

in the fall. After the harvest, the poles were brought out again and the trees whipped vigorously to remove any dead cones. In addition to accomplishing this task, it seemingly broke the ends of the branch tips, thus bringing about the production of two growth buds where there had been one. Pinching or breaking the growth buds by hand accomplished the same thing, although this usually involved the lower branches only. People say that both processes were "good for the trees," and the trees responded by producing more pine nuts in the future. However, it must be done only with wooden poles--to use plastic or pipe will damage the trees and not bring about the desired result. Although these processes have not been thoroughly studied to see just what is occurring, it is known that new cones will be produced on the faster growing branches of the tree (Lanner 1981:79), and perhaps the pruning activity stimulates this growth. Whipping trees to stimulate production is also known in other world areas, a case in point being 17th Century Europe where walnut trees were so treated (Eugene Anderson, University of California, Riverside, personal communication, November, 1993). Today, no one is whipping or pruning the pinyon pines of Death Valley National Park, but a few people still do on Hunter Mountain and in the Grapevine Mountains. A number of people feel that pine nut crops have suffered in recent years because no one is tending the trees.

People also pruned other plants as part of routine maintenance. Two species, in particular, were routinely pruned as part of the food collecting process in the spring. These were the prince's plumes: desert prince's plume (*Stanleya pinnata*) and Panamint prince's plume (*S. elata*). As the new growth was being removed to be used as a green, people also broke off last year's flower stalks and any dead leaves on these perennials, thus cleaning them up to make ready for continued new growth. Given that people harvested only young and tender leaves in the early spring, the plant seemingly had ample time to put on additional leaves to carry it through the late spring to early summer bloom. The pruning and cleaning promoted healthy growth for next year, according to what people were taught by their elders.

Coppicing of willow was widely practiced throughout this region to produce straight stems for basketry. Each winter, when last year's stems were harvested, those remaining in a willow patch were cut to the ground. The large root then responded by sending up new and vigorous sprouts or canes, each straight and without side branches. This type of first-year growth was what was most prized for basketry, especially for splitting stands for wefts. Side branches interfere with the splitting process, as do any insect borings or scales. They weaken the stem so that the splits hinge off, and the person doing the splitting cannot maintain three even strands throughout the length. Thus, it was very important to tend willow patches in this fashion each year, or, before long, a weaver would not be able to get materials that were workable or worth her time. Cut willows could be refreshed by burying them in the damp sand, so taking them in quantity was not wasteful. Often women cut a patch of willow even if they did not need new supplies in that season merely to maintain the patch. People also knew that coppicing helped keep insect infestations under control.

Willow patches formerly tended by Timbisha people were in Furnace Creek Wash below Travertine Springs, at Nevares Springs, in side canyons between Furnace Creek and

Grapevine Canyon, and in Wildrose. Good patches at the Furnace Creek Ranch ponds that were used frequently were destroyed when the Fred Harvey Company lined the ponds with black plastic.

Nothing is known of the tending of deer grass (Muhlenbergia rigens), a plant used for warp in basketry. DeDecker (1984:89) lists it as occurring only west of the Coso Range on Sierran slopes, but it was identified as a basketry plant by Coville (1892), seemingly east of there. In several areas of southern California, deer grass clumps were burned to stimulate new growth (Anderson 1993).

Transplanting and Cultivation

Although the history of agriculture is not fully documented for the Timbisha Shoshone, it is suggested that some people may have been cultivating traditional crops (corn, beans, squash) for some time before Death Valley was settled by Anglos. Driver (1937:113) was told by Bob Thompson that his great-grandfather had visited the Mohave and brought back seeds of various domesticated plants. Driver interpreted the date of this acquisition to be about 1840. Included were corn, beans, and yellow squash of unidentified varieties. He apparently planted these at Hungry Bill's Ranch in Johnson Canyon, a well-known gardening spot. Jaeger (1941:284) also remarks, presumably about the same individual ("a brother of Hungry Bill"), that he visited Fort Mohave "about 80 years ago" and obtained seeds of devil's claw (Proboscidea parviflora), a plant used in basketry, which he also planted there. Other accounts from the 1870s speak of gardens in what is probably this location, as well as in Grapevine Canyon, and at Furnace Creek (Wallace 1980).

Whatever the sources and timing of the introduction of agriculture among the Timbisha people (see Plants and Animals for discussion), it does seem clear that they have been familiar with the ideas of planting, tending, and irrigating crops for quite some time. Thus, either from this knowledge or from even earlier sources, people had ideas about planting and transplanting that they put to use in several instances. There is some indication that moving plants too far from their native situations may not have met with universal approval, however.

In the Wildrose District, at Bill Boland's Spring (probably the spring also called Johnny Shoshone's Spring), willows were transplanted by an individual so that his sisters would have a source of supply for their basketry. This seems to have been done in the 1930s, while the camp in the area was still being heavily used. Another member of the same family planted a plum tree at the same site, that grew to some size and has only recently died. Other members of the Timbisha community were against these activities, as the willows were known to be invasive and would probably ruin the spring, and the plum tree "did not belong there." The willow, indeed, has taken over quite an area around the spring. A few years ago, when a Timbisha tribal member was attempting to remove some of its growth to increase the water flow, a Monument ranger stopped the activity as destructive.

The Ranger probably did not realize that the presence of the willow was from transplanting activities at an earlier time. Other Native Californians were known to have transplanted small shrubs such as Ceanothus spp. and Arctostaphylos spp. (Shipek 1993:380).

Cleaning Water Sources

Timbisha people were also taught by their elders to care for other types of resources, such as those that provide water. Springs and tanks or potholes were routinely cleaned when people arrived at a site to camp, this procedure being part of the general cleaning process, but also one that specifically aided people and wildlife. Springs choked with willow, such as the one mentioned above, were cleared and dug out so that the water could accumulate better. Pot holes that had filled with debris since the last visit were similarly cleared. Fresh water would then collect in future rains, and thus aid all animals in the vicinity. Water sources were never to be fouled, or overused, as such action would jeopardize all life forms that depended upon them.

IV. LAND USE AND OTHER CONCERNS

During the course of our work with the Historic Preservation Committee, several areas of critical concern emerged or were specifically voiced by Committee members. These center around three major areas: 1) the management of natural and cultural resources; 2) problems of access; and 3) aspects of inter-governmental relations. We will raise each of these in turn, and discuss some of the concerns expressed within each.

Management of Natural and Cultural Resources

Although the Timbisha people are concerned with all aspects of the management of natural and cultural resources within Death Valley National Park, during the course of our work concerns for several specific resources were expressed frequently. These follow from both the history of use of these resources in the past as well as a concern for their well-being in the future. Included are the mesquite groves at Furnace Creek, the pinyon forests of Wildrose and Hunter Mountain, the former ponds at Eagle Borax, certain medicinal plant areas, the health of the chuckwalla population, and all archaeological sites and traditional cultural properties. The people also applaud the Park's efforts to deal with non-native species, such as the tamarisk and the wild burros, and hope that these efforts continue.

Mesquite Groves. As noted several times in this report, the mesquite groves at Furnace Creek, and others within the Valley in general, were once and still are considered to be an important resource to the Timbisha people. The groves furnished a major staple food in times past, and some people still would like to gather and process mesquite today,

as it is a food remembered with fondness for its flavor and nutritional value. The knowledge and ability to process mesquite properly is also a matter of ethnic pride and one of the ways that people can still express their relationship to the land. However, in recent years, the groves have declined in health, and people are concerned.

The mesquite groves at Furnace Creek appear to be in trouble, and no one seems certain of the cause/causes. They have not been flowering or fruiting properly in recent years, and Park staff as well as tribal members notice that there are no new trees sprouting or developing. One likely cause is water deprivation, with the easiest explanation being diversion. The trees grow on the toe of a large alluvial fan that comes out of Furnace Creek Wash, apparently fed by fresh water that comes down the wash and rides over the salt water in the Valley bottom (Kunkel 1965:73). Diversion of surface water at Gower Gulch as a flood control measure, as well as the general diversion of water in Furnace Creek Wash and Texas Springs for the development of hotel and Park facilities, has left the amount of water that now reaches this area at a minimum. According to Kunkel (1965:71), a hydrologist who testified before a congressional hearing on the Furnace Creek water supply in 1964 after studies of the system, the small amounts of water that remain after these diversions are present as ground water in Furnace Creek Wash well above the toe of the fan. Only waste water and direct precipitation appear to be reaching the area of the groves--along with underlying salt water. Although an attempt was made in the early 1980s to show that a diminished water supply was responsible for the decreasing health of the groves through measuring the growth rings of the trees, this attempt failed as the trees apparently do not put on measurable rings in any standard fashion (Douglas 1993). Some other mechanism needs to be found to determine if water is the primary source of the problem.

In addition to decreased inflow, the mesquites at Furnace Creek are also competing with athel tamarisk (*Tamarix aphylla*), a known phreatophyte. The groves at Furnace Creek show considerable invasion by the introduced species, which is a very successful competitor (Figure 47). What water remains is likely also being removed by these trees. A mature athel absorbs as much as 200 gallons of water a day (Nature Conservancy News, Oct/Nov. 1986). They are particularly good competitors for surface water. Mesquites, themselves phreatophytes, but with a series of water conserving specialties that the non-natives do not have, also have a two-layered root system like the athels. One layer takes advantage of water at or near the surface, and the other, a deep tap root, connects with an underground source (Solbrig 1980:429). Both mesquites and tamarisks are probably alive at Furnace Creek because of the taproots, but they are probably in direct competition for both deep and surface water.

Aspects of the biology of mesquite may also suggest why seedlings are not being produced. Mesquite seeds germinate naturally in the presence of surface moisture, such as that associated with spring rains, and usually after the seeds have been dispersed by mammals. In order for a seedling to become established, its tap root must reach a source of water quite quickly (it can grow rapidly to do this), and it must be free from competing underbrush, grass, etc. It must also have a source of light: seedlings do not do well under



Figure 47. Ed Esteves looking at mature athel tamarisk trees, lower Timbisha Village. March, 1993.

existing trees (Mooney, Simpson and Solbrig 1977:39f). None of these conditions are presently being met in the Furnace Creek groves. The trees are no longer pruned to improve light as they once were by Timbisha people, and cleaning of undergrowth also does not take place (see Native Management Principles). Mesquites seem to have been spreading in areas of Texas, New Mexico and Arizona because cattle grazing creates these same competition-free conditions (Mooney, Simpson and Solbrig 1977:42). The Timbisha gatherers also no longer discard the stony endocarp and seed, already scarified with mortar and pestle, which would have improved germination, in the groves where they once lived and worked. Dispersion of the seed by mammals such as coyotes is still assumed to continue, but is probably something that should be studied.

But, perhaps more critical is that there is very little, if any, surface water available for the seedlings because of historic diversion. We saw several young mesquites along the roadside in Furnace Creek Wash near Travertine Springs, seemingly taking advantage of roadway runoff (Figure 48). But none were seen in the Furnace Creek groves. Members of the Historic Preservation Committee also remarked that some of the other groves in the Valley should probably be monitored as well, as perhaps additional factors may be involved. Certainly those in adjacent valleys, such as Pahrump and Chicago valleys, are in even more trouble, and it would be very bad if conditions in Death Valley began to mirror those.



Figure 48. Young mesquite along roadway, Travertine Springs area. March, 1993.

Mesquite groves are also host to a diverse population of insects, birds and mammals, and, if these trees are not flowering and fruiting properly, these other species are likely also being affected. Coyotes are still present in the groves, but they may well be eating something other than mesquite beans and small mammals, given the proximity of Furnace Creek Ranch. Mourning doves are still occasionally seen, but, in general, the Timbisha people have the feeling that wildlife within the groves is less. A thorough investigation of the situation seems in order.

Pinyons in Wildrose and on Hunter Mountain. Members of the Historic Preservation Committee feel that although the pinyon trees in Wildrose and on Hunter Mountain continue to produce nuts, they seem to be doing so with less frequency and with smaller crops than previously. This is of some concern, especially since the exact causes are not known. It may be that the past several years of drought in the general region have been having an effect on pollination and seed set, and, if so, then one must wait for a change in the cycle. However, some also feel that declines are related to people paying less attention to the trees, and not managing them by clearing and cleaning under them, and by whipping them to remove old cones and to prune them (see Native Management Practices). This cannot be achieved without some appreciable time spent in the groves, as in former times. Visiting them on a day-by-day basis on weekends is not enough. This is a problem for the Timbisha and other Panamint people as much as for the Park, but perhaps some accommodation can

be worked out, whereby the people could begin to care for the trees in certain areas each year on a cyclical basis to see if improvements occur. Also, it would be very desirable if people could process green cones in the old way, both to show this to new generations, as well as to satisfy their own cultural feelings of doing things in the proper manner. Again, the nuts in these two locations are the most prized of all, although as we did not get the opportunity to work with people with ties to the Grapevine area in the northern Park, there may be feelings there as well of the importance of their gathering areas.

The Ponds at Eagle Borax. Members of the Historic Preservation Committee feel that it is important to try to restore the open-water ponds at Eagle Borax to the state they once remembered. This would greatly benefit waterfowl, who must now bypass the area, and probably go on to Saratoga Springs. They feel this as well because of the destruction of the ponds at Furnace Creek Ranch that once attracted waterfowl and other wildlife. Since these ponds have been lined to try to prevent emergent vegetation and willows (and for water loss?), waterfowl rarely stop there any longer. Some open water should remain within the Valley for these purposes.

Part of the problem of restoring open water at Eagle Borax will be dealing with the cattail and bulrush growth that seems to have taken over (Figure 49). The other problem



Figure 49. Pond at Eagle Borax choked with cattail. March, 1993.

is one of clean-up from the previous fire that destroyed much of the area, including the remains of the Wilson-Billson camp (Figure 50). The people feel that something should be done to bring this historic area back to at least some of its former condition, if at all possible. Removing the tamarisk was a step in the right direction, but it was unfortunate that that plan resulted in part in the current situation. It also appears that tamarisk may be coming back again, although the seedlings and root sprouts are still small.



Figure 50. Burn area, Eagle Borax. March, 1993.

Medicinal Plants. As noted earlier, the Historic Preservation Committee is concerned about the decrease in population of the yerba mansa associated with Travertine Springs. This and other medicinal plants are closely watched by the Timbisha people. It seems that the problem here may again be water diversion or channeling, which is not keeping the ground moist enough for the spread of the plant. The people have not been taking these plants for several years, and thus they are not contributing to the decline. But the plants matter to them even if they are not actively using them at the moment. They are less concerned about the turtlebacks and certain other species, as these appear to be maintaining their numbers. However, they will continue to monitor the plants, and they would be deeply concerned if any type of construction or destruction occurs in medicinal plant areas.

Of related interest to some are basketry plants, although few among the Timbisha people today are active basket makers. Those that do still work with the willow go outside

the Park to get their supplies, because there the plants can be properly pruned and coppiced to encourage growth. In this time of concern for biodiversity, the Park might also want to look into what seems to be the disappearance of decorative plants for basketry, including the bulrush and two rush species formerly used. It would also be good to know whether the historic population of devil's claw planted at Hungry Bill's Ranch in the mid 1800s has been able to maintain itself. Specimens were collected there in the 1950s and are in the DEVA Herbarium. Another collecting site was Cow Creek, and this too was probably a historic introduction by Timbisha people.

Chuckwallas. Members of the Historic Preservation Committee expressed some concerns over what they see as declining chuckwalla populations within the Park. Even 10 to 15 years ago, people would see young ones in the spring, especially in good flower years, at several sites, including in the Black Mountains near Furnace Creek. Today these are rarely seen, and even the adults seem to be less common. We saw only one near Hole-in-the-Rock Spring during our surveys, but we did not check some of the other known sites inside and outside the Park. Some tribal members still hunt chuckwalla, but outside Park boundaries. They do not want to continue to hunt if the populations are really declining.

Conservation biologists are also somewhat concerned about chuckwalla populations in the Mojave Desert, although evidence of a decline is conflicting. A survey this spring in some areas outside the Park and farther south indicated that there were young hatched this year, probably because of the good precipitation situation. This was considered an improvement over recent hatches which were probably low due to the prolonged drought (Dick Tracy, Colorado State University, personal communication, 1993). Another factor in the decline of adults is capture for the pet store market, and this is considered to be taking quite a heavy toll in some areas, especially around Joshua Tree National Monument (Kristen Berry, personal communication, 1993).

Archaeological Sites and Traditional Cultural Properties. The Historic Preservation Committee is concerned about all archaeological sites (except demonstrated non-Indian historic sites) within the Park as well as on their traditional lands in general. They are also concerned about the "unseen" archaeological sites, what are called by the NPS "ethnographic resources," and may in some cases qualify as Traditional Cultural Properties [36 CFR Criterion A; Parker and King (1990)]. Some of what we were doing in this study is locating these resources, although there are many more traditional use areas within the Park and outside its boundaries than we were able to visit.

Archaeological survey and excavation has been going on within the Park for decades. Hundreds of sites have been recorded, and scores excavated, without consultation with the Timbisha people. Regulations in the past did not require consultation; today, the situation is different. The Timbisha Tribe has a Historic Preservation Committee, duly constituted by the Tribe and trained to undertake consultation through grants (1992-93, 1994-95) from the Keepers of the Treasures Program of the National Park Service. The Committee has consulted at the invitation of a BLM district in Nevada, although that agency was not able

to reimburse them for their expenses. Members of the Tribe have also acted as paraconsultants for the Department of Energy and the State of Nevada on archaeological sites and traditional cultural properties on the Nevada Test Site. Several persons are thus familiar with the procedures and are willing to get involved. All of the mechanisms are in place for proper and successful consultations. Members of the Tribe and the Committee are particularly interested in resolving issues surrounding isolated burials recovered in the past within the Park, upon which consultation has been initiated, but not completed.

Problems of Access

Members of the Historic Preservation Committee express a variety of concerns that can be summarized under the heading of problems of access. Some have to do with restrictions on collecting plants and animals within the Park, or on other lands controlled by other federal agencies, and some have to do with the general feeling of being "locked out" of this area that is their homeland. They are also somewhat fearful of what might occur now that the area has National Park status, as additional controls may be instituted.

The anger formerly expressed by the parents of the present elders at restrictions on hunting and gathering is still with some people today, if not specifically, in general. Very few have ever participated in a hunt for bighorn sheep; something that is now only cultural memory. Few have gathered the many and varied plant resources of their ancestors. More have participated in pine nut and mesquite collecting activities, or in rabbit or bird hunting. Most feel strongly that at least those aspects of life should not become cultural memory. Although people still go to gather pine nuts and wild spinach, and would like to take mesquite, it is hard to do so if one is made to feel like a trespasser on one's own lands. Some are not against the present system of obtaining permits; others are, as they are advised by California Indian Legal Services to ignore the process. Generally, the people feel that they are not the ones in control of these lands, and yet they have been taught that these are their lands, they always have been, and always will be. The Tribe has been affiliated with the larger Western Shoshone National Council for many years and agrees with its attempts to try to regain federal lands under the Treaty of Ruby Valley of 1873. The Tribe's own successful attempt (1993) to enter into the Desert Protection Act for land allocations is a further indication of the feeling that the people themselves should be in control of their own lands.

With the passage of the Desert Protection Act (1994) and the status change to a National Park, people fear that there might be new problems of access. The expanded boundaries take in additional areas on Hunter Mountain and in Panamint Valley that are presently used by Timbisha tribal members as well as other Panamint people more freely. These areas could be closed to hunting, camping, fires, and even water access. The Indian Ranch presently obtains its water from Hall's Canyon. Access to the water source is difficult now with an unimproved road, but that access must be maintained if the spring is

to stay clean and the water flowing. Closure of that road would prevent even routine maintenance. These and like problems are being discussed in the context of this legislation, and particularly if the Timbisha Tribe does not acquire a land base.

Access to water at Furnace Creek is also a topic of concern. Tribal members maintain a number of cultural memories about being entitled to as much as one-third of the water that was originally captured by the Pacific Coast Borax Company. But satisfactory resolution of that or any other water right seems to be illusive. The Tribe will be unable to go ahead with any development plans, with or without land, without water. The present water delivery system is not wholly satisfactory, and some members get water from other sources for drinking. But then water and water quality are a general concern in the whole of the area of Furnace Creek, and this issue will not be resolved easily.

Members of the Tribe also feel very strongly that access to the presently-active cemetery needs to be maintained so that individuals within the Tribe who so wish it can be buried there in the future. Apparently the owners agree that this access is to be maintained as long as there is room within the cemetery for additional burials. The Park and the Fred Harvey company have helped the Tribe with access to the cemetery during actual burials in recent times, something that is much appreciated. The Historic Preservation Committee also appreciates attempts by the Park to discourage visitors from going to the site and hopes that these efforts will continue.

Inter-governmental Relationships

Since the founding of Death Valley National Monument in 1933, relationships between the National Park Service and the Timbisha people have often been stormy. Some of this history is detailed by Roth (1982) and in the considerable correspondence assembled by Herron (1981b) and others at the time the Timbisha Tribe was obtaining federal acknowledgement. Much of the difficulty stemmed from indecision on the part of the Bureau of Indian Affairs as to the status of the group in 1933 and who should take responsibility for services to the people. The Park Service has apparently always considered the 40 acres where the village is located its land, and it has acted consistently from that position. The people, however, have not so viewed these lands, and this has been a considerable source of conflict.

When the Tribe was granted federal recognition in January of 1983, additional attempts were made to settle the land issue. Beal et al. (1984) assessed several alternatives for the village, from continuing the pattern of leases to individuals, leasing to the Tribe, establishing a reservation, moving the village within the Monument, or establishing a reservation outside the Monument. The desired solution of the Tribe was a reservation within the Monument that would have incorporated the present village. This alternative was not favored by the Park Service, who noted that this would take Congressional action. A

totally satisfactory solution has not been reached. The Park Service also has responsibility for services to the village, and this, too, is a source of conflict for both sides.

There appear to be no easy solutions to these and other problems of inter-governmental relations, unless the Tribe is successful in obtaining land of its own either inside or outside the new Park. If it obtains lands inside, a whole new set of inter-government relationships will have to be established, founded on different principles. If no lands are forthcoming, then continued and more effective communication will be all that will ease the situation.

Effective communication can lead to a better understanding of the past and present of the Timbisha Tribe within Death Valley National Park, something that would also benefit visitors. At present, there is very little available to the visitor about the first peoples of the area. The Historic Preservation Committee is willing to correct this, by putting together some materials that could be of benefit. But it should also be emphasized that it is their history, and they want to control its presentation and interpretation. With reference to this, members of the Committee have noted some instances where they did not agree with present interpretations of their history on visitor signs. They are willing to correct these to the benefit of the visitors.

One matter, or better a set of related matters, involving interpretation is particularly important to the Committee. Members the Committee and the Tribe in general object to the heavy emphasis on "death" and "bleakness" in nearly all information on the Valley and Park. To them, it is a living Valley, a place that they have called home for untold generations. It is a place where many living things are to be found, a joyous place where life has been and can continue to be celebrated. Their religion teaches them not to dwell on death, but to look at life, including the life in this "living valley." A good start toward inter-governmental communication could be made by thinking about this theme and seeing how it could be put to good use in reinterpreting much that is within this most interesting region.

V. RECOMMENDATIONS

The following series of suggestions and recommendations is an outgrowth of the data developed during this study, comments on the report by certain Park Service reviewers,¹² and also of the principles and procedures suggested in "Management of Ethnographic Resources" (National Park Service 1994). Some are based on land and resource concerns voiced by the Timbisha people through their Historic Preservation Committee; others are more general, and follow from observations of the overall situation in Death Valley. All are meant to be helpful rather than critical, while recognizing that the complexities of the situation do not always invite easy solutions, especially from outsiders who are often unfamiliar with the full policy and legal constraints under which the agency operates. But given that the overall

goals of all parties are basically the same--to learn about and protect the unique resources of Death Valley National Park--it seems that various levels of cooperative effort should be in order and can be achieved.

The present members of the Timbisha Tribe, because of their deep-rooted history and long term residence in the area, approach most things concerning Timbisaka from a perspective noted in "Management of Ethnographic Resources;" that is:

Native Americans often have much longer ties to resources and view them as uniquely their cultural patrimony. In these cases they might express their strong sense of spiritual guardianship over the resources and interest in participating in related planning, management, and interpretive decisions (National Park Service 1994:167).

In short, the Tribe is concerned with almost everything that happens in the area, and whether practical or not, feels that it should be a part of decision-making. This deep concern does indeed follow from a strong sense of spiritual guardianship. It also follows from a holistic view of the region and its resources that sees each and every thing as connected and affecting all others. Elders believe that one set of resources, concerns, or people cannot be separated from the rest without problems arising. Thus, tribal members rarely take a fragmented, outside or dispassionate perspective on matters concerning the management of the area, because they feel a unique relationship to these lands and resources. This starting point at times may put them at odds with other perspectives, or with more compromising or even required alternatives. But understanding this position may indeed help understand arguments.

General Recommendations

1) Memorandum of Understanding. According to guidelines in "Management of Ethnographic Resources, "when a group approaches an area managed by the NPS from a view involving perceptions of cultural patrimony, "Park responses to these interests ... should include establishing and maintaining regular consultations, 'friends' committees, and formal cooperative arrangements through memorandums of understanding" (National Park Service 1994:167). Given that the Timbisha Tribe is a federally recognized entity, and that it has an authorized Historic Preservation Committee, it is suggested that the Park staff and perhaps also the Western Regional office explore more formal relationships through a memorandum of understanding. It could cover NAGPRA and other related legal issues involving consultation, as well as policies involving ethnographic and cultural resources. It could specify more clearly lines of communication and authority for both sides, perhaps naming persons, positions and/or committees that should be involved. The possible effect of formalizing relations could be much clearer communications, especially if both sides contribute equally to making it work.

2) Updating Management Plans. The draft "Cultural Resource Management Plan, Death Valley National Monument" (Deal 1989) and final "Management Plan" (National Park Service 1994a), suggest that a series of studies of archaeological, historical and ethnographic resources be made so that Death Valley National Monument can move closer to compliance with Executive Order 11593 and NPS 28.7.1-7.3 (Cultural Sites Inventory). In addition to compliance aims, such work would also further interpretive goals for the Park and help in management, as without full inventories, management cannot be fully informed. The plan also suggests continued and specific relationships with the Timbisha Tribe, as ethnographic users, and some specific programs that would involve the Timbisha people in interpretation and interaction with visitors (Deal 1989:31-35; 117-8; 202-8).

Most of the work done for the ethnographic overview and traditional use study reported here is in keeping with the general and specific suggestions made in the management plan, but quite clearly does not cover them all. A number of the specific sites visited were ones already on the list for future study; some on the list were not visited; and yet others were visited that were unknown before. In the light of what is now known and has been accomplished, these sections of the Management Plan should be updated to reflect this, and also to identify some new priority areas.

In the space of little over one year, and working part time, it was difficult to cover traditional use areas for as large a territory as Death Valley National Monument, let alone the new expanded boundaries for Death Valley National Park. We worked as systematically as possible on areas in central and southern Death Valley, but there were still regions that we did not cover satisfactorily. Coordination of busy work schedules for ourselves and the HPC of the Tribe contributed to some limits on field time. Thus, it is suggested that inventories of ethnographic resources and traditional cultural properties be continued by Park staff or hired contractors working closely with the Tribe's committee and other village elders, and that our study be viewed as Phase 1. Specifically, Warm Springs Canyon, Hungry Bill's Ranch, upper Hanaupah Canyon, and Bennett's Well would be good areas to view and discuss in more detail. In the northern part of the Valley, a good deal remains to be done as we only made very brief inquiries. The Strozzie Ranch, Cottonwood Canyon, the construction camp at Scotty's Castle, Grapevine Springs, Lower Vine Ranch, Mesquite Springs, Sand Springs, Surveyor's Wells and associated camps, willow gathering locations inside canyons between Furnace Creek and Grapevine Canyon, and other locations should be visited. The Historic Preservation Committee knows of several knowledgeable elders (some now residing outside the valley) who would be excellent consultants for these tasks.¹³ Most are elderly, but their experiences go back to actual residence in these localities. Their knowledge of the history of these areas, both Native and non-Native, is also extensive and would contribute to overall Park documentation goals.

Through the Keepers of the Treasures program of the NPS, the HPC of the Tribe is refining data on some of the sites and areas we visited, and also plans to visit some additional ones. The Committee plans to prepare National Register nominations for several of these places by the Spring of 1996. We are continuing to advise them on this process,

as is Linda Greene of the Park staff. However, they may need additional help and encouragement as the termination of their funding approaches. Some of their data should also be incorporated into the planned National Register nominations for several specific archaeological districts (see Deal 1989:29).

Although the methods of ethnohistory and oral and life history were employed during the present project, it is important to continue these efforts, perhaps toward publishable results or at least results that could be used in interpretive activities. Both Herron (1981; 1981a) and Roth (1982), as well as Beal, et al. (1984) have done a considerable amount toward more thorough ethnohistories and administrative histories involving the Timbisha people. Given that very little is available to the visiting public on the Native people of the Valley, encouraging the completion of such studies in cooperation with the Tribe, would seem to be in order. The Historic Preservation Committee (1994) recently cooperated with the Death Valley '49ers organization and wrote a "keepsake" outlining their history which could be significantly expanded.

3) Memorandum of Understanding, Timbisha Cemetery, Bedrock Mortar. Two sites in immediate proximity to Timbisha Village but on private land are of central importance to the Timbisha people. Strong opinions favoring continued access to them have been voiced since at least the 1950s (see Beldon 1959). Although there is a general agreement that the cemetery near Furnace Creek Inn will remain open for burials as long as there is room, there is no written document guaranteeing such access. The bedrock mortar in the parking lot of the Inn is of similar concern, although here the issue is potential destruction of this important property. As of April, 1995, the concessionaire has provided a wall, low fence and a plaque around this feature, but there is still a feeling that the site may not be properly protected in the future. It is suggested that perhaps Park management could act as an effective negotiator for a memorandum of understanding between the concessionaire and the Tribe to resolve both of these issues.

4) Use Permits. It has been suggested by the Western Regional NPS archaeologist that the Special Use permits presently issued to tribal members to collect foods and medicinal plants might be renegotiated to provide access over longer periods or for revised purposes. As noted earlier, at present California Indian Legal Services is advising tribal members not to request permits for use of native resources on Park lands, a policy being followed by some but not all tribal members. NPS-28 (1994:168-9) suggests that due consideration be given to religious uses of plants and certain subsistence uses of plants and animals in the light of documented cultural needs. Perhaps a more open discussion of this issue, with a presentation of some alternatives based on other NPS lands and activities would be in order. Any agreement might then be incorporated into a more general MOU. The State of Nevada gave the Western Shoshone National Council authority to regulate certain hunting and collecting procedures on its (and federal) lands, in exchange for reporting and monitoring data. Perhaps a similar approach would work here as well.

5) Special Training Opportunities. One reviewer suggested that internships be set up within the Park for interested tribal members, and that they also be encouraged to apply to regional and servicewide training programs. Such internships or training could be in a number of areas, including interpretation, and/or cultural or natural resources management. It would seem particularly relevant for tribal members to see what is happening in other NPS locations with Native American populations and significant programs that encourage Native interpretation or interaction with management. Internships in regional or national offices would seem less desirable than actual field experiences. Funding such opportunities is not always easy; both the Tribe and the Park should work with each other to make opportunities available.

Specific Recommendations

Although the Timbisha people are concerned with holistic management of all Park resources, during the course of our work some concerns for specific resources were voiced repeatedly. These include the Furnace Creek mesquite groves, pinyons in Wildrose and on Hunter Mountain, ponds at Eagle Borax, certain medicinal plant localities, chuckwalla populations, and archaeological/ethnographic properties. All of these are considered ethnographic resources by NPS-28 (1994:168) definitions.

1) Mesquite Groves at Furnace Creek. As discussed above (III, IV), the mesquite groves at Furnace Creek seem to be in trouble, probably from a complex of causes. Water diversion at Gower Gulch, water tapping for developmental purposes, invasion by tamarisk, lack of management according to Native principles, and other factors may be involved. Given that this particular grove is very important to the Timbisha people, and also to wildlife in the region, we suggest that a concerted effort be made to study the problem toward additional recommendations. The study should be a cooperative one among biologists, hydrologists, and the Timbisha people. It could include a Native management demonstration component, where the older principles of trimming the trees, processing beans in the groves in the old manner, and other cultural practices are tried along with the other studies. Such an attempt would likely attract a good deal of visitor attention, and the results, if positive, could then be applied elsewhere in the area.

2) Pinyon Management. A similar study is recommended in the pinyon forests in Wildrose and on Hunter Mountain, to see if perceived declines in crops and/or tree health are real and can be rectified. Native management techniques, such as whipping the trees and clearing undergrowth, could also be incorporated here as well. Signage explaining the attempts to visitors would be very informative. Tribal members should also be allowed to do green cone roasting to demonstrate the full and proper pine nutting procedures to their children and young people.

3) Eagle Borax Ponds. The Historic Preservation Committee feels strongly that new management strategies need to be applied to restore the ponds at Eagle Borax to an open

water condition. This would not only improve the appearance of the area, but encourage waterfowl and basketry plants to return. Cleaning up the burned area--while recognizing that the remnants of Tom Wilson's camp need to be identified and protected--and removing now young tamarisk would also be in order. Perhaps this could involve volunteer efforts (California Native Plant Society or some other environmentally active group) to help reduce costs.

4) Medicinal Plants at Travertine Springs. A specific population of medicinal plants (yerba mansa) that seems to be declining is of specific concern to the Timbisha Tribe's Historic Preservation Committee. Although not a threatened or endangered species within the Park, as a specific ethnographic resource it is recommended that this population be monitored and stabilized at current levels. If it increases, Timbisha people would like to resume limited collecting.

5) Chuckwallas. It is recommended that a general study of the chuckwalla populations within the Park be made, and the health and viability of them be determined. Again, although people do not presently hunt chuckwallas within the Park, they perceive the declines as perhaps related to those of other populations in the region. Timbisha people would be willing to cooperate with biologists in such a study, noting traditional areas where chuckwallas were seen and hunted in the past.

6) Archaeological/Ethnographic Properties. Although some of the concerns for these resources are also discussed under the section on general recommendations, it is worth reemphasizing that consultations with Timbisha tribal members, or specifically the Historic Preservation Committee, should be conducted as the need arises. The HPC should also be involved in ongoing inventory work within the Park, as often the members can identify ethnographic resources not necessarily visible as archaeological remains. Younger members could receive more direct archaeological experience through additional training opportunities with contractors or servicewide programs.

7) Signage and Interpretation. Related to several of the items above is the need for a review of present signage and interpretation dealing with the Timbisha people and their involvement with Timbisaka. The same holds for future signage and interpretive plans. As noted, the people feel strongly that dwelling on the "death" and the bleakness of the landscape is more negative than positive in an area that they consider a living entity. Reversing the focus and dwelling instead on the remarkable adaptations of people, plants, and animals to this region would provide a more positive view. Also focussing on the extreme variations in elevations, temperatures, plant and animal life, etc., would be positive as well. Some specific signage changes, such as at Ubehebe Crater, should also be considered.

Several of the above recommendations, whether general or specific require funding, something that is not always easy to obtain. But some require primarily time and negotiation. The results could be very positive for the resources and the Park in general, and could also enhance visitor experiences and responses. Most would improve relationships, and help everyone work toward the common goal of learning to properly care for Death Valley National Park.

NOTES

1. Transcriptions of Timbisha words follow the orthography used by Dayley (1989; 1989a) with the following exceptions (other than when quoting him): i is used for his ü; ng for n; single p, t, k, and k^w are used for his pp, tt, kk, kkw; b, d, g, and g^w are used for his p, t, k, k^w. Transcriptions quoted from other authors are left unaltered unless they were reelicited during the project.
2. According to research conducted by California Indian Legal Services with the Bureau of Indian Affairs in 1994, all tribes obtaining federal recognition before the Timbisha Tribe (January 1983) have land. Of those obtaining recognition since the Timbisha, three were without land as of August, 1994. Of the three, two were about to obtain land through settlements with their respective states (Wampanoag, Massachusetts; Mohegan, Connecticut), and the third (San Juan Southern Paiute, Arizona) were in questionable negotiations (live within the Navajo Reservation). Thus, the Timbisha Tribe is one of only two federally recognized tribes in the nation without lands of their own--the San Juan being the other (Fred Marr to Roy Kennedy, August 31, 1994).
3. With the passage of the California Desert Protection Act (PL 103-433) in October, 1994, which made Death Valley National Monument a National Park and expanded its boundaries, the Timbisha Tribe won the right to make a proposal for land acquisition. As of this date (August 15, 1995), meetings among several federal land managing agencies, the Tribe and various consultants were taking place, and studies of potential sites being conducted.
4. Hereafter, initials of the members of the Historic Preservation Committee will be used instead of full names: PE, Pauline Esteves; GG, Grace Goad; EE, Ed Esteves; KW, Ken Watterson.
5. An early California census (Bureau of Indian Affairs 1030) records another name for Bill Boland's father (Ti-u-wit), but given that people could have more than one name during a lifetime, it is still possible that "Bat" is the same person.
6. Deer have apparently continued to move eastward into various mountain ranges during historic memory. Melvin Checo, an elder from Lone Pine, CA, recalls specifically when new herds were seen in the area south of George Hanson's place in the Panamints, in the Hunter Mountain area, and on Matarango Peak from the 1920s to 1930s.
7. PE reported that the beans should be processed before the insect inside hatches. The insect is a species of Bruchid according to Bell and Castetter (1937).