impacts to cultural resources at MORA in the past and remain a concern for the future protection of such resources.

Some of the most recent volcanic activity and volcanic-based hazards at MORA include eruptions, landslides, and lahars. In particular, 10–12 distinguishable eruptions of Mount Rainier occurred in the last ~2,600 years, with the most recent incident occurring in 1894 (Sisson and Vallance 2008). In addition, five large landslides on Mount Rainier are documented over the last 6,000 years (Myers et al. 2004). However, an eruption may not be necessary for other damaging volcanic activity to occur, such as gas emissions, volcanic landslides, and lahars. This is evident in the most recent lahar incident, the Great Flood of 2006 (Kennard 2009). During this event, 18 inches of rain fell in 36 hours, resulting in a destructive lahar carrying debris such as boulders and trees. In addition to the vast damage caused by this mudflow to historic roads, trails, bridges, and campground areas, the Nisqually River was flooded, which washed out the protective levees at the Longmire Historic District, freezing weather following the storm burst a water pipe in the historic Paradise Inn causing structural damage, and high winds ripped the roofs from two historic fire lookouts (Bullock 2007). Such examples illustrate the challenges imposed on cultural resource management.

Practices to mitigate future volcanic-inspired damage to cultural resources at MORA have been proposed. Recognizing the historic structures at Longmire sit 57 feet below the Nisqually River, flood protection structures such as a concrete-and-rock wall have been built on the bank of the river to improve flood protection for the Longmire Historic District (Bullock 2007; Kennard 2009). Proposed plans for increased flood protection include the use of engineered log jams to redirect lahar flow. Engineered log jams are designed to mimic natural accumulations of large woody debris found in rivers and streams. Such log jams are used for habitat

enhancement and bank protection (Kennard 2009). However, such practices have not yet been approved.

Disaster preparedness

When it comes to disaster preparedness for cultural resources, the National Park Service has received criticism. For instance, while the NPS management policies (NPS 2006) include consideration for "Protection and Preservation of Cultural Resources" and "Emergency Preparedness and Emergency Operations," details of such policies are minimal and requirements for disaster planning are left to the discernment of each park unit (NPS 2006). Thus, some have said the National Park Service does not adequately plan nor require planning for potential disasters (Look and Spennemenn 2001).

Discussions on disaster preparedness in cultural resource management contexts suggest developing a disaster preparedness plan. Such plans include consideration for establishing a planning team, conducting a risk assessment, identifying critical assets, developing plan details (including assignment of responsibility, emergency response procedures, recovering and renewing operations, and on/off-premises functions and supplies), coordinating with outside organizations/agencies, testing the plan, and implementing and distributing the plan (Roy 2001).

While the development of a disaster preparedness plan is integral to cultural resource protection at MORA, additional recommendations for future cultural resource management in this park remain relevant. In particular, strategies for future disaster preparedness planning for cultural resources might include greater consideration for damage prevention, unidentified traditional cultural places and unlisted historical resources, as well as post-disaster operations.

Volcanic hazards at MORA are imminent (Sisson 2004); particularly given the propensity for climate change to act as a precursor of some hazards such as lahars. Inopportunely, the Longmire Historic District lies within a lahar hazard zone (Driedger and Scott 2008). Thus, greater consideration for practices of damage prevention to cultural resources from volcanic hazards such as lahars must be weighed. However, attention need not be focused on only historic structures, but also historic objects within the park such as trails, roads, bridges, and campgrounds. All of these objects tell the story of the earliest days of NPS planning and design and are worthy of protection. Practices to mitigate lahar damage could include additional construction of flood walls near historic structures and objects, as well as culverts, and wood-reinforced floodplain structures. Consideration must also be granted to the long-term relocation of historic structures and cultural materials from lahar hazard zones.

A major challenge to the preservation of cultural resources is the identification of historic places or traditional cultural properties as they can be difficult to recognize by someone outside of the cultural group (Shull 2001). As the landscape at MORA is dynamically changing due to volcanic activity, identifying these places may be further exacerbated. Greater consideration must be granted for identifying traditional cultural properties and sites of historical significance to tell the complete story of our nation's past, present, and future, before natural disasters such as volcanic hazards permanently conceal them.

The story of the indigenous Hohokam people of the Colorado Plateau illustrates a known culture with an incomplete cultural account due to unidentified traditional cultural properties. The Hohokam have been credited for building more than 200 ball courts between 750 and 1250 (Bayman 2001); however, identification of these sites remains incomplete. These cultural structures help explain the sociopolitical relationships of individuals in ancient societies as leisure and ceremonies occurred in these earthen domains. The only identified ball court in the heartland of the Hohokam is at Casa Grande Ruins National Monument, which offers limited interpretation and viewing from an observation platform (Thompson 1990; NPS 2008c). One

other identified Hohokam ball court was excavated between 1930 and 1960 in the Gila River Indian Reservation as part of Hohokam Pima National Monument (NPS 2007). However, after the last excavation, the complete site was covered with earth and the site remains closed to the public (NPS 2007). Identification and investigation of such cultural resources provides insight into the sophistication of ancient civilizations, such as the Hohokam. Without the opportunity to identify or the interpretation that fosters knowledge to recognize the significance of such sites in telling the story of our nation's past, understanding of cultural heritage remains incomplete.

Such may be the case at MORA where six Native American tribes retain historical ties with the area. The Nisqually, Puyallup, Squaxin Island, Muckleshoot, Yakama, and Cowlitz tribes have historically used the land contained within MORA for hunting and gathering as well as for carrying out spiritual and ceremonial traditions (NPS 2007; NPS 2008a). Currently, only 2.3% of the park's landmass has been surveyed for archaeological remains, with 62 of the 79 identified sites fully documented (NPS 2008a). Failure to identify culturally historical sites in the remaining 97.7% of MORA may result in permanent loss of cultural resources due to volcanic hazards causing permanent concealment. Some practices to assist in identifying such places include ethnographic methods for collection of historical accounts that may illuminate particular place meanings and significance among cultural and ethnic groups of the past and present.

Damage to cultural resources caused by clean-up crews is another evident challenge facing cultural resource management. For example, in 1992, Hurricane Andrew caused tremendous structural damage to the Historic Preservation District of Miami-Dade County (Eck 2000). Damage ensued from the storm as well as the unintentional clean-up efforts that followed. In particular, reclaimable original materials from historic buildings were inadvertently thrown away by work crews and shallow archaeological sites were damaged by heavy machinery involved in debris removal (Eck 2000). At MORA, a similar tale unfolds as evident archaeological materials have been loss due to past park construction efforts (NPS 2007). Recognizing that such construction holds the potential of damaging cultural resources, greater consideration must be given to planning post-disaster operations to ensure cultural resources remain intact. Some practices to ensure post-disaster operations do not disturb cultural resources include clear language in the disaster preparedness plan regarding steps taken to restore and rebuild cultural heritage and archaeological sites and granting this responsibility to cultural resource managers and archaeologists who can facilitate construction efforts in these locations.

Natural hazards such as volcanic activity create much damage to cultural resources and the concern remains prominent at MORA. NPS has responded to past volcanic activities by rebuilding downed protective walls and proposed engineered log jams to redirect future lahar flow. However, additional considerations are needed to ensure the future existence of the non-renewable cultural resources at MORA. Such practices include greater consideration for damage prevention actions, unidentified traditional cultural places and unlisted historical resources, as well as post disaster operations. Providing focused attention on these areas may prove merit-worthy in preventing further damage to cultural resources at MORA from volcanic hazards.

These case studies examined the diverse contemporary management issues facing cultural resource restoration and protection. Such issues consisted of social and ecological challenges including minimal public support for cultural resources as well as climate change and resultant natural hazards with debilitating effects on restoration and protection of cultural resources. Recommendations were provided for future management consideration; however, one emergent challenge remains; in particular, the philosophy of NPS towards cultural resource protection.

Toward a culturally minded philosophy

Recognizing that ecological and socially driven issues create challenges for cultural resource management leaves cultural resource managers responsible for tackling diverse and multi-disciplinary problems. This questions the value of cultural resources in the philosophy of NPS. Specifically, is the greater community of NPS "culturally minded" when it comes to managing all resources contained within our national parks? To address this question requires a gaze into the viewpoint of NPS on cultural resource protection. In particular, cultural resource protection and emergency preparedness in NPS has been criticized for not being prominent in the minds of NPS management (Bennet 1992; Galvin 2001; Little 2001). This minimal valuation of protection and emergency preparedness for such resources appears to be a response to a lack of significant policy associated with cultural resource protection, greater emphasis on natural resources in NPS management, and lack of accentuation on ethnographic resources.

A lack of significant cultural resource protection policy is evident within NPS. While there are many laws (e.g., National Historic Preservation Act of 1966), regulations (e.g., Code of Federal Regulations), orders and directives (e.g., director's orders, executive orders, staff directives) governing cultural resource management, these servicewide management policies provide little direction for strategies and support of cultural resource protection. For instance, the most recent NPS management policies (NPS 2006) presents management actions for the "Protection and Preservation of Cultural Resources" in broad language without clear guidance for specific practices to prevent damage from natural hazards. This is illustrated in the complete verbiage for this policy, which reads: "The National Park Service will employ the most effective concepts, techniques, and equipment to protect cultural resources against theft, fire, vandalism, overuse, deterioration, environmental impacts, and other threats without compromising the integrity of the resources" (NPS 2006:65). In addition, practices regarding "Emergency Management" of cultural resources are equally vague and simple. The entire language contained within this policy states: "Measures to protect or rescue cultural resources in the event of an emergency, disaster, or fire will be developed as part of a park's emergency operations and fire management planning processes. Designated personnel will be trained to respond to all emergencies in a manner that maximizes visitor and employee safety and the protection of resources and property" (NPS 2006:65). As such, these procedures illustrate the lack of clear and descriptive management policy associated with cultural resources to guide the NPS philosophy toward one that is cultural resource-minded. More attention and consideration is needed towards generating policies that ensure the protection of cultural resources in light of contemporary management challenges such as climate change and natural hazards. Such strategies might include mandating disaster management plans a requirement of all park units with cultural resources, regardless of "natural" or "cultural" establishment. This action would demonstrate the importance of cultural resources across park units and establish permanency for a philosophy centered on their protection.

Following this line of thought, there is an evident need for less focus on "natural" and "cultural" parks and more on necessity of both in telling the stories of our national park system. Greater consideration must be granted to recognize that knowledge is incomplete without understanding for cultural and natural dimensions of a landscape. Thus, gleaning insights from past uses of and social associations with natural resources provides understanding to make knowledgeable decisions in future management of all park resources.

This union of managing for natural and cultural resources through an integrative landscape management framework is evident in Shenandoah National Park. The establishing legislation of this park clearly identifies its mandate for the preser-

vation of natural resources within the park. However, park managers and community residents recognized the value of the park's cultural heritage as a clear connection to the natural resources and a pathway toward making sense of their unique cultural identity (Krumenaker 1998). This interest in cultural resources has since led to the integrative landscape management philosophy within the park, where cultural and natural resources are preserved in tandem. Following this dual management approach is warranted throughout NPS to allow for the relevance of cultural resource knowledge in natural resource-dominated management domains. In addition to an integrative landscape approach to management, a complementary strategy for enhancing such a philosophy within NPS involves consideration for ethnographic resources.

To illuminate a focus for a culturally minded philosophy within NPS, greater emphasis is needed on identifying ethnographic resources. For instance, the focus of cultural resources within NPS has been on historic structures and objects; however, attention to ethnographic resources remains minimal. Ethnographic resources explain the cultural associations between people and place (Mackintosh 1999). They are the perceptions held by cultural and ethnic groups in assigning value and meaning to special places in the landscape. Employing ethnographic methods, such as interviewing, to collect anthropological data, would reveal a full range of cultural values from diverse cultural groups (Miri 2001; Shull 2001). Strategies to encourage a philosophy within NPS that fosters understanding for the relevance of ethnographic resources might include dedicating resources to the collection of ethnographic materials and spoken word throughout park units as well as focusing on public interpretation to foster support for such resources. Building interpretive and research programs based on ethnographic meanings provides an inclusive representation of our American heritage (Brown 2001) and illustrates the biocultural diversity maintained within the national parks. Recognizing that diverse cultural groups are associated with the national parks in the distant and recent past and diligently obtaining ethnographic resources to illustrate these diversities will help to explain the breadth of biocultural resources across park landscapes and demonstrate interrelations between traditional linguistic, cultural, and biological diversity (Maffi 2005; Thornton 2009).

Advancing the philosophy of NPS on cultural resource protection and emergency preparedness as an equal priority amongst natural heritage and worthy of equal care in protection and preservation remains a challenge. Practices to advance such a philosophy might include employing significant policy associated with cultural resource protection as well as emphasizing cultural resources through a landscape-based management framework, and greater accentuation on ethnographic resources to tell the story of individual park units. Such practices may reveal relevance in fostering amongst NPS personnel a culturally minded philosophy for management.

As evidenced, contemporary cultural resource management issues in NPS result in challenges to restoration and protection. Specifically, lack of public support for cultural resources as well as climate change and resultant natural hazards often influence cultural resource management. While these case study examinations provide insights on cultural resource management challenges at INDU and MORA, the relevance of management issues and recommended solutions is retained across geographies and NPS designations. However, implementation of such strategies may be difficult without fostering a culturally minded philosophy in NPS that puts greater emphasis on the value of cultural resource restoration and protection. Fostering this way of thinking may prove merit-worthy in addressing these and more contemporary challenges of cultural resource management for the continued existence of such resources.

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