Grounds for Indigenous Knowledge in Park Planning: An Arizona Example

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Abstract

Grounds for indigenous knowledge in park planning may be categorized in at least three different ways: 1) legally, meaning requirements by law to consult with culturally affiliated indigenous peoples and thereby seek indigenous knowledge to apply to governmental-agency land management; 2) morally, whereby land managers seek indigenous knowledge to respect and incorporate human rights in their land management; and 3) professionally, by which agency, contracting, or academic anthropologists ply their ethnographic craft to learn about indigenous beliefs and practices, with a people's or group's permission and cooperation, for the consideration of the concerns of indigenous peoples in planning alternatives. With reference to Organ Pipe Cactus National Monument, Arizona, this paper shows how these legal, moral, and professional motivators combine as variables in conducting Native American consultations with the monument's neighbors, the Tohono O'odham.

The paper goes on to examine a policy of encouraging national park nominations to the National Register of Historic Places. Reference is made to the neighboring Tohono O'odham communities of Gu Vo and Hickiwan and the sacred rock formation within Organ Pipe Cactus National Monument known as Titoi Mo'o or Montezuma's Head. Analysis is offered within the focus of this ICAES session on national policies and community consequences and the attempt "to meet the challenge of protecting the viability and diversity of resources as well as communities" (Crespi and Hoover 1998).

Applying indigenous knowledge should contribute to the management of national parks for the benefit of all concerned by way of better protecting and preserving cultural and natural resources, better interpreting local cultures to visitors, and providing more opportunities for parks to cooperate in the conservation by neighboring peoples of their respective identities as each transmits its cultural heritage to the next generation. Adapted from traditional dryland farming methods and applied to a certain wash in Organ Pipe Cactus National Monument to divert intermittent desert wash water for erosion control, it is demonstrated that a Tohono O'odham mesquite weir model fits these expectations. The listing of Titoi Mo'o in the National Register of Historic Places is compared and analyzed in terms of how well it fits these same expectations.

Introduction: Legal, Moral, and Professional Motivators

Mentioned above in the abstract, a previous paper (Van Horn 1998) illustrates with several examples how legal, moral, and professional motivators operate as a combination of factors in conducting Native American consultations for park planning. In general, the National Park Service, as part of the United States Department of the Interior, is becoming more and more aware of "the importance of being sensitive to, consulting with, learning from, and sharing knowledge with American Indians and other Native Americans" (Van Horn 1998:31). Supporting evidence may be found in such areas as National Park Service staff training (DeSanti 1996), operations of units of the national park system (Ruppert 1997), and in the management of natural and cultural resources within these park units (Van Horn 1995).

The legal impetus for the National Park Service to seek indigenous knowledge by way of consulting with American Indian and other Native American neighbors stems from the National Historic Preservation Act of 1966 (NHPA) as amended, as well as other federal laws, presidential executive orders, and agency policies. In particular:

The 1992 amendments to NHPA shifted consultation from an internal to an external focus. As a result, the law now emphasizes training, for tribes as well as federal employees, and grants for
tribes. Section 110, as amended, instructs agencies to consult not only with state preservation but with Indian tribes and Native Hawaiian organizations before taking any "significant action" (Ruppert 1997:38).

The idea is to avoid disturbing, and to protect in additional ways as well, Native American sacred and other traditional-use sites. A recent anthropological article by Barbara Mills and T. J. Ferguson (1998) illustrates the preservation and research ethic concerning sacred sites from a tribal perspective. An article by Deward Walker (1991), predating the 1992 Native American consultation requirements discussed by Ruppert, compellingly calls attention to the need to protect American Indian sacred geography.

Indigenous knowledge is the key to the ideal of protection and preservation. And mutual application of that knowledge is the crux of "what has emerged ... a kind of mutual responsibility, a mutual authority that has transformed how both agencies and tribes operate" (Ruppert 1997:38).

Working Together at Organ Pipe Cactus

Organ Pipe Cactus National Monument, Arizona, is situated in that portion of the Sonoran Desert that extends north from Mexico into the United States. The monument shares borders and boundaries with Mexico to the south and the Tohono O'odham Nation to the east (Van Horn 1997). Formerly known as the Papago Indian Reservation, it is still mistakenly called that by some Anglos (Dollar 1998:8). As part of ongoing relations, the staff of the monument and members of the Tohono O'odham Nation share different types of knowledge. This is pertinent to materials for interpreting to visitors the natural and cultural history of what is now the monument, and to strategies for managing natural and cultural resources within the monument. The staff of the monument has plans in place, subject to future funding, to apply traditional Tohono O'odham skills about erosion control to a particularly troublesome spot in the monument.

The Tohono O'odham have long been recognized for their dryland farming techniques (Nabhan, 1986a, 1986b, 1987). In the Sonoran Desert, they catch and divert sporadic seasonal wash waters from desert rains. Among other methods, brush is gathered, and weirs are assembled for the purpose. The plans at Organ Pipe Cactus National Monument utilize mesquite weirs.

The monument staff has worked out a set of detailed drawings with Mr. Dolores Lewis, a much respected Tohono O'odham farmer, for the mesquite weirs. They would be set up to divert and more evenly distribute wash water above and below the spot in question in the monument. A gabion that has been in place for some time, replete with heavy steel mesh over rocks and boulders, has proven ineffective to stop the erosion (Van Horn 1995).

The Mesquite Weirs

The site in question is in a remote part of the monument where a major wash crosses a dirt road. Despite the gabion, the wash south of the road has eroded to depths of three feet and more. One recent photograph shows a root about six inches below the surface crossing from one side of the wash to the other, like a wire stretched across. The erosion here reaches down about three feet beneath the root, dramatically exposing it.

Tohono O'odham strategy, as developed by Mr. Dolores Lewis, a traditional O'Odham farmer (Lewis and Lewis 1990), calls for mesquite weirs to be placed above and below the road where it crosses the wash. The plans call for at least six weirs, as follows (Van Horn 1997:106):

Three sets of two weirs apiece would work together above the road. One weir of each pair would cross the wash from each side with an open channel in the middle. Given the topography and the narrowing contour of the wash as it crosses the road, if each weir met its mate, they would come together and form an angle of about 135 degrees in the center of the wash. Each of these weirs would be made up of single mesquite posts, intertwined with small brush woven between the posts, and placed at intervals of 200 or 300 feet, dependent upon the contour of the wash, so that each weir would work in tandem with its mate. A single weir could be as long as 900 feet. The mesquite posts would be spaced 3 feet apart and dug down so that about 2 feet of the post would remain above ground. When flowing above the road, the water in the wash would tend to fan out among the weirs on each side of the wash.
Stronger and heavier weirs would be placed right in the eroded wash below the road and below the existing gabion. These weirs would be doubled posted, with mesquite branches placed 8 to 10 inches across from each other, forming a thick barrier packed with brush. Angled pairs, similar to those above the road but thicker in width and much shorter in length, would alternate with weirs placed straight across the wash like blockades. Angled pairs would also be placed on top of the banks of the wash to fan out the overflow when the wash filled up. Here the mesquite posts would be buried 3 feet or more deep, and the angled pairs alternating with straight blockades would be installed every 150 to 200 feet or so. Additional brush placed downstream behind each weir would dispel the eddy currents that eat away the banks. Below the road, the weirs would serve primarily to slow the water and build up silt.

**Interpretation to Visitors**

The wash in question is in the Armenta area of the monument, named for the Armenta Ranch/Homestead/Well, where agriculture was practiced much earlier in this century through well-water irrigation. The area is in the “backcountry,” so to speak, and visitors must either hike in or reach the place via four-wheel drive vehicle on the dirt maintenance road. Anglo desert agriculture is interpreted here. The spot is a “discovery site” in that visitors employing a park brochure “discover it,” getting resource-education data and local history from the brochure.

When the Tohono O’odham mesquite weirs are in place, the Armenta area could interpret the idea and practice of applying Tohono O’odham knowledge for modern erosion control as an outgrowth of traditional dryland farming methods. This would augment the other ways the monument interprets the Tohono O’odham: a cultural and historical video at the visitor center plus changing exhibits there, and Tohono O’odham Day held on the visitor center grounds every spring. Tohono O’odham Day, now approaching its tenth anniversary, is an outgrowth of the ongoing and growing interaction between the staff of the monument and the Tohono O’odham Nation. It features displays on native seeds, O’odham language materials for teaching the language to school children, on models of traditional dryland farming by catching and distributing wash waters, and on the craft skills. This day of free admission to the park for visitors, and of bringing (by providing convenient transportation) Tohono O’odham representatives to the monument to interact with visitors, has proven quite successful.

**National Register of Historic Places**

As part of the system of national parks in the United States and other such units as national monuments, preserves, historic parks and sites, and recreation areas, Organ Pipe Cactus National Monument is managed under the act of Congress of August 25, 1916, which established the National Park Service. With reference to the national park system, the National Park Service is:

In addition, the 1937 presidential proclamation establishing the monument, mentioned above, recognizes the rights of the Tohono O’odham to pick the fruits of the organ pipe cactus, and other cacti, subject to monument regulations for resource conservation.

Thus we have a national policy embedded in law to preserve natural and cultural resources in parks by leaving “them unimpaired for the enjoyment of future generations.” However, when change is necessary by developing roads or other facilities, often for visitor safety, mitigation procedures are practiced. Avoiding any resources that might be threatened is the first strategy. Documentation by photography for preservation of this record of historical information would then follow in the case of cultural resources. It is not the purpose of this paper to discuss mitigation measures in detail, but rather to introduce the National Register of Historic Places as offering cultural resources protection.

Established in 1966 by the National Historic Preservation Act, the National Register of Historic Places serves as a national repository in Washington, D.C., operated by the National Park Service for information organized and filed per state and county on historic properties that meet criteria of significance for listing in the register. Historic property is the generic term for archeological sites, historic buildings, and other historic structures and objects that are evaluated for the integrity of their historic fabric in terms of how they might contribute to American history. Valuative criteria relate to: 1) being associated with important persons; 2) being associated with the sequence of
important events; 3) illustrating characteristics of important architectural styles associated with different periods of history; or 4) being recognized for the potential of contributing to future archeological research.

The status of being listed or being determined eligible to be listed (with further evaluation expected) affords certain protection. A property determined eligible must be treated as if it were actually listed. Basically, park planning must carefully consider all possible impacts to properties on the register or determined eligible. And any adverse actions must be mitigated through negotiation and agreement with the state historic preservation officer with involvement of the national Advisory Council on Historic Preservation if necessary.

The process of listing calls for research and documentation by way of a nomination form that is reviewed by the historic preservation officer of the state where the historic property is located. A property may be found eligible with further evaluation expected, as I have mentioned. The process continues for the keeper of the register in Washington, D.C., to evaluate further and hopefully to approve, thus listing the nomination. In other words, actual listing in the National Register of Historic Places requires the sequential evaluation and acceptance of first the state historic preservation officer and then the keeper.

The concept and category of traditional cultural property is a recent addition to National Register of Historic Places terminology. Before, properties could only be nominated for their historical or archeological significance. Now, they can be nominated as traditional cultural properties for their significance to the heritage of indigenous peoples within the United States (Parker and King 1990; Winthrop 1998).

National recognition can be a by-product of listing. Data on the nomination forms are public except where restricted to protect the location of archeological sites and to respect the wishes of indigenous peoples about places associated with culturally sensitive information. The issue of possible national recognition or increased publicity within the larger society needs to be examined concerning the listing as a traditional cultural property of I’itoi Mo’o in the National Register of Historic Places in terms of the reactions and expectations of two neighboring Tohono O’odham communities of Organ Pipe Cactus National Monument -- Hickiwan and Gu Vo.

I’itoi Mo’o

I’itoi Mo’o or Montezuma’s Head was listed in the National Register of Historic Places as a traditional cultural property on May 2, 1994. Montezuma is another name for I’itoi from the Tohono O’odham living in what is now Mexico (Underhill 1969). This happens to be the first traditional cultural property from the state of Arizona to be listed in the National Register (Trap et al. 1995:87):

I am professionally privileged to have initiated the idea of trying to place I’itoi Mo’o in the National Register of Historic Places as a traditional cultural property and to have researched and written the material for the National Register nomination. I presented it before the Arizona board of academic experts of archaeologists, architects, and historians -- the Arizona Historic Sites Review Committee -- which is affiliated with the Arizona State Historic Preservation Office and serves to evaluate National Register nominations. The experience was much like orally defending a dissertation (Van Horn 1998:34).

Approval ensued at the state level, and subsequently at the national level with the keeper of the register. A successful listing would not have been possible without the active cooperation of the government and people of the Hickiwan District and the Gu Vo District.

I’itoi, Hickiwan, and Gu Vo

To the northeast and east of Organ Pipe Cactus National Monument, respectively, Hickiwan and Gu Vo are the two westernmost districts of the eleven districts that comprise the Tohono O’odham Nation. Hickiwan shares a small border with the monument and is northeast of the Ajo Mountains. The Ajos mark a border running south to Mexico between the monument and the Gu Vo District. Gu Vo is directly south of Hickiwan. I’itoi Mo’o, in the northern Ajos in the monument, can be seen from Hickiwan, which is “on top” of Gu Vo on the map; the two districts share an east-west border. I’itoi Mo’o is much closer and forms a prominent part of the cultural landscape at Gu Vo.
Vo. Looking west, *I’itoi Mo’o* is almost in Gu Vo’s side yard, so to speak.

A short hike from Gu Vo brings people into the Ajos and to *I’itoi Mo’o*. Traditional Tohono O’odham purposes for going are to meditate and to leave gifts of food and personal belongings for I’itoi. Oral history tells of this O’odham deity’s:

appearance to the Tohono O’odham people, his instructions to them about proper living and surviving in the desert, his death and resurrection, and the possibility that he may return to earth at this place (Trap et al. 1995:87).

*I’itoi Mo’o* is one of three “homes” of I’itoi. These are sacred places to worship, meditate, and communicate with I’itoi. Another is in the remote Pinacate region of Sonora, Mexico, southwest of the monument, or, more specifically, *El Parque Nacional del Gran Desierto del Pinacate*; the third may be found around Baboquivari Peak, which is within the Tohono O’odham Nation with a prominent altitude of 7,730 feet. All three are associated with rock formations; the latter two have accompanying caves.

O’odham belief calls for observing seasonal changes and other environmental nuances of the desert, such as different types of water sources and how the distribution of plants and animals varies with altitude and terrain. I’itoi is the embodiment of such belief and knowledge that the desert supports life, as compared with an Anglo stereotype of the desert as only a harsh environment.

By way of my visits to their districts for various types of meetings (for example, Lewis 1989; Ramon 1994) and their on-site visits to the monument with me (for example, Cipriano 1989), people of Hickiwan and Gu Vo collectively and individually shared some of their indigenous knowledge or intellectual property (Ruppert 1994; Stephenson 1997). The clearly understood purpose was to nominate *I’itoi Mo’o* to the National Register of Historic Places as a traditional cultural property.

The Hickiwan District Council was so enthusiastic that it even sent a letter in the form of a council resolution supporting the nomination to the Arizona state historic preservation officer and to the keeper of the National Register of Historic Places. Hickiwan views the register as a way of recognizing and helping to preserve Tohono O’odham history and culture (Ramon 1993).

Gu Vo underwent a change in administration during the latter part of the nomination and approval process. The new officers of the Gu Vo District Council were invited, but did not attend, the Arizona Historic Sites Review Committee meeting on February 15, 1994, in Phoenix, Arizona. Members of the Hickiwan District Council did attend in support of the *I’itoi Mo’o* nomination per their resolution. As mentioned, *I’itoi Mo’o* was listed on May 2, 1994.

Gu Vo, nevertheless, communicated its concerns about listing Tohono O’Odham places as traditional cultural properties. As one member of Gu Vo put it, “Our religion is not a property!” The point is well taken. What level of indigenous knowledge is appropriate to meet policy criteria of listing in the register?

Hickiwan acknowledges the merit of revealing only so much sacred cultural information to meet listing criteria for the larger purpose of national recognition. The earlier Gu Vo administration who cooperated with the nomination is now back in power and thinks, like Hickiwan, that it is worthwhile to reveal some information to establish facts in support of National Register listings.

**Analysis from Below to Above**

Inspired by the “viewed-from-above-and-below” analytical approach of this session (Crespi and Hoover 1998; Hoover 1998), I attempt here an “on-the-ground, below-to-above” analysis. Subject to available funding, the mesquite-weir project in the monument would incorporate the expertise of the neighboring indigenous people, the Tohono O’odham, in resource management. Wash-weir technology could prove more effective than the more expensive “higher-tech” gabion approach. In the process, the monument staff would cooperate more -- adding this project to other O’odham programs of cooperation -- and in the process learn more of Tohono O’odham culture, such as the need to cut mesquite during the summer months when the wood is at its strongest and more resistant to termites and other insect damage. Cultural information like this could be incorporated in the interpretation of the monument to visitors.
The customs of the two cooperating cultures would come together for mutual benefit in estimating the quantities of mesquite and brush needed and budgeting funds for the labor of an O’odham crew to cut mesquite and gather brush from the Tohono O’odham Nation on their reservation. Budgeting would include funds for weir installation by the Tohono O’odham in appropriate stages and for the inspection and maintenance of the weirs in relation to water movement, which would dictate the placement of new weirs as time passes.

The Tohono O’odham model of mesquite weir fences, diverting the intermittent desert wash water for erosion control in the monument, certainly illustrates that:

. . . playing games against nature is always counterproductive. Indians know how to play games with nature. Europeans -- Whites -- have been at odds with nature for many centuries (Cross quoted in VanDevelde 1998:46).

The national policy of encouraging nominations of traditional cultural properties to the National Register of Historic Places must meet a test of indigenous utility -- even if recognized and applied through a cultural overlay of the larger society. This has been discussed in relation to Hickiwan and Gu Vo with regard to the nomination and listing of I’itoi Mo’o.

Conclusion

Applying indigenous knowledge contributes to the management of national park units for the benefit of all concerned by way of better protecting and preserving cultural and natural resources, better interpreting local cultures to visitors, and providing more opportunities for parks to cooperate in the conservation by neighboring peoples of their respective identities as each transmits its cultural heritage to the next generation. Seeking indigenous knowledge from the Tohono O’odham and attempting to apply it meaningfully has been demonstrated at Organ Pipe Cactus National Monument. One example illustrates a local, effective approach to erosion control, and the other illustrates the utility of featuring indigenous knowledge to document the information in Arizona's first traditional cultural property to be listed in the National Register of Historic Places.

Notes


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