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PAITU NANASUAGAINDU PAHONUPI (THREE SACRED VALLEYS):
**AN ASSESSMENT OF NATIVE AMERICAN CULTURAL RESOURCES
POTENTIALLY AFFECTED BY PROPOSED U.S. AIR FORCE
ELECTRONIC COMBAT TEST CAPABILITY ACTIONS AND ALTERNATIVES
AT THE UTAH TEST AND TRAINING RANGE**

DRAFT INTERIM REPORT

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CHAPTER ONE EXECUTIVE SUMMARY

Ute elder: Let me ask you a question. After all this is completed, down the road several years from now, after all what the Indian has put into this study, and then what he has labeled sacred, will there be a way to come back and say I'm going to practice my religion here, or are we gonna be closed off? Are we doing this to lose it, or are we doing this to identify it so that we could use it, or are they gonna let us use it? We as Indian people are participating in your, in this phase of it with that idea. We are identifying it for you, not to give it to you but to say it's there, to keep the religious aspect of it and also the access to it.

Gosiute elder: Why now, why now, you know? We had a treaty, you know, which covered all this ground here...

This report describes and summarizes the concerns of Gosiute, Pahvant-Southern Paiute, and Ute Indian people for cultural resources that may be potentially affected by proposed U.S. Air Force electronic combat test capability (ECTC) actions and alternatives in one of three candidate valleys in west-central Utah. Between March 6, 1989 and March 23, 1989, ethnographers from the Institute for Social Research at the University of Michigan, along with representatives of Science Applications International Corporation, Las Vegas, Nevada, and the United States Air Force, established a consultation relationship with four tribal governments who represent three American Indian ethnic groups involved in the cultural resources assessment study.

During this time period, tribal representatives visited each of the three candidate valleys and the specific locations of proposed sites slated for potential ground disturbing activities and development within each candidate valley to comment on cultural resources that exist there. Individuals who visited these locations represented the following tribal groups:

1. The Confederated Tribes of the Goshute Reservation, Irapah, Utah
2. The Skull Valley Goshute Indian Tribe, Stockton, Utah
3. The Paiute Indian Tribe of Utah, Cedar City, Utah
4. The Uintah and Ouray Ute Indian Tribe, Ft. Duchesne, Utah

Comments regarding the project and potentially affected cultural resources in the study area, generated from meetings with the tribal councils and interviews with tribal representatives during on-site field research, constitute the focus of this report. These issues are discussed in detail in subsequent chapters. Brief descriptions of the study area and the ECTC project are given in the sections below.

Description of Study Area

The general area under consideration by this study is located in western Utah and eastern Nevada, in a geographical region that is termed the Great Basin. The ECTC proposal potentially affects areas extending from the Great Salt Lake in the north to Milford, Utah in the south and from Eureka, Utah in the east to Ely, Nevada in the west. For most of this area potential impacts derive from the effects of air traffic. Construction and operation impacts occur at various locations from throughout the study area. The largest concentration of both air flight and ground disturbance impacts would occur in one of three long valleys located south of the Dugway Proving Ground: Whirwind Valley, Tule Valley, and Snake Valley. These valleys are approximately 60 miles long and have a north-to-south orientation. The valleys are defined by mountain ranges with peaks from 7,000 to 12,000 feet elevation. Valley floors vary between 4,000 to 5,000 feet in elevation. So each valley involves different ecological zones that span as much as 8,000 vertical feet.

This physically and ecologically diverse topography has been utilized by American Indian people for tens of thousands of years. For at least the past few hundred years it has been used by American Indian people belonging to the Gosiute, Pahvant-Southern Paiute, and Ute ethnic groups.

Description of Project

The purpose of the Electronic Combat Test Capability (ECTC) is to provide a field test environment which realistically simulates battlefield conditions facing modern weapon systems. The ECTC would subject test articles to a comprehensive, integrated array of electronic combat (EC) and other systems and the doctrine governing how those systems would be used by an enemy. The objective in locating and developing an ECTC is to provide maximum flexibility to respond to future technological developments, so that the ECTC continues to be able to provide a realistic test environment into the next century.

A field test environment is one in which battlefield conditions are simulated to test the response of modern weapon systems under actual combat conditions, to the extent that they can be anticipated. The objective is to duplicate those combat conditions to the extent practicable as they would be encountered in probable theaters of operations.

The primary focus of the ECTC requirement is to provide an EC environment for testing of all weapon system acquisition programs that might be affected by electromagnetic signals used for targeting: jamming, or data manipulation. EC is defined as "action taken in support of military operations against the enemy's electromagnetic capabilities." As technology develops, the ECTC would also provide test environments involving infrared, acoustic, and other detection methods.

A realistic EC test environment is needed for test and evaluation of modern weapon systems and components. Field testing is needed to both complement and supplement other testing methods, such as computer modeling and laboratory simulation. Advances in computer modeling, ground testing, and integration facility technology have reduced but not eliminated the need for realistic airborne test and evaluation. Field test and evaluation is

needed to validate modeling results.

A key advantage of the ECTC over alternative tests or analysis tools is the ability of both test and adversary systems to free-space radiate in the course of electronic system testing. Although security considerations and frequency management constraints may limit some broadcasting which would occur in actual war, the ECTC will be characterized by a large number of test and test support systems simultaneously broadcasting across numerous frequency bands to simulate the EC aspects of a modern air battle.

Field testing in a realistic EC environment provides information on weapon system performance that is critical to reducing acquisition risk to an acceptable level. This information cannot be obtained through modeling or simulation. Because of the relatively high expense of realistic field testing, it is not used to test parameters that can effectively be measured through less expensive and less time-consuming means like modeling and simulation. A comprehensive test and evaluation program involves a hierarchy of test approaches. Each item of critical information required is obtained through the testing mechanism that achieves an acceptable level of risk most efficiently. Those test points that cannot be accomplished through other means require ECTC field testing. Thus, ECTC tests would be only a small percentage of all tests and evaluations performed.

The Air Force proposes to establish an ECTC at the Utah Test and Training Range (UTTR) beginning in 1990. The ECTC would be capable of providing highly realistic presentations of EC threat environments. The ECTC would provide the necessary test environment for conducting developmental test and evaluation and operational test and evaluation critical to weapon system acquisitions. The environment would also provide benefits to other missions such as reliability and maintainability data collection and shelf-life testing. The Air Force needs the ECTC to support critical next-generation weapon system acquisitions. The ECTC would also support testing requirements for all military services.

Site Specific Assessment

The following section describes the portions of the ECTC proposal that was considered by the current American Indian cultural resource research. In all cases the primary source of effect on American Indian cultural resources derives from ground breaking activities associated with various elements of the project. All evaluated elements are proposed in areas that are located on public or private lands and not on Department of Defense lands.

Tactical Threat Area. The proposed Tactical Threat Area (TTA) involves a portion of a valley where a series of threat sites would be located. The proposed TTA is located in the Tule valley at the southern end of the restricted airspace on Bureau of Land Management land. It is expected to encompass 13 threat sites initially, with a maximum potential of containing 70 sites.

The Tule Valley proposed TTA cannot be selected without comparing it with alternative operational areas. Such comparisons must demonstrate that the Tule Valley

location is the superior choice in terms of a number of siting criteria, including potential affects on American Indian cultural resources. Two alternative TTA locations have been selected for comparison: (1) Snake Valley and (2) Whirlwind Valley.

Snake Valley is a possible location for the TTA. This location would provide adequate terrain masking an approach to either of the potential Strategic Threat Areas (STAs). A possible location for the alternative STA is immediately west of the Cedar Mountains and the Skull Valley Indian Reservation. The proposed STA is located on DOD land.

Because of low-altitude approaches, the TTA would have to be located north of Route 50 and the 230kV transmission line running parallel to Route 50. One disadvantage of Snake Valley is that it is near the western boundary of the range in an area that is populated by scattered ranches.

Whirlwind Valley is another possible location for the TTA. This area lies east of the Fish Springs Mountains, south of the Fish Springs Wildlife Preserve. Its orientation would need to be skewed to the northeast to avoid overflight of the wildlife refuge. This also limits direct access to the potential STA locations and constrains test realism.

Threat Sites and Array. The ECTC requires sites where threat simulator systems can be brought in, parked, and operated. Threat Sites are essentially parking areas where threat simulators can be brought in for test operations. They should be sited on relatively level, stable land with good visibility from all sides (i.e., flat, high ground). Steep terrain is not suitable for siting threat sites.

Although the exact configuration may vary, each site will generally consist of a square of stabilized earth large enough for three vans, security fencing, access roads, power distribution, and data instrumentation connections. In the near term, power would be supplied through on-site backup diesel-powered generators. Various techniques would be used to camouflage threat sites to provide greater realism. These techniques could include installing power poles in the area to simulate power lines and berming around the site to hide fencing.

Initially, threat sites would have no permanent equipment installed. Equipment will be brought in as needed for specific tests. This requires that access roads have the capability to accomodate transportation of equipment to and from the sites. Eventually, threat simulators would be installed to protect the assets.

Threat Sites will be grouped in arrays and arranged to simulate Soviet threat system deployment. Each array will distribute eight to ten sites throughout an area, with the sites nominally one-half mile apart. The sites will be distributed to simulate front-line threats, intermediate threats, and strategic threats over approximately 70NM.

Range Maintenance Facilities. The distribution of threat sites and ECTC range facilities covers a large area that probably could not be practically maintained from a single off-range location. Therefore, it is anticipated that range maintenance staging areas will be

required at more accessible locations within the range itself. If this support does not exist, new facilities will be required. Proposed Range Maintenance Facility sites for Whirlwind, Tule and Snake Valleys were visited by the study team.

Programmatic Assessment

The following section discusses those portions of the ECTC proposal that were assessed programmatically by the American Indian cultural resources research. "Programmatic assessment" refers to general assessment that is not necessarily based upon on-site field visits. In most cases these elements of the project are occurring on Department of Defense lands. In other cases, the location of the elements are to be identified after the TTA and threat sites arrays are identified.

Airspace and Flight Activities Effects. Air traffic associated with the project potentially can affect American Indian cultural resources as has been demonstrated in the General Environmental Impact Statement for Air Force Low Altitude Flight Activities that is currently being produced for the Air Force by Oak Ridge National Laboratory (see also Stoffle, Evans, and Olmsted 1987). Comments regarding low level flyovers were made by Indian elders and leaders during public meetings and on-site visits.

Gapfiller Radar Site. Because of the large physical size of the ECTC test arena, low-level ingress routes would be required off range. Low-level surveillance of off-range approach areas is not expected to be available at UTTR, generating the requirement for a low-level approach Gapfiller surveillance radar facility. It would be linked to air traffic control through microwave initially and eventually tied in with fiber-optic lines. The proposed location for the Gapfiller radar is Frisco Peak. Comments from an elder of the Paiute Indian Tribe of Utah were recorded during an interview in Cedar City.

Future Programmatic Assessments

Commercial Power. Commercial electrical power would be provided to the threat sites to support their power requirements. Utah Power and Light Company has identified a source for providing electrical power to the proposed TTA. A substation would be installed along an existing 230 kilovolt line which runs east/west north of Route 50. A 69 kilovolt line would run due north from the substation, along the west side of the Swasey Mountains (tentative alignment), terminating in a 69/25kV substation at Sand Pass. The 69kV line would run above ground. Power distribution from the 69/25kV substation to the threat arrays would be above ground along existing roads to within 1-2 miles of the threat sites. Power distribution in the immediate vicinity of the threat sites must be underground.

Fiber-optic Communications Network. UTTR currently uses microwave to communicate data to the Mission Control Center. The range proposes to replace the microwave with a fiber-optic network to be installed over several years. The data links to and among threat sites would also use buried fiber-optic lines installed with each threat array. These fiber-optic lines would be tied into the rangewide fiber-optic network.

Project-Related Structures and Activities on DOD lands. The project would involve

a number of structures and activities that would be located on Department of Defense lands. These include are are not limited to (1) Mission Control Center, (2) Engineering and Technical Services Support Facility, (3) Operations and Maintenance Activities, (4) Test Operations Staging Area, (5) Strategic Threat Area, and (6) Live and Inert Drop Target Areas.

CHAPTER TWO ETHNOHISTORY OF INVOLVED NATIVE AMERICAN GROUPS

This chapter briefly analyzes the history of Native American groups in the study area, based on written sources. It draws on the observations of Euroamerican travelers, settlers, and Indian agents, as well as on ethnographic studies. The chapter is divided into three sections. The first section looks at the ethnic identities and the territories of Native American groups with ties to the study area. The second takes a historical look at the period from early contacts through colonization and treaty cessions. The third section covers the period since the treaty cessions of the 1860s.

Ethnic Groups and Territories

Overview

The Native American ethnic groups with ties to the study area are the Gosiutes, Pahvants, and Utes (see Map 1). Gosiutes have the most direct ties with the northern and western portions of the study area. Pahvants have the most direct ties with the southern portions. Utes have ties to the study area primarily via extensive intermarriage with the Gosiutes beginning in the mid-nineteenth century. Since Gosiutes and Pahvants have the most direct ties to the study area, this chapter looks primarily at Gosiute and Pahvant ethnohistory, with relatively little discussion of Ute ethnohistory.

The precontact territories of these ethnic groups may always remain an uncertainty, since written accounts after contact were made during a time of massive dislocations of Native American populations as a result of Euroamerican expansion. Reconstruction of pre-contact territories involves considerable speculation. Territories of ethnic groups since contact have also undergone complex processes of modification, but there is at least better data for the post-contact period. The discussion of ethnic group territories that follows reflects information about territories as of early in the process of Euroamerican colonization in the region.

Gosiute territory (see Map 1) apparently stretched from the Great Salt Lake westward into Nevada and southward to the Sevier River and Sevier Lake. The treaty signed by four Gosiute representatives in 1863 at Tuilla Valley delimited Gosiute territory as follows:

It is understood that the boundaries of the country claimed and occupied by the Goship tribe, as defined and described by said bands, are as follows: On the north by the middle of the Great Desert; on the west by Steptoe Valley, on the south by Toedoe or Green Mountains; and on the east by Great Salt Lake, Tuilla and Rush Valleys (U. S. Congress 1873:930-931).

Steward's map (Map ³4) shows Gosiute territory as stretching nearly as far east as Utah Lake (Steward 1938:149).

The Pahvants were located to the south and southeast of the Gosiutes (see Map 1). The Sevier River apparently formed the boundary around much of the Pahvant territory (Escalante 1943:73) and defined the boundary between the Gosiutes and the Pahvants over a considerable distance (Roper 1951:493). Pahvant territory included easterly and southerly portions of Millard County, most of Beaver County, and westerly portions of San Pete, Sevier, and Piute counties. Based on his observations in 1861, J. H. Simpson, Chief Topographical Engineer of the Army of Utah, reported that "The Pah-vants occupy the Corn Creek, Paravan, and Beaver Valleys, and the valley of Sevier" (Simpson 1869:45).

According to the Pahvant leader Hunkup, successor to Chief Kanosh, the Sevier River was the boundary between Pahvants and Gosiutes, with Pahvants located south of the river, and Gosiutes to the north (Roper 1951:420). At least after Euroamerican colonization began, neighboring Gosiutes and Pahvants often engaged in social events and hunted together in the Sevier River country (Powell and Ingalls 1874:47; Gibbs 1894, reprinted in Gottfredson 1919:63-64).

East of the Gosiutes were the Utes (see Map 1). Gosiutes and Utes jointly used areas near Great Salt Lake, and Pahvants may have shared the use of areas near the great lake as well. Malouf argues that Salt Lake Valley was a borderland or zone of contact frequented and claimed by both Utes and Shoshones, and that this shared borderland zone extended into Tooele Valley (Malouf 1974:79). Camping near Simpson's Springs in 1861, the British adventurer Richard Burton recorded that this region was "a kind of central point, where Pavant, Gosh Yuta (popularly called Gosh Ute) and Panak (Bannacks) meet" (Burton 1862:454-55). In 1872 Indian Agent Franklin Campbell reported that the Pahvants were concentrated near Corn Creek, Fillmore, and Deseret but also were scattered out to the northwest as far north as the Great Salt Lake (Campbell 1872:175).

Gosiutes, Pahvants, Utes, and Southern Paiutes spoke Numic languages that were in large part mutually intelligible, shared many cultural characteristics, traded, and occasionally intermarried. Under the impact of Euroamerican encroachment and mortality from introduced diseases, intermarriage between these neighboring groups increased, apparently as a defensive strategy to cope with declining population and Euroamerican encroachment.

Intermarriages among Utes, Gosiutes, and Pahvants apparently resulted in close ties of kinship between men serving as leaders among these neighboring ethnic groups in the late nineteenth century. Powell and Ingalls identify "Pi-an-ump" as principal chief of the "Go-si Utes" in the early 1870s and identify him as a younger brother of the Pahvant chief Kanosh (Powell and Ingalls 1874:47). Kanosh is also reported to have been the brother of both the Ute chief Wakara and the Ute chief Arapine (Cummings and George 1951: 346). Even if some of these reported sibling relationships were actually in-law relationships, or merely apocryphal, the idea that these leaders were siblings is an indicator that there were extensive ties of kinship and intermarriage linking these neighboring ethnic groups by the late nineteenth century.

Gosiutes

Gosiute means people covered with dust, dusty people, or desert people (Steward 1943:265; Chamberlin 1913:2). Contemporary *Gosiute* people who are fluent in their language indicate that the term specifically refers to the white alkali dust that lines the lowest portions of most valleys.

There has been considerable confusion and disagreement among Euroamerican observers about the ethnic identity of the Gosiutes and about the language spoken by them. Gosiutes were variously described as Shoshoni-speakers (Forney 1858:212); as speakers of a language similar to but different from Shoshoni (Irish 1865:144); or as speakers of a mixture of Shoshoni and Ute (Douglas 1870:560; Simpson 1876:54). Chamberlin concluded from his linguistic research that the Gosiute language was closer to Shoshoni than to Ute (Chamberlin 1908:75).

Some observers have viewed the Gosiutes as a subgroup within the Western Shoshoni ethnic group (Steward 1943) because they are culturally and linguistically closest to the Shoshonis. Others have regarded the Gosiutes as a subgroup of the Utes. Alternately, the Gosiutes may be seen as an autonomous grouping with affinities to the Western Shoshonis as well as to other neighboring peoples.

Jacob Forney, the first Indian Agent to report on the Gosiutes, regarded them as a mixture of Snake (Shoshoni) and Ute, with Shoshoni predominating (Forney 1860:363). Indian Agent Hatch regarded the Gosiutes as a distinct tribe:

Within my agency proper, if I understand it correctly, there are five different tribes of Indians: Utahs, Shoshones, Goshee Utes, Par Vans, and Pie Edes, and each is divided into several bands, with chiefs, besides several small bands with sub-chiefs (Hatch 1862:205).

U. S. Commissioner Doty likewise wrote of the Gosiutes as a "tribe" or "nation" (Doty 1865a:173; Doty1865b:174).

The extensive intermarriage between Gosiutes, Utes, and Pahvants in the period since Euroamericans began to encroach on their territories is probably at the root of the lack of agreement between observers. By the time Euroamericans began to record their observations of Native American people in this area, the Gosiutes had become an ethnically mixed population, including many intermarried Utes and Pahvants. An army officer surveying for a new wagon road in 1859 noted that he encountered some Utes intermarried among the Gosiutes (Simpson 1869:48). Malouf suggests that it was probably because Utes had begun to live and intermarry with the Gosiutes by the late 1850s, that the early Mormon settlers began to refer to the Native Americans west of Salt Lake City as an offshoot of the Utes and to refer to them as "Gosha Utes" (Malouf 1940:76).

A period of extensive intermarriage could be expected to result in considerable variation in patterns of speech encountered by Euroamerican observers in Gosiute territory. Given the greater likelihood of intermarriage between eastern Gosiutes and western Utes, between western Gosiutes and eastern groups of Western Shoshonis, and between southern Gosiutes and Pahvants, it would be expected that there would be variations in language and variations in closeness of affiliation between various Gosiute groups and their neighbors. For example, Gosiute residents of the Deep Creek reservation apparently adopted vocabulary and pronunciation from their Nevada Shoshoni neighbors as these groups increasingly interacted in the Deep Creek area in the late nineteenth century (Malouf 1940:4). It is presumably because of nineteenth century intermarriages that Indian Commissioner James Doty viewed the Gosiute tribe as composed of Shoshoni bands in the north and bands connected with the Pahvants in the south (Doty 1864:173,175). Malouf noted that there was considerable variation in dialects and terminology between different parts of Gosiute territory, and that individuals continued to take pride in these differences well into the twentieth century (Malouf 1940:55).

As Mormon settlement expanded westward and southward from the Mormon political center in Salt Lake City, there were pressures on Pahvants and Utes, especially Utes, to move into Gosiute territory and to intermarry with the Gosiute people. Gosiute territory provided a refuge for many Utes and some Pahvants, since Euroamerican settlement came later to most of Gosiute territory than it did to areas closer to the principal axis of Mormon development in central Utah. There were apparently few cultural barriers to intermarriage and movement of Pahvants and Utes into Gosiute territory. Presumably there had been some intermarriage in the past. After Euroamerican settlement began, intermarriage between these neighboring groups increased as a way to cope with declining population and to cement defensive alliances between the neighboring ethnic groups. In the post-contact period, the Gosiutes apparently welcomed reinforcements from neighboring peoples (Burton 1862:475). Intermarried Utes and Pahvants were reportedly among the leaders of efforts to resist Euroamerican encroachment in Gosiute territory during the 1860s (Egan 1917:263-64, cited in Malouf 1940:78,102). The death of the Gosiutes' paramount leader in the mid-1850s, and the severe challenges posed by Euroamerican encroachment during that same period, apparently created an opening for new leadership that was partly filled by Utes and Pahvants who had intermarried with Gosiutes. The Utes and Pahvants had more experience in dealing with and resisting Euroamerican expansion, and it is probably for this reason that many of them played leadership roles in the Gosiutes' resistance to Euroamerican expansion. As of the early 1870s, according to J. W. Powell and G. W. Ingalls, Pi-an-nump, brother of the Pahvant chief Kanosh, was the paramount leader of the Gosiute people (Powell and Ingalls 1874:51,57).

After the military defeat of the Gosiutes in 1863, there were two primary centers of Gosiute population: one in the area of Deep Creek and the other in the area of Tooele Valley and Skull Valley, with smaller communities at springs in the deserts and mountains between them (Malouf 1974:10-11). Powell and Ingalls' survey reported that there were Gosiute groups in Skull Valley, Deep Creek, Otter Creek, and Snake Creek, as well as in Egan Canon in Nevada (Powell and Ingalls 1874:51) (see ~~Map 2~~ for locations).

As of 1862 the Utah Indian agent identified the chief of the Gosiutes as White Horse (Hatch 1863:207). As of the early 1870s Powell and Ingalls stated that the principal chief of the Gosiutes was a man named Pi-an'-ump, whom they identified as a brother of the Pahvant chief Kanosh (Powell and Ingalls 1874:51). In the late nineteenth century (dates not certain) the Gosiutes' principal chief was a man named Ta'bi and also known as A'pam-pi; Ta-bi has been anglicized as Tabby, and Tabby's Peak in the Cedar Mountains west of Skull Valley is named after this Gosiute leader.

According to Chamberlin, *Ta-bi* is the Gosiute word for sun (Chamberlin 1913:14,19); Miller gives the very similar *tapai* as the Shoshoni and Gosiute word for sun (Miller 1972:170). Chamberlin notes that the name Ta'bi (sun) was often given to chiefs of the Gosiutes and to chiefs of neighboring Numic peoples (Chamberlin 1913:14). Chamberlin also notes that a Gosiute individual often received several names during the course of his life (Chamberlin 1913:15). Thus a man who became a chief might acquire the name Ta'bi to honor him and mark his status. Chamberlin noted that the late nineteenth century Gosiute leader named Ta'bi also was referred to as A'pam-pi; Miller lists *pam-pin* as the Shoshoni-Gosiute word for head (Miller 1972:162). The late nineteenth century Gosiute leader thus apparently had two names, both of them honorific terms referring to leadership.

One of the four men who gave their marks on the 1863 treaty of Tuilla Valley was named Ta'bi, presumably the same leader for whom Tabby's Peak is named. "Tav'-wi" or "Tab'bi" was also the name of the principal chief of the Utes of Utah as of the early 1870s, according to Powell and Ingalls (Powell and Ingalls 1974:51,56). It is not necessary to assume that the Gosiute leader named Tab-bi and the Ute leader os the same name were the same person. of

Julian Steward's ethnographic data indicate that Snake Valley was a heavily populated area due to the favorable environment there, with high mountains providing substantial streamflow to the valley and providing access to upland resources in close proximity (Steward 1938:124). Most of the drainage of the Snake Mountains runs off the eastern slope into Snake Valley, "where it supported several large communities". Steward says there were numerous settlements in Snake Valley (see Map 3). These villages and camps included a cluster of camps headed by at least three chiefs at *Biaba* (Big Spring) in the southern portion of Snake Valley, a village named *Tosakowaip* at Silver Creek, a village named *Tunkahniva* near Lehman Cave west of Baker, the village of *Bauwanoida* at present site of Baker, and the village of Trout Creek at the northern end of Snake Valley, as well as numerous other villages whose locations were uncertain as of Steward's fieldwork in the 1930s (Steward 1938:124, map on p.125). In 1869 an army engineer observed that Snake Valley was occupied by some 200 "Snake Indians" (Wheeler 1875:11). Steward concluded that in the southern portion of Snake Canyon the population was a mixture of Shoshoni [Gosiute] and Southern Paiute (Steward 1938:123), suggesting that the border of Southern Paiute and Gosiute territory ran through this area.

Map 1, map 4

Fish Springs (Map 4), north of Whirlwind Valley, was another important site of Gosiute occupation located near an ECTC (Steward 1938:137).

Among the known Gosiute village sites in the Skull Valley area are two villages located on the western flank of the Cedar Mountains near the Alternative STA (see Map 4). These were the villages of *Tutiwunupa* and *Utcipa*, located near what was at one time the Euroamerican settlement of Clive (Steward 1938:136, map facing p.148). 3 —

There is evidence that horticulture in favored locations like Snake Valley was part of the precontact Gosiute subsistence strategy. An Army Corps of Engineer's survey report in 1869 noted that the Native American population of Snake Valley "are in the habit of occupying the valley in planting and harvesting season, raising scanty crops, which they cache for the winter use, and then retire to the mountains (Wheeler 1875:11). One of the major early histories of the state of Utah describes the Gosiutes as having aboriginal agriculture:

The Gosiute was one of the few Shoshonean tribes that engaged in agriculture, their principal villages being located near the streams, where there was arable land, and there is a tradition that they practiced irrigation in a crude way. (Warrum 1919:56)

Julian Steward's informant JR believed that all of the Snake Valley people had planted, using digging sticks, and irrigated their crops (Steward 1938:128). Steward states that "Farmed plots were inherited by a man's wife or children" (Steward 1938:128). Rabbit drives were held in Snake Valley near Garrison, antelope drives were held against the foothills between Baker and Garrison, and mudhen drives were held on the flats between Baker and Garrison (Steward 1938:129 and Figure 9, p.125). Snake Valley people also held fish drives to harvest this resource from their springs and watercourses (Steward 1938:130). —

Pahvants

Pahvant means people living near the water, referring to the extensive riverine lands and wetlands where Pahvant population was concentrated. The term may also carry implicit reference to the Pahvants' use of riverine lands for farming. Irrigated farming was a key component of the Pahvants' overall economic strategy at the time of initial Mormon contact, as indicated by the extensive fields they observed along Corn Creek (Daughters of the Utah Pioneers of Millard County 1951:140).

Correspondence in the *Deseret News* in 1853 indicates that all of the Pahvants could act as a single tribal entity as of the early years of Mormon colonization (Huntington 1853). Burton's 1861 observations record that half the Pahvants were located at the Indian farm at Corn Creek, while the "other wing of the tribe" occupied the wetlands ranging northeastward from Sevier Lake and adjoining Gosiute territory (Burton 1862:475). It is not clear from Burton's account whether these were two distinct subgroupings or, more likely, that people moved back and forth between the population center at Corn Creek and the various locations used for hunting and fishing in the wetlands along the lower Sevier River.

As in the case of the Gosiutes, there is disagreement about the ethnic identity of the Pahvants. Some observers have regarded the Pahvants as a subgroup of the Utes, referring to them as Pahvant Utes. Others have regarded the Pahvants as a subgroup of the Southern Paiutes. Still others have regarded the Pahvants as a separate, autonomous ethnic group.

Many of the early Mormon settlers regarded the Pahvants as a subgrouping of the Utes, as did the first non-Mormon Indian Agent in Utah (Forney 1860:364-65). Powell and Ingall's survey of the Numic peoples regarded the Pahvants as affiliated with the Utes (Powell and Ingalls, reproduced in Fowler and Fowler 1971:111). Omer Stewart and co-workers regard the Pahvants as a Ute group (Callaway, Janetski, and Stewart 1986:339).

While Indian Agent Forney regarded the Pahvants as a Ute group, Indian Agent Hatch, writing two years later, wrote of the Pahvants as a distinct, separate tribal group (Hatch 1863:205). Explorer Richard F. Burton also reported that the "Pavant or Parovan Yuta, are a distinct and self-organized tribe, under one principal and several sub-chiefs, whose total is set down at 700 souls" (Burton 1862:475). Forney regarded both Pahvants and Southern Paiutes as subgroups of the Utes. Since today Southern Paiutes are regarded as an ethnic group clearly distinct from the Utes, this suggests skepticism toward regarding the Pahvants as a subgroup of the Utes.

While some early Mormon settlers regarded the Pahvants as Utes, others apparently regarded them as Paiutes (Bennett 1951:311). The arguments for regarding Pahvants as a subgroup or affiliate of the Southern Paiutes seem to be at least as strong as for regarding them as a subgroup or affiliate of the Utes. Irrigated agriculture was pivotal in aboriginal Pahvant subsistence strategy, as it was for the Southern Paiutes, and Pahvants intermarried extensively with Southern Paiutes, at least since mid-nineteenth century. Inter-marriage between Pahvants and Southern Paiutes occurred on such a large scale that in 1865 an army officer described a group of some eighty people living on both sides of Salt Creek to the Sevier River as "a cross between the Pah-utes & the Pah-vants" (Bailey 1965:343); he actually called it the "Pabawat Tribe", though a group of eighty persons would have been a local group, not a tribe. Significantly, Pahvant-Paiute intermarriages were not limited to the immediately adjacent Eastern Division Southern Paiutes. Late in January of 1856, a Pahvant woman died during the severe epidemic that spread from Mormon colonists to Native Americans. Known to Mormon missionaries then at Las Vegas oasis as Nancy, this Pahvant woman had been baptized by them the previous fall. Apparently she started for her parental home after her baby died about a month before she did (Jensen 1926:200).

Utes

Ute groups inhabited territories in Colorado, Utah, Idaho, and Wyoming. In the period prior to Euroamerican contact, there may have been historical changes over time in the extent of territories occupied by the various Numic ethnic groups. Ute groups may have occupied some areas later occupied by Gosiutes. According to Stewart, none of the Utah Ute groups' territories encompassed the study area (Callaway, Janetski, and Stewart 1986:339-340). Neighboring groups often reciprocated with each other, permitting a neighboring group to participate in social events and harvesting activities within their territory. From at least the nineteenth century many Utes hunted and some Utes raided in Gosiute and Pahvant territory. Following Mormon colonization in Ute territory, many Utes intermarried with Gosiutes and lived within Gosiute territory.

Early Contact, Euroamerican Colonization, Conflict and Treaty Cessions, 1848-1860s

Overview

The study area remained peripheral to Euroamerican interests during the period of Spanish and Mexican suzerainty over the area that is today Utah. A Spanish exploring party travelled through the region in 1776. During the next several decades, apparently few if any Euroamericans traveled through the area. By the early 1800s trappers were active in the region. By the 1830s, the region's Native American people were increasingly impacted by the movement of trade along the "Old Spanish Trail". Many Native American populations in the vicinity of the Spanish Trail were raided for women and children destined for slavery in the Spanish settlements of New Mexico.

Euroamerican expansion made a massive impact on Native Americans in the study area in the period from the 1840s through the 1860s. During this period Euroamericans and their livestock expanded throughout most of the study area. Euroamericans appropriated Indian springs and Indian farmlands and they and their livestock encroached on the wild food resources important to Native Americans. The response of Native American people to Euroamerican encroachment was mixed. Accommodation was the response of many Native American groups and Native American political leaders, but there were also frequent acts of hostility or resistance. In the study area, much of the resistance focussed on the Euroamerican transportation corridor established across Gosiute territory in the late 1850s. By the mid-1860s resistance had been crushed and treaties had been signed by the Gosiutes, Pahvants, and Utes relinquishing control of most of their territories. For an interim period the Indian people continued to use extensive parts of their territories, but as more and more Euroamericans took over land and other resources, the Native American people found their resource base increasingly limited to reservations.

The first detailed Euroamerican reports about Native American people in the region date to this period. Euroamericans drew their conclusions about the ethnic identities and traditional territorial boundaries of the region's Indian peoples at the very time that Euroamerican encroachment was displacing Native American people from many of the areas they had occupied and at a time of significantly reduced Native American population levels due to introduced diseases. One of the impacts of encroachment and depopulation was increased intermarriage between neighboring peoples, resulting in modification of ethnic identities.

Gosiutes

The first impact of Euroamerican expansion upon the Gosiutes was probably indirect exposure to introduced diseases carried along Native American trade routes. However, these events precede Euroamerican presence and written documentation.

The earliest recorded impact of Euroamerican expansion on the Gosiutes was the loss of women and children to slave raiders supplying the Spanish settlements. From the 1830s the Old Spanish trail was a major trade route; Native American slaves were one of the principal commodities transported along this route, which came within forty miles of Gosiute territory. The unmounted Gosiutes were among the groups that experienced heavy losses to mounted Native American and Euroamerican slave raiders. In response, the Gosiutes adopted a strategy of avoidance and flight, retreating into the remoter parts of their territory to avoid contact with mounted intruders. Simpson observed that Gosiutes were still practicing this policy of avoidance in 1859. He noted that "The fear of capture causes these people to live generally some distance from the water" (Simpson 1869:50,54). As they retreated to remoter areas, Gosiutes had less access to the prime resources within their territory -- the springs and riverine oases with their fish, waterfowl, and abundant plant resources. This pattern of defensive withdrawal from the oases was probably one of the reasons the Gosiutes struck early Euroamerican observers as strikingly impoverished.

Mormon settlement in central Utah began in 1844. Mormon colonization soon led to hostilities between the Mormons and the Utes upon whose territory the Mormons encroached in the Utah Valley and other fertile valleys along the Wasatch Mountains. The "Walker War" of 1853 was part of this ongoing sequence of hostilities. As Utes were progressively defeated and displaced from central Utah, some of them relocated into Gosiute territory, where they intermarried with Gosiutes. Displaced Utes apparently provided some of the leadership in protracted hostilities between Gosiutes and Euroamericans in Gosiute territory during the 1860s (Malouf 1974:81,88).

One of the first impacts of Mormon colonization upon the Gosiutes came through the agency of disease. In 1848 exposure to measles resulted in extensive fatalities among the Gosiutes (Chamberlin 1908:74).

In about 1850 small numbers of Euroamericans, most of them Mormons, began settling in Tooele Valley, in the northeastern part of Gosiute territory. Soon after, Mormon settlers spread west into Skull Valley. These settlements were not the highly organized Mormon colonies that were established in many parts of Utah but followed a more unplanned, single-family farm pattern of development (Malouf 1974:85). Most of the Euroamerican settlers were initially concentrated in eastern Tooele County. Some families settled in the western part of the county, but organized settlement was not begun in the west until 1860, when the community of Ibabah or Deep Creek was founded (Defa 1979:45).

The early Mormon settlers at Tooele apparently met considerable resistance from the Gosiutes, in the form of raids on livestock. The Mormon settlers organized a military company and carried out numerous counter-raids on Gosiute camps from 1849 through 1851, killing many Indian people (Malouf 1940:70-73). The first Euroamerican settler in Tintic Valley was apparently killed by a group of Gosiutes led by Chief Tintic, for whom a valley and mountain range is named (McCune 1947:169).

reportedly

After the war between the United States and Mexico, sovereignty over Utah shifted from Mexico to the United States and Euroamerican encroachment on Gosiute territory accelerated. Beginning in 1849 American survey parties explored the study area seeking out suitable routes for east-west wagon roads and rail lines. By the late 1850s a corridor had been established for systematic Euroamerican transportation and communication across Gosiute territory, used first by the Overland Stage and the Pony Express. There were twenty-two stations along this route. These relay stations appropriated many important springs in the region; the livestock encroached on Native American plant resources; and the employees competed with Native Americans for game animals. One of many resources to which Gosiutes lost access were the fish (called chub) available in many of the springs appropriated by the stage operators (Davies 1861:130). Powell and Ingalls observed that Euroamerican encroachment in Gosiute territory had depleted the resources and forced the Gosiutes to fragment their population into smaller bands in order to survive (Powell and Ingalls 1874:43). During the same period Camp Floyd was established at the eastern edge of Gosiute territory and for a time soldiers were stationed at each of the relay stations to guard the stations and traffic on the road against Native American resistance.

The intrusion of this transportation route through the heart of Gosiute territory led to several years of protracted hostilities. Some Gosiutes responded to the encroachment of mail stations and parties of emigrants with attacks on the stations. In these attacks, most of the damage done was to livestock and buildings, though sometimes station employees were injured or killed. Hostilities culminated in the "Gosiute War" of 1863 in which some one hundred or more Gosiutes were killed (Doty 1864:175). Malouf notes that while many Gosiutes engaged in attacks on stages, stage stations, and ranches, many others tried to remain neutral in the expectation that a policy of accommodation was more likely to result in needed assistance from the government or the Mormons. Thus, Indian agents could remark on the generally peaceful disposition of the Gosiute people while the army was engaged in active conflicts with some of the Gosiutes (Malouf 1974:104).

Euroamerican encroachment on Gosiute territory apparently had a fragmenting effect upon the Gosiutes. Powell and Ingalls noted of the various Great Basin tribes that:

Their hunting grounds have been spoiled, their favorite valleys are occupied by white men, and they are compelled to scatter in small bands in order to obtain subsistence. Formerly they were organized into nations, or confederacies, under the influence of great chiefs, but such men have lost their power in the presence of white men... (Powell and Ingalls 1874:43).

In addition, the death of the principal chief of the Gosiutes in the mid-1850s as Euroamerican encroachment began to be felt, may have also contributed to an expanded role for local leaders among the Gosiute. In 1859 Indian Agent Forney observed that:

A few years ago the Go-sha-utes were a considerable tribe. Their principal and only chief died about four years ago, since which they have remained broken and subdivided into small fragments... (Forney 1860:363).

If the Gosiute were fragmenting into smaller groups as a result of Euroamerican encroachment, this suggests that the latitude for individual Gosiute leaders would have increased. The breakdown into smaller groups due to Euroamerican encroachment on resources, and the death of a major leader in the mid 1850s, apparently facilitated the movement of unmarried Utes and Pahvants into leadership roles. Reports on hostilities in Gosiute territory in the 1860s indicate that several men of Ute and Pahvant origins played leadership roles in some of the acts of resistance focussed on the transportation corridor through Gosiute territory. One of these leaders was Peah-nump or Pi-an-nump, identified as a Pahvant married to a Gosiute Indian woman from Deep Creek; Pi-an-nump was the leader of a group of Gosiutes living at Coyote Springs, near Simpson Springs (Egan 1917:263-64, cited in Malouf 1940:78). In the early 1870s, Powell and Ingalls identified Pi-an-nump as the principal chief of the Gosiutes and the brother of Kanosh (Powell and Ingalls 1874:47). Pi-an-nump had been peaceful and accommodating toward Euroamericans, but in 1862 a group of California Volunteers patrolling the stage line massacred many of the people at Pi-an-nump's camp while he was away. When he returned and discovered the massacre, he led an attack on a mail station in which several station employees were killed, including the man who had guided the militia to the camp where they carried out the massacre (Egan 1917:263-64; Sharp and Bennion 1936:92-93, both cited in Malouf 1974:101-102). Another Pahvant man named Tung-a-shump apparently played a leadership role in Native American resistance in the Deep Creek area (Malouf 1974:103).

Soldiers inflicted heavy casualties on the Gosiute people in the 1863 hostilities, killing more than one hundred persons, and the Gosiutes sued for peace. On October 5, 1863 U. S. Commissioners met with southern groups of Gosiutes and made a "verbal treaty of peace" (Doty 1865a:173). On October 5th, Treaty Commissioner James Doty, former Utah territorial governor, made "a verbal treaty" of peace "with the remaining portion of the southern bands who are connected with the Pahvant tribe". Commissioner Doty explained that Gosiute willingness to agree to a treaty settlement stemmed from military action against the people closest to the Pahvant. "The largest portion of these bands have been killed by the troops during the past season" (Doty 1865a:173). The defeat and treaty cessions of 1863 apparently resulted in a weakening of the ties between Gosiutes and Pahvants, ending most of the joint Gosiute-Pahvant exploitation of the riverine oasis of the lower Sevier. The

On October 12, 1863 U. S. Commissioners concluded a treaty at Tuilla Valley. Commissioner Doty noted that many groups of Gosiutes did not sign the treaty agreement made at Tuilla Valley. Apparently the treaty meeting only included Gosiute representatives from the Skull Valley/Tooele Valley area but not from Deep Creek and other parts of Gosiute territory (Doty 1865b:175). People from Ibapah, Shell Creek, and "the Desert", Doty said, "would have joined them but for their fear of the soldiers" (Doty 1865b:175). The men who made their marks on the treaty document were Tabby, Adaseim, Tints-pa-gin, and Harry-nup (Treaty of Tuilla Valley, reprinted in Malouf 1940:86). The treaty of Tuilla Valley ceded the greater part of Tooele County and some of northern Juab County, all of which the Gosiutes had claimed as their territory (Warrum 1919:67). The treaty committed the Gosiutes to acceptance of Euroamerican travel corridors, settlement, development, mining, and military posts throughout the region. The treaty also provided for the removal of the Gosiutes to a reservation at a later time.

As of the late 1860s there was a large Native American population in Snake Valley. Wheeler found that in 1869 there were "some two hundred" people whom he identified as "Snake Indians, who are in the habit of occupying the valley in planting and harvesting season, raising scanty crops, which they cache for the winter use, and then retire to the mountains (Wheeler 1875:11).

As more and more Euroamericans settled in Gosiute territory, Gosiute access to resources steadily diminished. The Gosiutes became increasingly dependent upon employment as poorly-paid laborers for Euroamerican employers.

Pahvants

Father Silvestre Velez de Escalante and his party spent several days travelling through Pahvant territory in late September and early October of 1776 (Escalante 1943:map after p.90). The Spaniards called the Sevier River the Valley of Santa Isabel (Escalante 1943:72). They entered Pahvant territory at a place they called Santa Isabel, near the location of present-day Mills (Escalante 1943:73, map after p.90). Some thirty Indian people assembled at the Spaniards' temporary camp on the banks of the Sevier River; they were described by Escalante as "gentle and amiable" (Escalante 1942:72-73). The name the Indians used for themselves was "Tirangapui" (Escalante 1943:74). What the Spaniards found most striking about the Native American people in this area was the long beards worn by the men (Escalante 1943:72-74). Escalante's journal reports that "this race of bearded Indians" begins at the Sevier River; in other words that the Sevier River formed the northern boundary of their territory (Escalante 1943:73). From their initial camp on the Sevier the Spaniards travelled westward, some of them nearly reaching Sevier Lake. They named the area east of Lake Sevier and south of the Sevier River the Valle Salado (Escalante:1943:75). In that area they encountered more of the bearded Indians who called themselves Tirangapui, and the Spaniards reported that the Indian people soon "became fond of us" (Escalante 1943:74). Some of the Spaniards became lost and when one of them did not rejoin the group the leader of the Native Americans "ordered four of his men to look for him" (Escalante 1943:75). Reportedly these Indian people were exceptionally friendly and receptive to the Spaniards and wept when the Spaniards left; this so moved the Spaniards "that some of our companions could not hold back their tears" (Escalante 1943:75). Reportedly the Indian people were eager to have the missionaries return and said they would be willing to relocate and live with the "Laguna" Indians if the Spaniards wished them to, since the Spaniards had already promised the Lagunas a mission (Escalante 1943:75). The accommodating attitude of the Native Americans in this region in the late eighteenth centuries seems to prefigure the generally accommodating policy of the Pahvant leadership toward the Mormons in the nineteenth century.

In the early 1850s the Mormons began expanding into Pahvant territory. When a small number of Mormon pioneers arrived in Pahvant territory, they found extensive maizefields and a town of some six hundred Pahvants near the mouth of Corn Creek or Kanosh Creek (Daughters of the Utah Pioneers of Millard County 1951:140). Mormons referred to this area as Corn Creek and to the town as Corncreek town.

Unlike the resistance accompanying Mormon expansion into Ute and Gosiute territory, the Pahvant response was predominantly one of accommodation by the leadership, though individuals and groups sometimes engaged in hostilities against the express wishes of the leadership. The principal leader of the Kanosh or Corn Creek Pahvants early entered into a close accommodation with the Mormons. Chief Kanosh gave his approval for Mormon colonists to settle in the area and secured Mormon agreement that Corn Creek would be respected as a reserve or "Indian farm" for the use of the Pahvants. This agreement was part of an 1849 treaty involving several Indian groups, establishing peaceful relations, and defining four reserves including one at Corn Creek (Daughters of the Utah Pioneers of Millard County 1951:143). The area on Corn Creek that the Mormons designated as an Indian reserve later became a federal reservation.

Initially the Pahvants traded pinyon nuts, moccasins, gloves, and other items to the Mormons (Daughters of the Utah Pioneers of Millard County 1951:145). As the Mormon colony grew, the Pahvant men increasingly performed farm labor and other tasks and Pahvant women increasingly were employed doing laundry (Daughters of the Utah Pioneers of Millard County 1952:143). At harvest time, Pahvant men, women, and children all performed work connected with the harvest (Daughters of the Utah Pioneers of Millard County 1951:143).

Chief Kanosh consistently upheld a policy of accommodation and opposed Pahvants who wanted to, or did, engage in acts of resistance to Euroamerican expansion. The Mormons were impressed by Kanosh's commitment to peaceful accommodation, his effective leadership of the Kanosh Pahvants, and his efforts to influence other groups to adopt similar policies of accommodation:

He controlled his tribe so well it was unnecessary to fortify against them. Only when other tribes came to bother him, did the people have any trouble. Then he used his influence to make friends as best and effectively as he could (Daughters of the Utah Pioneers of Millard County 1951:342).

Kanosh took an active part in treaty negotiations affecting several tribes. In 1854 Chief Kanosh was a participant in the peace negotiations that ended the "Walker War" or "Ute War" in which Chief Wakara had been the principal Indian leader (Gottfredson 1919:83). In 1865 Kanosh was the Indians' keynote speaker at treaty negotiations held at the Spanish Fork Indian Farm; on this occasion Kanosh was quite critical of the way Euroamericans had treated Native American peoples (Gottfredson 1919:153). In 1866 Chief Kanosh had three of his subchiefs accompany G. H. Head, Superintendent of Indian Affairs in Utah, when Head was attempting to bring an end to hostilities led by the Utah chief Black Hawk (Head 1866:129). In 1872 Kanosh "sent out a number of scouts, who have been on duty for some months, to warn the settlers" if hostile Indians led by Black Hawk should approach (Campbell 1872:175).

Kanosh adopted many aspects of Mormon and Western culture in an effort to forge an accommodation between the two ethnic groups. He married his third wife in the Sacrament House in Salt Lake City, where she had been raised in the home of Charles Decker, brother-in-law of Mormon President Brigham Young (Cummings and George

1951:346) Kanosh often spoke at Mormon Sacrament meetings; entertained Euroamericans in his home in Euroamerican style; and visited neighboring groups of Native American people to urge them to accommodate the Mormons and adopt standards of behavior similar to the Mormons (Daughters of the Utah Pioneers 1951:11; Cummings and George 1951:342-46). The Mormons and later the government reinforced Kanosh's position of leadership. Powell and Ingalls stated that the Pahvants had received far more government assistance than any other Great Basin Native American group (Powell and Ingalls 1874:57).

Sp. (Pahvants continued to occupy their townsite and farmland on Corn Creek. Others lived in labor camps on the outskirts of Mormon towns. Many Pahvants commuted between Corn Creek and employment in the Mormon communities:

The Indians ... came to Kanosh, Meadow and Fillmore almost daily. They came on horses, in one-horse carts, and some in buggies. The squaws went from house to house, begging for meat, bread, sugar, and old clothes. They would go to various homes and assist with the "washing," or laundry. They scrubbed dirty clothes on the washboard, for five or six hours, for fifty cents, their noonday meal, and any little gift of food the white woman chose to give her. Almost as familiar as the squaw herself was her pony. It was nearly four miles to the Indian village, so a pony was a necessity (Daughters of the Utah Pioneers of Millard County 1951:143).

Events in 1853 demonstrated the restraining influence of Chief Kanosh. Members of an emigrant train killed the father of the Pahvant war chief (whose name was Moshokuope or Moshokuop) while the emigrants were stopped at Meadow Creek. When Pahvants approached the emigrants to offer gloves and moccasins for trade, the emigrants were afraid of the bows and arrows the Pahvants carried and turned the interaction into a hostile confrontation (Daughters of the Utah Pioneers of Millard County 1951:142; Ekins and Warnick 1951:422) in which several were injured and Moshokuop's father was killed. Chief Kanosh restrained Moshokuop and his warriors, who wanted immediate revenge. Soon after, Moshokuop and some twenty Pahvant men went to the wetlands near Sevier Lake in a party that also included two presumably Gosiute men from Snake Valley and a Ute man from Nephi (Gibbs, in Gottfredson 1919:63-64). About two weeks after the death of Moshokuop's father, a survey party was attacked near Deseret in the middle of Pahvant Valley and eight of the twelve members of that party were killed in what is known as the "Gunnison massacre". Moshokuop and his warriors were suspected as the responsible parties, though some have suspected that the attack was a mixed Mormon-Native American project (Heitman 1903:I:483). Some two weeks later Chief Kanosh and another Pahvant man accompanied a party of Mormons to the scene of the killings to bury the dead and to locate Moshokuop and his warriors. Kanosh sent his Pahvant companion down the Sevier to locate Moshokuop and his warriors, who soon came in as Kanosh requested:

In those days not a member of the Pahvant tribe dared to disobey the intrepid chief, and as Mr. Call and his party were rounding up the top of the common grave, Moshokuop and his band came in sight across the swamp on their

ponies... (1894 article by Josiah F. Gibbs, editor of the "Blade", reproduced in Gottfredson 1919:59-74).

Kanosh apparently had considerable influence, though there was an ongoing tension between his efforts to maintain an accommodation with the Mormons and the resistance some of the Pahvants directed at Mormon encroachment.

The Mormon town of Deseret was founded in 1859 in the wetland region along the lower Sevier River. The fertile region around Deseret was still being used by large numbers of Pahvants. In the early 1860s Simpson reported that while about half of the Pahvant population (totalling about seven hundred) lived in the vicinity of Corn Creek and the nearby Mormon settlements, the other half were more widely spread through the triangle of wetlands between Sevier Lake, the Sevier River, and the town of Kanosh (Simpson 1862:475). Simpson reported that there were several sub-chiefs and one principal chief--presumably Chief Kanosh (Simpson 1862:475). As of the early 1860s the Pahvants still outnumbered the Mormon settlers in the area around Deseret and were apparently less accommodating toward the Mormons than was the case at Corn Creek.

The great valley was still a favorite rendezvous for the Pahvant Indians who pitched their wickiups on the banks of the river. The Indians were more numerous than the white people. The Indians around Deseret stole the settlers' cattle and kept them in constant fear. Finally they organized a Militia into two companies.... Finally the people were told to move into a larger settlement or build a fort. They decided to build a fort (Ekins and Warnick 1951:430).

The influence of Chief Kanosh apparently was strongest in the communities of Kanosh and Corn Creek where the Pahvant population center was located. Local Pahvant leadership the western part of Pahvant territory, around Deseret and westward to the Sevier Lake, was apparently less accommodating. Wheeler identified Blackhawk as a Pahvant leader who was "shrewed and warlike, and when the Mormons will not give him and his band all the meat that they wish, he immediately retires to the hills, declares war, and levies contributions (Wheeler 1875:36).

In 1865 the Treaty of Spanish Fork ceded all of the Pahvants' territory and opened it for Euroamerican settlement, with the exception of the Corn Creek reserve (Daughters of the Utah Pioneers of Millard County 1951:143). After this, several new Euroamerican towns were founded in Pahvant territory, including the Mormon town of Kanosh, which was established in 1867 on land that had until then been entirely Pahvant farms (Cummings and George 1951:343).

Utes

The Utes acquired horses and became efficient equestrians earlier than did the Gosiutes, Pahvants, and other Numic groups located west of the Utes. The mounted Utes used the increased mobility provided by the horse to establish superiority in trade and politics over their unmounted neighbors. Mounted Utes also raided the unmounted

Gosiutes and Pahvants. The more easterly (Colorado) Utes were the first to acquire the horse. The Utah Ute groups apparently did not acquire horses until around 1800 (Callaway, Janetski, and Stewart 1986:354), but had already become efficient mounted warriors before Mormon settlement began.

Since the Utes were already well established as equestrians when Mormon colonization began, Ute groups posed a significant military challenge to the Mormons. Their mobility enabled them to raid Mormon settlements and swiftly retreat over great distances. Hostilities between the Utes and Mormons were protracted. Today some phases of Ute-Mormon conflict are referred to as "Walker's War", "Black Hawk's War", etc. after the names of important leaders of Ute resistance.

Since the Treaty Cessions

Overview

By the early 1860s, armed resistance by Native American people to the encroachment of the stage and mail lines and to other encroachments in the study area had been militarily defeated. By the mid 1860s, a few representatives of the Gosiutes, Pahvants, and Utes had assented to treaties ceding nearly all of their territory and providing for removal to reservations. Most of the Gosiutes and Pahvants remained in enclaves within their traditional territories, however. Some of them farmed on "Indian farms"; most of them became increasingly dependent upon irregular employment as domestic workers and as farm laborers on Euroamerican-owned farms and ranches.

Gosiutes

After the defeat of Gosiute resistance and the treaty cessions of 1863, the Gosiutes were increasingly concentrated in enclaves, the largest of which was at Deep Creek. There was also a large Gosiute population in Snake Valley-- some two hundred persons-- according to an army engineer (Wheeler 1875:11). As of the late 1860s Gosiutes were reportedly still fearful of soldiers after the massacres of their people in the early 1860s. In 1869, Army engineer George Wheeler said of the Gosiutes of Snake Valley that

So far, our intercourse with the Indians had been limited, appearances indicating that in many instances they have fled at our approach. The Shoshones and Gosiutes, in whose country the route had so far lain, have, in yhears gone by, suffered greatly at the hands of the United States troops, and our guide and interpreter was known to them personally, and the word having been passed along the lines, they had silently taken their departure prior to our coming. This was indicated in two or three instances by the sight of deserted wick-e-ups, and it appears as a well-attested fact that they have a great terror of the soldiers. (Wheeler 1875:11)

In the early 1870s John W. Powell and George Ingalls were charged with removing the Gosiutes to the Uintah Reservation, but few of the Gosiutes left their traditional territory. Many Gosiutes were farming on a small scale both in the main enclaves and at scattered springs (Powell and Ingalls 1874:51,57). However, during the 1870s there was a large influx of Euroamerican settlers into western Utah, particularly from Nevada, and many of the

Gosiute farms were appropriated by these settlers (Malouf 1974:111). While Gosiutes were able to do some farming in the Deep Creek, Skull Valley, Salt Marsh, and Snake Valley areas, they became increasingly dependent on wage labor on Euroamerican farms and ranches. As of 1872 there were some 1100 Gosiutes, according to Indian Agent Franklin Campbell (Campbell 1872:174).

In the 1870s increasing numbers of Deep Creek area Gosiutes became Mormons. In 1874 there were mass baptisms at Deep Creek. One of the Gosiute leaders, named Toobuka or Torbuka, reportedly received a number of visions that led him to seek baptism for himself and his followers, some 100 of whom were baptized in June of that year (Malouf 1974:115,124; Bluth 1978:125). Altogether some 800 Native American people were reportedly baptized at Deep Creek by the end of 1874 (Nicholsen 1874, cited in Malouf 1974:117). At the time, the Mormons were encouraging Gosiutes and Western Shoshonis from Nevada (as well as Native American people from Idaho and Wyoming) to come to the Deep Creek area, and this helps to explain the large number of baptisms (Malouf 1974:117). In the 1870s the Mormons were attempting to bring Indian people into the Deep Creek area and missionize them, in order to establish a strong Mormon constituency at a time many non-Mormon whites were immigrating to the area from Nevada and elsewhere. The Mormons were also interested in keeping the Gosiutes in the area rather than having them moved to the Uintah Reservation as the federal authorities wanted done (Malouf 1974:117-120). In part, the Deep Creek Mormons were concerned with maintaining a local Native American population to serve as laborers (Malouf 1974:120). The mass baptisms at Deep Creek were thus linked to the Mormons' effort to strengthen their position in western Utah vis a vis competing Euroamerican interests.

Mormon support for the Gosiutes included establishment of an Indian farm. In 1883 Mormons arranged the purchase of a 1,000 acre Indian farm at Deep Creek and sent several Mormon families to serve as missionaries there (Lyman 1978:126; Anderson 1900 cited in Lyman 1978). Later the farm was deeded to the Gosiutes.

After establishing the Indian farm Mormon enthusiasm for missionary efforts with the Gosiutes apparently waned, but the reserve later became the nucleus of the federal Gosiute reservation established in 1914. (Malouf 1974:122). Euroamerican pressures upon Native American access to resources continued to intensify, leading to prolonged litigation over water rights. The Court awarded the Gosiutes one-third of the water rights in the Deep Creek or Fifteen-Mile watershed. (This at a time when the Gosiutes comprised half of the population in the area (Reagan 1919:1043; Malouf 1974:126). In 1914 an executive order established the Goshute Indian Reservation at Deep Creek. In 1940 Gosiutes living at Skull Valley were relocated to the Goshute Reservation at Deep Creek (Malouf 1940:12).

Pahvants

As of 1872 there were some 1500 Pahvants, according to Indian Agent Franklin Campbell (Campbell 1872:174). Pahvant leadership in the late 1800s maintained an accommodating orientation to the Mormons. At his death in 1884, Chief Kanosh was succeeded as leader of the Kanosh Pahvants by Hunkup, who was apparently regarded as

both a chief and a bishop; *The History of Millard County*, Daughters of the Utah Pioneers, identifies Hunkup as the "2nd Indian bishop or chief at Kanosh" (Cummings and George 1951:347).

As the Euroamerican population in Pahvant territory grew, the resource base available to Pahvants steadily shrank until the Corn Creek Reserve, which eventually became the Kanosh Indian Reservation, constituted the Pahvant resource base. After the devastating influenza epidemic of 1918-19 killed some two-thirds of the Kanosh Pahvants, many of the survivors relocated from Kanosh to other Utah reservations where they had friends and relatives (Daughters of the Utah Pioneers 1951:143). Relocated Pahvants became increasingly intermarried and merged with Utes. Today many of the Pahvants live at the Uintah Reservation. Others are located at Kanosh, Koosharem, and other small settlements in Utah where they are intermixed with Southern Paiutes (Callaway, Janetski, and Stewart 1986:340).

In the 1980s, after more than a century of Euroamerican disruption of Pahvant life, the strength of Pahvant-Southern Paiute ties is being displayed during the 1980s. In 1980, the Congress authorized the Southern Paiute people of Utah to select 15,000 acres of federal lands for a new reservation in connection with re-recognition of these people after the trauma of termination in 1954. Those people earlier labeled Pahvants who did not migrate to the Uintah Valley Reservation but remained in southern Utah are now being treated as part of the reconstituted Southern Paiute tribe.

Conclusion

Historical and ethnographic sources indicate a long pre-contact occupation of the study area by Native American people, involving both permanent village locations and sites used on a more transitory basis for hunting, gathering, ceremonial events, and travel. From the time of the first Euroamerican accounts of this region, Gosiutes occupied most portions of the study area, Pahvants occupied the southernmost portions, and Utes used some areas jointly with Gosiutes and Pahvants, particularly in the areas closest to Great Salt Lake and in the course of travel. It is impossible to reconstruct territories and changes in territories during the centuries before contact, during which time Utes may possibly have occupied more extensive portions of the study area than they did at the time of contact. During the nineteenth century the impacts of Euroamerican colonization and stimulated an increase in intermarriage between neighboring ethnic groups as a defensive strategy. Many Utes moved to Gosiute territory and intermarried with Gosiutes; Ute ties to the study area grew stronger as a result.

Many portions of the study area are fertile and well watered, and many areas were even better watered during the nineteenth century than they are today. Both Pahvants and Gosiutes in the study area practiced irrigated agriculture, before as well as after contact. Snake Valley, for example, was apparently one of the centers of Gosiute population (Wheeler 1875) containing numerous villages (Steward 1938) whose subsistence was partly based on farming (Wheeler 1875; Steward 1938). Even after the military defeats of the early 1860s and the accelerating Euroamerican encroachment that followed, some areas still supported concentrated populations of Gosiutes. Snake Valley, for example, had a

population of some 200 Gosiutes in 1869, for whom traditional agriculture constituted an important part of the subsistence base (Wheeler 1875).

Introduced diseases resulted in severe population loss beginning even before Euroamericans began to settle in Utah and accelerating with Mormon colonization. Mormon colonization resulted in encroachment on Gosiute, Ute, and Pahvant resources and military campaigns in which Native American peoples suffered both loss of population and loss of territory. All of these impacts of colonization resulted in major disruptions of Native American societies and narrowed their resource base and territorial base.

All of these disruptions were underway at the very time that Euroamerican travelers and settlers were writing the earliest accounts of the Native American peoples of this region. Many of the early accounts failed to recognize the immense changes that Native American cultures were undergoing at the time, and this failure led to misperceptions and misconceptions about the Native American people. For example, people who had been displaced from their prime resource areas and fragmented into smaller-scale social units as a result of depopulation, resource encroachment, and military actions were described as impoverished, starving, wandering bands without permanent villages, without agriculture, and without any large scale political organization. Many observers drew the conclusion that these conditions were representative of aboriginal Great Basin culture, rather than recognizing that impoverishment and fragmented social organization were a recent product of Euroamerican encroachment.

American Indian people in the UTTR study area have experienced repeated losses of population, territory, plant, animal and water resources in the course of nearly two centuries of Euroamerican colonization. In more recent times, these Indian people have suffered losses of sacred sites and cultural resources, as well as intrusions into the airspace over their reserved lands. Gosiute people have even lost control over the spelling of their tribal name, which was changed from *Gosiute* to "Goshute" by the Bureau of Indian Affairs. Despite all of these intrusions, disruptions, and losses, Indian people still maintain strong ties to and concerns for the traditional homelands which were at one time under their sovereign control. The proposed locations for ECTC activities in the UTTR study area remain areas of cultural significance to these Indian people.

CHAPTER THREE CHARACTERIZATION AND SITE-SPECIFIC EVALUATION OF CANDIDATE VALLEYS

This chapter presents the identification and interpretations made by Indian people during on-site visits to Whirlwind Valley, Tule Valley, and Snake Valley. These comments are organized into general responses to a valley and specific responses to specific sites within a valley being considered as TTAs. At the end of each valley assessment, a summary table places cultural resources into six categories, cross tabulated by the location of the resources, and the level of evaluation placed on the resources.

Whirlwind Valley Alternative Configuration

The location of one alternative configuration for ECTC activities is in Whirlwind Valley. This valley is the easternmost of the three candidate valleys for potential ECTC activities. It is situated west-northwest of the town of Delta. The cultural resources study was originally designed to concentrate on the northern array of TTAs, in addition to the Range Maintenance Facility site at the northern entrance to the valley. Just prior to the start of the fieldwork, however, the focus was shifted to the TTA array further south. Table 3.1 lists the site numbers visited in this array. Site visits with Gosiute and Paiute representatives occurred on March 16 and 17, 1989. Gosiute and Ute representatives visited the sites on March 20 and 21, 1989. Comments on and evaluations of sites and cultural resources at each site in this alternative configuration/array are discussed below.

Orientation and Overview Sites

It was decided by project ethnographers that the study team would visit a series of sites in Whirlwind valley that were not necessarily marked for potential near-future ECTC activities. These sites were visited for the purpose of providing representatives with an orientation or overview so that the team might obtain an overall sense of the valley as a spatial area. These overview sites were visited by Gosiute and Paiute representatives on March 16, 1989. Some of these sites were observed in a "windshield survey" fashion; some site visits included brief stops and still others entailed extensive walkovers. Overview sites visited included general areas in proximity to proposed longer-term future TTA sites W3B, W10C and W10B, which were viewed while driving. In the crevices and caves to the west of these latter two sites, Gosiute representatives noted the potential for burials. They determined that the entire area should be classified as sensitive, and that it should be avoided. Schoenburger Spring and Laird Spring in the Drum Mountain range area, which involved stops and walkovers; and Swasey Spring and the upland W3F site on the western side of the valley.

Whirlwind Valley Overview: General Comments

Gosiute representatives recalled that the valley had frequently been used as a travel route to Delta, Kanosh, Indian Peaks and other locations for visitation as well as for people who worked in the sugar mills. Wagon trails connected the locations. One Gosiute representative recalled that his father frequently travelled through the valley on horseback on his way to visiting Indian Peak, and that he returned home by going up through Baker and Warm Creek. While travelling, Indian people would gather seeds and roots or tubers of wild onions, hunt small game such as ground squirrels or prairie dogs and larger animals such as bighorn sheep. The Gosiute elders also identified *Ephedra*, or Indian tea, as being boiled for use as a beverage. Another unidentified plant described as growing flat and close to the ground was mentioned as having been used for treating diarrhea. Water for people and animals was readily available from the springs in the area. The Paiute representative also made the comment that the valley was significant in terms of travel by Indian people. A Gosiute elder remembered that his father had told him about all the springs in this area; his father knew the location of them all and their Indian names. The elder did not recall the Gosiute names. In addition, his father had told him about all of the burial grounds in the area. A Gosiute elder remarked that he recalled hearing mention made of markings on rocks, or petroglyphs, in the area which may have served as maps or resource guides to the valley. The following comments were made at the Schoenburger Spring orientation site. They reflect, however, the Indian peoples' concern for the study area in general, as well as for Whirlwind Valley in particular:

Ute elder: Well, I guess you could talk about a lot of things when you talk about Indian things, Indian ways. I believe that Indian people, they never gonna die out, they always gonna remain Indian, no matter how far we go into, say, this white man's world. There's always something that pulls on us, that goes back and kinda works that way. So believing that way, you know, we think life came from the earth itself, and then some of my people or some people that's, the elders especially of other tribes too, they believe that there are living beings, you know, spiritual beings that still remains on the earth. They live there, and then they make themselves presence to only very few and those are the ones that they pick or the ones that help them or they help them, too, like they become spiritual leaders or doctors. We have quite a few places like that, and then Indian usually don't tell the others where it is or we don't want to talk about it or we don't tell, that why I was asking, you know, how far do we go--see, we're not gonna tell you where they're at, you know, and the areas like this way out here, isolated area, may be, may have those type of places, too. So the sacredness of the area is kind of like determined by the ones that are given that certain right to communicate with them. To us, to the rest of us, the Indians, you know, we look at it as being sacred that way, too--the whole area's sacred.

Gosiute elder: That's what I was telling him...it's not the only three valleys that the Indians roamed, they roamed all over. It was sacred to them wherever they went, wherever they camped, because that's where they hunted or gathered seeds wherever they stopped and where they hunted antelope or

whatever around here. Because its' sacred because it's a God-given right, you know, to the Indians...

Ethnographer: Are there some places that are more powerful or more sacred or more religious than others, though, within that sacred land?

Gosiute elder: I don't think so, well I don't know as far as the medicine man or Indian doctor is concerned, they get that power from someplace.

Ethnographer: Would those places where they get the power, would those be more sacred, more important?

Gosiute elder: That's where they got the power, yeah.

Ute elder: Well, it's kinda like the whole area would be considered important, but some areas are, would be considered neutral, neutral areas, especially where they had their villages, if they had campsites. But around that area, outside, then would be then determined by individuals how sacred that is. Then again, just having a community there at one time or another is sacred.

Ethnographer: So if you find a camping area, that makes it a sacred area.

Ute elder: Yeah, that's part of a culture. And then if God is to be recognized in the form of culture, that's where they lived. And that makes it sacred, too, that way. Then if you take their culture away, it's like taking their God away, too.

Schoenburger-Laird Spring Complex

Location. This complex of two springs is located east of the Drum Mountains, in a lower talus slope zone south-southwest of the proposed alternative RMF site. Laird Spring is located on the southwest talus slope or flank of Mount Laird. Schoenburger Spring is located approximately a mile and a half to the northwest of Laird Spring.

Description. These sites were interpreted to have been locations of Indian camping, hunting, food and tool processing and semi-permanent habitation. The abundant plant and animal life around the spring, as well as the water and natural windbreak-type shelter made them ideal stopping or occupation areas for travelling Indian people. The Native American Research Associate felt a strong sense of the presence of burials at Schoenburger Spring and that this particular site was a powerful place which he felt was inhabited by the spirits of young children. The site, therefore, was interpreted to be a potentially dangerous location.

A Gosiute elder mentioned that his father had told him there was a burial place near Schoenburger Spring. The Paiute representative mentioned that there were potential burial sites in the crevices on the upper flanks of the Little Drum Mountains and other surrounding hills. These open-type springs--moreover, all springs--continue to be high

sensitivity areas. All elders unanimously categorized spring sites as being of special importance.

A Ute representative characterized springs as "jumping places" or resting spots in between other places or destinations. The Paiute elder mentioned that Indian people would have camped across from spring. Previous studies suggest that this strategy allowed animals access to the water. The Ute elder noted that in "remote areas" such as that surrounding Schoenburger Spring:

...where you find maybe chippings, arrowheads, maybe place for vision quests where medicine men would go and spend a certain amount of time fasting, or going through certain ceremonies, so each group would have their own areas, where they'd go. Maybe quite a few of these are like that, quite a few this area around here, you know, isolated areas where you find points and other things, gathering things like for oxides, too, you know, for Indian paint, I would think.

Indian tea was identified by Ute representatives as being used for a beverage and medicine in treating a number of sicknesses. Ute elders also spotted a bald eagle on the way to the site.

Generally, the Schoenburger-Laird Spring complex is characterized by relatively dense populations of useful Indian plants and evidence of Indian occupation. At Schoenburger and Laird Springs, for example, there was an abundance of such plants as willow, Indian tea, rabbitbrush (Gosiute *siva'api*), wiregrass and sagebrush. Seedgrain plants identified as ricegrass (Gosiute *wa'ara*) and ryegrass (Gosiute *wa'arumpip*) were used for food, the seeds being ground up and used as gravy or made into bread. Wiregrass stems were used for baskets when green. Ragwood and cedar were used for ritual smoking as a medicine; the cedar boughs are still used today. Rabbitbrush, ricegrass and ryegrass seeds were stored over winter, either ground or unground. At one time, tule or cattail roots were sliced and dried like jerky. No cattails were observed, however, at this site. Virtually all of these plants, then, were used for food, ritual and medicine.

Wiregrass stems were said to have been braided for spoons, also, according to a Gosiute elder. Willows (Gosiute *suuvi*) of a different type than those identified at the site are still used. Sage (Gosiute *povi*) was identified as a primary medicine. It was made into a drink for colds and is still used. Likewise, cedar (Gosiute *wa'api*) is still used for medicinal purposes. Saltgrass served as horsefeed. Another plant identified by Gosiute elders had white flowers with purple centers and variegated leaves. Its use was not recalled.

In terms of artifactual material, obsidian chippings were identified on the south side of Laird Spring. These concentrations of obsidian flakes led to the interpretation that there was Indian occupancy or camping around the spring. All of the elders pointed out that the most critical, and therefore the most culturally significant, resource was and is the water. Flakes and a bird point were found at nearby Freighter's Well, on the north side of Mt. Laird. Similar plant communities were also identified. This site was also interpreted as one of Indian habitation.

Evaluation. The Schoenburger-Laird Spring complex was given a high sensitivity rating by Indian representatives.

Swasey Spring

Location. This site is located on the western side of the valley in the southeastern portion of the Swasey Mountains.

Description. Swasey Spring is currently used to water livestock, indicated by the presence of a large corral around the pool and the presence of cow track. Tracks indicate that deer frequently water at the spring, also. Representatives identified several Indian plants at this site, including elderberry (*Gosiute tuyambu*), true greasewood (*Sarcobatus?*), several yucca, pinenut trees, Indian tea, sagebrush, a very high density of rabbitbrush, a plant resembling wild rhubarb, an unidentified medicinal plant with fuzzy leaves and four white flower petals with a red bloom inside, and a plant that may be wolfberry. The site also contained a fairly extensive lithic scatter of obsidian flakes and chips. According to a Gosiute elder, Indian people would have camped about two miles from the spring and waited nearer to it for game to come in so that they could be hunted.

Evaluation. The Swasey Spring site was given a high sensitivity rating.

Whirlwind Valley Proposed Alternative RMF And TTA

Whirlwind Valley RMF

Location. The proposed location of the range maintenance facility, in the event Whirlwind Valley were to be selected, is on the flats at the northern entrance to the valley. These flats are at the eastern base of one of a series of intermittent knolls or hills north of the Drum Mountains, south of Antelope Ridge.

Description. Gosiute and Pahvant-Southern Paiute representatives visited this particular site on March 17. During the site walkover, a high concentration of chips and flakes and cores of obsidian and other material was noted. Most significantly, a Gosiute representative discovered an obsidian projectile point approximately two inches in length. The point was found approximately 265 paces west from the north-south road entering the valley. It was found in close association with several flakes of more recent origin. The point exhibited a heavy patina, or desert varnish, and has basal thinning with no barbs. It appeared to be slightly fluted, in the style of an ancient Folsom or Clovis point. It was thus surmised that the point could be anywhere from 9,000 to 12,000 years old.

On March 20th, the study team walked further west of the site in the direction of the knolls and hills. Upon climbing up the eastern slope of the hill west of the smaller knolls, they discovered one small rockshelter. In addition, there was an extensive quarry of source material from which many of the flakes located in the washed out flats below were made. The quarry is composed of high grade yellow jasper. Because of this extensive quarry-type feature and the numerous flakes, the larger site area was interpreted to be a

quarry and tool processing site by the representatives. Ute representatives visited the site on March 21. After visiting the location of the projectile point, the Ute elder made the following comments:

(referring to a discussion he had with a Hopi elder in Salt Lake City): Someday, when the time is right, the Creator is going to come back and he's going to say, 'identify your land, where you were.' And those (indicating the projectile point) are going to be the identification marks. It's kind of like related to a spiritual belief, religious orientation that they go by. So by using the same method, we would say the same thing here. Maybe this is our identification. Maybe this is where we're gonna come back to. That's gonna determine that we were here. These are the markers that's left there. Maybe that's why they created these laws like the religious freedom act. What I'm saying is it belongs to the Indian, simple and short. It doesn't belong to the white person, though, because it was there before he came to this land.

...I don't think you can really say this area that's never been touched by human hands, I mean, you know, that's generally speaking, you know. They had to go through this area within, you know, a given time, 10,000 years B.C. up to this time. It's just a matter of determining what period that happened to be, this one (referring to the projectile point). You can tell by the discoloration in that...I think it's a matter of interpretation, really, because you know, going back to the older period of time...In the old days, everything was tied to a religious belief, sacred beliefs, like, like for instance, the tribe relied heavily on religious leaders, or medicine men, so they would determine what areas to hunt, what areas to go into. The whole thing was kinda like government, you know, the medicine man, a sacred person, the one that's in connection with the man who made this world. So everything that he used is within that structure, too, and arrowhead would be classified as a sacred instrument, also, so where do you draw the line?

I would think of it in this way, though--Indian is never gonna be cut off, people you know they were here before the white people and then they took the land they took everything and gave us small areas and our language and our beliefs and but this gives us kinda like a title to our land again, if I leave something there, to that place, that's gonna be a mark there for me, and this happen to be one of them because the people lived here...it's a certain thing that kinda ties it down...several tribes had come across this land...

Plants identified at this site included sage, Indian tea, bunchgrass and Indian ricegrass. All species appeared to have been heavily grazed. The large jasper boulders likely served as source material. Given the heavy density of chipping, the site portions were interpreted as consisting of a tool processing area at the bottom and a quarry at the top of the hill. In addition, the site was characterized as a camping and hunting area. The camping interpretation stems from a Gosiute elder who identified what he perceived to be as many as eight circular depressions, which may have been wickiup floors, scattered throughout the

site area. A curved stone identified by one of the Gosiute representatives may have been used for shaping arrowshafts. One representative discovered a grinding stone at the site, suggesting the possibility that the site may have been used to process ricegrass seeds at one time.

Evaluation. Because of the existence of the ancient point and the quarry, in addition to the potential camping and food processing functions, this site was judged to be of high sensitivity by the representatives.

W1A

Location. This site is located in a lower talus slope zone almost due north of Swasey Spring. The study was unable to locate the stake for this site.

Description. Gosiute and Paiute representatives noted that Indian people would not have camped in an open area such as this. Plants included shadscale, greasewood, an unidentified yellow plant, sage, bunchgrass, Indian tea, and an unidentified cactus with pads. Two obsidian chips were also identified.

Evaluation. This site was given a low sensitivity rating.

W1B

Location. This site is located in the flats north of the road approximately 1 mile northwest of W3H. The study team walked an area north 200 yards and south 200 yards, because no stake for this site was located.

Description. There was no observed evidence of Indian occupation nor any Indian plants of significance identified by the study team at this site.

Evaluation. This site was given a low sensitivity rating.

W1C

Location. This site is located in the flats of Swasey Bottom, within the same cluster of sites as W1A, W1B and W3H.

Description. Because the site is located in the mud flat zone, Indian representatives agreed that there was little potential for Indian habitation and cultural remains.

Evaluation. This site was given a low sensitivity rating.

W1D

Location. This site is also located in the cluster of Swasey Bottom mud flat sites. It is south of the east-west road across the valley, southeast of W1C.

Description. Because the site is located in the mud flat zone, Indian representatives agreed that there was little potential for Indian habitation and cultural remains.

Evaluation. This site was given a low sensitivity rating.

W1E-W3I

Location. These two sites are located to the east of the sites discussed above, in the mud flats further upslope, north and east of W1F, respectively.

Description. There was no observed evidence of Indian occupation in terms of artifactual material, and lower densities of significant plants than those identified at W1F, at either of these sites.

Evaluation. These sites were given a low sensitivity rating.

W1F

Location. This site is located on a low sandy ridge in the Whirlwind valley wash/Swasey bottom flats. W3I is just to the east and W1E is immediately northwest.

Description. The site is on a sand dune ridge just before a low area in the northern portion of Swasey wash. The study team could not locate any stakes. Indian representatives identified Indian tea in good stands, Indian ricegrass, sage, rabbitbrush and one cactus. Small lithic scatters of obsidian flakes and a broken obsidian arrowpoint, along with a unifacially worked knife or scraper, were identified. South-southwest from the core site area, the team noted an increase in the abundance of Indian ricegrass. Approximately 500 yards further out, additional chipping material was found on the sandy rises. Two flakes were obsidian and one was jasper. Ethnographers noted that this site area currently does not have an access road; consequently, there will likely be potential new road impacts. Also noted was the possibility that the large white flat blowouts may collect water. Concentrations of chipping material were located towards the road. In a low depression down by the main wash, in a sandy area, a one and one-half inch by 1 inch piece of pottery was discovered by a Ute representative. The sherd was about a quarter of an inch thick. It looked to be grayware with no markings. Representatives interpreted the site as a potential village or seed gathering location.

Evaluation. This site was interpreted to be an important site. It was hypothesized that, because of nearby water at Swasey spring, ricegrass would have been abundant in sandy area. It was further hypothesized that Indian people needed sharp blades to cut ricegrass tops off in order to harvest the seed. Obsidian would have served as the best blade-making material. Heavy grazing may have prevented ricegrass plants from reseeding themselves. Because no grinding stones were found, the site may not have been used for food processing; however, because of the presence of ricegrass, the reshaped obsidian blades and ceramic evidence in the form of a sherd that may have been part of a waterjug, this site was given a high sensitivity rating with further potential.

W1G

Location. This site is also located in the Swasey Bottom/Wash zone, on the north side of the east-west road, due north of W3I.

Description. Because the site is located in the mud flat zone without any observed evidence of sandy ridges, Indian representatives agreed that there was low potential for Indian habitation and cultural remains.

Evaluation. This site was given a low sensitivity rating.

W1H

Location. This site is located in the lower talus slopes at the western base of the Little Drum Mountains.

Description. The site is located on a good size hill of volcanic origin. Indian plants present at the site included Indian tea and relatively extensive stands or patches of Indian ricegrass. Ethnographers discovered three distinct arrangements of rocks that may represent two rock wall alignments and one stone ring. On top of the eastern side of the hill a piece of rose-colored chert, not common to the immediate surrounding area, was discovered. Pieces of broken and flaked chalcedony were also identified.

Evaluation. The combination of food plants and evidence of occupation in terms of camping resulted in representatives giving the site a medium sensitivity value.

W1I

Location. This site is located on the eastern side of the valley, southeast of W1H. More specifically, it is located in the lower talus slopes at the western base of the Little Drum Mountains, west of Horse Canyon.

Description. Although no walkovers were conducted at this site, Indian representatives agreed that there was potential for Indian occupation, plants and cultural remains.

Evaluation. This site was given a medium sensitivity rating.

W1J

Location. This site is located southeast of W1I and W3J, further up in the talus slope at the western base of the Little Drum Mountains on the eastern side of the valley.

Description. Although no walkovers were conducted at this site, Indian representatives agreed that there was potential for Indian occupation, plants and cultural remains.

Evaluation. This site was given a medium sensitivity rating.

W3H

Location. This site is located about two miles down the road from W1A, just west of the intersection of the north-south road and an offshoot road to the west. The site is in the same general landscape which characterizes virtually all of the lower, Swasey Bottom flats in the western valley.

Description. Indian representatives agreed that there was little potential for Indian occupation. Plant community composed of shadscale, greasewood and unidentified yellow plants, as well as ricegrass, Indian tea and possible *Lycium*. Plant densities were low, however. The study team was unable to locate a stake, and so a quarter of a mile out from the road and approximately half a mile in either direction was walked over.

Evaluation. Representatives gave this site a low sensitivity rating.

W3J

Location. This site is located in the eastern part of the valley, slightly upslope of the flats off of the western flanks of the Little Drum Mountains, southeast of W1H, in between Horse and Dennison Canyons.

Description. Although no walkovers were conducted at this site, Indian representatives agreed that there was potential for Indian occupation, plants and cultural remains.

Evaluation. This site was given a medium sensitivity rating by representatives because it is located in the same talus slope environmental zone as W1H, W1I and W1J.

W4A-W4B

Location. These sites are located on the western side of Whirlwind Valley, on the eastern edge of the Swasey Mountains, in a highland pine-juniper zone.

Description. The sites are up on a ridge and upper talus slope, respectively. At the higher elevation site W4A, an obsidian chip and what appears to be a hunting blind/rock wall on the crest of the hill where trails (animal?) intersect were identified. A potential grinding slab or boulder, indicated by the smooth, pocked depressions in two areas was found downslope. Additional chipping material, elderberries (Gosiute *tyambi*), chokecherries (Gosiute *tonam*), serviceberries (Gosiute *kunugi*), and pinenuts (Gosiute *tuvah*) were discussed and/or identified as being important upland resources. Chokecherry trees were observed at a distance by a Gosiute elder. The site also exhibited abundant evidence of recent deer hunting activity. A heavy density of sage was observed at site W4B.

Evaluation. These sites were given a medium to high sensitivity rating because of their food resource, plant and hunting potential.

Summary of Site-Specific Evaluations

It is clear from the site visits and comments of Indian representatives that Whirlwind Valley is a significant area, both in terms of natural resources, archaeological remains, and Indian routes of transportation as well as habitation. Table 3.1 lists in tabular form the cultural resources and site evaluations for this valley.

TABLE 3.1 WHIRLWIND VALLEY CULTURAL RESOURCES AND SITE EVALUATIONS

Cultural Resource Categories

Sites	Spring	Artifacts and Burials	Plants	Animals	Minerals	Aesthetics	Value
Schoenburger Spring	H	H	H	H	-	H	H
Laird Spring	H	H	H	H	-	H	H
Swasey Spring	H	H	H	H	-	H	H
RMF	-	H	H	nd	H	H	H
W3B	-	-	-	-	-	-	M
W3F	-	L	L	L	-	-	ND; L
W3G	-	L	L	L	-	-	ND; L
W3H	-	L	L	L	-	-	L
W3I	-	L	L	L	-	-	L
W3J	-	M	M	-	-	-	M
W10B	-	-	-	-	-	-	M
W10C	-	-	-	-	-	-	M
W1A	-	L	L	L	L	L	L
W1B	-	L	L	L	L	L	L
W1C	-	L	L	L	L	L	L
W1D	-	L	L	L	L	L	L

Sites	Spring	Artifacts and Burials	Plants	Animals	Minerals	Aesthetics	Value
W1E	-	L	L	L	L	L	L
W1F	-	H	H	H	-	-	H
W1G	-	-	-	-	-	-	L
W1H	-	H	M	-	-	-	M
W1I	-	M	M	-	-	-	M
W1J	-	M	M	-	-	-	M
W4A	-	M	H	-	-	-	M - H
W4B	-	M	H	-	-	-	M - H

Snake Valley Alternative Configuration

Another location of the alternative configuration for ECTC activities is in Snake Valley, the westernmost of the three candidate valleys. This valley is bounded in the west by the Deep Creek Range and in the east by the Confusion Range and its southwestward trending offshoot, the Conger Range. The major passage linking Snake Valley with neighboring Tule Valley to the east is Cowboy Pass. Indian Pass, which runs through Chevron Ridge north of Cowboy Pass, is another passage. The focal points of the valley are the springs, a number of which exist at the eastern base of the Deep Creek Range at the western portion of the valley, and the Bishop Springs Area, including Twin Springs, in the southwest-central portion of the valley flats. Within the valley are located Robinson's Ranch and associated spring, the towns of Gandy and the Mormon community of Eskdale. Adjacent to the valley are the towns of Garrison and Baker. These locations were all occupied and used by Indian people.

Orientation and Overview Sites

As in Whirlwind Valley, certain sites within Snake Valley were visited to provide Indian representatives with an overview. Orientation sites visited included those to the north of the actual valley study area, such as Indian Pass, Twin Springs and upland sites west of Chevron Ridge. Cultural resource evaluations of these and proposed TTA sites are discussed below.

Snake Valley Overview: General Comments

All of the sites that the study team could access were visited in Snake valley; sites that were not visited because of access or time constraints were evaluated in general terms. As mentioned above, Snake Valley was an important area to Gosiute people. It is possible that the valley comprised part of the core of Gosiute territory. It was an area of much travel, social activity, intergroup gatherings and habitation. The Southern Paiute elder even remembered that there were large concentrations of Gosiute people in the present townsites of Gandy, Baker and Garrison. Several springs in what is now the Baker Springs Area undoubtedly served as significant camping, resting, and social gathering places if not semi-permanent residence locations. These springs are perhaps the largest in all of the three valleys, and would have been of primary importance. Snake Valley has always been, and continues to be, an important area to Indian people in general, and particularly to Gosiute people.

More recently, the valley has become an area of frequent sheepherder activity. Consequently, much of the area has seen intensive disturbance which may explain the heavily grazed condition of many plants and the relative lack of archaeological material and artifacts. The study team discussed the project with one sheepman who is perhaps the most knowledgeable non-Indian person in the valley. At the time he was encountered, he was looking for strays to move to Baker. He was concerned that year-round ECTC activity might

disrupt sheep-herder activity. He was convinced from observing the number of stakes in various locations that Snake Valley would be the location of the ECTC project.

Indian people expressed concern that if Snake Valley was chosen as the location for ECTC activities, adverse effects may be suffered in the nearby, newly created Great Basin National Park, with its associated tourism and natural resources of national cultural significance. These include the 3,000 year old bristlecone pines, or "grandfather trees," located at the base and on the flanks of Mount Wheeler. Mount Wheeler is also a culturally and religiously significant peak to Gosiute and Southern Paiute people. A large cave located on the mountain's eastern flank is a well known place of religious importance. Antelope were observed running across the valley; such populations could also be adversely affected.

Snake Valley Alternative Tactical Threat Site Array

Snake Valley RMF

Location. This site is located near the state line on the road north of highway 50, nearly due west of Eskdale. The study team was unable to locate a stake for the site.

Description. The study team covered an extensive area of over four-tenths of a mile by foot as a consequence of not being able to locate a stake. Only the rabbitbrush plant was identified. Two isolated flint chips were also identified. Gosiute representatives noted that the alkali mud flats would have been too muddy for a camping area.

Evaluation. This site was given a low sensitivity rating.

S1A

Location. This site is the northernmost of a cluster of three sites north of the Robison ranch. The study team was unable to find an access road into the site.

Description. The study team did not visit the site, but it is in the same low mud-flat zone as the cluster of sites immediately south and east. The general area was viewed from the north-south road, north of the ranch looking east. No artifactual material or Indian plants were observed.

Evaluation. Evaluated in terms of general area rather than site-specific walkover, this site was judged to be of low sensitivity.

S1B-S3I

Location. These sites are located north of the Robison ranch; no access road was found leading to the sites.

Description. The study team did not visit the sites, but they are in the same low mud-flat zone as the site cluster to the east. The general area was viewed from the north-south

road, north of the ranch looking east. No artifactual material or Indian plants were observed.

Evaluation. Evaluated in terms of general area rather than site specific walkover, these sites were judged to be of low sensitivity.

S1C

Location. This site is located immediately west of Knoll Spring on the north side of the east-west road.

Description. There was no evidence of Indian occupation observed, nor plants identified, in this alkali mud flat similar to that of sites S1A, S1B and S3I.

Evaluation. This site was given a low sensitivity rating.

S1D

Location. This site is located immediately southeast of S1C, west of Knoll Spring. The study team could not locate the stake.

Description. No significant plants in any density, other than sage and rabbitbrush, were identified. There was no evidence of Indian occupation in terms of artifactual material. Same general environment as sites S1A, S1B, S3I and S1C.

Evaluation. This site was given a low sensitivity rating.

S1E

Location. This site is located northwest of S1H (Knoll Spring).

Description. There was no evidence of Indian occupation or activity observed at this site. Dense brush included rabbitbrush with sage interspersed. Same general environment as sites S1A, S1B, S3I, S1C and S1D.

Evaluation. This site was given a low sensitivity rating.

S1F

Location. This site is located north of the east-west road, almost due north of Knoll Spring.

Description. The site is in a valley bottom, mud-flat zone with no evidence of Indian occupation observed.

Evaluation. This site was given a low sensitivity rating.

S1G

Location. This site is located north-northwest of S1F.

Description. Valley bottom mud-flat zone with no evidence of Indian occupation observed.

Evaluation. This site was given a low sensitivity rating.

S1H

Location. This site is located on the south side of the east-west road, just across (southwest) from Knoll Spring.

Description. No evidence of Indian occupation was observed, but the presence of the spring was noted by representatives, increasing the potential for Indian use and temporary occupancy.

Evaluation. This site was given a conditional low to medium sensitivity rating. Because of the presence of the spring, the site has potential for higher significance. Further discussion culminated in a medium sensitivity rating.

S1I

Location. The study team was unable to locate this site.

Description. No data.

Evaluation. Not determined.

S1J

Location. The study team was unable to locate this site.

Description. No data.

Evaluation. Not determined.

S3H

Location. Southwest of Rattlesnake Bench between Knoll Hill and the northwestern flanks of the Conger Range, northwest of S3J in Brown's Wash.

Description. A shepherd showed the team to the site, accessible only by 4WD. One small obsidian flake, unifacially worked, was identified. Alternative material was low-grade silicious material, unworked chocolate brown chips and chunks. The site was lacking in plants due to heavy grazing.

Evaluation. The site was given a low sensitivity rating.

S3J

Location. Southeastern portion of Snake valley, tucked on the northwest talus slopes of the Conger Range.

Description. Plants included bunchgrass, sparse tea, and sage, all of which were heavily grazed, a thorny bush (*Stephanomeria?* Gosiute *kangumbi*), an unidentified woody brush with small green leaves and yellow flowers, and heavily grazed and widely dispersed ricegrass. A possible jasper chunk was also identified. No other artifactual material was observed.

Evaluation. This site was given a low to medium sensitivity rating based on aesthetics. The site location provided a vantage point for observing a large surrounding area. Such a vantage point was regarded as being of aesthetic value by representatives.

Indian Pass Area

Location. North of Cowboy Pass through Chevron Ridge, windshield assessment of future TTA site S4I.

Description. The study team walked over the crest of the pass. Plants included Indian ricegrass, and abundant sage. There was a fairly good distribution of all foliage, though most species were heavily grazed. Representatives commented on the good view out across the valley. Site S4I is west of the pass along a sandy wash in an area of low rolling hills, sagebrush, and rabbitbrush.

Evaluation. This site was given a medium sensitivity rating.

Twin Springs Site

Location. This site is located on the west side of the main road, northwest of S4I. The spring is the first in the Bishop Springs Area, west of the Foote Range. The spring was the largest spring observed in the three candidate valleys.

Description. The pool is approximately 100 feet x 100 feet, and is presently used as a livestock watering station. There was no observed evidence of Indian occupation and use, but the presence of the spring was seen as being significant.

Evaluation. This site was given a high sensitivity rating.

Summary of Site-Specific Evaluations

As mentioned at the beginning of this section, Snake Valley has undergone rather severe disturbance due to shepherding activity. Cattle and sheep now water at most if not

all the spring locations within the valley. Twin Springs, and other springs in the Bishop Springs Area, are perhaps the largest of any springs in all three of the valleys. Because of heavy grazing, plants that may have been significant to Indian people do not appear in any density. Those that were identified were scattered and not in very good condition. It can be assumed that artifactual material was largely unaccounted for because of the abundant physical evidence of sheepherding activities and the several sheep camps within the area of the TTA. In addition, the area may have been thoroughly surveyed during earlier MX missile studies. Because of these severe disturbances, archaeological and botanical cultural resource inventories were low.

In spite of the disturbed nature of the valley, Indian representatives still remember fairly frequent and steady use of the valley by Indian people, particularly Gosiute people. Thus, the valley cannot be characterized solely on the basis of visible artifactual remains. Oral testimony given by representatives attests to the historic significance of Snake Valley to Gosiute and other Indian people. Table 3.2 lists the cultural resources and site evaluations for this valley.

TABLE 3.2 SNAKE VALLEY CULTURAL RESOURCES AND SITE EVALUATIONS

Cultural Resource Categories

Sites	Spring	Artifacts and Burials	Plants	Animals	Minerals	Aesthetics	Value
RMF	-	L	L	L	-	-	L
S3I	-	L	L	L	L	L	L
S1A	-	L	L	L	L	L	L
S1B	-	L	L	L	L	L	L
S1C	-	L	L	L	L	L	L
S1D	-	L	L	L	L	L	L
S1E	-	L	L	L	L	L	L
S1F	-	L	L	L	L	L	L
S1G	-	L	L	L	L	L	L
S1H (Knoll Spring)	M	L	L	L	-	-	M
S1I							ND
S1J							ND
S3H	-	M	L	L	-	-	L-M
S3J	-	L	L-M	;	-	-	L-M
Indian Pass	-	L-M	M	-	-	-	M
Twin Springs	H	M	M	H	-	-	H

Tule Valley Proposed Configuration

Tule Valley is the proposed location for the construction of TTAs and subsequent ECTC activities. It lies between Snake Valley to the west and Whirlwind Valley to the east.

Orientation and Overview Sites

No overview sites other than Sand Pass were visited in this valley.

Tule Valley Overview: General Comments

Gosiute representatives noted a possible trail through Sand Pass. They recalled the existence of a trail further north, which Gosiute people living near present Dugway used to travel to Skull Valley and to visit Paiutes. Antelope were observed roaming the valley; in addition, both golden and bald eagles were observed. Eagles are extremely significant to Southern Paiute people.

Tule Valley Proposed Tactical Threat Site Array

Tule Valley RMF

Location. This site is located in the vicinity of Sand Pass, northeast of the pass itself. The study team was unable to locate the stake; the site may have been marked with plastic.

Description. The study team walked an area of about eight-tenths of a mile in either direction from the site. Representatives identified an extensive obsidian lithic scatter and worked flakes. Indian tea and other vegetation in the outwashed, sand dune area was heavily grazed; ricegrass was observed in low density. A Gosiute elder found flakes up on the western tip of the hillside. The obsidian chipping area was identified 103 paces from the road on the crest of a little sand dune. A chalcedony chip and shadscale were also identified. While on-site, the study team observed a non-military, low altitude flyover.

Evaluation. This site was given a conditional low to medium sensitivity rating, with potential for higher significance because of the sand dunes. Further discussion culminated in a medium sensitivity rating with a potential for higher sensitivity, due to the possibility of subsurface features and artifacts in the sand dune area.

1B-3J

Location. These sites are located approximately one mile due east of site 1F.

Description. These sites are virtually contiguous, so they were evaluated simultaneously. Plants included sparse Indian tea and ricegrass, but the site area was mostly bare desert pavement in the upper flats.

Evaluation. This site was given a low to medium sensitivity rating. The site location provided a vantage point for observing a large surrounding area. Such a vantage point was regarded as being of aesthetic value by representatives.

1F

Location. This site is located on the south side of the east-west road, southeast of Middle Range. The study team was unable to locate the stake for this site.

Description. This site exhibited the same characteristics as sites 1B and 3J.

Evaluation. This site was given a medium sensitivity rating. The site location provided a vantage point for observing a large surrounding area. Such a vantage point was regarded as being of aesthetic value by representatives.

3I

Location. This site is located on a little knoll southwest of Sand Pass, southeast of the Middle Range.

Description. Plants identified included Indian tea, wolfberry, (Paiute *u'up*, *Lycium* sp.). Artifacts identified included one flake, which was old and chocolate brown in color. Several additional flakes, brown to red in color, perhaps locally available, along with core material totalling six pieces were also identified. The site was interpreted as a possible camping area by a Paiute elder. The campsite would have been higher up on a small ridge. Numerous flakes were found near the stake, along with 6 or 7 unused large spawls. A Ute representative interpreted the site as a possible hunting area.

Evaluation. This site was given a low to medium sensitivity rating.

1A

Location. This site was difficult to access, as it is off a jeep trail west-southwest of site 3I.

Description. No evidence of Indian occupation was observed at this site. It appeared to have been surveyed as part of the MX project. Plants included small yucca, Indian tea, little unidentified plants, and sage, all of which were heavily grazed.

Evaluation. This site was given a low sensitivity rating.

1J

Location. This site is located just west of site 1A.

Description. No evidence of Indian occupation observed, low density of plants in an association similar to that of site 1A.

Evaluation. This site was given a low sensitivity rating.

1C

Location. This site is located west of a ridge north of the east-west road, southwest of 1J and 1A as well as the Middle range; southeast of Granite mountain and east of the Confusion Range.

Description. The site is west of a ridge in the flats composed of sandy soil. The study team identified *Opuntia* cactus and heavily grazed Indian tea, bunchgrass, and rabbitbrush. There is a road up into the site area, which was littered with tin cans. The abundant tracks likely indicate a sheep camp. The study team did not observe any chipping materials. The site lacked any artifactual material.

A Ute elder made the following comment regarding the aesthetics:

...that's the way they were brought up. The world is your altar and everything in it is alive. That's why they say if you want to go to church or pray, you don't have to go anywhere, just kneel right there, it's gonna be right in front of you. That's a Indian way that's been passed on from that generation, those generations on down, to now, we still maintain that, you know. I think, you know, in that way, what we saw, what we're looking at here today and now, is it. You could get away from everything, the busy life that you go through, like us over there coming out here is its really working on me to the point where I can feel it now, it took one whole day to do it. If you could bring someone out for two three days, you know, they would know what it is to be completely free of all worries. That's why jets don't fit (discussing with ethnographer the quiet solitude and the panorama of the site). Its kinda like changing too as the sun sets you know it changes, and it absorbs, you know, one of the ways Indian believe in the tipi way, is that nature itself will doctor you when you're sick, and then if you let it it will suck sickness out of you like a magnet, you know slowly draw it out, but you gotta let it, you know you gotta open up to it, and then fire does that and even the light like this the sunlight will be that way, that's why they use these ochre, you know red Indian paint, you see you hear stories about Indian painted red, war paint they call it, it's not war paint, it's a paint for doctoring purposes, or its a spiritual thing, it through that it absorbs all the badness out of you and then it protects you same time. That's how they use it.

Evaluation. The site was judged to be of low significance in material terms, but highly significant in terms of aesthetics and location, which is at the center of the valley. The Ute elder made the following recommendation:

...say it's a high significance mainly for the purpose of it being the main focal point of the valley, because from that point you can see almost all direction and it gives you that, kinda like a feeling of being on top of the world. They can go ahead and put it over there, but not here...OK?

The aesthetics of the valley is directly affected by the panorama and the view from an Indian perspective. The site was given a high significance rating.

1E

Location. This site is located in the northwestern flats of Tule valley, in between the southern hills south of the Middle Range and Confusion Range to the west.

Description. The study team walked about one-half mile due east of a post on the site. Sparse vegetation was observed, 10 to 30 feet between bigger plants, which tended to be Indian tea with smaller unidentified plants interspersed. There was a fair amount of bare ground. Also identified was one small cactus. No chips or other artifacts except for two scattered flakes, one not technically on the site, were identified.

Evaluation. This site was given a low sensitivity rating.

1D

Location. This site is located half a mile to a mile north of site 1E, in the flats southwest of the Middle Range.

Description. This site is a hilltop site, situated on a ledge. The team spread out so that a line was formed extending almost a quarter-mile in length. The site may have been an area for potential rabbit drives. Due east from the stake, scattered Indian tea plants were identified, although they appeared to have been heavily grazed, along with sage and cedars nearby. Four or five yucca plants were also identified. Upon closer examination, the plants first identified as yucca were recognized as actually being agave. The study team thus hypothesized that there was potential for roasting pits in the area. The site may have been used as an agave gathering area. No observed evidence of Indian occupation or artifactual material.

Evaluation. This site was given a medium sensitivity rating because of the presence of the agave stand. In addition, the site location provided a vantage point for observing a large surrounding area. Such a vantage point was regarded as being of aesthetic value by representatives.

3H

Location. Approximately a half a mile north-northwest of 1D. The study team only briefly visited this site the second time.

Description. The site is on a west-southwest ridge, with yucca plants present in the small wash that splits the ridge. After walking the whole ridge to the east, Gosiute representatives commented that Indian people wouldn't have lived at this location, but possibly used it for rabbit drives.

Evaluation. This site was given a low sensitivity rating.

1G

Location. This site is directly north of future TTA site 7D, on the north side of the east-west road.

Description. The study team conducted a windshield assessment of the site in terms of general valley bottom flats environment. Indian representatives agreed that there was little potential for Indian habitation or use.

Evaluation. This site was given a low sensitivity rating.

1I

Location. This site is located northeast of sites 1H and 7A. It appeared to be in an extant flyover path or MOA, in that the study team observed a low altitude flyover by military aircraft. The study team was unable to locate the stake for this site.

Description. The study team conducted a windshield assessment of the site in terms of the general valley bottom flats environment. Indian representatives agreed that there was little potential for Indian habitation or use.

Evaluation. The site was given a low sensitivity rating.

1H

Location. This site is located on the north side of the east-west road, southeast of Granite Mountain and future TTA site 7A. It is the westernmost site in the Tule Valley TTA. The study team was unable to locate the stake.

Description. The site is on a ledge, apparently in a low altitude flyover path, in that the study team observed a low altitude flyover by military aircraft.

Evaluation. The site was given a conditional low sensitivity rating. The study team may have visited a mistaken location, which may have been a former MX study site area. No data were elicited concerning Indian habitation or use, and no evidence was observed in terms of artifactual material.

10A

Location. Northwest Sand Pass, with future sites approximately 4 km. from RMF.

Description. The study team conducted a windshield assessment of the site in terms of the general upper talus slope environment. Indian representatives agreed that there was potential for Indian habitation and use.

Evaluation. This site was given a medium sensitivity rating.

7B

Location. This site is located on the flats off the back (south) of site 3H.

Description. The study team made a general assessment of the site in terms of the valley bottom flats areal environment. Indian representatives agreed that there was potential for Indian habitation and use.

Evaluation. This site was given a medium sensitivity rating.

Summary of Site-Specific Evaluations

The most significant areas in Tule Valley appear to be in the vicinity of Sand Pass which probably served as a primary travel route connecting Tule with Whirlwind Valley to the east. Additionally, the most sensitive sites within this valley are those in the cluster of sites south-southwest of the Middle Range. These are generally on lower talus slopes or the series of low ridges which extend from the southern tip of the Middle Range. Site 1C was particularly noted because of the visual panorama. At a central point in the valley, the panorama afforded long distance observation in all directions. Sites further to the west, in the valley bottom flats, were less sensitive. Table 3.3 lists the cultural resources and site-specific evaluations for this valley.

TABLE 3.3 TULE VALLEY CULTURAL RESOURCES AND SITE EVALUATIONS

Cultural Resource Categories

Sites	Spring	Artifacts and Burials	Plants	Animals	Minerals	Aesthetics	Value
RMF	-	H	L-M	M	-	-	M+
1B	-	L	L	L	-	M	L-M
3J	-	L	L	L	-	M	L-M
1F	-	L	L	L	-	M	L-M
3I	-	M	M	-	-	-	L-M
1A	-	L	L	L	-	-	L
1J	-	L	L	L	-	-	L
1C	-	L	L	-	-	H	H
1E	-	L	L	-	-	-	L
1D	-	L	H	M	-	M	M
3H	-	L	L	M	-	-	L-M
1G							ND;L
1I							ND;L
1H							ND;L
10A							ND;M
7B							ND;L

CHAPTER FOUR PROGRAMMATIC ASSESSMENT OF POTENTIAL IMPACTS OF PROPOSED ECTC ACTIONS

This chapter briefly summarizes the concerns of Indian representatives regarding potential ECTC actions that were programmatically assessed by the study team. That is, activities other than ground disturbance that may occur in the study area were discussed with tribal elders and representatives during public meetings and on-site visits. The potential adverse effects of currently proposed and future activities such as gapfiller radar station installation and low altitude flyovers associated with ECTC training missions were the subjects of discussion and comment by Indian leaders and elders.

Overall Concerns Regarding ECTC Project

The following sections summarize the concerns of Indian leaders and representatives regarding (1) the ECTC project as a whole; (2) the adverse effects of current low altitude military overflights and concerns regarding the potential increase for low altitude aircraft traffic associated with ECTC training missions; (3) the proposed installation of a gapfiller radar station on Frisco Peak; and (4) the potential development of an alternative STA west of the Cedar Mountains, north of Tabby's Peak.

General Ethnic Concerns

During the course of the on-site fieldwork, Native American representatives made comments regarding their general attitudes toward the ECTC project. Southern Paiute, Gosiute and Ute representatives all agreed that the project should not be implemented. These general concerns revolve around the issue of land. In terms of the study area, Gosiute people in particular have experienced repeated land loss following treaty agreements. They perceive the leasing of BLM land to the Air Force as another episode in their continuing struggle to obtain additional lands for their tribal members and economic development purposes. They feel that the Air Force currently controls large enough tracts of land between the Deep Creek Range and Skull Valley. They are therefore opposed to the obtaining of further land in their traditional territory for military development.

Perhaps the primary element of this opposition to Air Force acquisition of additional land is the effect that increased air traffic, in the form of increased low altitude overflights, will have on reservation social, economic and ritual life, as well as psychological well-being. The issue of low altitude flyovers and specific concerns of Indian representatives is discussed below.

Low Altitude Flyovers

Gosiute people continue to experience military aircraft flying at low altitudes over reservation lands. More bothersome to reservation residents have been what one Gosiute elder described as Air Force jets "buzzing" or "dive-bombing" personal residences and other reservation areas. He commented that the aircraft were flying so low that he could read the numbers and colors of the jets. He repeatedly made the point that such low altitude pranks on the part of pilots strike fear amongst all reservation residents who experience them. He expressed the feeling that his house has been used as a practice target by pilots. The feeling is that these pilots willfully and deliberately violate specified flight paths and MOAs. Gosiute representatives have also seen aircraft flying at "power-line altitude" at night in the dark with no flame emerging from the rear of the aircraft--a "stealth-type" run--with another, larger plane following behind at a certain distance in a monitoring mode.

Gosiute leaders and elders expressed strong concerns regarding the effects of low altitude flyovers within reservation boundaries in general. Perhaps most serious were the complaints about overflights which break the sound barrier. These events are perceived to be the cause of cracking in tribal building foundations and walls, as well as the shattering of windows. A Paiute elder recalled that flyovers occurring in the 1950s in Cedar City caused the shattering of virtually every storefront window in town, resulting in panic, people scrambling for cover from flying glass, and personal injury. He also noted that flyovers have disturbed religious ceremonies such as those held by the Native American Church. In addition, he noted that low altitude overflights could have the effect of scaring animals away from their habitats, forcing them to move to new areas further away. These animals include those that are hunted, such as deer. Most significantly, overflights would scare the spirits of old people (the deceased) "for all time."

Gosiute tribal members who have suffered such damage to their residences are concerned about compensation, as are tribal leaders when administrative office buildings are threatened with collapse due to cracking foundations. They reported having been told that the burden of proof with regard to cause rests with them and that they must make a claim within a short time frame to receive compensation. Representatives also reported that aircraft have dropped live ordnance and have crashed in the mountains nearby.

During tribal meetings, elders and leaders also expressed the strong concern that low altitude flyovers disturb the dead. Thus, burials are cultural resources that have been adversely affected, and will continue to be adversely affected, by overflight activities associated with the ECTC project.

Gosiute representatives are particularly concerned about the current potential effect of low altitude overflights, as well as the future effects of potential increase in such activities, on the tribal elk restocking program on Ibapah mountain. Tribal resource managers expressed strong concerns that flyovers will scare the newly re-introduced elk herd off the mountain into the next valley. This effort has been a long and painstaking one, involving tribal expense and energy, to provide members with recreational and subsistence

opportunities. It is expected that tribal hunting will begin on a regulated basis in about two years.

Presently, a viable, healthy herd of about 100 animals inhabits the mountain-top. Just after the on-site fieldwork, tribal representatives expected to receive another fourteen animals to complete the herd. They expect the herd to be around 150 strong by the time hunting begins. Hunting is to occur in a sustainable manner by tribal members. The elk population is a significant cultural resource that could potentially be adversely affected by low altitude overflight activities associated with the ECTC project. Moreover, the hunting of elk is a cooperative socioeconomic activity which could also be adversely affected.

Overall, Gosiute people perceive that low altitude military air traffic will increase as a result of the ECTC project. Although there are defined MOAs or flight paths, the perception is that jets will likely "hit the deck" or rapidly descend to low levels earlier in their training runs than has been projected; Indian people believe that pilots will very likely overstep the bounds of ECTC flight paths more often and in increasing numbers.

Gapfiller Radar Station

A Paiute elder expressed concern for the proposed locations of gapfiller radar station installations on the tops of Frisco Peak and the Timber Mountains. High elevations sites were places where Indian people harvested pinenuts and held social and ceremonial activities. It may also be that the peaks themselves were the loci of spiritual power and religious significance.

The Paiute elder recalled that there were abundant pinenuts on Frisco Peak, as well as an abundance of herbs both on the mountain and in the flats around it. The Wah Wah Valley and its associated springs to the west of Frisco Peak were important areas of Indian habitation and use. Indian people worked in the mine at Newhouse, west of the San Francisco Range. Paiute people from the Indian Peak area collected many plants around the area. These plants included *ku'u* (*Mentzelia* sp.) and *wa'ai* (Indian ricegrass, *Oryzopsis* sp.). Animals were also abundant, and included mountain sheep, antelope and deer. Because of the frequency with which Paiute and Pahvant people from Kanosh and Indian Peak used the San Francisco Mountain area, the Paiute elder mentioned that there was a good possibility that a burial area may be located on the mountain. To Paiute and Pahvant people, this area was a significant portion of their forefathers' sacred land. To more recent descendants and contemporary Paiute and Pahvant people, the area remains one filled with sacred places.

Proposed Alternative STA Location

Gosiute representatives visited the proposed alternative location of the STA, west of the Cedar Mountains, on March 23, 1989. This proposed STA location lies immediately north of the Dugway Proving Ground boundary and just east of the boundary of the Wendover Range, on BLM land. Access to specific proposed site locations within the STA did not occur because of the presence of barbed wire fencing and what appeared to be practice target towers. Potential live (unexploded) ordnance was also perceived to be

present. Consequently, the STA area was evaluated programmatically in terms of general area.

Gosiute representatives expressed strong concerns for this proposed alternative STA location. Gosiute people frequently crossed over the Cedar Mountains from Skull Valley by way of a pass near Tabby's Peak, which is visible from the STA location. The peak is named after a Gosiute elder's great great grandfather who was a chief. Gosiute people continue to hunt in the eastern mountains near Tabby's Peak. Gosiute representatives thus expressed a desire to revisit the area when conditions permit to more systematically walk over and examine the area. A Gosiute elder mentioned that he had once found grinding stones on the other side of the Cedar Mountains, so the likelihood of evidence of Indian occupation and use is a fairly strong possibility. Representatives also noted that there was an abundance of sage on the other side of the Cedar Mountains. This valley may be under consideration as a parcel which the Gosiute people are seeking to reclaim as part of a long-standing effort to obtain additional lands. Gosiutes thus have strong concerns for this culturally significant area. Gosiute representatives also expressed a desire to visit other places in the vicinity of the Kittycat-Wildcat areas further west of the alternative STA.

CHAPTER FIVE NATIVE AMERICAN CULTURAL RESOURCE RECOMMENDATIONS

This chapter presents a series of preliminary recommendations made by Indian representatives regarding cultural resources. These recommendations derive from the on-site visits. The recommendations apply mostly to places and artifacts. Because the fieldwork occurred early in the season, positive plant identification was difficult. Consequently, no specific recommendations regarding individual species of plants were made. Plant-specific recommendations will be generated in the course of future ethnobotanical fieldwork. For purposes of this report, plant communities associated with springs and upland forest zones have been identified as significant. It is assumed, therefore, that the recommendation to avoid such sensitive places or locations can be extrapolated to include the plant communities that exist within them. More comprehensive and specific, overall recommendations regarding categories of cultural resources will have to be generated from further research and mitigation discussions and meetings between the involved Indian groups.

Recommendations Regarding Places

As mentioned in Chapter Three, Indian representatives identified places, locations and habitats of cultural significance during the course of the on-site fieldwork. Recommendations regarding these places are summarized in general terms.

Springs

Spring sites are highly sensitive locations to Indian people. Invariably, springs were the locations of Indian camping, hunting, food and tool processing and semi-permanent habitation. Also, spring areas tend to have burial places associated with them, thus intensifying sensitivity. All tribal representatives agreed that any disturbance of spring areas should be avoided. One Gosiute elder recommended restricting any activity to an area outside of what might be considered a "buffer zone" of up to two miles around the spring location.

Sites With Aesthetic Significance

As mentioned in Chapter Three, Indian representatives identified certain locations as being significant in terms of aesthetics. Visual panoramas and the peaceful atmospheres of certain locations made them attractive to Indian people. The attraction of such places remains strong. Despite the potential lack of material evidence of Indian occupancy and use, these locations provide peace of mind and opportunities for self-examination and spiritual meditation. Representatives thus recommended that ground-disturbing activities be moved away from such aesthetically significant sites.

Sites With Evidence of Indian Occupation

Indian representatives identified many locations of Indian occupancy and use during the course of the on-site fieldwork. A Ute representative commented that Indian people believe that any evidence of use and occupancy of a site elevates that site's significance to a sacred or religious nature. These medium to high significance sites should thus be avoided.

Recommendations Regarding Archaeological Resources

General recommendations regarding archaeological resources were made by Indian representatives during the course of the on-site fieldwork. These recommendations applied particularly to certain artifacts and potential burials that might be disturbed by potential ground-breaking activities. These recommendations are summarized below. No specific recommendations regarding flakes, cores, other chipping material, structures or ceramics were made. It is assumed, however, that recommendations regarding avoidance of sites with evidence of Indian occupation and use can be extended to include these types of artifacts.

Control and Disposition of Artifacts

Representatives were concerned about the disposition of the ancient dart point at the Whirlwind Valley RMF site and whether it would be safe to leave it *in situ* after marking the site location. Obviously, the site was marked so that it could be easily located by project archaeologists. There is, however, a fair amount of sheepherding activity in most of these areas. After much discussion, the first representatives to visit the site decided to leave the point in place, at the location where it was found. Ethnographers notified the project archaeologist of the find and discussed whether the point should be removed for protective purposes or left where it was found. Following discussion of the implications of options, upon the recommendation of the archaeologist, the point was removed at the end of the March 21st site visit. Representatives agreed that the point should be scientifically analyzed, but that final disposition and control of the artifact should remain with the tribes through traveling diplays among the involved reservations or curation at an Indian controlled and operated museum such as the one at the Uintah-Ouray Ute reservation.

Burials

Potential burial areas were identified by Gosiute and Paiute elders in Whirlwind Valley in general, and particularly in the area around the Schoenburger/Laird Spring complex. Avoidance of burial areas was recommended.

Recommendations Regarding Plants

As mentioned above, no plant-specific recommendations were made by Indian representatives, owing to the early part of the season in which the fieldwork occurred. Plant-specific recommendations will have to be generated from further ethnobotanical fieldwork, at a time when plants are in bloom, and from mitigation discussions between the

involved Indian groups. For present purposes, the recommendation to avoid sensitive places or locations can be extrapolated to include the plant communities that exist within them.

APPENDIX A METHODOLOGY AND CHRONOLOGY OF FIELDWORK

This appendix summarizes the methodology used in conducting literature search and on-site visit fieldwork tasks for the Native American cultural resource study portion of the ECTC project. The appendix also lists a chronology of fieldwork, which involved both meetings with tribal councils, interviews with tribal elders, and on-site visits with Native American representatives.

Literature Search and Ethnohistory

Efforts to document the ethnohistory of Native American ethnic groups with historic ties to the study area included locating, searching, and analyzing several categories of sources. These included early travel accounts, ethnographic studies, government documents, and local newspapers. Because the study team has conducted previous research in the general area, some of these sources were readily accessible in study team files. Locating other sources involved library research at the University of Michigan and obtaining documents through interlibrary loan. Some documents were collected at archives and university libraries in Utah during the course of in-field literature review conducted as part of another research project in Utah.

Ethnographic Sources

Standard ethnographic works on Gosiute, Pahvant-Southern Paiute and Ute people were consulted during the course of the literature search. Studies by recognized scholars in Great Basin ethnohistory such as Ralph Chamberlin, Carling Malouf, Julian Steward, Omer Stewart, and others were reviewed (see Chapter Two and Bibliography).

In addition, relevant sources identified in Stoffle and Dobyns (1982) were analyzed. Referenced items identified as potentially relevant by searching through the bibliographies of the materials listed above were also reviewed.

Government Documents

Sections of the annual reports of the Commissioner of Indian Affairs pertaining to Utah were reviewed during the literature search. These constituted the primary set of government documents consulted. Reports dating from the 1850s through the early 1900s were analyzed.

Archival Sources

Archival sources such as local histories of the counties in the vicinity of the study area were also screened. In each county, the local chapter of the Daughters of the Utah

Pioneers has compiled a volume of local history, and these were the primary sources reviewed.

In addition, manuscripts, theses, and dissertations listed under the subjects of Gosiute, Pahvant, Ute, and Sevier River in the Special Collections sections of both the University of Utah Salt Lake City and Brigham Young University in Provo were reviewed. Archival research also occurred at the Utah State Historical Society. Limited searches were performed in these three Utah archives during the course of fieldwork on another research project.

Early Eyewitness and Travel Accounts

The diaries, journals and other travel accounts in which observations of early explorers and missionaries were recorded were searched for relevant data pertaining to Indian people inhabiting the study area. Portions of the journal of the Escalante party in 1776, for example, and the travel accounts of Burton and Simpson in the 1860s were searched.

Local Newspapers

Selected years of newspaper coverage in the Deseret News were examined during the literature search. For the years 1852-1858, 1865-1867, 1871-75, and 1890 the local and regional news pages of each issue were searched during the course of another research project. At the same time, however, items relevant to the UTTR study area were also obtained for review and analysis.

Time and funding allocations for ethnohistory research did not provide for in-field archival research, so searches conducted in Utah while engaged in research on another project were hurried and limited. Potentially valuable sources that have not been searched include: (1) regional history materials in the archives of the Church Historian, Church of Jesus Christ of Latter Day Saints, Salt Lake City; (b) local newspapers and other local history sources for the towns of Tooele, Delta, Fillmore, Beaver, and Cedar City; and (c) a number of compendia histories of the state of Utah that may contain relevant information. Time and funding limitations also precluded searching for many of the primary sources cited in some of the works that were examined and analyzed.

Fieldwork and On-Site Visits

Fieldwork for the ECTC project began by visiting Gosiute, Southern Paiute and Ute reservations. The purpose of these visits was to provide the tribal councils with an overview of the project and describe the cultural resource study. During these meetings, the study team made requests for their participation in the study by selecting key cultural experts to accompany the study team to the study area for on-site visits. Tribal experts would have the opportunity to identify cultural resources and evaluate the sensitivity or cultural significance of proposed sites scheduled for potential future development associated with the project. Prior to the council meetings, each tribe was notified by letter of the project and cultural resource study. In the letter, each tribe was asked to respond to a request to have a

meeting between tribal leaders, the study team and project personnel at a time that was convenient for them. Upon receiving positive responses, the study team entered the field to conduct the meetings.

Chronology of Fieldwork

On March 6, 1989, Stoffle departed for Las Vegas. There he met with project staff at SAIC regarding the fieldwork schedule. From Las Vegas he traveled to St. George, Utah to pick up the Native American Research Associate, who accompanied the study team during the fieldwork. The following day, Stoffle and the NARA returned to Las Vegas to meet with the Principal Investigator for the cultural resource study. The three then departed for Ely, Nevada in preparation for the first tribal meeting with Gosiute leaders.

The meeting with leaders of the Confederated Tribes of the Goshute Indian reservation occurred on March 8, 1989 at Ibapah, Utah. Discussion revolving around issues associated with the ECTC project took place and leaders appointed representatives to accompany the study team in the field. Following the meeting, the team traveled to Skull Valley, where they met with leaders of the Skull Valley Indian reservation the following evening (March 9).

From Skull Valley, the team traveled to Roosevelt, Utah. The next day, March 10, 1989, the team met with members of the Uintah and Ouray Ute Indian Tribe in Fort Duchesne, Utah. The next day, the team remained in Fort Duchesne to conduct background interviews with Ute elders regarding the historic migration of Pahvant people to the Uintah-Ouray reservation. Elders and other tribal representatives recommended that the team contact the tribal administrator for the purpose of selecting key cultural experts for the on-site visits. The letter was sent and approval obtained for tribal representatives to participate in the fieldwork.

On March 12, the team stopped in Kaibab, Arizona while en route back to Las Vegas. On March 13, an assistant field ethnographer arrived in Las Vegas to accompany the study team. During that afternoon, the team conferred with SAIC project staff in firming up the on-site visit schedule. At this time, they were informed that an alternative STA location west of the Cedar Mountains had be added to the inventory of sites to be assessed in terms of cultural resources. The team also obtained a series of metric and quadrangle topographic maps with study sites marked on them for use in the field. From Las Vegas, the ethnographers returned to Kaibab.

The following day, March 14, the ethnographers and NARA departed for Cedar City, Utah for the meeting with leaders of the Paiute Indian Tribe of Utah. The meeting was held that afternoon, and potential representatives recommended. Following the meeting, the study team departed for Delta, Utah, where they would be based while conducting the on-site visits in the study area valleys.

In the three day period between March 16 and March 18, 1989, Gosiute and Paiute representatives visited the three study area valleys along with the study team. Prior to beginning the on-site visits, the study team was informed that the alternative threat site

array in Whirlwind Valley had been changed. Visits to the southern array of sites in the valley were to be conducted instead of those in the northern array. These Whirlwind Valley sites were visited on March 16. On March 17, sites not visited the previous day in Whirlwind valley were visited in addition to the array of sites in Tule Valley. Tule Valley sites not covered on March 18 were visited along with sites in the Snake Valley array on March 18.

The following week, a three day period between March 20 and March 22 was devoted to repeating the previous week's schedule of site visits with additional Gosiute representatives, as well as Ute representatives. Brief visits were made to particularly important sites in Whirlwind Valley on March 20. Other Whirlwind Valley sites and the Tule Valley array were visited on March 21. Unfortunately, because of prior commitments, the Ute representatives were unable to stay for the March 22 visits to sites in Snake Valley. Gosiute representatives did visit the Snake Valley sites.

The study team changed its field schedule to incorporate an on-site visit to the alternative STA location west of the Cedar Mountains. This visit occurred on the afternoon of March 23. Gosiute representatives were the only group to visit this site.

Following the visit to the STA site, the study traveled to St. George, Utah to drop of the NARA. From there, they continued on to Las Vegas. On March 24, the ethnographers departed for Ann Arbor to analyze and write-up the data gathered in the field.

Methodological Assumptions of On-Site Fieldwork

Ethnic groups ultimately determine the assessment of cultural effects that potentially derive from a proposed project. In general, the federal government has specified the means of determining ethnic concerns of American Indians by consulting with tribal governments. The tribe, however, may be composed of Indian people from many ethnic backgrounds. It was thus necessary to separate tribal concerns from ethnic concerns. In addition, some ethnic groups are represented by more than one tribe. Consequently, it was necessary to contact a number of tribes so that multiple tribal concerns could be combined to determine the ethnic concerns of one group.

Key cultural experts were selected by each of the involved tribal-ethnic groups. These cultural experts accompanied study team ethnographers into the field to conduct on-site visits in the three study area valleys. One group of Gosiute representatives visited the alternative STA location north of the three valleys. Once on-site, key cultural experts identified cultural resources and evaluated each site based on the types and numbers of resources present, as well as other factors such as aesthetics. Key cultural experts also provided tentative overall characterization of the entire valley area in terms of its historic and cultural significance to Indian people.

In order to elicit the dual concerns of tribal and ethnic groups, tribal representatives spent one day in each valley identifying and interpreting cultural resources. It was assumed by study team ethnographers that ethnic group concerns would be a function of the total

tribal concerns expressed for a study area. This report expresses cultural resource effects of the ECTC project in terms of overall evaluations, which is the sum of the ethnic concerns, and ethnic evaluations comprised of the tribal concerns.

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