Puaxant Tuvip: Utah Indians Comment on the Intermountain Power Project, Utah Section Intermountain-Adelanto Bipole I Transmission Line Ethnographic (Native American) Resources

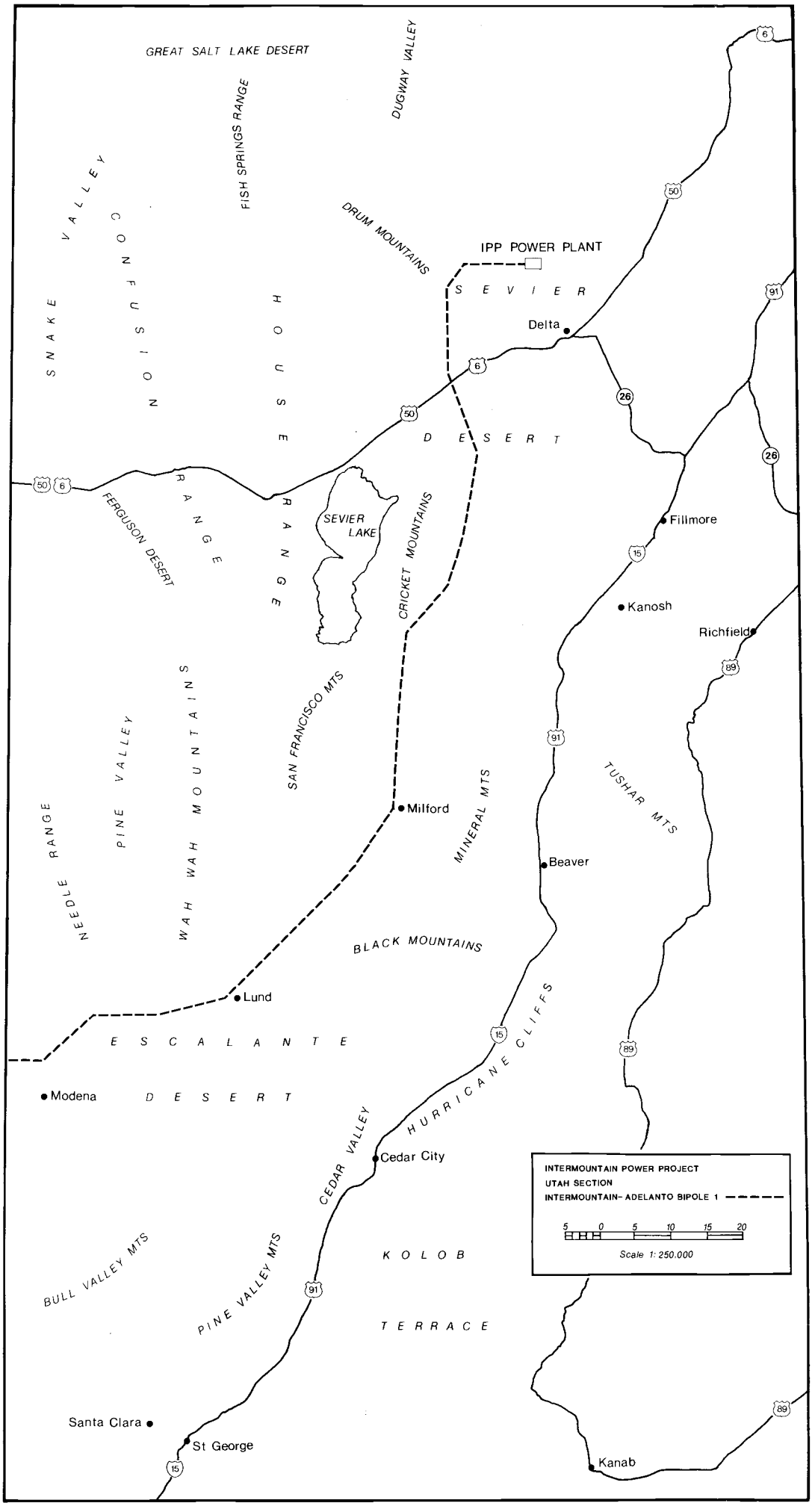
PUAXANT TUVIP

UTAH INDIANS COMMENT ON

THE INTERMOUNTAIN POWER PROJECT, UTAH SECTION

OF INTERMOUNTAIN-ADELANTO BIPOLE I PROPOSAL

University
of
Wisconsin
Parkside


GREAT SALT LAKE DESERT
DUGWAY VALLEY
FISH SPRINGS RANGE
SNAKE VALLEY
CONFUSION
HOUSE RANGE
DRUM MOUNTAINS
IPP POWER PLANT
SEVIER
DESERT
Delta
FERGUSON DESERT
RANGE
SEVIER LAKE
CRICKET MOUNTAINS
Fillmore
Kanosh
Richfield
NEEDLE RANGE
PINE VALLEY
WAH WAH MOUNTAINS
SAN FRANCISCO MTS
MINERAL MTS
TUSHAR MTS
Milford
Beaver
BLACK MOUNTAINS
Lund
ESCALANTE
DESERT
Modena
HURRICANE CLIFFS
CEDAR VALLEY
Cedar City
KOLOB
TERRACE
BULL VALLEY MTS
PINE VALLEY MTS
Santa Clara
St George
Kanab
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PUAXANT TʊVIP:

UTAH INDIANS COMMENT ON

THE INTERMOUNTAIN POWER PROJECT, UTAH SECTION

INTERMOUNTAIN-ADELANTO BIPOLE I TRANSMISSION LINE

ETHNOGRAPHIC (NATIVE AMERICAN) RESOURCES

Report Submitted

by

APPLIED URBAN FIELD SCHOOL,

UNIVERSITY OF WISCONSIN-PARKSIDE

to

APPLIED CONSERVATION TECHNOLOGY, INCORPORATED

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August 13, 1982

PUAXANT TÜVIP

"Sacred Land"

A PAIUTE RELIGIOUS LEADER AND ELDER COMMENTS ON IPP PROPOSAL

In our Indian way I could say it...nüngwürüvwipüxaip marü.

Axani, axani, axani, nüngwüxupi ura'navachü

uamukiyakapi ura'püxaivyach, the sacred places you know.

Axan uru'as aik, mara'rü nüngwürüvwipur ava ur mara'rü.

Marü süwaxantüapa urümpur kunur avikuvani aik.

Ich ma nüngwürüvwipur süwavüxianar.

Arukwaxaip nüngwürüvwip aik.

Mava nüngwünchingwung kanixaipüxantüm.

Ichü manoni ichü apa nüngwürüvwip.

Urü upa nüngwünchincwü unipüngur.

Nüngwüxup ura'navach urüs...

(translation by line)

In our Indian way I could say it...that former Paiute country.
How, how, how, there must be Paiute graves there use to be
places where they round-danced the sacred places you know.
There, I said, how it is, that is Paiute land there.
I think the electricity will lie on sacred things.
This Paiute country is sacred.
So is that part of the Paiute country that was under the ground.
The Paiutes used to have camps there.
All that is Paiute Country
Paiutes used to live out their lives there.
There must be Indian graves...

ACKNOWLEDGEMENTS

A project of this scope is the product of dozens of hands and hundreds of minds. Special thanks go to the many Indian people who accepted the challenge of reaching across time and miles to help protect Native American cultural resources potentially impacted by the IPP power transmission line. The names of these people will not be mentioned in order to protect their privacy.

The project was immeasurably facilitated because of the able assistance of the Official Tribal Contact Representatives, the OTCRs. Although this was a new experience for each of them, they attended training sessions, arranged for public meetings on their reservations, communicated with tribal chairmen when appropriate, helped arrange for in-depth interviews, and have reviewed this manuscript for their councils. In alphabetical order, the OTCRs are:

Ivan Benn	The Paiute Tribe of Utah
Earl Baker	Confederated Tribes of the Goshute Reservation
Vivienne-Caron Jake	The Kaibab Paiute Tribe

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Finally, we would like to thank the staff of ACT for their extensive technical, professional, and personal support during this research: Gary Dudley, Vice President of ACT and overall Project Manager; Sally Higman, Project Manager; Ed Weil, Cultural Resources Project Manager; Mike Macko, Cultural Resources Specialist; Cory Christensen, Graphic Technician. They performed the difficult task of guiding individual research projects such as this one while coordinating it with others being conducted at the same time. Information from other research projects shared with this study team during our research greatly increased the quality of this report.

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CHAPTER I. MANAGEMENT SUMMARY

This is the report of a Native American cultural heritage resource study conducted by the University of Wisconsin-Parkside Applied Urban Field School (UW-P:AUFS) for Applied Conservation Technology, Inc. (ACT). It deals with the Utah section of the Intermountain Power Project (IPP) Intermountain-Adelanto Bipole I transmission line, a development proposed by the Intermountain Power Agency (IPA). The latter consortium includes 23 Utah municipalities. It has authorization to build and operate a coal-fired, 3,000 megawatt steam electric generating facility near Delta, Utah.

THE INTERMOUNTAIN POWER PROJECT

The IPA consortium has scheduled construction of its generating plant to begin in August, 1982. It plans for commercial operation of the four 750-MW generating units to start in July of 1986, 1987, 1988, and 1989 respectively. IPA anticipates burning coal from both extant and to-be-opened shaft mines in central Utah. It expects to utilize water from the Sevier River and local wells. IPA anticipates installing two distinct transmission systems to convey electricity from the generating station to the distribution networks of the participants in this project -- a Utah System and a Southern California System.

THE SOUTHERN CALIFORNIA SYSTEM

This component is planned to consist of two 500-kV Direct Current (DC) transmission lines crossing portions of southwestern Utah, southern Nevada and Southern California. IPA plans to build an 836 km. (519-mile) northern transmission line to carry electricity generated by Units 1 and 2. This is called Intermountain-Adelanto Bipole I. A second 796-km. (496-mile) southern transmission line, Intermountain-Adelanto Bipole II, is projected to be built later and will transmit the power generated by Units 3 and 4. Construction of Bipole I is scheduled to begin in July of 1983, and that of Bipole II two years afterward. Each transmission line will include a converter station at the generating plant near Delta to convert alternating current to DC, and a converter station at Adelanto to change DC to AC. Existing distribution facilities will deliver electricity from the Adelanto Station to project participants, the municipalities of Anaheim, Burbank, Glendale, Los Angeles, Pasadena, and Riverside. The Department of Water and Power of the City of Los Angeles is responsible for

designing, building, operating and maintaining the Southern California transmission system.

The present study deals with Native American cultural resources within the Utah section of the right of way for the northern line in the Southern California System -- the Intermountain-Adelanto Bipole I line. Under terms and conditions of the Federal Land Policy and Management Act of 1976, Titles II and V, the Intermountain Power Project has received from the United States Bureau of Land Management (BLM), the lead federal agency, a transfer of ownership for the generating station site, and a right-of-way grant for the Southern California system's two 500±kV transmission lines. Each 500±kV line right-of-way is 61 m. (200 feet) wide, measured as 30 m. (100 feet) on each side of center. The grant is a general one that lacks any site-specific stipulations. Such stipulations will be incorporated into the grant when a Notice to Proceed is issued to authorize construction to begin.

ETHNOGRAPHIC-ETHNOHISTORICAL ANALYSIS OF NATIVE AMERICAN VALUES

The present study identifies Native American peoples across whose territory the proposed Intermountain-Adelanto Bipole I transmission line would be constructed. It sketches changes in intergroup relations between the Goshute, Pahvant Ute, and Southern Paiute peoples that have lived in and utilized portions of the proposed right-of-way across southwestern Utah during historic times (see chronology at end of chapter). This study analyzes cultural resources that may be adversely affected by construction of the proposed transmission line and associated structures. It does so by describing specific concerns expressed by contemporary Native Americans, as well as by presenting an ethnohistorical sketch of how intergroup relations and forced Native American demographic and cultural changes have shaped contemporary values, perceptions and attitudes. The present study conveys Native American recommendations for mitigating adverse impacts of the proposed transmission line upon their cultural heritage.

The findings reported by this study are intended to assist the IPA in complying with the requirements of federal agencies in carrying out the IPP. In conducting this study, the authors and their associates relied as much as possible upon the findings of previous research on Native Americans using the study area and adjacent areas. Because of conceptual limitations inherent in some earlier research, the present report relies heavily on historic eye-witness descriptions of Native American behavior rather than twentieth century oral traditions of earlier conditions. As a consequence, the present report at times describes Native American behavior in the study area rather differently than previous anthropological analysis. The present report attempts to describe an historic

cultural process instead of a still photograph of Native Americans posed at one single time.

Nearly all Native Americans living in that portion of Utah traversed by the study area belong to two of the three Indian peoples who occupied this region when Euroamerican travel and colonization began in the mid-nineteenth century. They are descendants of Pahvant Utes and Southern Paiutes who were closely related when colonization began, and have since become even more closely allied through intermarriage. They are today linked in the Paiute of Utah Tribe, which was legally constituted by federal legislation in 1980. These Native Americans remain, in other words, within their ancestral ethnic Holy Lands in terms of their traditional oral Scriptures (Spicer 1957). This makes Native American attitudes toward the land and its resources differ in a fundamental way from those of Euroamerican residents in the same areas. The level of consciousness generated by residing within an ethnic Holy Land varies from Native American individual to individual, as does knowledge of traditional oral Scriptures.

Members of the Church of Jesus Christ of Latter Day Saints (LDS) often hold similar attitudes toward what their own belief system defines as Zion. Their perceptions may be summed up in the famous pronouncement of Joseph Smith, the leader of the denomination at the beginning of its westward trek in search of religious freedom: "This Is The Place." Yet, there is a significant difference between the Native American belief that the supernatural powers created their ancestors and placed them on a particular region of the earth, and the LDS belief that historic human prophets led believers in a given denomination to a refuge region that had to be seized from its aboriginal inhabitants. Euroamerican colonists in the area other than Mormons have a different frame of reference with regard to religious meanings of land and resources; their Holy Land lies across the Atlantic Ocean in the Middle East.

The cultural concerns of these persistent peoples (Spicer 1971) are being considered in the IPP right-of-way proposal because of legal mandates regarding Native American cultural heritage. One set of legal mandates requires that Native Americans participate in preparing environmental impact statements so as to guarantee that their legitimate cultural heritage concerns are included in such documents. Another set of legal mandates calls for Native American identification of the resources viewed as sacred. The American Indian Religious Freedom Act reaffirms for Native Americans the same First Amendment protection that other United States citizens receive. The effect of the Act is to prohibit federal officials from issuing permits for projects that will interfere with Native American freedom of religious practice.

TRADITIONAL TERRITORY

The study area analyzed in the present report consists of a right-of-way 60 meters (200 feet) wide that extends 163 miles from the IPP generating plant near Delta to the Utah-Nevada border. The area from the generating facility to the lower Sevier River channel lies within the aboriginal territory of the southern division of the Goshute people. The area east of Sevier Lake from the south bank of the Sevier River channel to Cove Creek, or a line projected west from Cove Creek's surface flowing waters in the nineteenth century, crosses aboriginal territory of the Pahvant people. From Cove Creek to the Nevada state boundary, the study area traverses aboriginal territory of the Eastern Division of the Southern Paiute people.

RESEARCH FINDINGS

SACRED AND RELIGIOUS VALUES

Native American concerns over potential affects of IPP, especially holy shrines and zones, are presented in detail in Chapter V. The continuing Native American world-view that underlies expressed concerns is distinctive. Like other Native Americans, contemporary Goshutes, Pahvants and Southern Paiutes tend to perceive their habitat holistically. In other words, they usually differentiate secular from sacred only insofar as their thought processes may have shifted from traditional Numic to European thought-categories because of formal education in the English language. Their traditional cultures did not demarcate a secular dimension: all was sacred.

Traditional cultural values and perceptual frameworks have been significantly and often reinforced by funeral and mourning ceremonies among the Pahvant and Southern Paiute constituents of the reconstituted Paiute Tribe of Utah. Like Southern Paiutes in Arizona and Nevada, the five populations in Utah still suffer from a mortality rate higher than that of their Euroamerican neighbors. This mortality means that funeral and mourning rituals occur frequently; people assemble at them in large numbers. Ritualists sing and chant oral scriptures describing the integral relationship between Native American people, traditional supernatural beings, and their Holy Lands. Consequently, the sacred ties between living Paiute Tribe of Utah members and the Pahvant-Southern Paiute Holy Lands in Utah are most effectively reinforced.

The proposed IPP right-of-way potentially affects Native American sensitivity over sacred territory at certain specific sections. These are discussed in detail in Chapter V. Here,

emphasis may be placed on the mountainous sector of the proposed right-of-way where it departs from the long-established railroad mechanized transportation corridor and crosses what was long a refuge area for Southern Paiutes in the highlands near the Nevada state line.

TRADITIONAL USE VALUES

Goshutes consulted during the present study expressed a relatively lower level of concern for traditional use areas within the study area. The southern division of the Goshutes that was once closely allied with the northern division of the Pahvants was largely exterminated by United States military action during the 1860s. Consequently, there has been very little Goshute utilization of the study area since that time. A few Goshutes have found employment on the Sevier River Delta irrigation developments, but that appears to be the extent of their acquaintance with the study area in recent decades.

Those Pahvant descendants who migrated to the Uintah Valley Reservation have been so long removed from the study area and its neighborhood that contemporary residents of that Ute Indian reservation appear to have only minor interest in the study area.

The Pahvant descendants, allied with Eastern Division Southern Paiutes in the reconstituted Paiute Tribe of Utah consulted during the present study, expressed a relatively high level of concern for traditional use areas within the study area. They express concern over potential adverse construction impacts on historic burials, habitation sites, hunted animals, and many food and medicinal plants. The habitation sites mostly lie in the highlands area near the Nevada state line, and are discussed in Chapter V. The Pahvant-Southern Paiute plants that are of concern are listed in the present report in tables of Paiute food plants, fiber plants, and medicinal plants. The largest plant which arouses specific concern is the barrel cactus, which appears to be potentially vulnerable to IPP construction and operation.

SPECIFIC SITES AND AREAS

A detailed discussion of sites and zones specifically sensitive to Pahvant-Southern Paiutes belonging to the Paiute Tribe of Utah is presented in Chapter V. That discussion distinguishes, in Euroamerican terms, between religious concerns and traditional use even though such a distinction does not exist in traditional Numic thoughtways. Many sections of the proposed right-of-way closely follow existing highways, railroad and/or electric power transmission lines. They can be viewed, therefore, as only adding to the modification of already compromised Holy Lands. Other sections of the proposed right-of-way would cross areas that are at present not within existing transportation right-of-ways of any

kind. These sections, along with construction and maintenance roads, pose a different kind of potential threat to artifactual evidence of former Numic land use, to especially significant sacred zones and sites, to game and plant food, and to medicinal resources that are still exploited by Utah Paiute tribesmen.

BRIEF CHRONOLOGY OF ETHNOHISTORY PERTINENT TO NATIVE AMERICAN CULTURAL HERITAGE IN WEST CENTRAL UTAH.

1750± - 1846. LATER SPANISH PERIOD.
Spanish demands for Native American slaves and servants stimulates mounted Utes to raid Goshutes, Pahvant and especially Southern Paiutes for captives. Raiding compounds selective mortality during disease epidemics, accelerates depopulation.

1821 - 1846. MEXICAN PERIOD.
Trappers and traders travel through Goshute, Pahvant and Southern Paiute country, especially after 1826, and 1829 when caravans cross Paiute territory from New Mexico to Southern California. Slave raiding by New Mexicans and mounted Eastern Utes reaches a peak. Native American international trading continues.

1847 - 1869. LATTER-DAY SAINT COLONIZATION.
Members of Church of Jesus Christ of Latter-Day Saints colonize Salt Lake basin in 1847, expand annually thereafter on the transcontinental mail-wagon road to central California from 1849, along the Mormon Corridor to the Pacific not far east of the study area on an exploratory basis in 1849, and colonize from 1851. Direct Mormon immigration from Europe transmits numerous contagious Old World diseases to Goshutes, Pahvants, and Southern Paiutes, with consequent high mortality and rapid depopulation. Euroamerican contamination of Virgin River oasis system begins in 1853, and water-borne diseases and malaria heighten impact of Old World diseases on Southern Paiutes. Goshutes suffer proportionately higher casualties in conflicts with migrants on the Central Route to California, and with United States troops in their southern range. Native Americans quickly make a transition from traditional economy to laboring for colonists who pre-empt irrigable lands and irrigation waters, grass pastures, and other vital resources.

1870 - 1879. ANIMAL-DRAWN TRANSPORT PATHS EXPAND WITH MINING.
Mineral development begins in mountains on both sides of the study area, and stage lines and freight wagons operate over an expanded network of roads crossing the study area and Goshute, Pahvant and Southern Paiute Holy Lands. Diversification of Euroamerican dominant group

occurs with immigration of large numbers of non-Mormon miners, retailers, freighters, etc.

1880 - 1889. MECHANIZED TRANSPORTATION CORRIDOR STARTED.
The Utah Southern Railroad is constructed south from Utah territory across Goshute land, Pahvant territory, and a bit of Southern Paiute territory, to Milford. The railroad integrates the mining activities and makes lode mining economical, affording additional wage labor opportunities to Native Americans. Goshutes, Pahvants and Southern Paiutes live, except for one Goshute farming group and three Southern Paiute refugee groups, in labor gangs located beside Euroamerican colonies. Native Americans learn English on the job despite exclusion from school classrooms. Traditional Native American knowledge and land management skills are denigrated by bureaucrats and denominational missionaries.

1889 - 1905. MECHANIZED TRANSPORTATION CORRIDOR COMPLETED.
The railroad tracks are extended from Milford to the Nevada state line, violating the Indian Peaks refugee group's last refuge area, and completing the mechanized transportation right of way parallel to the study area. Only Kaiparowits and Willow Creek Southern Paiutes remain in refuge areas following traditional pursuits; all other Pahvant-Paiutes live in labor gangs oriented to Euroamerican colonies.

1905 - 1932. NATIONAL INTEGRATION.
Construction of surfaced highways and proliferation of automobiles and trucks mechanizes transportation in the area, and initiation of rail service from Los Angeles to Salt Lake in 1905 completes the integration of this previously isolated region into the national economy. Goshutes, Pahvants and Southern Paiutes become highly mobile wage workers ranging from Idaho to Southern California, as transitional labor gangs disintegrated and the extended family became the typical labor/consumption unit. Southern Paiutes are more mobile than some Pahvants at Kanosh and Koosharem, and Deep Creek Goshutes. Federal government creates inadequate reserved land base for Goshutes, Pahvants and Southern Paiutes.

1932 - 1940. GREAT DEPRESSION.
Federal intervention to benefit poverty-stricken citizens becomes increasingly crucial to the Utah sector of the Southwest Poverty Diagonal. Nearly all Goshutes,

Pahvants and Southern Paiutes survive by laboring for wages, and traveling long distances for work.

1941 - 1951. TEMPORARY WARTIME PROSPERITY.
Demand for minerals stimulates mining sector of Southwest Poverty Diagonal region, and indirectly benefits Goshutes, Pahvants and Southern Paiutes.

1953 - 1963. FORCED TERMINATION OF TRUSTEESHIP.
Congress establishes policy of terminating federal trusteeship of Numic lands in Utah and ending services to small groups, under impetus of Utah Senator Arthur Watkins. Goshute, Pahvant and Southern Paiute families in Utah continue to be dependent on enduring low income wage labor in the Southwest Poverty Diagonal region. Numic groups seek damages for land loss from United States Indian Claims Commission.

1964 - 1980. PAIUTE TRIBE OF UTAH RENAISSANCE BEGINS.
Awards by United States Indian Claims Commission bolster family economies, and federal subsidies permit construction of improved housing for some families. Movement culminates in 1980 Congressional re-recognition of Paiute Tribe Of Utah, made up of Shivwits, Cedar City, Indian Peaks, Kanosh and Koosharem groups.

1982 - Members of Paiute Tribe of Utah and residents of Skull Valley and Deep Creek Goshute Reservations are the surviving descendants of aboriginal Native American occupants of the area traversed by the proposed IPP transmission line.

CHAPTER II. INTRODUCTION TO STUDY

The present report presents the findings of a study of Native American cultural heritage values in west-central Utah. The Applied Urban Field School of the University of Wisconsin-Parkside conducted the study for Applied Conservation Technology, Inc. Fullerton, California. The study area consists of a right-of-way 61 m. (200 feet) wide extending from a coal-fueled generating facility a few miles north of Delta, Utah, to the Nevada-Utah state border. The Intermountain Power Agency proposes constructing the Intermountain-Adelanto Bipole I transmission line in this right-of-way.

In order to petition for a Notice to Proceed, the IPP must provide documentation supporting general environmental and technical stipulations set forth in its Right-of-Way Grant. Those stipulations touch upon ten specific concerns: clearing, erosion control and rehabilitation, wildlife and habitat protection, access management, solid waste disposal, protection of visual resources, health and safety, cultural resources, water resources and air quality. Native American ethnographic resources are classified as one of the so-called cultural resources. This report presents the ethnographic value analysis and proposed transmission line right-of-way impact assessment for the Utah sector of the IPP.

NATURAL SETTING

TOPOGRAPHY

The Intermountain Power Project transmission line would cross southwest central Utah, a medium-altitude arid to semi-arid region. Topographically, this portion of Utah is part of the Basin and Range province of montane North America. The town of Delta, Utah, near the power generating plant, is 4,650 feet above sea level, and over 100 feet higher than the dry bed of former Sevier Lake (4,519 feet see PLATES 1 and 2).

The Sevier Desert and the bed of former Lake Sevier extend southward from the generating plant site for about 200 miles with little change in elevation. The Sevier Desert becomes the Escalante Desert toward the south. Native Americans long inhabited this arid zone because water and food resources are available in mountains on both sides of the Sevier and Escalante Deserts. At its widest section the Sevier Desert is only some 60 miles between mountain peaks reaching to 9,000 and 10,000 feet above sea level. At former Lake Sevier west of the proposed transmission line only 15 miles of former lake basin

separates peaks of 7,300 feet and 5,900 feet. Save for the immediate vicinity of Delta and the generating plant site, there are few places more than 10 to 15 miles from mountain range to mountain range, with peaks from 7,000 to 10,000 feet above sea level. The ranges east of Sevier Desert rise higher than those to the west. They form part of the Wasatch system which is the eastern edge of the physiographic province called the Great Basin.

Most of the Great Basin mountains consist of uplifted and tilted limestone deposits. There is considerable evidence of volcanic activity on and around the Sevier Desert and elsewhere in southwestern Utah.

Historic diversion of surface-flowing streams to water agricultural crops has markedly changed the environment of this region. The dry bed of former Lake Sevier resembles not at all the large if shallow saline body of water with marshes around its edges that existed prior to Euroamerican colonization (see PLATE 3). The proposed transmission line would cross the beds of the two major streams that formerly flowed into Lake Sevier. Near the generating plant site and Delta, the transmission line would cross the bed of the lower Sevier River. This stream rises in the high mountains of the Wasatch system far to the southeast of Delta. It flows north-northeast in its own valley for a long distance, and then makes a virtual U-turn through a pass between the Canyon and Gilson Mountains. It flowed southwest from that pass into former Lake Sevier. The Sevier River provided Native Americans with abundant resources: trout and other fish, beaver and other water mammals, geese and other waterfowl in season, deer and other upland big game animals, rabbits and other small upland game animals, game birds, and plant foods.

From the neighborhood of Clear Lake and Pahvant Butte, the proposed transmission line will parallel for many miles, and cross, the channels of the Beaver River. The principal tributaries of this stream rise on the western slopes of the Tushar Mountains and flow eastward. They unite in a pass between the Mineral and Black Mountains, and then turn sharply northward. Modern Minersville, Utah, is near this great bend of Beaver River. Because its lower course crossed a more arid, lower terrain than the upper Sevier River, Beaver River constituted if anything an even more important Native American hydrological resource than the larger stream.

In the vicinity of modern Milford, Utah, the proposed transmission line turns southwestward, still keeping to the lowest terrain possible. The ground surface gradually rises, however, so that as the line is built west-southwestward it will rise to a mile high, and then somewhat higher still on relatively level valley ground. Near the Utah-Nevada state border, the IPP right-of-way will climb rather rapidly to cross the Mahogany Mountains. It will cross rugged mountain

P-1. IPP Generating Station Construction Site, December 1981

P-2. Site of Worker Housing at IPP Generating Station, December 1981

P-3. Lake Sevier With the Cricket Mountains to the East, December 1981

slopes reaching about 6,500 feet above sea level and continue westward for some distance in eastern central Nevada through similar terrain.

The proposed IPP transmission line will cross, in sum, three distinct former environments: (1) extensive medium-altitude alluvial desert, (2) local former riverine oases now dessicated by upstream diversion of irrigation waters, and (3) mountainous high altitude forested slopes.

NATIVE AMERICAN PEOPLES POTENTIALLY AFFECTED BY BIPOLE I

The proposed IPP right-of-way would traverse the aboriginal territories of three Native American ethnic groups in modern Utah; the Goshute, the Pahvant Utes, and the Southern Paiutes. Inhabiting the relatively arid west central Utah environment, all three peoples converged on former Lake Sevier in pre-colonization times. They exploited the fish, waterfowl, marsh plant, and domestic water resources of that body of water, as well as the major streams flowing into it. Social relationships between these peoples appear to have been amicable. They joined one another in ceremonies and traded various commodities at favorite camping places along their mutual boundaries. Differential acquisition of horses and a shift to mounted hunting and economic raiding during the mid-nineteenth century, to some extent disrupted friendly intercourse between the three peoples on the eve of subjugation to Euroamerican society.

GOSHUTES

The Intermountain Power Agency coal-fueled generating facility will be constructed within the aboriginal territory of the Goshute people. The proposed IPP right-of-way leaving the generating plant will traverse pre-colonization Goshute territory for approximately eleven miles until it crosses the bed of the lower Sevier River.

The Shoshonean-speaking Goshute seem not to have been organized as a tribe, if anthropological studies couched in the ethnographic present may be believed. The Goshute constituted the south-easternmost component of the Shoshonean groups that formerly occupied portions of northwestern Utah, northern Nevada, northeastern California and southeastern Oregon.

In Utah, the Goshute people exploited the environment between Sevier Lake and Sevier River on the southeast and the shore of Great Salt Lake on the northeast (see Map 2 - back

cover). Their territory extended more or less due westward from the two saline bodies of water to the modern Utah-Nevada state border (Allen and Warner 1971:163; Chamberlin 1911:331). Interviews with Goshutes carried out early in the twentieth century, when older informants should have been able to remember pre-colonization conditions, indicated that these people relied primarily upon vegetable foods. "They seem to have placed no regular dependence on forms larger than the abundant jack-hare..." although they did drive antelope and deer into natural or constructed blinds (Chamberlin 1911:335). The Goshutes possessed a detailed knowledge of the edible qualities of scores of plant roots, tubers, stems, leaves, blossoms and particularly fruits and seeds. They apparently sowed a Mentzelia and a Chenopod prior to Euroamerican colonization (HDR Sciences 1980:33).

Colonization of the Great Salt Lake basin by members of the Church of Jesus Christ of Latter Day Saints began in 1847. That colonization promptly intruded into riverine oasis habitats of the Goshute people, rapidly reducing their economic land base. While Goshutes continued of necessity to rely heavily on hunting and gathering wild food products, they valiantly attempted to become grain farmers like the Mormons themselves. While LDS leader Brigham Young was territorial governor and Superintendent of Indian Affairs during the 1850s, he fostered a policy of congregating Goshutes on farms in Skull Valley and along Deep Creek. The federal Office of Indian Affairs for many years paid Euroamerican farmers to demonstrate the use of teams, Old World plows, harnesses, broadcast sowing, etc., to interested Goshutes. By 1870, Goshutes who survived Old World diseases transmitted by Mormon European convert-immigrants ranged such territory as they still could from farming bases at Skull Valley and Deep Creek (Allen and Warner 1971:171).

A few years later, federal officials began to ignore the surviving Goshutes. These people managed very much on their own for four decades. Not until 17 January 1912 did President William Howard Taft sign an executive order reserving a mere 80 acres in Skull Valley for Goshutes. On 7 September 1919, President Woodrow Wilson issued another executive order reserving an additional 17,920 acres at Skull Valley for Goshutes (Allen and Warner 1971:177). At the beginning of the 1980s, fewer than 100 Goshutes formally aligned themselves with this reservation. Only three families resided there. Today, a Skull Valley Band Council of three members governs this jurisdiction.

The Goshute group appears to be receptive to contemporary high-technology initiatives that provide it with income. It built a missile testing facility on its tribal lands, and leased it to Hercules, Inc. Lease income provides an estimated 98 percent of reservation government funds. These are employed for agricultural development, such as installing a 500 gpm

irrigation well (HDR Sciences 1980:27).

Skull Valley Reservation lies some 55 km. (35 miles) south of Great Salt Lake, adjacent to the Cedar Mountains. This location is well to the north of the IPP generating facility and the proposed transmission line. Consequently, neither the plant nor the line will affect the reserved area. As the small number of Goshute residents on the Skull Valley reservation indicates, these people have continued to range through their aboriginal territory and beyond. Some of their twentieth century activities have taken them into the IPP area, as will be discussed in a later chapter.

Not until 23 March 1914 did President William Howard Taft sign an executive order reserving 34,560 acres in Utah for the Goshutes in western Tooele County (Allen and Warner 1971:177). A Nevada component consisting of 70,489 acres was added to this reservation in 1938. This is the Deep Creek Valley Reservation (see PLATES 4 and 5). Goshutes depended on Deep Creek Valley in pre-colonization times. They persisted in living there after colonization. The bulk of the contemporary Goshute population lives there, with 225 individuals in residence at the beginning of the 1980s. A total of 377 persons are members of this community (HDR Sciences 1980:27). Lacking mineral resources, this population has turned to fabricating steel materials such as cattleguards.

The Deep Creek Reservation is even farther from the IPP generating plant and proposed right-of-way than the Skull Valley jurisdiction. Thus, there is no question of impact on this reservation. Again, potential concerns exist on aboriginal Goshute territory, portions of which Goshutes have utilized in recent years.

PAHVANT UTES

South of the bed of the Sevier River, the proposed IPP right-of-way will traverse several miles of Pahvant Ute aboriginal territory. These south-westernmost Utes formerly occupied lands south of the curving lower Sevier River and east of Lake Sevier. They currently are represented by the Ute Indian Tribe and the Paiute Tribe of Utah. While the Pahvant Band or Tribe of Utes are distinguished from other Ute polities in the ethnographic literature, they actually were and continue to be closely related culturally and genetically to the neighboring Southern Paiutes. In fact, until the early nineteenth century, the Numic-speaking Paiute-Ute groups appear to have formed a cultural continuum from the Sonoran Desert dwelling-Chemehuevi group of Southern Paiutes to the Southwest through Pahvant to the northeastern Utes near Long's Peak,

P-4. Basin and Range Topography of Deep Creek Mountain Range on Goshute Reservation

P-5. Deep Creek Range and Upper Goshute Reservation Near Ibapah, Utah

Colorado. The eastern Ute bands acquired horses after the 1680 Pueblo Revolt in New Mexico, and differentiated increasingly from walking Utes farther west such as the Pahvants (Stewart 1966:49). After about 1750, the eastern Ute became hostile toward the Plains Comanches, so they wisely formed an alliance with the New Mexican Spaniards and Pueblos against the Comanches. Like Southern Paiutes, Pahvant Utes were to some extent subject to economic raiding by the mounted eastern Ute bands.

Pahvant Utes differed at mid-nineteenth century from mounted Ute bands in that they raised summer crops. At least some Pahvants raised maize and no doubt squash and beans on irrigated fields on what Mormon explorers labeled "Corn Creek," which flows out of the Pahvant range to modern Kanosh, Utah. This town is named for a long-time nineteenth century Pahvant chief. Pahvants intermarried with Southern Paiutes and continued to live near the Euroamerican town. Like Southern Paiutes, some Pahvants proved to be extremely reluctant to risk powerful Ute sorcery by joining the eastern bands on the Uintah-Ouray Reservation. Other Pahvant people who did relocate to Ute Indian Reservations are now part of that tribe.

The single treaty which federal representatives negotiated with Utes in Utah was not ratified by the United States Senate (Stewart 1966:55). Annuity payments or other benefits stemming from a formal treaty relationship with the federal government did not, therefore, exist that might have countered Pahvant fears of their easterly Ute linguistic relatives. During the stressful War of the Rebellion, more commonly known as the Civil War, federal authorities doubted the degree of Mormon support for the Union. Early on, however, President Abraham Lincoln issued an executive order on 3 October 1861 reserving the Uintah River Valley in Utah Territory for the "use and occupancy of Indian tribes" (Kappler 1904:I:900). Federal officials in time came to think that Yampa, Grand River, White River and Uncompahgre Utes assembled on the Uintah Valley Reservation, along with Pahvants and Goshutes. On 5 January 1882, President Chester A. Arthur reserved an additional area for the Uncompahgre or Tabequache Utes immediatiely to the east of the Uintah Valley Reservation (Kappler 1904:I:901).

After land was allotted to individuals early in the twentieth century, Utes retained only 77,000 acres of irrigated and 19,000 acres of unirrigated land. Individuals later sold a third of the watered lands. The Indian New Deal restored some 650,000 acres of grazing land to trust status. Since the Great Depression, oil has been discovered under some of the reserved lands. The federal policy of terminating services to Native Americans during the 1950s resulted in about one-third of the genetically mixed individuals at Uintah-Ouray Reservation selling their interest in its resources. In 1964, some 1,600 persons shared the relatively rich surface and subsurface resources (Stewart 1966:58). The comparatively wealthy

reserved resource trove has tended to focus the attention of modern Uintah-Ouray Utes on their reserved lands. Moreover, the population at the beginning of the 1980s is a relatively youthful one, reared in the recent microhistorical perspective of reservation life. Consequently, residents of the Uintah-Ouray Reservation retain relatively less interest in Pahvant aboriginal territory near Lake Sevier (See Appendix A-Letters #1, #2) than do those Pahvant peoples represented by the Paiute Tribe.

The Pahvant descendants with the greatest cultural heritage interest in the zone immediately east of Lake Sevier are those at Kanosh and Richfield. The cumulative impact of life-long struggles for survival, federal termination of services and land trusteeship have resulted in a comparatively high degree of cultural assimilation of these ethnic enclaves. Yet, they persist in part because they have maintained social boundaries between themselves and Euroamericans in general. Both characteristics of these enclaves make locating members and determining their present cultural heritage stake in ancestral lands and resources extremely difficult.

EASTERN DIVISION SOUTHERN PAIUTES

In pre-colonization times before Euroamericans differentiated Pahvant Utes from Southern Paiutes, these peoples probably observed no territory boundary. The topography of southcentral Utah where they lived, and the distribution of water resources in that area, make it very probable that both utilized water flowing in Cove Creek. The western channel of that stream may be taken as marking where the proposed IPP right-of-way leaves aboriginal Pahvant Ute country and enters Southern Paiute country. Southern Paiutes ranged north to the south shore of Lake Sevier to the westnorthwest. From this area west, the proposed IPP right-of-way passes the railroad towns of Milford and Lund, then curves westward to the Nevada border. Approximately two-thirds of the proposed right-of-way, therefore, crosses aboriginal Southern Paiute territory.

Much of westcentral Utah formed the northernmost portion of the territory of the Eastern Division of the Southern Paiute tribe. About 1825, prior to Euroamerican impacts, that tribe appears to have been socially and economically organized into a Western Division (Paranayi) and an Eastern Division. Available studies fail to provide the native designation for the Eastern Division. The Eastern Division people raised small crops on sandbars bordering the Colorado River. Their horticultural core and mainstay consisted of riverine oasis fields along Santa Clara Creek and the Virgin River upstream from the confluence of the two streams. All of the local socio-economic groups constituting the Eastern Division, except the

Willow-Springs/San Juan band south of the Colorado River, seem to have planted summer crops in the riverine oases. They may well have spent most of the summer hunting and collecting wild foods at higher and cooler elevations on the plateaus and in the mountains, rather than constantly weeding, cultivating and irrigating their crops. Those local socio-economic groups that exploited Panguitch Lake and the Upper Sevier river watershed upstream from it, Beaver River, Cove Creek, Lake Sevier, and other bodies of water caught many fish. They also undoubtedly killed many waterfowl that paused on these waters during their seasonal migrations (Stoffle and Dobyns 1982:15).

Euroamerican colonization of riverine oases, upon which the Eastern Division Southern Paiutes depended, rapidly disrupted their aboriginal settlement pattern and economic system. Members of the Church of Jesus Christ of Latter-Day Saints began their invasion of Eastern Division lands in 1851. They essentially completed their occupation of key riverine oasis fields by 1862 when irrigation canal construction at St. George destroyed the antecedent Southern Paiute non-erosive, small-scale canal network along that portion of the Virgin River Valley. Perhaps by that time, and certainly not later than the early 1870s, surviving Eastern Division Southern Paiutes had become functionally members of ethnic labor gangs. The tribal head chief and Eastern Division chief is not mentioned in documents after 1873. Each labor gang subsisted as a segregated Native American satellite to a specific Euroamerican settlement, with a more or less bilingual male "chief" who served as cultural broker between the two ethnic groups. An economically key function of the cultural broker was to act as a labor contractor who recruited unskilled Southern Paiute workers for Euroamericans seeking help, and as a spokesman for labor gang members trying to obtain services or favors from members of the dominant ethnic group.

The southeastern bands of the Eastern Division escaped the labor gang fate. The Willow Springs people retreated into their lands south of the Colorado River, where they were overrun by Navajo shepherds expanding into their territory and eventually were incorporated as a cultural enclave on the Navajo Reservation. The Kaiparowits people similarly retreated into the high plateau and mountain wilderness of inhospitable southeastern Utah until the 1918 influenza epidemic decimated them (Bunte and Stoffle 1981). Then the few surviving Kaiparowits crossed the river to amalgamate with the Willow Springs people. Elsewhere, labor gangs lived near the edge of the Euroamerican towns of Beaver, Gunlock, Kanab, Panguitch, St. George, and Cedar City (Kelly 1934:552-553).

At the northwestern margin of the aboriginal territory of the Southern Paiute Eastern Division, a number of families found a sizeable refuge area at the south end of the Needle Mountains in Hamblin Valley and the nearby slopes. There, these people were able to find a relative abundance of game

animals and nutritious wild plant foods. Thus, they were able to continue, like the Kaiparowits and Willow Springs bands, a surprisingly traditional economic pattern well into the twentieth century. These families appear to have formed part of the Cedar City labor gang and became known as the "Indian Peaks Band". The microhistory of this population is not at all well known. Quite possibly residence either in the mountainous refuge area and on the outskirts of Cedar City was very fluid, with people moving back and forth as employment opportunities appeared at the town or seasonal resources beckoned in the mountains.

The existence of a refuge area in the uplands, where many traditional and well-liked foods could still be obtained by one's own efforts with the expenditure of cash, fostered relatively intensive resource exploitation by members of the Cedar City labor gang. Economic ties and detailed knowledge of wild plant and game resources in this area consequently continue today to be stronger than among any other Southern Paiute Eastern Division group save the Willow-Springs-Kaiparowits amalgamated band that never degenerated into a labor gang.

During the 1950s period of government implementation of a policy of terminating federal services to Native Americans, the Paiute groups in Utah were almost all terminated. Inasmuch as the Paiute land base near Cedar City was not federal trusteeship land, the framers of the termination legislation overlooked the Cedar City labor gang. In 1980, new legislation restored federal recognition and services to the Utah Southern Paiutes. Approximately 500 surviving Utah Southern Paiutes are now organized in a single ethnic unity called the Paiute Tribe of Utah. Elected representatives are selecting federal lands that will become about 15,000 acres of new reservation.

ETHNOGRAPHIC SITUATION SUMMARY

The three aboriginal ethnic groups whose descendants have a legitimate historical interest in the proposed IPP right-of-way across Utah, have two distinct ethnographic relationships to that right of way. The contemporary Goshutes mostly reside on the Deep Creek Reservation on the Utah-Nevada border far to the north of the proposed project. Those people are caught up in the microhistory of the Deep Creek Reservation, and are now separated in both space and time from the right-of-way sector which traverses aboriginal Goshute lands north of Sevier River. The few Goshutes living at Skull Valley Reservation are in much the same situation, and the majority enrolled there but residing elsewhere are too busy seeking out a livelihood to be particularly concerned with the project area. The eastern Utes of the Uintah-Ouray jurisdiction, including the few Pahvants whose ancestors migrated there, are very definitely involved in

their own distinctive microhistorical process. The relative wealth of natural resources being exploited at Uintah-Ouray focused the attention of people enrolled there on the local events and issues. The proposed IPP right-of-way is extremely peripheral to their meaningful geographic frame of reference.

In contrast, the Pahvant Utes who remained near their aboriginal homeland near Lake Sevier have, in effect, been legally incorporated into the Eastern Division Southern Paiute successor tribe. When the United States Congress in 1980 restored federal recognition to Utah Paiutes, it included the intermarried Kanosh and Koosharem "bands" with the Shivwits, Indian Peaks and Cedar City "bands" (Associated Press 1982). Thus, the Pahvant Utes who retain very meaningful cultural interest in the lands crossed by the proposed IPP right-of-way are currently amalgamated legally as well as by intermarriage with the Eastern Division Southern Paiutes in Utah.

The emergence of a new ethnic legal amalgam in southern Utah is quite perceptible in the initial choices of approximately 15,000 acres of reconstituted reservation for the re-recognized Paiute Tribe of Utah. The post-1980 Utah Paiute polity seeks about 4,000 acres in Millard, Iron and Sevier counties to utilize as reserved residential areas for the five local populations. The Bureau of Land Management currently administers these lands. The post-1980 Utah Paiute polity has selected nearly 10,000 additional acres of land currently under Forest Service administration. The larger 9,520 acre parcel, located in the Manti-La Sal National Forest, was chosen for its economic potential; rich coal deposits lie under the surface. The smaller 430-acre tract is located in Fish Lake National Forest; it contains many still-well-remembered burial spots and ceremonial sites. These are labeled "Paiute" in current discourse (Associated Press 1982). Some ethnographers have considered the "Fish Ute" as a "very primitive people" who managed to acquire very few horses, and were not even part of the Pahvant (Steward 1974:62).

The deep-felt concern of contemporary Utah Paiutes by legal fiat for the burials near Fish Lake indicates that either the Fish Ute never were a distinct group, or that survivors of that population amalgamated with the Pahvant during the nineteenth century.

The post-1980 Utah Paiute request for the 430-acre parcel of land near Fish Lake because it is "dotted with Paiute burial grounds" points up a very important dimension of the current ethnographic situation. The Utah Paiutes are very much concerned about preserving and protecting their ancestors' graves. They consider these graves sacred. Federal policy and law vest in Native Americans special rights of access to religious shrines and sacred areas. Planning large construction projects like the IPP transmission line requires, therefore, consultation with the Native Americans likely to be

affected. In southcentral Utah, that means primarily members of the recently re-recognized Paiute Tribe of Utah.

The Southern Paiute renaissance now underway appears to be gathering momentum. Residents of the Moapa River Reservation in southeastern Nevada have launched a large-scale, capital-intensive greenhouse tomato-cucumber growing-marketing venture. Congress recently restored approximately 70,000 acres to the Moapa reservation (Stoffle and Dobyns 1982:159, 160). Federally subsidized housing programs have notably enlarged the size and quality of housing stock at Moapa and Kaibab reservations. Now, the Southern Paiutes living at Kaibab are joining leaders of other Southern Paiute populations to form an overarching Southern Paiute organization to represent all of the scattered jurisdictions.

STUDY TEAM AND STRUCTURE

Applied Conservation Technology, Inc., is providing the Intermountain Power Agency with professional consulting services necessary to perform and coordinate environmental studies related to the IPP Southern California Transmission System. In coordinating the necessary studies of Native American cultural resources to be potentially affected by the IPP Intermountain-Adelanto Bipole I right-of-way across west-central Utah, ACT selected the Applied Urban Field School of the University of Wisconsin-Parkside to perform the ethnographic resources field studies. Dr. Richard W. Stoffle, Associate Professor of Anthropology at UW-Parkside, is Director of the Applied Urban Field School (AUFS), and submitting officer of this report (see PLATE 6).

The on-campus staff of the AUFS engaged in the present study included:

Mrs. Florence V. Jensen, Research Assistant, Administrative Coordination

Mr. David B. Halmo, Research Assistant, Analysis and writing

Mr. Peter A. Cramer, Research Assistant

Ms. Patricia J. Falduto, Research Assistant

Mr. Joseph Ripp, Research Assistant

The off-campus field staff of the AUFS engaged in the present study includes Director Richard W. Stoffle, and

Dr. Pamela A. Bunte, Assistant Professor of Anthropology, New Mexico State University, linguist-ethnographer (see PLATE 8);

Mr. Steven Boyd, Department of Botany and Plant Sciences, University of California, Riverside, field botanist (see PLATE 9);

Mr. Dan Bulletts, Moccasin, Arizona, Kaibab Paiute cultural consultant-research associate (see PLATES 6, 7, and 10);

Mr. Michael J. Evans, Department of Anthropology, University of Florida, ethnographer-surveyor-ethnohistorian (see PLATE 7);

Mr. Robert Franklin, Department of Anthropology, Indiana University, linguist-ethnographer; and

Mr. Andrew C. Sanders, Herbarium Curator, Department of Botany and Plant Sciences, University of California, Riverside, arid-lands botanist.

The off-campus ethnohistorical field staff of the AUFS engaged in the present study included:

Dr. Henry F. Dobyns, Director, Native American Historical Demography Project (NAHDP), Center for the History of the American Indian (CHAI), The Newberry Library, ethno-historian-editor (see PLATE 11);

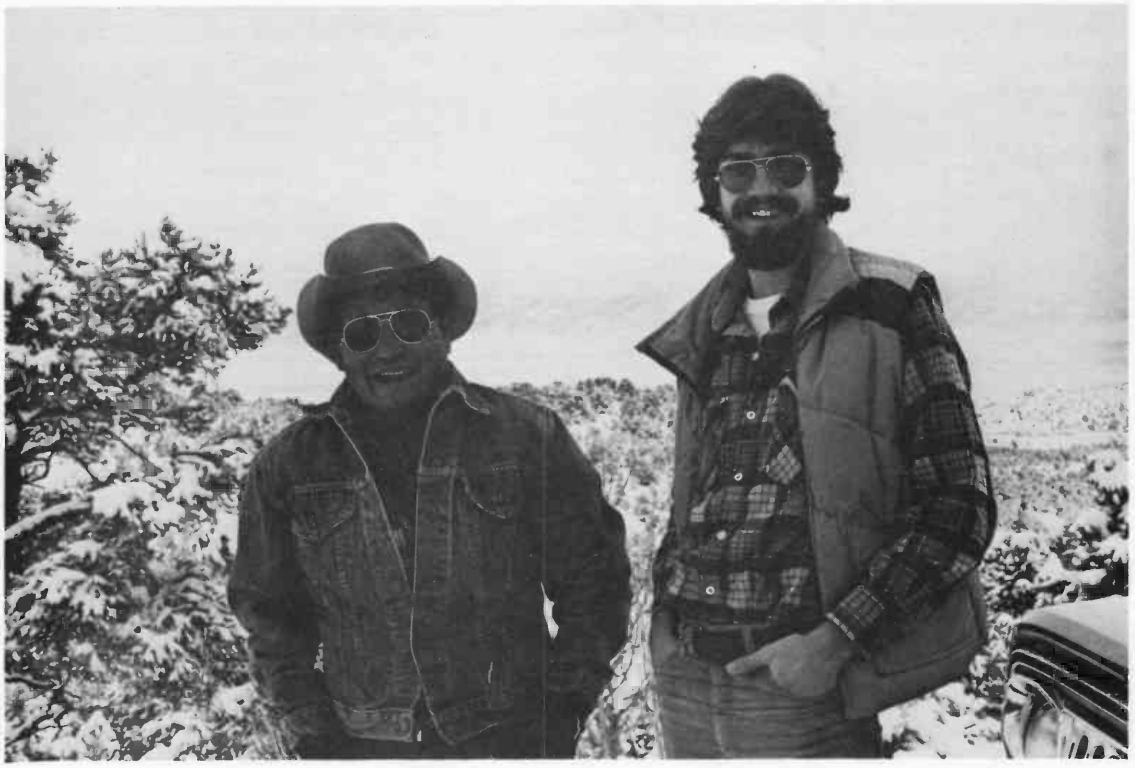
Mr. Alec D. Avery, Department of History, University of Utah, ethnohistorian-research assistant;

Kristine L. Jones, research assistant, NAHDP, CHAI, The Newberry Library , and Department of History, University of Chicago (see PLATE 11);

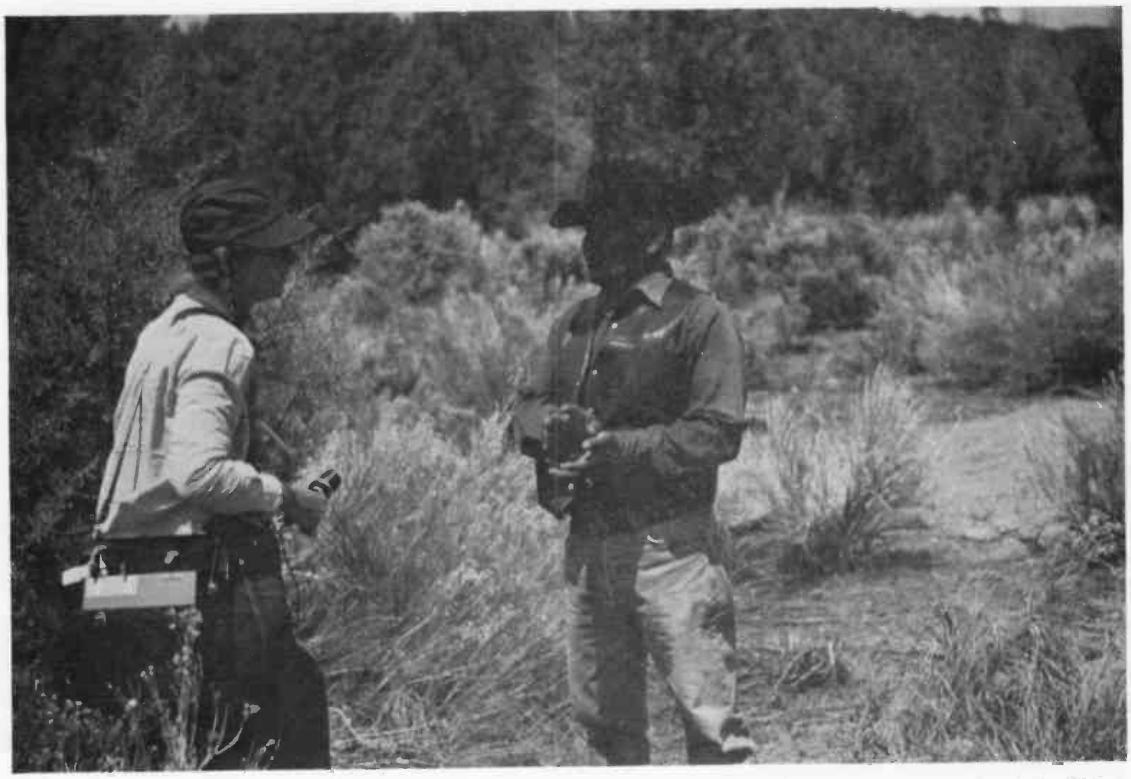
Dr. Omer C. Stewart, Emeritus Professor of Anthropology, University of Colorado, ethnographer-ethnohistory consultant (see PLATE 10)

Ethnographic-Ethnohistorical Analysis. As the ACT/UW-P:AUFS scope of work statement specified, the AUFS staff comprehensively reviewed published literature, mainly anthropological and historical, dealing with Native Americans in westcentral Utah. The staff recovered relevant data from newspaper files and selected archives insofar as proved feasible during the short time available. The AUFS staff reconsidered evidence bearing on boundaries between aboriginal tribal Holy Lands, especially in terms of environmental and land-use pattern characteristics (Stoffle and Dobyns 1982: 63-65). The staff revised earlier questionable interpretations of Pahvant and Southern Paiute settlement patterns and

P-6. Dan Bulletts, Research Associate and Dr. Richard Stoffle, Ethnographer in Mountains on the Way to Goshute Reservation at Ibapah

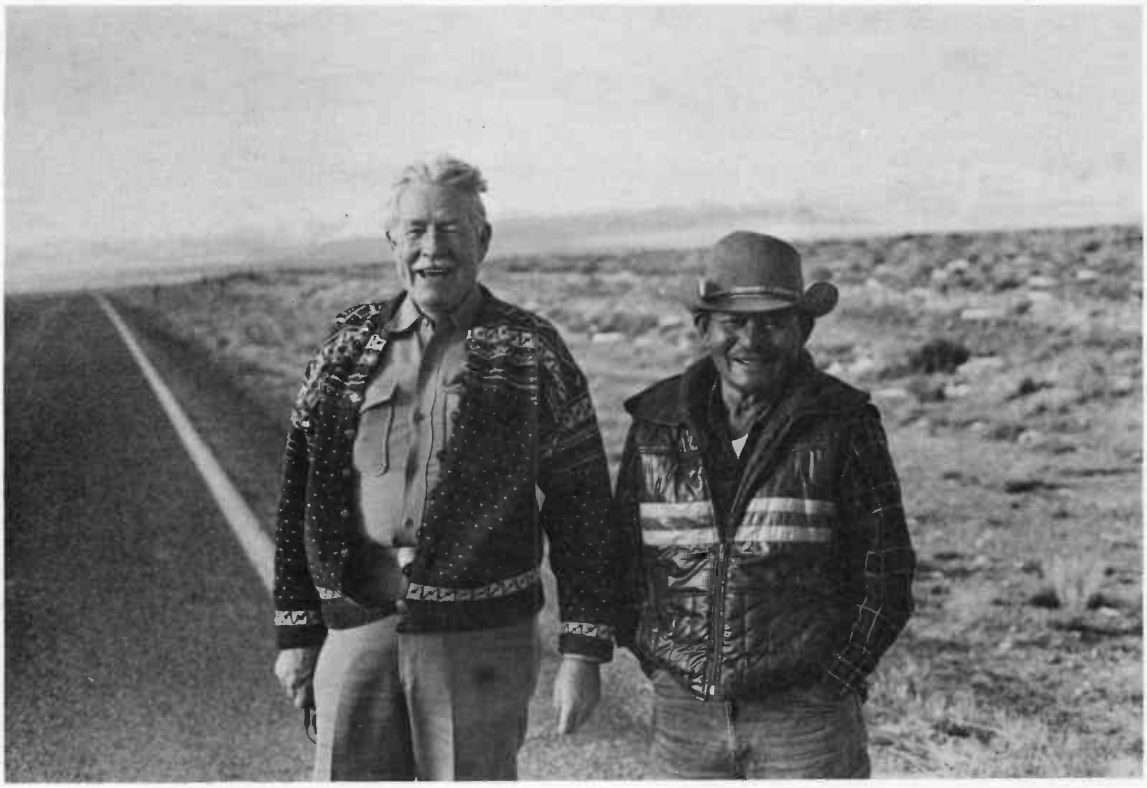


P-7. Dan Bulletts and Mike Evans, Research Assistant, on the Way to Ibapah, Utah



P-8. Dr. Pamela Bunte, Linguist and Ethnographer, Recording the Comments of Clifford Jake, Indian Peak Tribe Religious Leader, at Spring

P-9. Mr. Steven Boyd, Project Botanist, Collecting Plants During Ethnobotanical Visit at Spring



P-10. Dr. Omer Stewart, Ethnographer, and Dan Bulletts Near Lake Sevier on Way to Goshute Reservation

P-11. Dr. Henry F. Dobyns, Ethnohistorian and Kristine Jones, Research Assistant Working at the Newberry Library in Chicago

subsistence technology, particularly the horticultural conversion of solar energy into storable human foods. Archival and newspaper eyewitness accounts proved most useful in accurately reconstructing natural resource exploitation, processing, exchanges and consumption.

In its data collection and analysis, the AUFS staff focused on the all-pervasive religious significance of native flora and fauna at specific places. Native American oral history proved to be crucially important to the identification of sacred spots to which access is protected by federal law. In the present report, an ethnographic-ethnohistorical presentation tries to assess relationships between traditional ways of life, numerous historical changes fostered by Euroamerican colonization and domination, and the essential qualities of contemporary Native American behavior.

Field Studies. Professor Stoffle and Research Associate Bulletts have taken the lead in conducting field studies among Native American groups in Utah and among the Kaibab Paiutes in northern Arizona. The AUFS has cooperated with Native American Official Tribal Contact Representatives (OTCRs) for every enclave who has appointed a project representative. The Uintah-Ouray Reservation government has viewed the IPP right-of-way as too remote to designate an OTCR. Elsewhere, the OTCRs have chosen qualified consultants in each population who voiced ethnic concerns with regard to the proposed IPP right-of-way.

The entire field study staff of AUFS has obtained information about contemporary Southern Paiute, Goshute, and Pahvant Ute uses of their ancestral Holy Lands in Utah. The staff has elicited some information about the significance of ethnographic sites to Native American values in advance of and after detailed archaeological survey of the Utah sector of the IPP right-of-way. Through such procedures field study staff secured considerable specific information about potent IPP impacts.

The OTCRs participating in the present study are (listed alphabetically):

Mr. Earl Baker, Confederated Tribes of the Goshute Reservation;

Mr. Ivan Benn, the Paiute Tribe of Utah;

Ms. Vivienne-Caron Jake, the Kaibab Paiute Tribe.

Report Organization. This report is organized to serve the

needs of several kinds of readers. The initial MANAGEMENT SUMMARY is designed for rapid perusal by the very busy corporate or tribal executive; it also orients other readers to the policy decisions that led to the present study.

The INTRODUCTION to the study very briefly describes the natural setting of the proposed IPP right-of-way, and identifies the Goshute, Southern Paiutes, and Pahvant Utes as the Native American peoples potentially affected by the IPP right-of-way proposed across Utah. It also summarizes the contemporary cultural condition of these Indian people.

The third chapter summarizes the basic social scientific theories that underlie the analysis carried out by the AUFS staff, and outlines the methods of analysis.

A fourth chapter on ETHNOHISTORY evaluates ethnographic and historical evidence of the tribal background, and adjustment to Euroamerican travel and colonization after A. D. 1825. This chapter lays the conceptual and factual groundwork for understanding the Indian cultural heritage values presented in a fifth chapter based on extensive field research.

For reasons explained in the body of the present report, if specific information about sections of the IPP transmission line right-of-way that is especially sensitive to Native Americans is presented, it is placed in a Confidential Appendix. This appendix will not be as widely distributed as will the rest of the report. It is provided to reservation officials and Official Tribal Contact Representatives to enable them to insure the most accurate possible presentation of Native American concerns about the proposed right of way. It is provided to ACT, BLM, and LADWP on much the same basis.

Chapter five presents the concerns of Native American peoples as these concerns have been expressed during public meetings, OTCR training sessions, key person interviews, ethnobotanical on-site visits and official tribal responses. The concerns are divided by official tribal units and each section is subdivided according to the type of responses made.

Chapter six summarizes the general geographical areas of concerns, specific sites within those areas, and mitigation relevant to those sites. Mitigation that is not site specific is only discussed in Chapter V.

CHAPTER III. RESEARCH DESIGN, ASSUMPTIONS, AND ACTIVITY

The present report tries to present information about Native American concerns over possible impacts of IPP Intermountain-Adelanto Bipole I construction and maintenances on their cultural heritage. In general, this report employs everyday terminology in the interest of clarity. On occasion, some words are used in a technical sense, usually a special meaning common in anthropological studies. For example, the word culture does not in this report refer to plays, piano playing and the dance. It is used in its anthropological meaning, referring to those conventional understandings in people's minds that characterize societies and differentiate one society from another (Redfield 1941:132). Thus, a brief discussion of major concepts and theories orienting the present analysis is in order.

THEORY

One conceptual framework basic to the present study is that of the Columbian Exchange (Crosby 1972). Natives of the Old and New Worlds exchanged domesticated plants and animals after 1492, changing the pre-Columbian vegetational landscapes on both sides of the Atlantic. The cultivation of Old World wheat, for example, provided Native Americans in the Southwest with a winter food crop that could potentially double the available food grain supply. The major New World grain, maize, grows only during the summer and is not frost-resistant as is wheat.

Languages, technologies, human beings and their parasites, germs and viruses also crossed the ocean. Consequently, diseases that had evolved in the Old World invaded Native American populations, causing a major demographic catastrophe (Dobyns 1966). Native Americans lacked immunity to Old World pathogens; they also lacked a cultural pattern of nursing sick persons (Joralemon 1982: 112). The pre-Columbian New World population fell from more than 100,000,000 to less than 5 percent of that number during the first century and a half after the Columbian discovery.

The Native American peoples of Utah experienced a nineteenth century repetition of sixteenth century trans-oceanic transmission of Old World diseases. Members of the Church of Jesus Christ of Latter-Day Saints colonized the Great Salt Lake Basin in 1847. This religious movement then had a number of foreign missionaries trying to convert people to Mormonism in Great Britain, Scandinavia, Germany, other European countries, and even in the cities of India. During

the 1850s and 1860s, Mormon missionaries succeeded in making numerous converts in Western Europe. Hundreds of them traveled westward every summer directly from Europe, through Atlantic ports of the United States, across the Great Plains to "Zion" in Utah. Inevitably, some of them carried with them contagious diseases that were endemic in the cities from which they came. Some of those diseases spread from the European immigrants to the Native Americans in Utah. The demographic collapse among Utah native peoples that resulted was rapid and dramatic. LDS Church President Brigham Young (1853:1) described its progress in the fall of 1853: "The Indians in these mountains are continually on the decrease, bands that numbered 150 Warriors when we first came here number not more than 35 now;..."

The demographic change perspective of the present report differentiates it from most of the anthropological and historical literature about the Goshute, Pahvant Utes and Southern Paiutes. A single published paper (Stoffle and Evans 1976) and a companion analysis of the IPP right-of-way in Nevada (Stoffle and Dobyns 1982) have discussed major demographic changes among Southern Paiutes.

This report also springs from a framework of cultural ecology in historic perspective. Not only have most anthropological studies of Utah Native Americans ignored demographic changes, but they have also borrowed the concept of environmental determinism of human cultures from turn-of-the-century geographers (e.g., Steward 1938). The present analysis does not assume that the quite diverse natural environments found within Utah dictated the rather similar pre-colonization cultures of Goshutes, Pahvants and Southern Paiutes. Instead, it presents evidence about some ways in which Utah's native peoples exploited quite different ecological niches (Dobyns 1981). Whenever possible, this report relies on eye-witness descriptions of such cultural adjustments.

Although Utah Native American populations died off in great numbers, a few hundred Southern Paiutes, a few hundred Goshutes, and more Utes survived. Not only have these native enclaves survived biologically, but they have also preserved an impressive amount of knowledge derived from their ancestral cultures. Consequently, the theory of persistent cultural systems (Spicer 1971) is pertinent for describing the historic experiences of Paiutes, Pahvants and Goshutes. These ethnic groups have now lived for many years in a contrasting cultural situation (Spicer 1971:796), as have Yaquis, Iroquois, Jews, Basques and other better known persistent cultural groups.

The current resurgence in Southern Paiute ethnic identity in Utah is a classic instance of successful minority opposition to forced assimilation into national society (Spicer 1971: 797). Legally, the U. S. Congress terminated the special federal trustee relationship to Utah Southern Paiutes nearly 30 years ago, on the premise that these people would assimilate

into Euroamerican society. They did not. As tribal chairman Travis Benioh recently stated the Southern Paiute social position in Utah:

> I can't change my skin color. I'm me regardless...I'm an Indian, identified as being an Indian. And that's what termination was supposed to do, you see, we were supposed to go out there and be like the white man and it never worked and it never will." (Cardall 1982).

Besides their biological heritage, Utah Native Americans preserve their linguistic inheritance. They continue to speak Goshute, Ute and Paiute as well as English (Spicer 1971:798). Whatever the defects in formal instruction a bilingual person may or may not suffer, that individual possesses a perspective on language no monolingual person can gain.

An integral part of Utah Native American cultural persistence is living in a special relationship to the land that no Euroamerican can share. Goshutes, Pahvants and Southern Paiutes are very aware that they live today in their ancestral Holy Lands (Spicer 1957). The Christian Holy Land is a distant abstraction to Christians unless they make a pilgrimage to Jerusalem or other shrines in the Middle East. Southern Paiutes continue to live in their ethnic Holy Land. Actually, the Southern Paiute Language contains a term that translates into English "Sacred Land," but is itself so inherently powerful that it is not used in everyday discourse (Bunte, Boyd and Stoffle field notes). Goshutes still inhabit their ethnic Holy Land. Pahvants have demonstrated their very close attachment to their ethnic Holy Land by stubbornly staying within it and refusing in most instances to migrate to live among eastern Utes on reserved lands.

The contemporary Native American adherence to traditional beliefs at times disconcerts Euroamerican Christians. Some Southern Paiutes still observe traditional ethnic mourning rites and abandon a dwelling in which a person dies (Anderson and Mike 1974:21). Such cultural persistence militates against participating in federal subsidized housing programs. Utah's recently re-recognized Southern Paiutes exhibited their cultural persistence when they selected a 430-acre tract "dotted with Paiute burial grounds" as part of their 15,000 acre reservation to be (Associated Press 1982).

During their historic adjustment to Euroamerican domination, Utah's Native Americans have changed many conventional understandings while preserving others. Their social structure has altered profoundly since pre-colonization times. During the period since 1847, these ethnic groups have lived in the socio-economic structure of domestic colonialism (Thomas 1967). They have become economically and politically dependent peoples dominated by a major colonial power. The transitional years between 1847 and about 1873 transformed earlier tribal chiefs into men without roles in dependent populations. Those years converted band and lineage heads into

labor contractors negotiating the best rates of compensation and working conditions that they could for their labor gangs. The latter lived in ethnically segregated shanty-town satellites of Euroamerican ranches, farm villages and cities. The social structure of those labor gangs closely resembled that of mid-twentieth century migratory ethnic labor gangs of Papagos picking cotton on irrigated neo-plantations in the Sonoran Desert (Dobyns 1951). During the transitional period, however, Utah Native American labor gangs resembled those of turn-of-the-century Argentine Chaco in that geographic mobility was restricted and dominant group employers negotiated with "chiefs" as contractors (Bialet Masse 1968:56, 74, 83). Labor gang children typically had no access to classrooms intended for offspring of members of the dominant ethnic group. They learned, nonetheless, to speak English, wear manufactured clothes and work.

Disheartened by long-continued mortality from Old World diseases and demoralized by the social and economic domination of Euroamericans, many Utah Native Americans joined in a millenarian movement late in the nineteenth century. Participants believed that by dancing and praying properly they could bring deceased relatives back to life along with the game and plants to feed them, and magically waft colonists away (Dobyns and Euler 1967). Anthropologists label such activity a nativistic movement (Linton 1943). After World War II, Goshutes and Southern Paiutes organized to pursue secular economic, social and political goals (Spicer 1971:799). Following 1980 re-recognition of Utah's Southern Paiutes, they have joined in a resurgent nationalism. The current optimistic Southern Paiute organization of pan-reservation associations is easily perceived to be a revitalization movement (Wallace 1956).

The current pan-Southern Paiute political integration drive counters a century of dominant group disintegration of Native American social structure. Each local Utah Native American group now has experienced a century of microhistory. Thus, Deep Creek, Skull Valley, Koosharem, Kanosh, Cedar City, Indian Peak and St. George enclaves have perspectives that differ one from another. Yet, members of these local groups have maintained contact with each other, especially since they have acquired the greater geographic mobility made available by automobiles. Today's Native American leaders in Utah are striving to build social and economic structures that once again unite rather than divide local populations.

THE LEGAL FRAMEWORK OF THE IPP-UTAH PROPOSAL

The proposed IPP right-of-way for Intermountain-Adelanto Bipole I will become a reality only within a framework of legal requirements. Some of these merit brief summation.

NATIVE AMERICAN IMPACT ASSESSMENT ISSUES

A number of federal and state laws and/or regulations call for conducting a study to assess the potential effects of a development project on Native American people and their cultural resources. Such a study, called here a "Native American Impact Assessment" or NAIA, occurs as part of a more comprehensive set of studies called an "Environmental Impact Assessment" or EIA (see journal Environmental Impact Assessment Review). A NAIA may be placed in any one of several sections of the EIA set of studies. For example, a NAIA may be defined (1) as part of the "Cultural Resource Management" or CRM studies where there will be a close relationship with the archaeological research (Dickens and Hill 1978). On other projects, a NAIA may be defined (2) as part of the "Social Impact Assessment" or SIA studies where Indian economic, demographic, and sociological impacts can be discussed with cultural issues and the combination compared with the local non-Indian population (Finsterbusch 1980; Finsterbusch and Wolf 1981; Leistritz and Murdock 1981; see the journal Social Impact Assessment). In still other studies, A NAIA may be given (3) its own category and termed an "Ethnographic" or "Native American Values" study. The present report falls within the latter category. It is, therefore, limited in its scope to a discussion of Native American cultural patterns set within a historic perspective.

The issues of where Native inputs belong in an overall set of EIA studies, or even when Native American inputs should be made a part of the EIA set, are still very much topics of regional and national debate. Thus, many of the procedures and interpretations presented in this chapter belong to a point in the debate rather than being final interpretations of the laws and regulations that influence NAIAs. Despite the currently changing legal milieu within which NAIAs are conducted, most of the following assumptions are widely accepted and some have been published as part of the on-going debate (cf Stoffle, Jake, Evans, and Bunte 1981; Stoffle, Jake, Bunte, and Evans 1982).

FEDERAL REGULATIONS

The federal Congressional Declaration of National Environmental Policy (83 Stat. 852) calls for Native American sacred areas to be studied as potentially impacted cultural and historical resources. The Southern Paiute high level of concern for ancestral graves is readily apparent in the selection of 430-acres in Fish Lake National Forest as part of a reconstituted Utah reservation. While the specific parcel of

land lies well outside the proposed IPP HVTL right-of-way, its value to the Southern Paiutes indicates how concerned these people are about possible graves, other shrines, and even sacred trails within the proposed right-of-way.

The National Historical Preservation Act (80 Stat. 915) also speaks to the need to study Native American cultural resources. It encourages the preservation of objects significant in national history and these include archaeological remains and culturally important locations.

The American Indian Religious Freedom Act of 1978 (92 Stat. 469) legalizes a special status for sacred places, artifacts, animals and plants of Native American peoples. This act guarantees American Indians access to sacred sites, including cemeteries, required in their religion. It also guarantees Native Americans the freedom to use, in practicing their religions, sacred resources and natural species even though the resources may not be controlled by the Indian people.

Final CEQ regulations on the National Environmental Policy Act that the Federal Register (Vol. 32 #230:44978-56007) printed on November 29, 1978, clarify the role appropriate for Indian groups participating in the NEPA process. Section 55989 calls for Indian tribes to receive early knowledge of projects, to be invited to participate in formulating issues, and to participate in the research. It further requires Indians to be invited to comment on report drafts before they become available during the public comment period. Native Americans possess these rights "whenever a project can impact Indian people living on a reservation." The status of off-reservation and non-reservation Native Americans is not specified.

Federal regulations are most pertinent to the proposed IPP right-of-way primarily because most of it traverses federal lands administered by the Bureau of Land Management. The proposed right-of-way does not pass through or over any incorporated towns or cities in Utah. City ordinances do not, therefore, affect the proposed right-of-way.

CONTROL OF INFORMATION

Patterns of control over social impact assessment research data are defined by professional ethics. Often they are specified in contracts although they are rarely specified by law. Anthropologists professionally define their relationship with a person who provides information (termed informant, respondent or consultant) in a manner parallel to attorneys or physicians. That is, information provided by a consultant is treated as private communication and confidential and the consultant is entitled to privacy.

Analyses based upon field notes are prepared for public consideration. These become the property of scholarly journals or of agencies that fund research and analysis. Such public documents are written by the ethnographer so that they meet broad scientific goals while maintaining maximum protection for the privacy of the consultant and his/her people.

Certain ethical standards for producing ethnographic studies of Native American sacred sites have developed over a period of years. These standards have usually been found to be acceptable by tribal councils, public utilities, and government regulatory agencies.

Consultant Anonymity. It is BLM policy that ethnographers identify Native Americans with whom they consult. In order to encourage consultants to speak with relative freedom, however, our policy is to present in a report no more information about a person quoted than is necessary to indicate the kind of authority with which that individual speaks. The study team will provide the BLM, separately from the report, a list of those interviewed, along with the information about group affiliation, age, role and status that the BLM requires.

Site and Area Confidentiality. This report places in a confidential appendix, not for public distribution, information about sacred sites and areas received from Native Americans that is given to us in confidence. This confidential appendix will also be distributed to the tribal councils representing the potentially affected Native Americans.

POTENTIALLY AFFECTED GROUPS

Which Utah Native American groups will potentially be affected by the proposed IPP transmission line? Which Native American groups have the right to comment about resources of the study area? Answering these questions requires defining criteria for recognizing a Native American group as being an occupant of a study area.

Much legislation establishing policies toward Native American resources relies on the term tribe. This is an ambiguous label, but legislatively often refers to an organized group of Native Americans recognized by the Bureau of Indian Affairs and defined as holding rights to lands reserved to the group by the federal government. One key issue involved is the degree of sovereignty a Native American government exercises over group members, territory and its resources (Swagerty 1979). A narrow definition of this type serves Bureau of Indian Affairs (BIA) purposes, but it does not necessarily achieve the goal of assessing Native American cultural heritage. Previous studies of potential impacts of projects

similar to IPP have defined tribe more broadly than the BIA (Bean and Vane 1978, 1979, ERT 1980). For purposes of the present report, tribe is defined operationally as a Native American ethnic enclave--a "persistent cultural system" to use a term introduced by Spicer (1971). The term refers to linguistically and socially distinct Indian groups that may or may not own ancestral lands or be recognized by the BIA.

Native American groups potentially affected by the proposed IPP transmission line are identifiable also in terms of occupancy of the study area. There are at least two methods of identifying them. One conception of occupancy is historical; it perceives occupancy as having occurred when Euroamericans first contacted ancestors of the contemporary ethnic enclave. This perception frequently is expressed in the terms "aboriginal inhabitant" and "traditional territory." A second conception of occupancy is quantitative; it perceives occupancy as a function of what portion of the year an ethnic group lives in a particular area. Both of these conceptions infer that residence in the study area was significant enough for Native Americans to incorporate features within it into their cultural self definition. A third function and perhaps most significant to the nature of potentially affected resources is the current utilization of an area or the perceived desire to utilize an area related, of course, to religious practices.

INDIAN GROUPS POTENTIALLY AFFECTED BY IPP-UTAH

Sevier Lake, with its abundance of saline marshes that supported large flocks of seasonal waterfowl, salt-tolerant fish species, and grew large tracts of "honey-dew" exuding rushes and other water plants with edible roots, attracted Native Americans for centuries prior to Euroamerican colonization. During the eighteenth and nineteenth centuries, Lake Sevier appears to have been the common meeting-ground of the three Indian groups discussed in this report. Euroamerican colonization in this area in the middle of the nineteenth century quickly disrupted traditional Native American life-ways and inter-group relationships.

All of the changes in Native American life that occurred during the nineteenth century make it extremely difficult for professional ethnographers to recover accurate information about pre-colonization ethnic territories and boundaries. Ethnography emerged as a social science in the United States relatively late in the nineteenth century, and trained ethnographers began research among the native peoples of southwestern Utah only in the twentieth century. By that time, most Native Americans in the area had lived all or most of their lives in labor gangs, in economic poverty, socially segregated from Euroamericans, forced to learn enough English to negotiate for jobs and carry them out but excluded from

nearly all Euroamerican activities including education. Only the very oldest individuals remembered pre-colonization times, and they were very few in number because of high mortality caused by Old World diseases. Native American oral history was, therefore, greatly attenuated by the time professional ethnographic research began.

The earliest ethnographic research among the peoples of southwestern Utah concentrated, moreover, on linguistics and what is often considered folklore. That is, extensive texts of oral literature were elicited and recorded.

Not suprisingly, therefore, the ethnographic record of the native peoples of southwestern Utah is not as full as one could wish. The great bulk of the previous research was carried out in pursuit of scholarly goals different from those of the present study. Consequently, many data available simply are not relevant to the present analysis. There are lacunae in both data and interpretations, some of which will necessarily be dealt with in the present study. These precautionary remarks in no way criticize the professional ethnographers who have studied the native peoples of southwestern Utah. For they have been so few in number that their published findings are actually quite astonishingly voluminous. While a number of scholars have contributed relatively brief studies, the major corpus of ethnography has been supplied by Robert H. Lowie, Julian H. Steward, Isabel T. Kelly, Carling Malouf and Omer C. Stewart, building on the early investigations of John Wesley Powell, a government administrator-geographer who was not a trained ethnographer. In recent years, Don. D. Fowler, Catherine Fowler and Robert C. Euler have modified ethnographic interpretations by relatively sophisticated ethnohistorical research. The Fowlers have rescued much of the unpublished writing of Powell from archives.

When possible, the present study relies on published ehthnohistorical findings, and secondarily on ethnographic interpretations. When these are inadequate or innaccurate, the present analysis attempts to rely upon eyewitness accounts of Native American behavior.

GOSHUTE

Discussion of the Native American groups with a valid interest in the possible impact of the proposed IPP transmission line on their cultural heritages starts with former Lake Sevier as the focal zone. The presentation begins at the north tip of the lake, the 12 o'clock position on a traditional clock face (see Map 2: inside back cover). The Goshute people of west-central Utah ranged south to the northern tip of Lake Sevier and the north bank of the lower Sevier River. Consequently, traditional and contempory Goshute

cultural interests are involved in that portion of the right-of-way north of Sevier River. The IPP generating plant site is located within aboriginal Goshute territory.

The primary range of the Goshute people lay well to the north of the lower Sevier River region. The Goshutes lived mainly, it seems, along Deep Creek and in Tooele Valley. They were extensively impacted by early Mormon colonization, especially in Tooele County. They also were impacted by the Pony Express Mail Route across central Utah to central Nevada and California. When the mail service was established, with several relay stations along the route, the goods stores and livestock at the stations became tempting targets for Goshute economic raids. Thus, Goshute attention was diverted from the Lake Sevier-Sevier River region. Nonetheless, Goshutes continued to go there, camping north of the river and interacting with Pahvant Utes south of the stream (Gardner 1955:379).

PAHVANT UTES

South of the lower Sevier River and east of Lake Sevier lived the Pahvant Ute people. Only the riverine oasis and the Western slopes of the Pahvant Mountains were suitable for Native American habitation. Pahvant Utes lived in villages located in both riverine and mountainous habitats. Ethnographers have considered most of their resources to have been at higher elevations farther east, but that Pahvants did cross the lower deserts "for special purposes." They have expressed uncertainty as to how far south Pahvant villages existed (Steward 1974:53).

The fish-waterfowl-reed resources of Lake Sevier were sufficient to attract Pahvants. The eastern shore of that body of water can be considered the effective mid-nineteenth century western frontier of Pahvant land-use. At least one twentieth century Pahvant claimed former villages at Kanosh and Black Rock (Steward 1974:54). Whether a Pahvant division actually wintered at Black Rock prior to Mormon colonization is a difficult question to resolve. That area was on the frontier between Pahvants and Southern Paiutes, and their traditional relationship appears to have been amicable, so that their land use probably overlapped at Sevier Lake and Beaver River.

SOUTHERN PAIUTE

The proposed IPP right-of-way in Utah will cross aboriginal Southern Paiute territory from a point approximately at the southern tip of former Lake Sevier to the Nevada state border. The Southern Paiute economy differed markedly from that of the

Goshutes and Pahvant Utes. Most ethnographic studies have classified both Goshutes and Pahvants as fishing-hunting-gathering peoples. While there has been some tendency to classify some or most Southern Paiutes the same way, there is general recognition that at least some engaged in irrigated horticultural food production.

The difference between horticultural and non-horticultural Native Americans was sufficient to warrant considering the Southern Paiutes as forming part of the Rancherian Culture Area stretching northward from the frontiers of civilized Mesoamerica to the northern frontier of Southern Paiute country (Dobyns and Euler 1980). The importance of horticultural activity for Southern Paiutes, and the distribution of irrigable fields along the riverine oases of the streams comprising the Virgin River system turned Southern Paiutes markedly southward. Not only did Southern Paiutes, mostly if not all, garden somewhere in the riverine oases, but those who ranged to the northern frontier tended to spend their winters in the relative warmth of the river valleys at much lower elevations. The summer-winter concentration of Southern Paiute population meant a spring-fall primary utilization of the higher altitude territory toward and on the northern frontier. This southward orientation and cultural interest in horticulture helps to make Southern Paiute oral history of land use along the northern border difficult to obtain. Once the Mormons set up their base in Great Salt Lake Valley, they expanded rapidly southward to Utah Lake, along parts of Sevier River, upper Beaver River, and to the Ash Creek and Santa Clara Creek tributaries of the Virgin River en route to the main stream. Since the disruption of Native American settlement and land use patterns occurred during the 1850s, probably no living Native American interviewed by the 1930s had experienced pre-colonization aboriginal life-ways. The oral history of labor gang members has limited validity for reconstructing the pre-colonization frontier.

On environmental grounds, therefore, and taking into account the fact that fish constituted a dietary staple and that waterfowl were important sources of meat and relatively easily taken in salt marshes, the present study places the northern frontier of Southern Paiute territory at the south end of former Lake Sevier. In the 1930s, surviving Southern Paiutes claimed that their tribal territory had extended to just south of Lake Sevier and a line between Dog Valley and Cove Creek on the western slope of the Tushar Mountains. A Pahvant claimed a frontier from a line between Pine Creek farther south and Cove Creek to the northern tip of the Mineral Mountains to the south end of the Beaver Mountains and westward south of Lake Sevier (Kelly 1934:553n.9).

At issue are essentially Cove Creek and Black Rock Spring. Given the fundamental importance of water and the resources concentrated where water flowed on the surface, the slightly

overlapping Pahvant and Southern Paiute descriptions may best be interpreted as defining Cove Creek as the actual frontier prior to Euroamerican colonization. Goshutes and Pahvants seem to have formally recognized the lower Sevier River as their mutual river-defined boundary farther north. That is to say that each group encamped on its own side of the stream, although individuals visited back and forth across it to participate in dances and exchange commodities. Cove Creek was a far lesser barrier to travel, so that land use by both Pahvant and Southern Paiutes no doubt overlapped. In post-colonization times Southern Paiutes and Pahvants have intermarried to a considerable extent, and there are many reasons to think that they did so prior to Euroamerican invasion. Thus, there is little reason to suppose that the Pahvant-Southern Paiute interethnic boundary was a hostile borderland that either group felt impelled to defend. Rather, it was a zone of overlapping resource exploitation by friendly peoples who intermarried. The distribution of water sources more or less required that Southern Paiutes who utilized the area go all the way to Cove Creek and the marshy edge of Lake Sevier. From Cove Creek south, then, the proposed IPP right-of-way traverses aboriginal Southern Paiute terrain.

SACRED SITES AND RESOURCES

Any NAIA report must come to grips with a definition of what Native American sacred cultural resources are and how they are to be determined. Since the passage of the American Indian Religious Freedom Act there has been a major attempt to specify how this law is to be translated into specific United States government agency regulations. A Federal Agencies Task Force (1979), in consultation with Native American traditional religious leaders, has summarized the thoughts of numerous interest groups regarding what are Native American sacred cultural resources and how they should be protected. Already this report has stimulated great controversy (see White 1980), and recent articles (Arnold 1980, Rosen 1980, and Winter 1980) suggest that the argument will continue. Also worthy of attention is the recent U. S. District Court case in which Judge Richey ruled against the Hopi Tribe and the Navajo Medicinemen's Association's joint request to limit the expansion of a ski facility on the sacred San Francisco Peaks (Hopi Indian Tribe v. John R. Block 1981).

For any specific NAIA it is necessary to find a middle ground in the definition of these resources that will be acceptable to most of the interest groups who have expressed their opinion on the issue. The following assumptions have been established by comparative studies of religion and are generally acceptable to Native American leaders, federal agencies such as the Bureau of Land Management, major

corporations, and professional anthropologists. It is assumed that human groups vary in the degree to which they define portions of their society, culture, and material resources as sacred rather than secular. It is also assumed that when compared with many other ethnic groups in contemporary United States society, Native Americans generally define more of their social, cultural, and material resources as sacred. It is assumed that among sacred resources or sociocultural patterns some can be more important than others and that this relative importance can be changed over time by group consensus. Inasmuch as the sacredness of these resources can and does change through time, it is assumed that no NAIA of Native American sacred resources is complete without consulting with the potentially impacted group. Therefore, a Native group can define as sacred a wide range of resources--from the food they eat, to the places they once lived, to the trails they once traveled upon--and only they can make such a determination.

The assumptions help place in perspective apparently conflicting responses regarding potential impacts on sacred resources. So, for example, a Native American person can say, without the statements being in mutual conflict, that all of the land is sacred and that a specific area is clear of sacred resources and will not be harmed by construction. In the first case the response is to the general idea of having the development occur at all, while the latter is a conditional response which means that given the project goes ahead a particular area has the fewest cultural resources.

ETHNOGRAPHIC RESOURCES POTENTIALLY IMPACTED BY IPP-UTAH

Southern Paiute, Goshute, and Pahvant Ute peoples have occupied the desert land of the study area for more than a thousand years. Some scholars have viewed their presence in this harsh land as a sign that they were a people dominated by their environment and by their more powerful neighbors. From such a perspective, the plants and animals of the desert are natural elements of the environment and not the product of human activity. In contrast to this view, recent research suggests that Indian peoples significantly managed and therefore modified their environment (cf. Kehoe 1981; Stoffle and Evans 1976; Stoffle, Jake, Evans, and Bunte 1981). Instead of being dominated by the desert, they learned to "husband its resources"; these Indian peoples consciously adjusted plants and animals to the many desert micro-environments. By prudently and economically managing these "natural" resources, Indian peoples assured their own continued survival and population expansion in the desert. A knowledge of plant genetics is suggested by this research as a major "cultural focus" (Anderson 1956, Shipek 1970, 1981). Over thousands of years of "husbanding" the environment, these people in effect

made many of the plants, animals, and places of the desert human artifacts.

In order to maximize available resources, Indian people developed an "adaptive strategy" (Bennett 1976:273) involving seasonal movement in pursuit of the total spectrum of flora and fauna in the environment as well as cultivation of crops by flood plain, oasis, and riverine irrigation and dryland techniques. This wide-ranging semisedentary adaptation had been termed a "transhumant adaptive strategy" (Stoffle and Evans 1976:6). Our research suggests that this strategy, when combined with plant and animal husbandry, produced an environmental "carrying capacity" that actually exceeded that carrying capacity produced by Euroamerican strategies of full time farming and/or ranching. The transhumant adaptive strategy effectively utilized extensive desert tracts and supported denser populations than those previously estimated by Steward (1938). These data will be discussed in detail in Chapter IV.

Although it is impossible to ascertain the total range of natural food sources actually utilized by these Indian people we can proceed toward an estimate by listing (1) those foods these people claim to have utilized, (2) foods that Euroamericans observed Indian people utilizing, and (3) foods present in the area and known to have been utilized by neighboring Native Americans. Our ethnohistorical investigations of Southern Paiute ethnobotany indicates that they utilized 64 families of flora encompassing at least 170 species of edible plants (Stoffle and Dobyns 1982). These food sources ranged from cacti to grasses, to berries, to trees such as pinyon and juniper. Leaves, stalks, bark, fruit, roots, and any other edible portion of these plants was utilized (Palmer 1878; Kelly 1964; Woodbury 1965). The list would be greatly expanded were it to include an equally impressive array of medicinal plants that often have nutritional value.

In similar fashion, these Indian people utilized most of the varieties of fauna found within their territory (Kelly 1964;47-55). Hoofed animals utilized included bighorn sheep, antelope, mule deer and elk. Rodents eaten included cottontail rabbit, chipmunk, deermouse, muskrat, rat, beaver and porcupine. Carnivores included mountain lion and bobcat. Birds of many varieties were taken from specially constructed hunting blinds. Reptiles including snakes and lizards were frequently eaten. Insects consumed included locusts, green caterpillars and ants. Euroamericans commented at great length on the fact that no portion of the area's fauna from ants to deer was overlooked as a food source. The pattern of total fauna utilization was extended to Euroamerican animals such as horses, cattle, sheep and donkeys when these were brought into the area, much to the consternation of the Euroamericans.

Most of these Indian people were not merely effective consumers and keepers of natural foods, but also planted irrigated gardens of maize, beans and squash near permanent water sources. Although it has been suggested by some researchers that even the Southern Paiutes for example were non-cultivators (Kelly 1964:36), such a position is not supported by historic and archaeological evidence. An early Spanish explorer, Escalante, in 1776 described the Southern Paiutes as cultivating the irrigable lands within their territory (Euler 1966:33). The Mormon explorer, John D. Lee, in 1852 observed Paiutes in the Santa Clara River Valley cultivating 100 acres of corn and squashes (Woodbury 1944:140). A few days later, in the narrow but fertile stream bottoms of the Virgin River at the edge of, or possibly in, Kaibab Paiute territory, Lee again observed that; "Their corn was waist high; squashes, beans, potatoes, etc. look well. They had in cultivation four or five acres; their wheat had got ripe and was out" (Woodbury 1944:143). When Euroamericans first traveled down the Colorado River, past Southern Paiute teritory, they found small fields of maize planted along the river (Powell 1957:100). Powell stated that all of the Southern Paiutes cultivated the soil prior to settlement of the area by Euroamericans (Powell and Ingalls 1874:53).

In summary, it has been necessary to provide an alternate explanatory frame of reference in order to understand the inclusiveness and emotional intensity of Goshute, Pahvant Ute, and Paiute expressed concerns over resources that Euroamericans normally define as "a part of nature." During the Allen-Warner Valley study (Bean and Vane 1979), for example, Las Vegas Paiutes repeatedly mentioned a concern that power line access roads would result in the killing of small mammals and reptiles. The desert tortoise was singled out as a common example of an animal that would be harmed. Indian people discussed at length examples of times when they had stopped cars on busy interstate highways in order to save a tortoise from harm. Such paternalistic statements may seem insincere exaggerations until they are viewed as role components associated with desert animal husbandry. Similar paternalistic statements emerged regarding the relationship between Indian people and their plants.

The most widely recognized type of Native American cultural resources are physical artifacts such as home sites, grinding stones, mortar depressions, arrowheads, petroglyphs and pictographs. These are found throughout the study area. Less widely recognized but nonetheless critical cultural resources are Native American trails, places where events of historic or cultural importance occur, and places of religious importance. While the trail is itself a physical artifact, it and the other places of cultural significance may not be associated with archaeological features. Their locations and importance, therefore, can be determined only by interviews with Native

American people. Finally, great concern has been expressed over the potential impacts on Indian burials.

NATIVE AMERICAN REPRESENTATIVES

Another basic question to be answered is what is an appropriate or representative response from a Native American group? When a group is organized and recognized by the Bureau of Indian Affairs, the first level of contact by the NAIA researcher is the tribal chairman and council. Depending on the size of the tribe and the degree of concern over the proposed development, the council will either make an official response regarding the project or they will specify an appropriate committee to make a response. A much more complex situation exists when the Native American group is not officially recognized and may, therefore, not have a spokesperson who is empowered to speak for all the group. For example, one of the least organized and recognized Southern Paiute groups is the so-called "San Juan Paiutes," who are composed of the Willow Springs and Navajo Mountain groups. An undetermined number of these people (perhaps 300) define themselves as Southern Paiute, continue to speak the Paiute language, follow many traditional Paiute cultural ways, and live on lands that are officially designated as a portion of the Navajo Reservation. Although these people are territorially and politically incorporated by the Navajo Nation, they recently expressed the desire to be considered in NAIA reports as a separate and culturally distinct group. Their spokesperson's status is based on informal group consensus.

The Pahrump Paiute Band of Nevada constitute a similar case. Like the Willow Springs Band, the Pahrump Paiutes were recognized in the early ethnographic literature on Southern Paiutes but the U. S. Government failed to convey on them tribal status or assign traditional territory to them. Despite a lack of official U. S. Government recognition, the Pahrump Paiutes still attempt to function as an independent band whenever it is appropriate. They agreed during the Allen-Warner Valley regional planning study to have their views generally combined with the Las Vegas Paiutes but noted that they would probably speak as a separate group when and if site-specific proposals were made. They have an elected council and chairman.

In addition to establishing who the appropriate official contact person is for a Native American group, there still remains the question of how to elicit the most complete and representative response to the potential development project. This is an issue that must be carefully negotiatied with the group's contact person, who must understand the project and the

type of impact study being conducted. The Bureau of Land Management, for example, has three classes of studies ranging from regional planning, to problem-specific, to site-specific research. In addition to understanding the nature of the research, working with the official contact person is especially sensitive when the tribal government is not viewed as representative of all groups within the society.

Beyond the official contact level, there are three broad types of Native American expert consultants and each will probably provide a different perspective on the group's sacred resources. These are (1) traditional religious practitioners, (2) group members selected at random, and (3) persons who have the most direct contact with the potentially impacted portions of the study area. Traditional religious practitioners have specialized knowledge of religious practice, religious materials, and religious locales that most persons in the group will not have. A random selection of group members, usually divided by age, sex, and whether residing on or off the reservation, will help specify the range of knowledge about and the diversity of concerns for sacred resources. Finally, consulting with persons who actually live within the study area or have lived there in recent times often provides the greatest detail regarding the presence and distribution of resources.

EVIDENCE VALIDITY

The information contained within any report such as this one must be supported by as much evidence as possible. Inasmuch as a great majority of Native American sacred cultural resources exist on or are a part of lands no longer owned by them, it is often necessary to specify why a Native American person or group has a right to express concerns over the disposition of study-area resources. The major means of validating the right to make a response and determining the quality of the expressed concerns involves ethnohistory. An ethnohistorical methodology uses multiple data sources such as archaeology, documents, and oral history to "triangulate" research findings to help assure their accuracy. Ethnographic comparisons with living peoples or with contemporaries for whom more data are available serve further to validate ethnohistorical findings.

Oral history is a cornerstone of the ethnohistorical method. It generally is accepted as valid evidence by professional ethnohistorians who have used such data as testimony in Indian Land Claims Commission legal court actions since the early 1950s (Dobyns 1978). After (and sometimes during) such hearings, these findings are presented for academic scrutiny through publication in professional journals such as Ethnohistory.

Survey data are extremely useful, for they allow more group members to be reached and permit quantification of responses. The methodology and its resulting findings are widely accepted by non-social scientists who frequently serve as administrators of proposed development projects and regulatory agencies. The difficulty of conducting a survey as part of a Native American Impace Assessment stems from the limited time allowed by a typical project and the general distrust of surveys by Native Americans. To help resolve the first difficulty, Finsterbusch (1977:291) suggests the use of mini-surveys. In order to increase the reliability of these surveys, categories that are used to form the survey questions should be generated from interviews with key informants from the population to be surveyed. These expert judgments can later be compared with the mini-survey findings (see Stoffle, Jake, Evans and Bunte 1981).

ETHNOHISTORY

This report presents an ethnohistory of the Southern Paiute, Goshute, and Pahvant Ute peoples between the Spanish colonial period in the Southwest, and particulary 1776, and 1982. The ethnohistorical chapter provides an historical narrative that identifies major dynamics of cultural and demographic change among these Indian peoples. It constitutes ethnic history insofar as it focuses upon the Indian ethnic group. Influenced by earlier scholarly publications dealing with these Indian groups, the authors initially anticipated that the ethnohistorical section of the present study would be simply ethnic history. In the course of research, and analysis of first-hand accounts of Indian individuals and group behavior at different times, the authors recognized that rather convincing evidence exists that prior to Euroamerican colonizaton in their territory, at least the Southern Paiute people constituted an organized tribe. The social boundaries of the ethnic unit meaningful to Southern Paiutes were larger than has been assumed by scholars. Common speech and many identical cultural traits linked Southern Paiutes with Utes. Southern Paiutes and Utes were separated, however, by (1) the strong fear the former acquired of the power of Ute sorcerers, (2) the nineteenth century acquisition of horses and adoption of raiding band organization by certain Ute groups, (3) intermingled resource exploitation in the same key oases by various Southern Paiute camps, and (4) the influence upon all Southern Paiutes of a small cadre of High Chiefs, including one Head Chief at any given moment, viewed as sacred personages by other Southern Paiutes.

The leadership of the High Chiefs among the Southern Paiutes appears to have been more ritual than political far more admonitory than authoritarian. Paradoxically, the non-political, sacred nature of Southern Paiute chieftainship made it all the more powerful in ways difficult for Euroamericans to understand. Euroamericans in the United States are accustomed to secular government by authorities who tolerate organized religious denominations, and require their

members to tolerate one another. Such a form of human relationships was utterly foreign to the thoughts of pre-colonization Southern Paiutes. They perceived their sacred High Chiefs as linking human beings to the supernatural, to the Scriptural Beings who created the Earth and the animals, plants and people who inhabited it. They lived in a social order and economic system almost completely within or colored by what Euroamericans compartmentalize as "religion."

In tracing the social and conceptual revolution in Southern Paiute, Goshute and Pahvant Ute people that transformed their pre-colonization world into accomodation with Euroamericans in the twentieth century, the ethnohistorical chapter relies heavily on eyewitness accounts. That is to say that the authors have chosen to rely more on one of two major methodological thrusts in ethnohistorical analysis than the other. Both are employed. For example, when knowledge of the Southern Paiute versions of the Numic language helps interpret information recorded at some earlier time, that knowledge obtained by interviewing contemporary Southern Paiutes is brought to bear on the analysis. So are oral histories collected in the course of the research conducted in order to prepare this report. Reviewing the documentary sources of information about changes in Indian behavior and culture and demographics made clear that Indian society was radically altered during the half century between 1825 and 1875. Indian people who survived in 1875 had had to dramatically change their culture, and to abandon traditional fundamental postulates about the relationships between human beings, the environment and supernatural. Surviving Indian people had had to change drastically partly because they were very few in number compared to tribal strength in 1852. Euroamerican colonization in west-central Utah transmitted numerous lethal contagious diseases that caused Indian numbers to "melt away." Demographically, Old World diseases decimated these Indian people between 1825 and 1875, and depopulation did not stop then.

One cultural consequence of depopulation was simply that many specialists and sacred leaders perished before they could pass their abundant and specialized knowledge on to their descendants or other trainees. Thus, an unknown store of detailed Indian Scripture, knowledge about animals and plants, horticultural techniques, ritual, kinship relationships, etc., was forever lost when the minds which carried it died. The demographic disaster experienced by these Indian peoples dictated the methodological reliance on first-person descriptions of behavior during the initial years of inter-group contact and conflict. The loss of information that occurred during depopulation was so great that a scholar can to only a limited extent depend upon contemporary Native American statements to accurately portray events and more especially relationships in a tribal society of a scale that no one has seen functioning for a century and a half.

The main ethnohistorical methodology employed in the present study, therefore, relies wherever possible on eyewitness reports of Indian behavior. Every analytical effort has been made to take into account the biases inherent in various kinds of observers. Reports have been interpreted in terms of known patterns of behavior of other Native Americans in the Rancherian Culture Area, without burdening this study with comparative discussions. Reports of historic Indian behavior have been interpreted, in addition, in the light of general social science knowledge about the nature of intergroup relations between a dominant and subordinate ethnic group.

RESEARCH TASKS

PROJECT INITIATION

On January 19, 1982, ACT project managers notified Principal Investigator Stoffle of the ethnographic study to be undertaken pertaining to the proposed Utah section of the IPP Intermountain-Adelanto Bipole I transmission line right-of-way. The schedule of this study was to overlap with the completion of ethnographic research for the Nevada Section (Stoffle and Dobyns 1982). The UW-P:AUFS staff spent the first eight days of February completing a budget proposal for submittal to ACT. The authorization to proceed became official in the form of a subconsultant agreement and work scope/plan dated February 12, 1982. The official project start-up date was February 15, 1982.

ESTABLISHMENT OF NATIVE AMERICAN COMMUNICATION NETWORK

The first task of the research team was to establish a formal communication linkage with an official representative of every potentially impacted Native American group. This two way communication linkage is called the Native American Communication Network (NACN).

Initial phone contact was made on February 17th. That contact introduced the project and included a request for the tribal chairmen to appoint an Official Tribal Contact Representative (OTCR) to work with the study team. The list of tribal chairmen contacted were:

Travis Benioh, Chairman, Paiute Tribe of Utah

Dan Murphy, Chairman, Confederated Tribes of the Goshute Reservation

Burt Wash, Chairman, Skull Valley Goshute Indian Tribe

Homey Secakuku, Chairman, Uintah-Ouray Ute Indian Tribe

Bill Tom, Chairman, Kaibab Paiute Tribe

Formal written notification of the IPP-Utah Ethnographic studies was sent to each tribal chairman by ACT on February 23rd (see Appendix A).

In order to obtain full Native American participation, reduce miscommunication and strengthen the research process, an Official Tribal Contact Representative (OTCR) from each group was hired for the duration of the project. This representative was selected by the tribal chairman and/or tribal council. Meetings were planned which would involve the principal investigator and each of these project representatives. At these meetings each representative would have the opportunity to learn in detail about the project and to have any questions answered. After returning to the reservation each representative was to be the major link in the NACN although other members of the tribe were also included in this network at the request of the tribal chairman or council. It was the responsibility of the OTCR to handle questions as they arose on the reservation, to set up the official meetings with the tribal chairman and/or council, to arrange for individual interviews with key Indian consultants, and to review and help formulate an official comment on the preliminary report.

The Native American Communication Network established and maintained two-way communication from project inception. The concept of a NACN was developed during the year-long Kaiparowits Coal Development and Transportation Study (cf. ERT 1980). The concept was then refined and incorporated into the Nevada section of the present Intermountain Power Project (cf. Stoffle and Dobyns 1982). In both cases the NACN proved successful in providing potentially impacted groups with the time and necessary information for making an appropriate response to the projects and their reports.

LITERATURE SEARCH, ANNOTATION, AND ASSESSMENT

A second task was to write the ethnohistory section of the report based on documents. Much of the basic literature regarding the potentially impacted Native American peoples was already available in research team files. These files exist due to previous studies dating back to the U. S. Indian Land Claims Commission cases, due to members of the research team having made a long-term professional commitment to the study of these peoples, and due to previous research projects in the area.

Extant research team files did not of course contain all relevant documents relating to the IPP. However, they provided the first stage of literature review. This helped determine what data were missing.

The second stage of the literature search involved personal visits to nationally recognized collections of Native American materials located at the Newberry Library, and computerized information searches. The former yielded original documents while the latter helped the study team access recent books and articles on the area.

A third stage of the literature search was to request the services of two persons as ethnography-history consultants. Dr. Omer C. Stewart and Mr. Alec Avery were commissioned to aid in the ethnographic-ethnohistorical portion of the literature search. Dr. Stewart, Emeritus Professor of Anthropology at the University of Colorado, had spent many years studying Native American peoples in the study area. He searched his personal data files consisting of many original documents and contributed a discussion of potentially impacted Indian groups in Utah, sections on their ethnography, geography, ethnohistory, and plant and animal use. Avery, a graduate student in history at the University of Utah, conducted archival research on the history of the study area. Both recommended additional sources to be consulted during the course of the literature search phase. These two consultants complemented the research of principal project ethnohistorian Dobyns, as did his assistant at the Newberry Library, Kristine L. Jones.

A common annotation style and composition was agreed upon at the beginning of the project. Throughout this process of searching and annotating relevant literature, an assessment of its quality and potential uses were made by the study team.

IN-FIELD ETHNOGRAPHIC INTERVIEWING

The purpose of in-field work was to provide Native Americans with special settings in which they could discuss the project and provide various types of feedback. During the development of the NACN the need for establishing an OTCR to work with the study team was discussed with each tribal chairman. During those phone calls, the tentative project schedule was discussed and a request for one or more on-reservation meetings was made. Previous experience had suggested that it was best to separate the chairman/council meeting from the public tribal meeting. Structuring these initial group meetings was the responsibilility of the OTCR and the principal investigator. The timing of these meetings, however, was carefully negotiated so that the field work could be completed within the time and financial resources set by the

ACT/UW-P contract. After the public tribal meeting(s), individual meetings occurred with (1) Native Americans who have lived in directly impacted portions of the study area, and (2) Native American religious specialists and /or traditional leaders.

Throughout the field work period, the study team's Native American research associate, Mr. Dan Bulletts, was in attendance at public meetings and at as many of the individual meetings as time and travel distance would allow. His presence permitted conversations to occur in the native language between study team members and the audience. If he could not attend a meeting, Dr. Pamela Bunte was asked to serve in the capacity of translator.

Given that this is site-specific impact assessment, on-site visits were conducted. The entire route was not traversed by truck or car. Instead, key locales were visited. Each visit included a linguist and/or the Native American research associate and a person from a Native American group who was recognized as knowledgeable about the area.

After direct interviewing was completed, key issues were formed into an easily read mini-survey (see Appendix D). This survey was developed with the assistance of the project's Native American research associate and the official tribal project representatives. The mini-survey concept was first proposed by Kurt Finsterbush (1977). Its first known use in a NAIA was by Evans and Stoffle during the Chemehuevi section of the Devers-Palo Verde study (Bean and Vane 1978). It was later refined in the Allen-Warner Valley report to include a scaling of cultural resources (see Stoffle, Jake, Evans, and Bunte 1981). The results of this survey will appear in the Chapter V.

SPRING ETHNOBOTANICAL ON-SITE VISIT

Previous NAIA research conducted by the authors of this report documented expressions of strong concerns over the desert flora that make essential contributions to Southern Paiute, Goshute, and Pahvant Ute nutrition, health, and religion. During the Kaiparowits study, on-site visits provided a richness of detail not achieved in previous studies. These visits occurred in the early spring when numerous plants are gathered by Indian people. Because many valuable plants do not appear above the surface in winter, their presence in the IPP-Utah study area would be difficult to determine without a spring on-site visit. The Kaiparowits experience pointed out a further advantage of having growing plants, Native American plant specialist, linguist, and ethnographer together at one time. Such a combination produced the first combinations of exact location, specific usage, scientific name, and Indian name ever to appear in a NAIA. The

process was greatly facilitated by Dr. Bunte's modified International Phonetic Alphabet (IPA) which she developed specifically for the writing of Southern Paiute language.

The spring ethnobotanical on-site visit included Drs. Bunte, Stoffle, Steven Boyd, the project botanist, a Native American Research Associate, and one or more plant specialists from potentially impacted groups. The trip occurred in early May.

CHRONOLOGY OF FIELD WORK

OVERVIEW

As mentioned previously, the official start up date for the Utah section of the IPP was February 15, 1982. The structure of the project research staff was identical to that of the Nevada section (Stoffle and Dobyns 1982). When the authorization to proceed with the study was received by the UW-P:AUFS, the principal investigator made formal introductory contact with potentially affected Native American groups. Initial contact was made by phone on February 17. While in California to discuss the project with ACT personnel on February 24, the principal investigator planned to travel along the proposed Utah right-of-way in addition to the planned route in Nevada. That trip occurred on February 27. Initial field notes and photographs of key locales along the line were recorded.

On March 1, Stoffle picked up Native American Research Associate Bulletts at Kaibab Paiute Reservation and proceeded to Cedar City, Utah for the OTCR orientation meeting that afternoon. Unfortunately, most tribal groups were not able to appoint their OTCRs by this time. Only the OTCR from the Paiute Tribe of Utah, Ivan Benn, was appointed and attended. Stoffle discussed the project with him and then returned to Kaibab to discuss the project with Kaibab Paiute Tribal Council members. On March 4, the day after his return to UW-P, Stoffle drafted a letter to the Utah OTCRs and tribal chairmen of the potentially impacted tribes. Included with the letters was a tentative schedule for March and April-May field work and proposed dates for OTCR and public tribal meetings at each group's headquarters. The letter was also sent to AUFS field staff members on March 8. The details of those field sessions are provided in the following sections.

MARCH FIELD WORK

Upon entering the field on March 15th, the crew of field ethnographers comprised two study teams. This dual team system allowed meetings and key interviews to take place at as many locations with as many potentially impacted tribes in the study area as the short time schedule would allow.

On March 15th, a public meeting was held on the Kaibab Paiute Reservation in northern Arizona. Both study teams were present then and the meeting was well attended by tribal members. The project was introduced through discussions and the display of a series of raised topographical maps, so that Indian people could easily identify areas of concern.

The following day, March 16th, Stoffle met with the Kaibab Paiute Planning Committee leader to discuss the project. A phone call from Paiute Tribe of Utah chairman and OTCR set up the first key consultant interview with a Paiute elder in Cedar City.

On March 17th, both teams traveled to Cedar City for a public meeting held in the tribal offices of the Paiute Tribe of Utah. Again, both teams were present and the meeting was well attended. The project was described in much the same fashion as at Kaibab. Following the meeting, the study teams interviewed a key Utah Paiute consultant. Then the teams split up. One team remained in Cedar City to conduct additional interviews with tribal elders there (March 17 and 18). The second team traveled to the Confederated Tribes of the Goshute Reservation near Ibapah, Utah. On March 18 the second team met with the Goshute Tribal Council to discuss the IPP. The council appointed their OTCR, who then set up key interviewswith several Goshute elders in their own homes. These inter-
views continued on March 19th.

While returning from the meetings with the Confederated Tribes of the Goshute Reservation the study team traveled to the Skull Valley Goshute Reservation. Unfortunately, no tribal official could be reached and therefore no interviews could be conducted there. Communication between the project staff and the Skull Valley Goshutes has been difficult inasmuch as they have no tribal office, no homes have phones, and they only have part-time tribal administrators.

On March 19th, members of the first study team traveled to Kanosh, Utah to interview Pahvant Ute and Paiute people. Interviews there continued through March 20th, when the second study team returned to Cedar City.

On March 21, another meeting was held for the Utah OTCRs by the full study team. The meeting focused on the progress of the project and on the topic of "Improving Native American

Participation in Social Impact Assessment." Following that meeting, an additional public meeting was held in the tribal offices of the Paiute Tribe of Utah. On March 22, the study teams returned to Las Vegas to continue fieldwork for the on-going Nevada section of the IPP.

Upon returning to UW-P from the field on March 28, project staff began processing field note tapes and other new data concerning sacred resources obtained during the Utah field session. Report preparation activities commenced.

APRIL-MAY FIELD WORK

The primary purpose of the April-May field session was to obtain botanical specimens from specific locations along the proposed Utah right-of-way through a series of on-site visits. Collected specimens would be identified and analyzed by Andrew C. Sanders and Steven Boyd, project botanists, at the University of California-Riverside herbarium. Then data obtained from Native American plant specialist narratives concerning plant names and uses could be corroborated with the actual physical specimens of botanical resources.

After discussions with ACT project managers (April 30 and May 1), and a series of ethnobotanical on-site visits for the Nevada study (May 1-3), the study team, including project botanist Boyd, traveled to Cedar City. Together with a Utah Paiute consultant, the principal investigator, Native American Research Associate, linguist and OTCR traveled the proposed Utah right-of-way, stopping at key locales to collect plant specimens and elicit responses concerning name and traditional use from the Native American consultant. This trip occurred on May 4.

The following day, the team held an informal meeting over lunch with the OTCRs. The principal investigator then had successive meetings with the Kaibab Paiute tribal chairman, Kaibab Paiute consultants, and the tribal council on May 7th and May 10.

On May 6th, the study team members had planned to visit the Uinta-Ouray Ute Indian Tribe. A phone call to the Ute Tribal Chairman, Mr. Homey Secakuku, indicated that the Ute Tribe would not be interested in having the research team visit the Ute Indian Reservation (see Appendix C). Consequently, no interviewing or meetings took place there. The Ute Tribe however, did reserve the right to comment on the IPP project in the future should more information become available which they felt directly concerned them.

As was customary throughout the duration of IPP research, communication between Native American consultants, AUFS project

staff, and ACT project managers was constant. This communication enhanced the planning and conducting of all meetings, on-site visits, and ethnographic interviewing, along with other aspects of the field sessions. Open lines of communication allowed the in-field work to be carried out with a minimum of confusion and delay.

CHAPTER IV. ETHNOHISTORICAL ETHNOGRAPHY OF GOSHUTES, PAHVANT UTES AND SOUTHERN PAIUTES

This chapter describes some aspects of pre-colonization traditional culture of Goshutes, Pahvants and Southern Paiutes that continue to effect their perception of their ancestral lands that the proposed IPP transmission line would cross. It traces intergroup interactions between Euroamericans and the three Native American ethnic groups that also influence present Native American expressed concerns about the proposed right-of-way. Intergroup interactions have changed in nature and intensity from Spanish colonial times to the present day. Consequently, the ethnohistorical analysis will be presented not only thematically, but also in temporal periods.

THE PRECONTACT FISHING ECONOMY

Although Southern Paiutes, Pahvants and Goshutes ranged over large expanses of xerophytic and true desert, they paradoxically subsisted largely on fish. Several sizeable lakes, a number of creeks and springs, and short rivers rising in the area such as the Sevier, and Virgin - as well as the Colorado River that flowed through the region - supported large stocks of edible fish. Lake Sevier and the Sevier River are the key fishing waters in terms of the study area. Southern Paiutes, Pahvants and Goshutes all congregated on the shores of Lake Sevier to fish, and to hunt waterfowl in its marshes. In the early 1840s, Euroamerican mountain men referred disparagingly to these "Digger tribes, which frequented Lake Sevier" (Fremont 1956:417). Strikingly, the most general systematic analysis of Native American fishing in North America classed the middle Sevier River as a region "in which fish was a staple food but no more important than game or plants" (Rostlund 1952:304). This is the second most intensive utilization of fish by Native Americans. Only native peoples living where fish was the "most important staple in yearly food economy" caught and consumed more fish per capita.

The fishing technology of these peoples included lighting bonfires on shore to attract fish at night (Rostlund 1952:295), and building weirs and traps (Rostlund 1952:292). The information about the geographic range of the Northern Pahvants along the lower Sevier river and eastern shore of Lake Sevier indicates that the technology employed along the middle Sevier River was also used along its lower reaches. There "the river was full of fish" (Gardner 1955:379). In the headwaters, Eastern Division Southern Paiutes took fish from Panguitch Lake in sufficient quantities to exchange surplus fish with pioneer

colonists (Smith and Steele 1852:1). They built weirs and diversion dams and wove nets with which to catch fish through the winter months and during spawning runs (HDR Sciences 1980:36). Again, there can be little doubt that these Paiutes employed the same technology in the marshes of southern Lake Sevier as on the upper Sevier River.

Among the palatable fish that lived in the Sevier River system were cutthroat and rainbow trout (Rostlund 1952:259), Rock Mountain Whitefish (Rostlund 1952:263), flannel-mouth sucker (Catostomus latipinis) (Rostlund 1952:264), and the Mountain sucker (Pantosteus spp.) (Rostlund 1952:267). Fragments of shells of freshwater clams (probably Margaritana margaritifera L.) found on prehistoric habitation sites in western Utah indicate aboriginal collection of shellfish for food (Ruby 1953:162). Southern Paiutes, Pahvants and Goshutes no doubt continued aboriginal habits of collecting freshwater clams to eat.

The Pahvant and Goshute exploitation of the Lake Sevier and lower Sevier River fishery and shell fish colonies demonstrates that the study area crosses areas of former riverine oasis and stream channel inhabited by those peoples. Economic exploitation with aboriginal technology continued until some time after Euroamerican colonization. Newspaper stories, official federal reports and travel accounts place the Northern Pahvant on the lower river, and at or near the lake, until at least 1860.

THE PRECONTACT HUNTING ECONOMY

The Eastern Band Southern Paiutes followed the same seasonal round as the Pahvants and Goshutes, but in different geographic locations. The Southern Paiutes planted summer crops in the riverine oases along Santa Clara Creek, and up the Virgin River and along Ash Creek. They hunted and collected wild food products in the mountains and on the plateau to the east. They returned to the riverine oases to harvest green corn roasting ears, green beans and tender squash. Then they scattered out through the pinyon groves on the slopes in the fall, from August through October. They harvested their food crops in the low-altitude valleys, and then settled in for the winter there. The river valleys stayed warmer than the higher elevations, and the oases provided abundant fuelwood for heating flimsy houses -- ironwood, mesquite which makes marvelous coals for roasting food, cottonwood and willow (Stoffle and Dobyns 1982: 63, 64).

Pahvant and Goshute territory did not include any lands as low in altitude as the Southern Paiute riverine oases to the south. The desert around the lower Sevier River course was the

lowest terrain open to those two peoples. The river delta zone offered them the very same kinds of attractions that the Virgin River oases provided Southern Paiutes. Not only was the river full of fish, but great flocks of migratory ducks and geese also wintered on the river (Gardner 1955:379) and no doubt on Lake Sevier. Native Americans skillfully hunted such waterfowl. A duck provided from half a pound to a pound of meat, and a goose up to 15 pounds.

The ease with which members of Jedediah S. Smith's party killed antelope near Beaver River bottoms in 1826 (Brooks 1977:53) attests to the abundance of those animals on the low altitude flats. Terrain that has been desert in the twentieth century evidently supported grasses under Native American fire management. Antelope appear to have ranged in large numbers over the plains between sources of water. One grown antelope yielded as much meat as six to ten big geese, so Native American hunters understandably sought them.

Up until the early 1820s, an even larger big game animal attracted Pahvant and Goshute hunters to the Sevier river delta zone. This was the bison. Pahvant oral history toward the end of the nineteenth century still preserved memories of "a big herd of buffalo that summered in the Cherry Creek mountains and in the winter they went down into the desert to feed among the willows and reeds along the river." Bison and man both sought the lower elevations which were relatively free from snow during the winter cold. The bison "sheltered themselves from wintry blasts along the banks and bluffs of the river," which supplied them with drinking water (Gardner 1955:379). The river delta certainly constituted no effective barrier to the movement of bison, so one may be sure that those big game animals did not "scamper in the winter sunshine on the sand hills and clay flats" only on the Pahvant (south) side of the river. They surely ranged along the north side of the delta, thus magnifying the attraction of the oasis for the Goshutes. One grown bison provided as much meat as ten antelope.

According to Pahvant oral history, early and very heavy snow one fall in the early 1820s trapped the bison in the mountains before they had moved out onto the river delta to winter. They perished in the deep snows, as did a deer-hunting party of two dozen young Pahvants in Little Creek Canyon (Gardner 1955:380). The local extinction of the bison forced Goshutes and Pahvants to depend on smaller game, fowl, fish and vegetable foods. During the period from about 1830 to 1860, their population diminished, according to Mountain Men then in intermittent contact with them (Burton 1862:474). Thus, per capita meat consumption may not have dropped very much when the local bison herd disappeared.

The Sevier River delta zone also attracted Goshute and Pahvant hunters because it was rich in small game. Traveling south from Great Salt Lake through the higher valleys, Jedediah

Smith first encountered jackrabbits in the middle Sevier River Valley in 1862 (Brooks 1977:50). Jackrabbits ranged the lower valleys like antelope, although they cannot travel as far from water as the larger pronghorns. Sevier River "overflowed its banks each spring which made great meadows of wild grass" (Gardner 1955:379). The delta meadows attracted the Pahvants when they acquired horses, because the sun-dried meadow grass provided winter grazing. It also fed many a cottontail and jackrabbit that Pahvants and Goshutes hunted with nets when they wanted animal protein. The abundant and diversified vegetation in the river delta zone no doubt also supported a large population of upland game birds and other small game animals hunted by Pahvants and Goshutes.

The streams that crossed the Sevier, Black Rock and Escalante Deserts from the Canyon Mountains and Pahvant Mountains supported one acquatic animal of some ,but unknown, importance in Goshute, Pahvant and Southern Paiute diet. This was the beaver. In 1826, Jedediah S. Smith ascended the middle Sevier near the frontier between San Pitch Utes and Eastern Division Southern Paiutes. The smoke signal alarm system of the latter group Smith set off indexes their frontier situation and perpetual alertness to movements of strangers (Brooks 1977:50-51). Smith trapped some beaver from this stretch of the Sevier River, but did not think that his success justified continued effort. He then crossed over the mountains to Beaver River. He found beaver signs on it, but gave up trapping after following the surface flow out onto the desert where it sank into the sands (Brooks 1977:53). Southern Paiute smoke signals again indicated Smith's proximity to an inter-ethnic frontier -- this one with the Pahvants to the north. Residence of Southern Paiutes in wickiups on Cove Creek in 1854, the women wearing rabbit skin robes (Brooks 1972:13) both locates the Paiute-Pahvant frontier and attests to the abundance of rabbits in the habitat.

While Smith did not traverse the Sevier River Delta zone, the native beaver population of that stream probably extended downstream into the delta. So the Goshutes as well as Pahvants probably had some access to beaver as a medium-sized game animal. At any rate, the lacustrine/riverine beaver constituted another game animal that attracted these Native American groups to the Sevier River and Beaver River habitats that the proposed IPP right-of-way will cross. Upstream diversion of water for irrigation purposes has long since dessicated the low-altitude study area, however, so that there are no contemporary beaver populations within the study area to be threatened by IPP construction.

Willows are cold hardy as cottonwoods, mesquites, ironwood trees are not. Consequently, the Sevier River delta oasis abounded in willows. For Pahvants and Goshutes wintering in the relatively low-altitude delta zone, fuelwood needed to cook game and vegetable foods, and to heat winter shelters was very

important. "There were great clumps of willows along the river which made a very good supply of fuel for the winter" (Gardner 1955:379). Thus, the Goshutes spent the cold winter months encamped along the north shore of Lake Sevier and Sevier River, (Larson 1952:26) living within and/or frequently hunting in and crossing the study area between the IPA generating plant and the river. The Pahvants spent the same period living on the south shore of the river and the east shore of the lake. When not living in the study area, they frequently hunted there and crossed it south of the river a considerable distance onto the arid valley floor. There can be no doubt that Goshutes and Pahvants intensively exploited the study area within the Sevier River delta before Euroamerican colonists diverted irrigation water from the river upstream and drastically altered the delta environment.

The contemporary entrenched river channels, bordered by desiccated lands where agricultural fields are not irrigated by water carried long distances in artificial canals, do not look at all like the pre-colonizatation delta life zone. When Euroamerican colonists appropriated water from the Sevier River upon which Native Americans had depended for millenia, they destroyed a complex ecological system that had flourished in the delta zone. It is little wonder that the surviving Pahvants and Goshutes turned their backs on the new artificial desert where their ancestors had flourished.

THE PRECONTACT COLLECTING ECONOMY

The riverine oases at the border of Goshute territory and within Pahvant country, like those in Southern Paiute lands, provided a wide assortment of nutritious wild food plants in addition to fish, game animals, waterfowl and fuelwood (see TABLES 2-6; 10-17). While the assemblages of wild food plants at the higher altitudes in Goshute and Pahvant country differed to some extent from the assemblages in lower altitude Southern Paiute oases along the Virgin River and its tributaries, many plants grew in both habitats. These rich plant resources helped to attract Goshutes to the northern Sevier River delta, Pahvants to the southern part of the delta, and Eastern Division Southern Paiutes to the Beaver River Valley.

More than a century after the upstream diversion of irrigation water from both streams began, it is impossible to reconstruct with accuracy the full complexity of the delta environment of the Sevier and the valley environment of the Beaver River. Jedediah S. Smith saw one dimension of the riverine oasis plant resources along the middle Sevier River in 1826. He reported that both the Sanpitch Utes and Paiutes on

TABLE 1. GAME BIRDS AND ANIMALS TAKEN BY SOUTHERN PAIUTE, PAHVANT AND GOSHUTE IN OR NEAR IPP STUDY AREA

GAME BIRD/ANIMAL	PAIUTE	GOSHUTE	PAHVANT
Bison		Sevier Delta	Sevier Delta
Antelope	Beaver River Valley		Black Rock Desert
Mountain Sheep	Mountains		Mountains
Deer	Mountains	Sheeprock Mts.	Canyon Mts. Pahvant Mts.
Beaver	Beaver River		Sevier River
Jackrabbit	Beaver River Valley Cove Creek	Sevier Delta	Sevier Delta
Cottontail	Beaver River Valley Cove Creek	Sevier Delta	Sevier Delta
Swans	Lake Sevier	Lake Sevier	Lake Sevier
Geese	Lake Sevier	Lake Sevier	Sevier Delta
Ducks	Lake Sevier	Sevier Delta	Sevier Delta
Mudhens	Lake Sevier	Sevier Delta	Sevier Delta
Squirrels	Mts.	Mts.	Mts.
Gophers	Beaver River Valley	Sevier Delta	Sevier Delta
Prairie Dogs	Beaver River Valley		Black Rock Desert
Locusts			Corn Creek Oasis
Caterpillars	Beaver River Valley	Sevier Delta	Sevier Delta

that stream "appear to subsist entirely on Roots." Smith described the most important root as approximately the size of a cultivated parsnip, with a leaf resembling that of the beet. He reported that it grew "on the richest upland." The Native Americans pit-roasted the roots, then "mashed" them, and shaped them into small cakes for drying to store for winter consumption (Brooks 1977:49).

At least one prehistoric habitation site in western Utah has yielded "quids" showing that Native Americans ate the rhizome of the bullrush (Scripus americana) (Ruby 1953:162). Recent oral history makes clear that Southern Paiutes dug out these rhizomes to eat (Stoffle and Dobyns 1982:83 TABLE 9), along with the roots of Cattail (Typha angustifolia). Both of these water plants undoubtedly flourished in the Sevier and Beaver River deltas. They constituted one portion of the wild plant food resources that attracted Pahvants and Goshutes to the Sevier River delta, including the study area.

Probably the Sevier River delta also supported dense stands of Reed Meadow Grass (Glyceria aquatica), a plant that flourishes in wet ground and along streams (Chamberlin 1911:370). The Goshute designation pa'-si-wump recognizes the water habitat preference of this seed-yielding grass, the pa' being the term for water. Another water plant probably abundant in the Sevier delta is the common reed (Phragmites communis). Like Southern Paiutes, Goshutes knew that the aphids that fed on the leaves secreted a sweet substance that adhered to the leaf surfaces. They scraped it off to use as a sugar (Chamberlin 1911:376).

Another major plant resource of the Sevier River Delta would have been the cottonwood tree (Populus angustifolia). It would have attracted Goshutes, inasmuch as this tree supplies much of the raw material for Goshute baskets (Chamberlin 1911:378). All of the plants listed are likely to evoke interest and concern among Goshutes, Southern Paiutes, and probably Pahvants today.

THE HORTICULTURAL ECONOMY

MAIZE HORTICULTURE

One cultural trait set the Southern Paiutes, Goshutes and Pahvant Utes apart from other Native Americans in Utah. All three of the ethnic groups who once utilized the study area cultivated maize and other food crops in pre-colonization times. The food production activities of these three groups are summarized in Table 7.

TABLE 2. PLANT SEEDS GATHERED BY GOSHUTES (Chamberlin 1911:360-75).

	BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	PROCESSING
1.	*Agropyron repens*	o'-ro-rop	Blue-joint	-
2.	*Amsinctia tessellata*	tso'-hamp	-	-
3.	*Artemisia biennis* *A. dracunculoides* *A. discolor*	pi'-a-wa-da	Sagebrush	
4.	*Atriplex canescans*	dzi-cup	Saltbush	grind
5.	*A. confertifolia*	sun-su'-no		
6.	*A. truncata*	a'-po		
7.	*Balsamorrhiza hookeri*	o-a-kump		
8.	*B. sagittata*	ku'-si-a-ken-dzip		roasted
9.	*Brickelia grandiflora*	wa'-na-tsi-mu-gi		baked
10.	*Bromus breviaristatus*	to'-bai-ba-bi	Brome grass	
11.	*Cinna arundinacea*	to'-bai-baabi	Road reed grass	
12.	*Cympoterus montanus*	tu'-na		
13.	*Deschampsia caespitosa*	toi'-ya-so-nip	Hair Grass	
14	*D. danthonioides*	mo'-no	Hair Grass	
15.	*Dracocephalum parviflorum*	toi'-ya-ba-gwa-nup	Dragon-head	
16.	*Elymus canadensis* *sibiricus*	o'-ro-rop o'-ro-rop	Wild Rye Wild Rye;Lyme Grass	
17.	*Festuca tenella* *ovina*	si'-wump toi'-ya-si-wump	Fescue Grass Fescue Grass	
18.	*Glyceria aquatica*	pa'-si-wump	Reed Meadow Grass	
19.	*G. distans*	si'-wump	Manna Grass	
20.	*G. nervata*	tai'-gwi-bi		
21.	*Gymnolomia multiflora*	mo'-ta-qa		

TABLE 2. Continued

BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	PROCESSING
22. Lophanthus urticifolius	toi'-ya-ba-gwa-nup		
23. Oenothera biennis	tsi'gi-tump	Evening primrose	
24. Oryzopsis cuspidata	wai	Mountain rice	
25. Pinus monophylla	ti'-ba-wa-ra	Nut pine	roast
26. Poa californica	tin'-a bip	Meadow Grass	
27. P. tenuifolia	ni'-a-ba-so-nip	Bunch grass	
28. P. pratensis	ni'a-bip	Blue Grass	
29. Quercus undulata	ku'-ni-up	Scrub oak	grind leach
30. Salicornia herbacea	pa'-o-ka	Samphire	meal cooked
31. Scutellaria	toi'-ya-ba-gwa-nup	Skullcap	
32. Sisymbrium	poi'-ya	Hedge Mustard	mush
33. Solidago canadensis nemoralis spectabilis	oi'-yink	Goldenrod	
34. Stachys palustris	toi'-ya-ba-gwa-nup	Woundwort	
35. Suaeda depressa	wa'-da	Seablite	
36. Triglochin maritimum	pa'-na-wi	Arrow grass	
37. Trisetum subspicatum	wi-tcub		
38. Tyhpha latifolia	to'-imp	Cattail	roasted
39. Valeriana edulis	toi'-ya-bi-tum-ba-ga		
40. Wyethia amplexicaulis	pi'a-ken-dzip		

TABLE 3. BERRIES GATHERED BY GOSHUTES (Chamberlin 1911:360-81).

	BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	PROCESSING
1.	Almelanchier alnifolia	ti'-umpi	Service Berry	mash, dry
2.	Berberis repens	so'-ko-ri-uum	Oregon grape	
3.	Fragaria vesca	an'-ka pa-ri-ump	Strawberry	fresh
4.	Juniperus californica	wa'-pi	cedar juniper	boiled in water to make mush
5.	Lonicera utahensis	pi'-a-ra-dum-bip	Woodbine Honeysuckle	
6.	Prunus demissa	to'-o-nump	Chokecherry	mash, dry, boil in water to make mush
7.	Rhus trilobaa	an'-ka-ti-wi-ump	Squawberry	fresh
8.	R. glabra	an'-ka-ti-wi-ump	Squawberry	fresh
9.	Ribes aureum	kai'-i-ump	Black Currant	
10.	Rosa californica	tsi'-o-pi	Rose	
11.	Rubus leucodermis	tu'-kwun-dau-wi-a	Raspberry	fresh
12.	R. nutkanus	tu'-kwun-dau-wi-a	Salmonberry	
13.	Sambucus racemosa	ku'-no-gip	Elderberry	fresh
14.	Shepherdia argentea	an'-ka-mo-do-nup	Buffaloberry	fresh
15.	S. canadensis	a'-da-rum-bip	Buffaloberry	fresh

TABLE 4. ROOTS AND BULBS DUG BY GOSHUTES (Chamberlin 1911:360-81)

BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	PROCESSING
1. *Allium bisceptrum*	kunga	wild onion	fresh
2. *Calochortas nutallii*	si-go	Sego lily	fresh, dry
3. *Camassia esculenta*	pa'-si-go	Camas	dried,pit roast
4. *Carum gairdneri*	yampa		pit roast
5. *Claytonia carolinia*	dzi'-na	Spring Beauty	
6. *Cympoterus montanus*	tu'-na		
7. *Fritillaria pudica*	wi'-na-go	Buttercup	

TABLE 5. WHOLE PLANTS AND PLANT PARTS CONSUMED BY GOSHUTES (Chamberlin 1911:360-81).

	BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	PROCESSING
1.	Aphyllum fasciculatum	po'-ho-ru	Cancer root	entire
2.	Balsamorrhiza sagittata	ku'-si-a-ken-dzip		petioles, leaves boiled
3.	Carex utriculata	pa'-gi-gip	Sedge	children eat lower tender stems, roots
4.	Cnicus drummondi	tin'-tsiñ-gä	Plumed thistle	stems
5.	C. undulatus	pa'-go-go	Plumed thistle	stems
6.	Crepis glauca	mu'-tci-gi		leaves
7.	Cymopterus longipes	an-dzup'		leaves boiled
8.	Ferula multifida	to'-dzup		young shoots
9.	Latuca leucophaea	mu'-tci-gip	Lettuce	leaves
10	L. ludoviciana	mu'-tci-gip	Lettuce	leaves
11.	Mammillaria sp.	mu'-tsa	Pincushion cactus	remove skin
12.	Mentha canadensis	pa'-gwa-nup	Mint	leaf for tea
13.	Nasturtium palustre	si'-bo-i-ump	Watercress	fresh
14.	Opuntia rutila	ai'-gwo-bi	Pricklypear	despine, roast
15.	Phragmites communis	paidj	reed	honeydew eaten
16.	Populis angustifolia	so-o-pi	cottonwood	
17.	Ranunculus aquatilis	mo'-a-pa-on-gop		boil whole

TABLE 5. Continued.

BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	PROCESSING
18. Scirpus lacustris	saip	Bulrush	lower stem
19. Troximon aurantiacum	mu'-tci-gip		leaves sometimes

Chamberline 1911:360-375

TABLE 6. PLANTS THE GOSHUTE USED IN MANUFACTURES
(Chamberlin 1911:360-81)

	BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	USE
1.	*Cercocarpus ledifolius*	tu'-nampi	Mountain mohogany	favorite for bows
2.	*Erigeron grandiflorus*	ta'-kan-di=di=a-gup	fleabane	root used for arrows
3.	*Juniperus californica*	wa'-pi; wap	cedar, juniper	furnished wood in constructing winter lodges, thatching, covering, lining pits
4.	*Malvastrum*	koi'-na-kimp		used to coat earthen dishes & pitched wicker baskets
5.	*Populis*	so'-o-pi	cottonwood	shoots used for baskets
6.	*Salix longifolia*	si'-o-pi si'-hip	willow	used for baskets; fish weirs

The Southern Paiutes cultivated and planted a much longer list of food-producing plants than the Goshutes or Pahvants. In part, Southern Paiute virtuosity in food production stemmed from an environmental limitation on Pahvant and Goshutes. Southern Paiute territory included much low-altitude desert crossed by permanent streams that afforded irrigation water. Higher winter temperatures at the lower altitudes allowed freeze-sensitive desert plants such as mesquite, screwbean and ironwood to grow in the Southern Paiute riverine oases. Those plants cannot survive the winter freezing temperatures in Pahvant or Goshute territory.

Maize, beans, squash, sunflower, Chenopods and Amaranths and Mentzelias all were subject to the same temperature limitations as the desert trees. That is to say that they are summer growing season plants killed by frost. The frost-free season is long enough at the higher altitudes and latitudes of Goshute and Pahvant aboriginal territory to allow successful harvesting of these crops at the end of the summer. The aridity of the area required that the Mesoamerican domesticates -- maize, beans and squash -- be irrigated. Consequently, Pahvants and Goshutes grew them in riverine or lacustrine oases as did Southern Paiutes. The major Pahvant maize-growing oasis appears to have been the Corn Creek bottomlands.

Former Lake Sevier was a very significant hydraulic influence on land use by all three tribes in and near the study area. This is because it offered Native Americans "arable land around its shore, especially along the river..." (Steward 1933:30). That meant that the Goshutes, whose maize-growing two valleys to the west of the lakes in Snake Valley had been recorded (Steward 1938:128), almost certainly planted maize on occasion if not regularly near the marsh on the west and north shores of Lake Sevier and on the north bank of Sevier River. By the same logic, the Pahvant who grew maize in the Corn Creek stream oasis, probably also grew it on the south bank of Sevier River and in the fields beside the marshes on the eastern shore of Lake Sevier. Thus, one may infer that the study area crosses former Goshute and Pahvant maize fields as well as the lower Sevier River course. In addition, the Eastern Division Southern Paiutes probably planted some maize in the arable areas adjacent to the marshes at the southern tip of Lake Sevier. Consequently, the proposed IPP right-of-way will cross numerous Southen Paiute trails that people traveled year in and year out between the low-altitude Virgin River system oases and the rich lacustrine resources of Lake Sevier.

TABLE 7. FOOD PLANT CULTIVATION BY GOSHUTE, PAHVANT & S. PAIUTE

PLANT	COMMON NAME	PAIUTE	GOSHUTE	PAHVANT
Zea mais	Corn	cultivar	Korn= post colonial	
Cucurbits	Squash	cultivar		
Phaseolus	Beans	cultivar		
Helanthus	Sunflower	cultivar		
Ipomoea	Morning Glory	cultivar		
Ribes inerme	Gooseberry	transplant		
Ribes aureum	Currant	transplant		
Triticum sativa	Wheat	cultivar		
Solanum tuberosum	Potato	cultivar	post-Mormon	
Citrullus vulgaris	Watermelon	cultivar	post-Mormon	
Phaseolus	Black-eyed Pea	cultivar		
Chenopodium	Goosefoot	transitional	capitatum/wild leptophyllum/wild	
Amaranthus	Pigweed	cultivar	cultivar	
Mentzelia	Blazing Star	transitional	transitional	
Vitus	Grape	planted		
Prosopis juliflora		Mesquite	planted	
Prosopis odorata	Screwbean	planted		
Olneya tesota	Ironwood	planted		

Southern Paiute: Stoffle & Dobyns 1982:72-104.

Goshute: Steward 1938:128; Chamberlin 1911:366, 382, 384, 361.

Pahvant:

THE GREAT SALT LAKE-COLORADO RIVER SOCIAL STRUCTURE CONTINUUM

Before Euroamerican colonization began in Utah, the Goshute, Pahvant and Southern Paiutes formed a special social continuum. These peoples were linked to each other by intermarriages. It is not clear whether their neighbors to the east and west also intermarried with these three ethnic groups. It appears that they did not, or did not do so as extensively as members of these three groups intermarried. Theethnographic result of differential exogamy was kinship linkage of Goshute to Pahvant and Pahvant to Eastern Division Southern Paiute and even the Western Division. This situation is pertinent to the present analysis, inasmuch as the principal zone of intergroup contact where young men and women met and courted included the study area. That is to say that Goshutes and Pahvants met along the lower Sevier River while encamped there during the winter, exploiting riverine oasis resources. A bit farther south, Pahvants and Eastern Division Southern Paiutes met probably along Cove Creek and surely along Beaver River that the study area crosses.

GOSHUTE

Nineteenth century observers were not agreed even on the language spoken by the people labeled Goshutes. Some considered them Shoshone-speakers (Forney 1858:212) or that "they talk very nearly the Shoshonee language" (Irish 1865:144). Others identified as Goshutes groups they reported did not speak Shoshone (Douglass 1870:560), but "a sort of gibberish, made up of the Ute and Sho-sho-nee dialects" (Simpson 1876:54). The pattern of intergroup intermarriage apparently lies at the heart of the confusion of nineteenth century observers. There existed an ethnically mixed population on the frontier between Ute and Shoshone. Individuals from each ethnic background intermarried, and a somewhat distinct intermediate ethnic group formed which Euroamericans later designated as Goshute. The individuals involved may have been bilingual, speaking Shoshone or Ute, depending upon the circumstances. Apparently Goshute language has not been historically stable. Reportedly, Goshute residents of the Deep Creek reservation adapted Nevada Shoshone pronunciation and vocabulary during the earlier decades of the twentieth century. Proximity and frequent contact seem to have made Nevada Shoshone popular (Malouf 1940:4). There is no reason to suppose that the same kind of influence did not affect how and what Goshutes spoke during the nineteenth century.

During the mid-nineteenth century period of initial Euroamerican colonization impact, Goshutes suffered heavily as Mormons settled in Great Salt Lake Valley, Tooele Valley, and

the transcontinental mail route cut through Goshute territory. Brigham Young may well have had Goshutes in mind when he spoke of watching bands shrink from 150 to 35 warriors by late 1853 (Young:1853:1). The Goshutes may have welcomed whatever reinforcements they would. The English explorer-author Richard F. Burton, who visited Salt Lake City in 1860 and interviewed long-time colonists, compared the Goshutes to an Arabian tribe that recruited individuals cast out of other tribes. He predicted that Goshutes "will presently become a mere banditti." (Burton 1862:475).

Burton's opportunities for observing Goshutes were extremely limited, so that his characterization of them derived from more experienced people in Salt Lake City. Their perception certainly confirms that the Goshute population was largely a product of intermarriages of members originally from other Native American entities (Forney 1859:731; Simpson 1869:47, 48; Alter 1932:30). The English traveler noted one other significant event in Goshute mid-century history. He wrote that the "principal chief" died "about five years ago." Burton's text was originally published in 1861 in England, so 5 years earlier would have been 1856, the year of a smallpox epidemic among Mormons and Native Americans alike. To the extent that Goshute distinctiveness depended on individual leadership, the death of the "Principal chief" in 1856 may have been a crucial event. G. W. Bean, a leading Mormon interpreter, reported that a disaffected Ute chief named Goship separated from the other Utes two generations prior to Euroamerican arrival (Simpson 1876:54).

By 1861, Mormons (Greene 1861:2) considered a man named Tabby chief of the Goshutes. Somewhat later, federal officials in the Office of Indian Affairs did, too (Irish 1865:144). Yet, later ethnographer-ethnohistorian Omer C. Stewart (1966:55) considered Tabby a Uintal-White River Ute. By the fall of 1871, Tabby led the Uintah Valley reservation Utes (Critchlow 1872:545, 547). The language spoken by Goshutes is not, therefore, the only cultural trait confused by their marriage pattern. A presumably Shoshonean-speaking ethnic group led by a Ute chief was different from the more easterly Utes and the more westerly and northerly Shoshoneans. They made sense on their own terms, however, and those terms included a close marriage connection and social and economic association on the lower Sevier River (Chidester 1955:379). An army officer exploring a new wagon road in 1859 noted that he encountered occasionally an intermarried Ute among the Goshutes (Simpson 1876:54) without specifying Pahvant Ute.

The Euroamericans severed much of the Goshute-Pahvant connection in 1863, and evidently terminated most joint Goshute-Pahvant exploitation of the riverine oasis of the lower Sevier. On 5 October, Treaty Commissioner James Duane Doty, former Utah territorial governor, was able to make "a verbal treaty" of peace "with the remaining portion of the southern

bands who are connected with the Pahvant tribe". Commissioner Doty explained that Goshute willingness to agree to peace 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). Just how high Goshute casualties may have been the United States commissioner failed to report, although he placed them at "more than a hundred" (Doty 1865b:175).

From the scant clues in reports from the 1860s, then, one may hypothesize that the Goshutes consisted, prior to United States military conquest, of two divisions. A southern division of unknown size wintered in the Sevier River delta (Larson 1952:126). There its members obtained a wide variety of foods in considerable abundance -- from fish to buffalo, from tule roots to maize traded from Pahvants. There the southern division danced social dances with Pahvants, attended joint rituals, and young people courted and married. This southern divison probably was the main conduit for Pahvant genes into the Goshute populaton. A northern division lived around the southern rim of Great Salt Lake Basin, from Skull Valley a mere 20 miles from later Salt Lake City, to Deep Creek Valley on the Utah-Nevada border. That division survived army action in 1863; the southern division evidently did not.

PAHVANT

Extant anthropological and ethnohistorical literature does not define Pahvant social structure with much certainty. For example, Steward (1974:55) wrote that "Until the Indians were well mounted and engaging the whites in warfare, I should guess that chieftainship was on a village basis." Actually, the Pahvant did not violently oppose Euroamerican colonization and the few clashes that did occur hardly qualify as warfare. In fact, the Pahvant Chief Kanosh stands out in retrospect as thoroughly committed to peaceful accomodation with colonists. There is good historical evidence, moreover, that mid-nineteenth century Pahvants followed tribal leaders and only later disintegrated into smaller units. The individuals Steward guessed led aboriginal villages most likely were later contact-period labor gang-contractor cultural brokers (Stoffle and Dobyns 1982). One of these gangs had already formed at Fillmore by the spring of 1854 (Brooks 1972:13).

On 26 October 1853, members of a federal survey party led by Capt. John W. Gunnison were slain in aboriginal Pahvant territory. Regional historians blamed Moshoquop, identified as the Pahvant war chief under Kanosh (Steward 1974:56; Gottfredson 1919:288). National historians blamed a mixed Mormon-Native American attacking force (Heitman 1903:I:483). During the period of uncertain interethnic relations in the wake of the Gunnison Massacre, the entire Pahvant population

reportedly acted in concert. The official Utah Superintendency interpreter reported "that all the Pahvants had gone on a hunt, about 50 miles southwest" of Fillmore (Huntington 1853:2). At that distance west-southwest of Fillmore, the Pahvant would have been at the south end of Lake Sevier or in the nearby Cricket Mountains. Their route of travel from the new Mormon town to their refuge on or very near Lake Sevier crossed the study area, no doubt along a trail well known to them.

Tribal Divisions. While Huntington's 1853 report indicates that all of the Pahvants could behave as a single tribal entity in 1853, several clues suggest that the Pahvant usually lived in one of two major tribal divisions. These appear to have been somewhat like the Eastern and Western Divisions of the Southern Paiute (Stoffle and Dobyns 1982). The Pahvant divisions, in the absence of knowledge about their native designations, may best be referred to as the Northern and Southern divisions.

Steward (1974:55) speculated that these two Pahvant divisions "were probably no more than new groupings of Ute who had been dislocated by the Mormons from their principal settlements and given reservations." The federal government had not reserved lands for Pahvants in 1858-1860, the period to which Steward referred except on a farm along Corn Creek. Utah ex-officio Superintendent of Indian Affairs Brigham Young had, while territorial governor, established the Pahvant reserve on Corn Creek.

As Steward noted, the English explorer Richard F. Burton (1862:475) reported two Pahvant divisions in 1860. One lived at Corn Creek; the other lived at Sevier Lake and in the northeastern Fillmore Valley. Thus, the tribal division that Burton reported lived within the study area and/or regularly traveled through it near Sevier River. Burton did not visit Pahvant territory, but relied on conversation with, or reports of, the Utah Superintendent of Indian Affairs. Two years earlier, he had already reported to the Commissioner the two Pahvant divisions (Forney 1858:364) and did so again in the fall of 1859 (Forney 1858:732). After negotiating peace in the fall of 1863, former Superintendent James D. Doty (1865a:173) referred to the Goshute as "southern bands who are connected with the Pahvant tribe."

If Forney were the only observer who perceived two Pahvant divisions, Steward's hypotheses that they resulted from Mormon colonization and disruption of earlier social organization might be accepted. There exists, however, additional and earlier evidence of the two divisions.

This information was recorded a full decade and a half earlier, late in 1853. Brigham Young instructed interpreter D. B. Huntington "to hire Ka-no-she, and other friendly Pauvans to go with him to the Pauvans on the Sevier, and try all possible

methods to recover the lost property..." (Deseret News 12 Nov. 1853:2). At that time, Chief Kanosh was already clearly aligning himself and his Pahvant followers with Euroamericans. If colonization created Pahvant factions, they already existed by mid-November 1853. If the second Pahvant contigent was an anti-colonist faction, it had come into being by that time.

Early that same year, Huntington (1853:2) provided additional clues. When he first sought the Pahvant in January, and they were all hunting together on or near the shores of Lake Sevier, he hired other Utes to locate them. "They returned with Konosh and Parashont, the two chiefs, and four braves." Although Kanosh alone repeatedly was identified in later years as chief of the Corn Creek Indians or Pahvant, early in the contact period he was but one of two Pahvant chiefs.

Ankateko Band. The significance of accurately reconstructing Pahvant social structure for the present study lies in the apparently distinct geographic ranges of the two divisions. When colonization began, Kanosh apparently led the Southern Division that grew maize in the Corn Creek stream oasis and ranged almost due west to the southern shore of Lake Sevier. In 1865, a United States Army officer reported that "chief Cannosh" led 150 warriors of the Pahvant tribe, and the Ankateko (Corn) Band (Bailey 1965:343). By 1865, the pre-colonization social organization of the Pahvant was almost surely disintegrating into labor gangs oriented to Mormon settlements. Yet, the existence of a native group-term referring to maize suggests that Ankateka may have been the pre-colonization designation for Pahvant Southern Division.

Nantekokebit Band. Parashont apparently led the Northern Division that lived along the Chalk Creek oasis where the Mormons established their town of Fillmore late in October of 1851 (Deseret News 2:2 [29 Nov.] 2), and along the south shore of the lower Sevier River and the eastern shore of Lake Sevier. The Northern Division Pahvants evidently spent more time within their portion of the study area than did the Southern Division. In 1865, an army officer referred to the Nantekokebit (meaning "Lone Mountain") Band led by Chief Naoquineup, and a Soamuntas Band led by Nare'ant (Bailey 1965:343). The Lone Mountain Band may have been the term for the Northern Division. By 1865, however, both "bands" may in fact have been labor gangs living near Mormon settlements.

Intermarriages. Just as Northern Division Pahvants intermarried extensively with Goshutes, Southern Division Pahvants apparently intermarried with Southern Paiutes. Intermarriage occurred on such a large scale that in 1865, an army officer actually reported a "Pahbawat Tribe" of 80 people living on both sides of Salt Creek to the Sevier River. He called it "a cross between the Pah-utes & the Pah-vants" (Bailey 1965:343). For such a grouping to have appeared

distinctive enough to receive a distinctive label in 1865, Pahvant-Paiute intermarriage had to have been going on for many years on a large scale.

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). The 1856 date is too early for the marriage and residence of a Pahvant woman with the Las Vegas group to reflect colonial disruption of Southern Paiute marital patterns.

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. This authorization accompanied congressional re-recognition of these people after their 1954 termination. What is significant to the present analysis is that 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. The descendants of labor gangs at Cedar City and Indian Peaks and the former Shivwits reservation historically were labeled as Southern Paiutes. The groups living at Kanosh and Koosharem reservations historically were labeled as Pahvants. Today they are linked together in a new federally recognized tribe (Associated Press 1982) that reflects social reality. These local populations have long been linked together by marriage ties and joint economic activities.

Colonization by Euroamericans disrupted a continuum of intermarriages and consequent kinship ties extending from southern California to northern Utah. Those ties linked Goshute to Pahvant, and Pahvant to Southern Paiute, and facilitated use of the study area.

SOUTHERN PAIUTE

Careful reading of historical information about Southern Paiutes indicates that prior to colonization, one sacred head chief performed major rituals, offered sage advice, and provided some measure of political leadership. From 1854 (Corbett 1952:67) until 1869 (Fenton 1869:203), Tutzeguvuts can be identified as chief of the Eastern Division and headchief. During that 15-year period, the number of Southern Paiutes living in the immediate Santa Clara Creek dominion of

Tutzeguvuts diminished from about 800 to around 200 people. Although twentieth century Southern Paiutes presumably differentiated hunting chiefs from political chiefs (Steward 1974:56), Tutzeguvuts hunted (Brown 1854). He also urged Jacob Hamblin to pray for the death of a Southern Paiute, evidently thinking that Hamblin's power was greater than his own (Corbett 1952:106). In addition, Tutzeguvuts as head chief convened councils, dispatching runners to summon lesser leaders to them (Sale 1865:153). That is, Tutzeguvuts played a many-faceted role as headchief of the Southern Paiutes.

Eastern Division. Southern Paiutes inhabiting the higher altitude plateaus of Southern Utah and Northern Arizona appear to have planted their summer crops primarily in the Santa Clara Creek oasis, and up the Virgin River from that tributary. They grew maize and other crops in some sand-bar fields along the Colorado River, and the Willow Springs people may have stayed south of the large stream without spending part of the summer on Santa Clara Creek. Many of these people also spent the winter in the low-altitude oases. Seeking pinyon nuts during the fall, or pursuing big game, waterfowl and fish, the Eastern Division people who congregated on Santa Clara Creek ranged northward to the Needle Mountains, Snake Valley, and the southern tip of Lake Sevier. They met and mingled with the Pahvants along Cove Creek and perhaps the Beaver River bottoms. They fished the upper Sevier River and Panguitch Lake, and hunted and collected wild foods east of Santa Clara Creek on the high plateau, including Kaiparowits Plateau (Stoffle and Dobyns 1982:49)

Paranayi Division. The Nevada-Utah border accidentally coincides, apparently, with the approximate upland division between the ranges of the Eastern Division and Paranayi (Western) Division Southern Paiutes. The Meadow Valley Wash-Moapa River Valley oasis constituted the horticultural irrigated core of Paranayi territory. The Division name glosses in English "people with their feet in the water", the latter being the Meadow-Valley-Moapa intermittent stream. Some members of this division persisted in gardening along Meadow Valley Wash until at least 1871 (Powell 1872:562). Some today are engaged in capital and labor intensive greenhouse agriculture on the Moapa River Reservation in Nevada. (Stoffle and Dobyns 1982:159).

One might for convenience think of the Paranayi Division as the Nevada Southern Paiutes, and the Eastern Division as the Utah-Arizona Southern Paiutes. Euroamerian colonization in the key riverine oases deprived the Eastern Division people of their food production base. This deprivation quickly forced them to labor for cast-off clothes, food, and finally cash wages for members of the dominant group. Laborers lived in gangs near each new colonial town.

SPANISH COLONIAL PERIOD

The early Spanish Colonial Period affected the Southern Paiutes, Pahvants and Goshutes indirectly and directly, in four principal ways: (a) Old World diseases Spaniards transmitted across the Atlantic spread via Native American traders from colonial New Spain to the three peoples. The scale of mortality among Goshutes, Pahvants and Southern Paiutes prior to mid-nineteenth century is not known, but that some occurred cannot be doubted. (b) The Columbian Exchange brought not only germs and viruses to the Western Hemisphere, but also many Old World domesticated animals and plants. Wheat, watermelons, and black eyed peas diffused beyond the Spanish colonial frontier to Southern Paiute cultivators in the Virgin River system (Stoffle and Dobyns 1982:65, 66, 71). Despite ethnographic classification of Pahvants and Goshutes as non-horticultural, the food-production imperative appears to have reached both peoples prior to the middle of the nineteenth century.

The Pahvant, whose villages were located on Corn Creek near the southwestern frontier of Pahvant country, learned to grow maize before the first Mormon explorers reached the creek. Its very name records that fact.

The Goshute, or at least some of them, appear to have sowed seeds of two plants domesticated by Native Americans farther south: Amaranth and Chenopod. Southern Paiutes also grew both of these New World domesticates.

At approximately the same time that some Old World cultivated plants were traded through intervening Native American peoples from New Spain to the Southern Paiutes, (c) horses spread northward. Plants apparently diffused north along the West Coast of Mexico. Horses spread from the Spanish colony in the upper Rio Grande Valley after 1598. Horses reached only some Utes, who became mounted economic raiders of Southern Paiutes, and across Southern Paiute country into Southern California. By 1776, some eastern Utes were mounted and mobile. Increased mobility presumably fostered formation of economic raiding bands drawing personnel from several villages (Steward 1974:66). Pahvants acquired horses by the mid-nineteenth century. Goshutes and Southern Paiutes did not. Horses afforded the mounted Utes access to the trading fairs of the mountain men who penetrated into the Rocky Mountains and upper Rio Grande Valley after 1821. There they acquired firearms and ammunition (Fremont 1956:417).

Horses that facilitated eastern Ute economic raiding enabled them to profit from (d) the colonial slave trade. This fourth Spanish colonial influence fundamentally affected Goshutes and Southern Paiutes as well as Utes. Mounted Utes competed with hostile Comanches and other Plains peoples for

bison on the Plains and at the edge of the Plains. Their hunting pressure reduced Utah's bison to so few animals in high altitude refuge zones that a single unusually early and severe storm in the 1820s reportedly exterminated the last Utah bison. Trading at the colonial trading center of Genizaros at Abiquiu, New Mexico, or with Spanish traders who rode northwest into their lands, Utes exchanged human slaves for horses, metal blades, textiles, etc. They could capture few women or children to sell into slavery from the Comanches to the northeast. Mounted Utes logically sought women and children among Southern Paiutes, Goshutes, and other unmounted Native Americans without firearms with which to oppose them.

Direct Spanish trading with Utes seems to have begun about 1755 when Manuel Mestes was among the first to ride forth to trade with them at Utah Lake (McNitt 1962:8). The slave trade continued to the end of the Spanish colonial period, and through the Mexican period of sovereignty over the region. It did not end until about a century after it began. Then Utah Territorial Governor Brigham Young and federal officials in New Mexico Terrritory acted to terminate the traffic in Native American bodies in 1851 (Anderson 1942:105; Deseret News 13 Dec. 1851:3; Young 1852:2). Mounted Ute slave raiding and the more or less forced purchase of Southern Paiute children reinforced the Paiute's fear of Ute sorcery.

The official Spanish colonial program relied upon government institutions, particularly the military post and the Indian mission, to stabilize and defend frontiers. Neither government institution affected the Southern Paiutes, Pahvants or Goshutes. The initiatives that affected them were entirely private ones, economic in motivation, and in the case of the slave-trade actually illegal. New Mexican traders linked into existing Native American international trading networks, partially redefined valuable commodities, and influenced the fate of native individuals living hundreds of miles away.

DEMOGRAPHIC CHANGE

The population changes that may have occurred among the intermarried Goshutes, Pahvants and Southern Paiutes prior to the mid-nineteenth century are necessarily a matter of speculation. One consideration is that the known patterns of social interaction created ideal conditions for the transmission of communicable diseases through all three populations. The intermarriages that linked Goshutes, Pahvants and Southern Paiutes meant that families maintained contact with one another across tribal or ethnic group boundaries. Joint ceremonials and social dancing and other interchanges between southern Goshutes and Northern Pahvants, spending the winter along the lower Sevier River, meant that interpersonal contacts were frequent enough to foster disease transmission.

Externally, Southern Paiute involvement in international trade meant that Mojave and Oraibi traders visited frequently enough to transmit at least some of the diseases that spread northward from New Spain. Southern Paiutes offered turquoises and sea shells to members of the Velez Escalante party in 1776 (Bolton 1950:207); they apparently quarried turquoise in Southern California (Stoffle and Dobyns 1982:88). The variety of ceramic vessels recorded on the Virgin River in 1826 indicated trade with Mojaves, Northeastern Pai, and Oraibi traders (Brooks 1977:60; Dobyns 1974:I:17-73,147; Baldwin 1950:52-53; Schroeder 1952:20). Probably not all of the communicable diseases that swept away thousands of Pueblo individuals during historic times reached the Southern Paiutes, Pahvants and Goshutes, but some surely did (see TABLE 8). The unanswerable question is which diseases Pueblos transmitted to Paiutes.

OLD WORLD CULTIVARS

Wheat. The first Euroamerican explorer who visited the core riverine oasis gardens of the Southern Paiutes reported them to be growing wheat, an Old World domesticated plant. Jedediah S. Smith in 1826 noted a Southern Paiute planting wheat in hills, the way Native Americans grew maize, on the Colorado River bank (Brooks 1977:67). Wheat seed had spread through tribes between the Southern Paiutes and the northern frontier of New Spain, but not the knowledge of the European practice of sowing small grains by broadcast. Probably wheat diffused from Sonora to the Southern Paiutes via the Northern Pimans and their Northern Panya trading route, acquired in 1827 by driving the Northern Panya off the Lower Colorado River (Dobyns, Ezell, Jones and Ezell 1957:46).

Wheat growing had become fully established among the Southern Paiutes by that time, and they may also have obtained seed from Oraibi trading partners. Mormon travelers going to California late in 1849 reported seeing wheat straw on Beaver Dam Wash (Bigler 1954:153) and "some wheat sowed" (Rich 1954:186). Thus, wheat growing clearly preceded Mormon colonization in the Virgin River oasis system. It persisted there as long as Southern Paiutes retained access to irrigated fields. Shortly after colonization began, missionaries saw five acres "of good wheat, all headed, and some of it ripe" in mid-June of 1854 on Santa Clara River (Brown 1954:2). They also saw 40 acres or more ripening on Moapa River, which Mormon settlers had not reached in 1854 (Pratt 1854). They reported continued wheat-growing on sandbars on the Colorado River (Jensen 1926:140).

Just as knowledge of broadcast sowing of small grain did not diffuse with wheat seed, so European tools for harvesting wheat did not reach the Southern Paiutes. They harvested wheat as they had been accustomed to harvesting Chenopods, by digging

TABLE 8. MAJOR EPIDEMIC EPISODES OF OLD WORLD DISEASES AMONG PUEBLO PEOPLES WHICH MAY HAVE SPREAD TO SOUTHERN PAIUTES, PAHVANTS AND GOSHUTES

DATE	DISEASE	REFERENCES
1837	Typhoid & Smallpox	Bancroft 1889:314
1826	Measles	Kessell 1979:378; Veblen 1977:498
1816	Smallpox	Kessell 1979:378
1800	Smallpox	Kessell 1979:378
1780-81	Smallpox	Kessell 1979:378
1759	Smallpox	Kessell 1979:378; Ewers 1973;108; Duffy 1951:338
1748	Smallpox	Kessell 1979:378; Hill 1926:6; Adair 1930:356
1738	Smallpox	Kessell 1979:378; Alegre 1960:IV:381
1728-29	Measles	Kessell 1979:378; Alegre 1960:IV:335-6
1704	Smallpox	Kessell 1979:378; Kip 1846:207; Browne 1906:376-7
1696	Fever; Smallpox	Kessell 1979:378; Veblen 1977:498; Spicer 1962:34
1671	Pestilence	Hackett 1937:III:302; Kellogg 1925:162
1641	Smallpox	Kessell 1979:163; Stearn and Stearn 1945:27-28
1635	Measles	Hackett 1937:III:108; Thwaites 1897:69-89
1630	Bubonic Plague	Vetancurt 1961:276; Hackett 1937:III:108.
1592	Measles	Hayes 1981:31; Sauer 1935:11
1564	?	Hayes 1981:31; Mendieta 1945:174
1545	Bubonic Plague	Hayes 1981:27-28; Gibson 1964:448-449
1531	Measles	Hayes 1981:29; Gibson 1964:448
1520	Smallpox	Dobyns 1981:50

the entire plant and setting it to dry. Favorably disposed Mormon missionaries loaned Southern Paiutes sharp knives with which to cut wheat stalks (Corbett 1952:42). The Native American lack of plows, sickles, etc., fostered a Mormon attitude of agricultural superiority and generated a campaign to teach Southern Paiutes -- as well as non-wheat growing Pahvants and Goshutes -- to plow with European plows instead of using native digging sticks, to broadcast seed, to sickle and winnow in the traditional European manner. Consequently, in the course of time, Mormons sincerely believed that they taught these native peoples to farm. Apparently Mormons did spread wheat cultivation to Pahvants and Goshutes, but certainly they merely changed Southern Paiute wheat-growing techniques.

Potato. Native Americans in the Andes domesticated the potato (Solanum tuberosum) in remote prehistoric times, and developed over 40 distinct local varieties. Spaniards took one main white-fleshed variety to Europe that became the progenitor of nearly all of the carbohydrate-rich varieties grown in Europe and later North America. This white potato spread to the Southern Paiutes prior to Mormon colonization within the Virgin River oases. The Eastern Division people cultivated the domestic potato on Ash Creek in the summer of 1852 (Smith and Steele 1852:1). They continued doing so while they retained irrigated oasis fields (Brown 1854:2).

The Southern Paiutes dug up more than a dozen different bulbs, roots and rhizomes of native plants before they acquired the domestic potato (Stoffle and Dobyns 1982:83 TABLE 9). Consequently, they were well acquainted with tubers when domesticated potatoes became available to them. Indeed, their collection of wild bulbs and roots may have gone beyond mere collection -- collectors may have deliberately replanted immature bulbs and roots to grow into mature plants for later harvesting.

The Pahvants and the Goshutes also exploited a wide range of native tubers, rhizomes, bulbs and roots. Goshutes collected more than half a dozen, including the abundant and nutritious Camas root (TABLE 9 above). In addition, "The potato is cultivated to some extent by the Goshute" (Chamberlin 1911:382). It is not clear whether Goshute potato-growing began prior to Euroamerican colonization, and was like that among Southern Paiutes, or whether it began as a result of Mormon urging in the latter half of the nineteenth century. Goshutes refer to potatoes by two terms, one of which (dzina) was originally applied to the bulbs of the Spring-beauty, a native wild plant.

Watermelon. In 1826, J. S. Smith also recorded seeing green watermelons growing where he purchased ripe squash and pumpkins from Southern Paiutes (Brooks 1977:63). Like wheat seed, watermelon seed spread far beyond the Spanish colonial frontier among numerous Native American horticultural peoples.

Watermelons may have reached the Southern Paiutes either via the Oraibi trading center or the Northern Panya trading center. Mormon records of watermelons grown on Ash Creek (Brown 1854:2) and on Moapa River (Pratt 1854), when LDS colonization began in the Virgin River oases, indicate that this Old World plant was grown wherever Southern Paiutes gardened.

Goshutes have also grown watermelons, which they call pa'riki nump. As one would expect, this is an innovated label, pa meaning water, kikakin meaning to eat, and ump meaning material used for a purpose (Chamberlin 1911:355, 366). As in the case of the potato, it is not clear precisely when Goshute watermelon cultivation began, before or after Euroamerican colonization. Given Native American liking for watermelons, it seems quite probable that Goshutes began to grow watermelons with seed obtained from Southern Paiutes prior to 1847.

Summary. The quality of life of Southern Paiute horticulturalists certainly improved during the Spanish colonial period when they acquired at least three plants domesticated in the Old World. The watermelon added a sweet-tasting, cooling treat to the hot summer cultivars. The potato added a tuber larger that any of the wild roots or bulbs available in the environment, and a cultivar that when planted even with digging sticks returned a high food yield for relatively little physical effort. Wheat grew during the winter season when all of the Mesoamerican domesticated plants could not grow because they could not withstand freezing temperatures. It is not certain whether the quality of life of Pahvants and Goshutes also improved because of cultivation of these food crops.

IMPACTS OF MOUNTED RAIDERS

Once Spaniards introduced breeding stocks of horses to various parts of the New World, these Old World animals tended to reproduce explosively. The demographic collapse in the densely settled parts of Indoamerica freed formerly cultivated fields to become horse, cattle, sheep and goat pastures. Near colonial frontiers, mares and stallions escaped into favorable natural habitats such as the Pampas in South America or the Great Plains in North American. Native Americans who already exploited the natural flora and fauna of those habitats quickly learned to emulate the Europeans by riding horses, even though most Native Americans initially slaughtered horses as big game animals to consume. When the horse population expanded into environments exploited by non-horticultural peoples, it tended to stimulate parallel patterns of cultural change everywhere in the Americas.

Military-Economic Prowess. Once they mounted horses, Native Americans on the South and North American frontiers of the Spanish empire tended to become successful economic raiders. They quickly learned to treat Spanish farmers and stockraisers as sources of supply, raiding them for agricultural produce, additional animals, clothing, metal weapons and tools, and in many instances nubile women. This pattern involved becoming geographically mobile on horseback and adopting Spanish saddles, bridles, lances and shields, and battle tactics (Secoy 1953; Padden 1957; Spicer 1962:238-39, 243; Gregson 1969:37). If Spanish cavalry units decisively defeated mounted Native Americans, the latter sometimes turned to raiding other native peoples who lacked horses and were militarily inferior. The raiders then traded commodities thus acquired to colonial Spaniards who held periodic frontier fairs.

Mobility and Food Gathering. The geographic mobility Native American groups gained by mounting horses significantly increased the area from which women responsible for collecting wild plant foods could do so. The horse also enabled hunters to seek game animals over much larger territories than could hunters on foot. Hunting on horseback also facilitated cooperative killing of big game animals (Gregson 1969:38-39). Thus, the horse increased the survival capability and often the standard of living of non-horticultural peoples. Horses enabled the Eastern Utes to hunt bison on the Plains, together with both Comanches and Jicarilla Apaches, from about 1700 to 1750. Then the Comanches and Utes became enemies, and the latter allied themselves with Pueblos and Spaniards (Stewart 1966:49). Increased Eastern Ute mobility and a quest for pasturage as well as plant foods and game and other economic resources brought mounted Utes into Goshute, Pahvant and Southern Paiute country as raiders.

Social Structure. The economic rewards of cooperative mounted hunting, collecting, and especially trading and economic raiding fostered formation of raiding bands. Charismatic war chiefs collected warriors with their families, almost irrespective of pre-horse village and lineage affiliations. Raiding band membership became relatively fluid and voluntary. Often consistent raiding success, stemming from intelligent leadership and competent planning, brought war chiefs lacking personal charisma large followings. Thus mounted raiding bands typically grew in population size, counter to the general depopulation trend among Native Americans (Gregson 1969:39). The rich supply of animal protein in the diet of mounted raiders may also have contributed to higher fecundity than among other groups. The infrequent face-to-face contacts with sedentary populations minimized exposure to contagious Old World diseases that decimated Native Americans linked by administration, tribute payment and trade to the colonial epidemic regions. When mounted Native Americans became sheep pastoralists as did the South American Toba and the North American Navajo, a dependable supply of

mutton seems to have stimulated a high birth rate (Dobyns and Euler 1971) and fueled population growth while non-pastoralists diminished.

Energy Losses to Raiders. The social, economic and demographic changes just outlined transformed Eastern Ute groups nearer to Spanish colonists in the upper Rio Grande Valley than Goshutes, Pahvants and Southern Paiutes. Eastern Utes who did not differ culturally from the Pahvant and Paiutes in pre-horse times became distinct socio-cultural entities once they became mounted raiders. The Utes were a group effectively defeated by colonial Spaniards. They chose to trade with colonists and raid other Native Americans over whom they enjoyed military superiority. The mounted Ute raiders inflicted significant population losses on Goshutes, Pahvants and Southern Paiutes. They exported energy stored in the territories of the western groups in numerous forms. They hunted game in the aboriginal territory of these unmounted westerners, and collected wild plant foods in their countries. No doubt they exacted tribute in the form of horticultural products, thus discouraging the expansion of horticulture among the Pahvants and Goshutes. When the raiders departed eastward, they took with them the various kinds of stored solar energy contained in foodstuffs and game.

The most important single storehouse of energy the mounted raiders carried east with them, however, consisted of human beings. The transformation of a foot economy into a mounted economy enabled many Native American raiding bands to develop a hierarchical social structure. That is, they differentiated not only chief and warrior-raiders, but also captives treated as worker-slaves. A band raiding economy could sustain a warrior class and a slave class drawn from other ethnic groups. Slaves were assigned to menial tasks about camp and caring for livestock (Spicer 1962:241; Gregson 1969:40). The extent to which class differentiation occurred among mounted Utes during Spanish times is not documented. By the end of Mexican times, it had clearly emerged, at least in the form of concubinage and child slavery.

Clear evidence for this pattern was recorded when the most infamous or famous Ute raiding band Leader, Chief Walker (Stewart 1966:54; Bailey 1950) died in 1855. During his funeral rites, his relatives sacrificed, to accompany him, at least one pregnant Southern Paiute woman who had been a captive concubine, and a pair of Paiute girls and one boy who had been among his slaves (Huntington 1855:3). The available record indicates that Southern Paiutes in their semi-sedentary oasis settlements suffered most from mounted Ute slave raiding, but Pahvants and Goshutes also were subjected to Ute domination. More will be said on this topic below.

The intrusion of mounted Eastern Ute raiders among Goshutes, Pahvants and Southern Paiutes has implications for

the present study. As participants in the Native American international trade network, members of these three groups traditionally traveled across the lands of friendly neighboring peoples without molestation. Oraibi, Mojave and Northeastern Pai and Northern Panya traders apparently crossed Southern Paiute territory without molestation, as did Pahvants. Economic raiding for women, children and other commodities violated all of the traditional canons of Native American trade, hospitality and intergroup relations. Goshute, Pahvant and Southern Paiute traditional values were violated as the people themselves were. These peoples could not but begin viewing foreigners who rode into their territory as undesirable intruders. Mounted Eastern Ute raiders generated a mind-set among Goshutes, Pahvants and Southern Paiutes perceiving foreigners who took initiatives that involved traveling across tribal territory as threatening. Most Goshute, Pahvant and Southern Paiute experience with travelers and commodity movers since the early nineteenth century has reinforced that perception originated by Ute raiders.

SLAVE RAIDING

Spaniards on the frontier of northern New Spain readily bought young captives from Native Americans adjacent to the frontier. They even exchanged horses, greatly coveted by Native Americans familiar with the advantages of riding, for captive children and young women (Dobyns, Ezell, Jones and Ezell 1957; Jones 1890:49-50). The Spanish crown outlawed Native American slavery in the mid-sixteenth century, but left a loophole that stimulated intergroup slave raiding for centuries. The loophole allowed colonial Spaniards to buy and sell captives taken in a just war. Consequently, frontier Spaniards anxious to enhance their social status and household comfort by acquiring slaves to perform menial tasks automatically defined any intertribal conflict beyond the colonial frontier as a just war. The provincial Sonoran stimulus appears to have stopped just short of the Southern Paiutes. The known record shows that Sonorans acquired Mojave captives (Dobyns, Ezell, Jones & Ezell 1960) but not people from groups farther north.

The Spanish colony in the upper Rio Grande Valley, in contrast, absorbed captives whom mounted Utes had taken hundreds of miles away. Spanish traders dealt with the Utes once the latter made their choice about 1750 to trade with the colonists and raid other Native Americans. Some Spaniards themselves traveled as far as Utah Lake about 1755 (McNitt 1962:8) and to the Sevier River about 1761-1765 (Goetzman 1966:69). Later traders following their paths readily accepted captives in exchange for textiles, metal utensils and tools, and horses. Their repeated trading trips among Utes clearly indicate that their Ute customers levied heavily on nearby

Goshutes, Pahvants and Southern Paiutes for slaves to trade.

The colonial slave trade thus compounded the demographic collapse among peoples such as Southern Paiutes, Pahvants and Goshutes. They were linked into the colonial epidemic region by their continuing participation in intertribal trading networks that distributed European commodities, such as metal blades and seeds, beyond the colonial frontiers. Thus they were exposed to the numerous contagious epidemic diseases that spread along Native American trade routes. Moreover, they were simultaneously exposed to slave raiders who selectedly removed fertile younger women and children below child-bearing age from the population. The precise demographic impact of slave raiding on these peoples is not known because of the scarcity of documentation. The analysis of events based on written records forms the foundation of historical reconstruction. The written record of events among Goshutes, Pahvants and Southern Paiutes is frequently incomplete, especially prior to mid-nineteenth century. The paucity and incompleteness of documentation is particularly apparent during the period of Spanish colonial influence.

Something of the psychological effect of slave raiding on Southern Paiutes, Pahvants and Goshutes can be inferred from their mid-nineteenth century behavior. Long-continued slave raiding by militarily superior, mounted Utes generated in the groups still on foot a deeply felt fear of Utes. By mid-nineteenth century that fear had been heightened by the framework of aboriginal belief (McNeill 1976) that did not differentiate religion from other spheres. Faced with Ute physical prowess, Southern Paiutes, Pahvants and Goshutes interpreted the situation in supernatural terms. They concluded that Utes possessed not only arms and horses, but also very powerful shamans with effective access to power. This perception was so firmly ingrained that Southern Paiutes, Pahvants and Goshutes refused to live among mounted Utes for fear of their powerful sorcery when United States officials attempted to resettle them at Uintah Valley Reservation (Fowler and Fowler 1971:103).

THE MEXICAN PROGRAM: 1821-1846

The Spanish colonial period of indirect influence on Goshutes, Pahvants and Southern Paiutes ended in 1821 when Mexico achieved its political independence from Spain. Republican Mexico attempted to emulate French revolutionary models in defining its major national institutions. It discarded the colonial Indian mission as a frontier institution, expelling foreign-born priests in 1828 and secularizing colonial missions. Mexico necessarily continued to rely on military posts to defend its northern frontiers from

both hostile Native Americans and Euroamericans. The new republic emphasized a basic policy of treating each individual as a citizen in the French revolutionary sense. This fundamental thrust in time broke up the surviving cooperative organizations of Native Americans within the republic (Ezell 1955:199-214). The citizenship policy affected Native Americans even beyond the frontier of effective governance. The post-independence changes in Mexico opened its New Mexican Province to commerce with United States merchants crossing the Great Plains from Missouri. Some merchants not prospering turned to trapping fur-bearing animals in the mountainous regions Mexico claimed but did not control. Other merchants provided trappers with capital.

TRADING-TRAPPING

Not all merchants engaged in the Santa Fe trade with the New Mexicans. Trapper-traders penetrated into the Rocky Mountains directly across the Plains, ascending the Missouri River in most instances. They frequently utilized the ancient Native American trade route along the Snake River, joining the Shoshones in their annual trade fair on that stream. The fair became the famed annual rendezvous of the trapper-traders and numerous Native Americans. The Euroamerican trader-trappers contacted mounted Eastern Utes near Great Salt Lake, and espcecially those on Bear River toward Bear Lake where the 1827 rendezvous was held.

Euroamericans began crossing Goshute, Pahvant and Southern Paiute territory like mounted Ute raiders no later than 1826. That was the year when Jedediah S. Smith led a trading-trapping party from Great Salt Lake southwest into Southern California. The Euroamericans crossed Weber and Timpanoag Ute country, detoured eastward around Pahvant territory and descended Cove Creek on the Pahvant-Paiute frontier. They marched through the core Southern Paiute riverine oases to reach San Gabriel Mission on the California coast. They turned north to Stanislaus River and returned eastward across the Sierrra Nevada via Walker Lake, crossing Goshute territory between roughly Salt Marsh Lake and Great Salt Lake to join the 1827 rendezvous at Bear Lake (Brooks 1977: frontispiece). Then Smith led another party over essentially the same trail southwest in 1827 (Sullivan 1934).

Smith and his Euroamerican and Eastern Native American successors lived off the land as they traveled without any respect for aboriginal Native American rights. They killed such game as they could for their subsistence. They trapped all the beaver they could out of the mountain and desert streams, significantly changing the riverine habitats by diminishing the number of beaver ponds and marshes that contained flood waters and prevented stream erosion. These men

rode mules or horses that grazed by preference on grasses that under earlier conditions produced large quantities of edible seeds that Goshutes, Pahvants and Southern Paiutes collected and ate. They cut trees for fuelwood for what were by Native American standards huge, wasteful fires, thus initiating a long process of depauperation. They began diverting energy from the Native American inhabitants to intruders crossing ancestral Holy Lands (Spicer 1957), and upsetting ancient ecological relationships, especially in regional hydrology.

INTERPROVINCIAL CARAVANS

Almost on Smith's heels, Antonio Armijo (1954:159-165) led a party of New Mexicans northwest on the trail used by traders going to Sevier River and Utah Lake. Armijo turned off short of those waters to find and to follow Smith's trail southwest to San Gabriel. Thus he pioneered what became know as the "Old Spanish Trail" although it was in fact a new Mexican trail following very old Native American footpaths (Crampton 1979:361ff). When the Armijo party returned from California to New Mexico, its members realized such a large profit on their exchanges of commodities that emulators instituted an annual trading caravan.

The major commodity traders moved eastward from California was horses. Large herds of these animals overgrazed on riverine oasis vegetation that Southern Paiutes grew or upon which they depended. This predation impacted Native American life significantly in the oases because there was little or no pasturage in the desert between oasis. Consequently animals were half-starved when they entered each oasis. Not having livestock themselves, Southern Paiutes had not yet learned to fence their fields. Thus the pack trains and horse droves moving along the Old Spanish Trail sharply diminished the volume of Southern Paiute horticultural production. Gardening at spring-flow oases such as Las Vegas became impracticable. Even in the major riverine oases, Southern Paiutes had to relocate away from the caravan route. Moreover, they pulled back because travelers might shoot them on sight, so that their lives as well as their crops were at risk (Stoffle and Dobyns 1982:94).

Later Southern Paiute reticence about the Mountain Meadow area, often attributed to reluctance to admit involvement in the 1857 massacre of emigrants encamped there, actually stems from the earlier impact of annual caravans. Leaving well-watered, grassy coastal California, the eastbound caravans crossed the lower Sonoran Desert just as fast as possible. The arid crossing severely taxes horses and mules even in good condition so that the caravans typically halted for some weeks to recruit the animals on the rich high altitude pasture of Mountain Meadow (Fremont 1956:414). Euroamericans encamped in

Mountain Meadows for several weeks in mid-summer would effectively have prohibited Native American exploitation of the meadow or any nearby area where traders went hunting.

SLAVE TRADE AND RAIDS

By 1836, the mounted Ute raiding band chief Walker began to lead his raiders along the trail into Southern California to steal horses and mules in concert with renegade Euroamericans (Stewart 1966:54). Walker and his raiders were not at all averse to capturing Southern Paiutes and probably Pahvants along the way, or forcing them to "sell" children for nominal amounts of trade commmodities. By that time, the mounted Utes were well integrated into the Euroamerican trapping-trading network. They acquired muskets and then rifles, and ammunition (Fremont 1956:417). The combination of guns and horses gave Ute raiders even greater military superiority than lances over unmounted Goshutes, Pahvants and Southern Paiutes still using bows and arrows.

New Mexicans engaged in considerable slave raiding on their own. Within the first decade of independence, New Mexicans raided as far west as the Mojaves on the Lower Colorado River south of its great bend (Armijo 1954:164). In the succeeding years, they raided Southern Paiutes on the upper and San Pitch Utes on the middle Sevier River. "A certain class of men" captured the Native Americans in the spring when they were "weak and helpless" presumably because they were running out of stored food. Fattened following capture, the "likely" girls and boys were sold in Santa Fe for $100-$200 (Snow 1929:69-70; Farnham 1843:11; Alter 1932:28). Even after Mormon colonization began and United States territorial government had been established in New Mexico, the traffic in Native Americans continued.

The annual New Mexico-California caravan reportedly crossed in 1851, and the traders swapped "used up horses" for "the poorer Indian children" along the trail. The latter were exchanged in Southern California for horses. Children purchased on the eastbound journey supposedly brought from $100 for boys to $200 for girls in New Mexico (Jones 1890:50). In 1851, Utah Territorial Governor Brigham Young encountered a party of New Mexican traders from Santa Fe in Pahvant Valley with horses and mules to exchange for Native American children. They carried a trading license issued by New Mexico Territorial Governor James S. Calhoun (Deseret News 13 Dec. 1851:3). Young seized upon the opportunity and "strictly prohibited their further traffic" (Young 1852:2). In the decade that led to the great sectional conflict between Euroamericans, Young ringingly declared to the Utah territorial legislature: "Restrictions of law and government make all servants but human flesh to be dealt in as property is not

consistent or compatible with the true principles of government." He went on to state that his own feelings were "that no property can or should be recognized as existing in slaves, either Indian or African." There was, however, an element of sectarian and/or ethnic prejudice in the Mormon leader's action. He informed the legislators that Mormons could acquire Native American children:

> under the present low and degraded situation of the Indian race, so long as the practice of gambling away, selling, and otherwise disposing of their children; as also sacrificing prisoners obtains among them, it seems indeed that any transfer would be to them a relief and a benefit. Many a life by this means is saved, many a child redeemed from the thralldom of savage barbarity, and placed upon an equal footing with the more favored portions of the human race.

Involuntary Native American servitude under Mormons did not, in other words, morally outrage the LDS. Church leader. What he objected to was Native American servitude to Roman Catholic Spanish-Americans:

> If in return for favors and expense which may have been incurred on their account, service should be considered due. . . This may be said to present a new feature in the traffic of human beings; it is essentially purchasing them into freedom, instead of slavery; but it is not the low, servile, drudgery of Mexican slavery to which I would doom them, not to be raised among beings scarcely superior to themselves, but where they could find that consideration pertaining not only to civilized, but humane and benevolent society (Young 1852:2).

The slave-buying and holding heritage of the Mexican period, derived from Spanish colonial times, persisted well into the United States territorial period among Mormons in Utah.

UTE DOMINATION

Inevitably, the augmented military superiority of Eastern Utes inspired even greater fear of them than before among Goshutes, Pahvants and Southern Paiutes. The western perception of the power of Ute sorcery was strongly reinforced between 1836 and the death of Walker in 1855. The military prowess of mounted Utes enabled them to expand their horse pasturage very widely at the expense of the western groups Stewart 1966:54), like other mounted Native Americans (Gregson 1969).

The wide geographic range of mounted Utes and their

mobility generated additional resentments toward foreigners among Goshutes, Pahvants and Southern Paiutes. The present analysis has already referred to a time early in the Euroamerican colonization period when colonists considered Tabby chief of the Goshutes. To repeat, Mormons so perceived him by 1861 (Greene 1861:2) and federal Office of Indian Affairs representatives concurred in mid-decade (Irish 1865:144). By 1871, Tabby had migrated to live on the Uintah Valley Reservation (Critchlow 1872:545-47), and later scholars have identified him as originally a raiding band leader of San Pitch Utes and brother of Walker (Stewart 1966:54-55).

The association of Chief Tabby with Goshutes raises some questions as to what really occurred. Was Tabby using his military superiority to utilize horse pasturage in Goshute territory? The scarcity of grass within Goshute country militates against such an interpretation. The Euroamerican perception of Tabby as leader of the Goshutes suggests that the mounted Ute chiefs of the Walker family actually sought to impose their authority over the Goshutes by force of mounted Ute arms. When Tabby departed for Uintah Valley Reservation, he no doubt left a legacy of Goshute resentment toward fast-traveling foreigners who pre-empted Goshute natural resources by force.

A parallel situation arose among the Pahvants. With the Old Spanish Trail only a short distance from Corn Creek, Chief Walker himself clearly found that Pahvant oasis an attractive camping place. He seems to have used the Corn Creek oasis as his local base when he led his mounted raiders south to collect tolls from passing caravans. Walker and his followers profitted from annual trading caravans by forced exchanges. That is to say that they selected the horses they wanted and offered the owners very nominal recompense (Fremont 1956:417).

Walker continued to dominate the Pahvants while Utah was still a territory. The Gold Rush initiated large-scale summer emigrant travel along the Smith route from Salt Lake south through Goshute, Pahvant and Southern Paiute territory to Southern California. Walker's raiders continued to use the Corn Creek oasis as a convenient base for collecting tolls from travelers. The first mission Brigham Young dispatched to Southern Paiute country in 1854 encountered about 20 of Walker's men near Corn Creek late in April. The Utes surrounded the wagons and barred their forward progress. They gesticulated and the oldest of them spoke loudly to the travelers. Finally, using a symbol all understood, the raiders threw a blanket on the ground. The official recorder of the Mormon mission wrote that "we all understood this to be a demand of toll for passing over their lands." The missionaries contributed bread, flour and tobacco. The Utes consumed the bread at once (Brooks 1972:10). What the Mormons apparently did not understand was that the land actually belonged to the

Pahvants by right of aboriginal occupancy, and that Walker and his raiders were interlopers.

Chief Walker laid claim to the very land, however, in his propagandistic conversations wth Mormon interpreters. He boasted that if he became angry, no white man could pass through "his lands" alive. He also appealed to the land greed of the Euroamericans by talking about selling "all the lands." He asked for a couple of tons of flour and many cows and horses as an initial payment (Brooks 1972:12). In 1854, Walker encamped at the Corn Creek oasis of the southern Pahvant divison. He was not simply expanding his horse grazing area, inasmuch as he was amassing wealth by charging travelers tolls. Had Walker seized political control of the Pahvants with military force?

In 1855, Walker seems to have transferred his field headquarters. In the winter he seems to have gone south to Parowan in Southern Paiute country (Scovil 1855:2). Soon after he went to the Chalk Creek oasis of the northern Pahvant division. By that time, of course, Mormon colonists at Fillmore had seized much of the oasis, and the Euroamerican town attracted Walker, not the local Pahvants already reduced to laboring for the Mormons (Brooks 1972:13). Walker did condescend to gamble with Pahvants, and one version of his death attributed his demise to bursting a blood vessel while so engaged (Huntington 1855:3). Toward the end of his life, Walker thus spent considerable time in Pahvant territory. By that time, though, Mormon colonization provided a powerful attraction to the old raider, who developed a peculiar special relationship with Brigham Young. His death frightened the Pahvant labor gang at Fillmore. Members rushed to the Mormon settlement for protection, telling the colonists to drive their cattle in for safekeeping because the bereaved Utes threatened to dispatch a number of Pahvants, Mormons, and their livestock to accompany Walker's soul in the afterworld.

Whatever the actual relationship was between Tabby and the Goshutes, and Walker and the Pahvants, their raiding bands could have constituted an unwelcome economic burden on the two eastern groups. The raiders sharply restricted Goshute and Pahvant access to game animals and wild plant foods, and prevented their collecting tolls from travelers crossing their own Holy Lands. The disruptive presence of Ute mounted raiders among Goshutes and Pahvants stemmed from the large-scale trade with Euroamericans that began with Mexican independence in 1821 and expanded through the entire Mexican period until 1847 and perhaps later. That presence left a legacy of Goshute and Pahvant distrust and resentment of foreigners intruding on their lands. The major travel routes of the mounted Utes north and south through Goshute and Pahvant country, and of the trader-trappers as well, parallel the study area. Consequently, contemporary Goshute and Pahvant perception, like that of Southern Paiutes, is colored by historic experiences

extending in time back to the Mexican period. These persistent peoples have developed their perceptions of outsiders moving commodities across or near the study area for over 150 years.

THE AUTONOMOUS MORMON PROGRAM: 1847-1849

The United States and Mexico went to war in 1846 to settle a dispute over their mutual boundary. Contingents of United States troops rode and marched into the northern Mexican province of New Mexico. Some remained there on occupation duty; others continued to California. Uncolonized Mexican territory inhabited by Native Americans was finally separated from any semblance of Mexican control. Legal annexation did not occur until after the Treaty of Guadalupe Hidalgo was negotiated in 1848.

During the war period, advance parties of members of a dissident religious sect emigrated from the United States into Ute territory on the shore of Great Salt Lake. Brigham Young and other leaders of the Church of Jesus Christ of Latter-Day Saints traveled by wagon train from Iowa to future Utah in the summer of 1847. These Mormon pioneers sought a denominational refuge after several years of what they perceived as persecution by Gentiles in the United States. They pursued an ideal model of human settlement, the City of Zion. The model called for close cooperation among farmers, with enough skilled artisans such as mechanics to perform the non-agricultural tasks necessary for successful farming in mid-nineteenth century. The 1847 pioneers laid out Salt Lake City as a planned City of Zion. Part-time farmers who kept shops or plied trades received one to five-acre plots close to the center of the settlement. Full-time farmers were to cultivate ten to 80-acre tracts farther away (Anderson 1942:68).

When Brigham Young led the vanguard of LDS Church members into what he anticipated converting into an earthly Zion in a wilderness inhabited by Native Americans, his church already had numerous foreign missionaries at work. Their proselytizing achieved marked success, especially in Northwestern Europe. Foreign missionaries soon began to encourage members of LDS Church congregations abroad to emigrate to North America. They quickly passed through the United States to reach the Mormon Zion. The mission-emigration system could send approximately 4,000 migrants annually (Anderson 1942:117). Probably the system could and did not move so many converts in 1848, but it did very soon after that date. One irony of the City of Zion plan for the cooperative farming village as an institution of arid land settlement was that the original Mormon settlement quickly became a true city. Many of the LDS Church migrants arriving from Europe chose to settle in Great Salt Lake City.

The first expansion of Mormon settlement in Zion thrust north into Weber Ute country. Later expansion initiated in January of 1849, skipped some 50 miles south from Salt Lake City to establish Provo on the shore of Utah Lake (Anderson 1942:101). Thus Mormons colonized traditional Timpanagots Ute territory, and neared Goshute and Pahvant country.

Mormon colonization brought fundamental changes to the social and biological situation of Utah Native Americans. The European emigrants frequently carried contagious diseases with them that were transmitted to Goshutes, Pahvants and Southern Paiutes. They depended on the same irrigation water, fish, game, and arable land resources that sustained these Native Americans.

UNITED STATES PROGRAMS: 1849-1982

When the United States annexed the independent Republic of Texas, it acquired an uncertain boundary with Mexico. The president and army leaders initially concentrated their efforts on the Lower Rio Grande Valley (Nevin 1978:22-43). They did not, however, forget that Mexico's northernmost provinces were already linked into the Yankee international trade network and were militarily vulnerable. Relatively small detachments of United States troops occupied the Upper Rio Grande Valley. Even smaller contingents followed the southern Gila River trade route west to California. Joining U. S. naval units on the coast, and a force of irregulars under John C. Fremont, they conquered the California militia and volunteers (Nevin 1978:99-108). The Rio Grande Valley and coastal California were the inhabited goals of manifest destiny.

By 1848, General Winfield Scott had led a large United States invasion task force to decisive military victory and occupied Mexico City (Nevin 1978:169-193). The victorious power was able more or less to dictate peace terms once Mexican patriots were able to form a functional government in the aftermath of defeat. The Treaty of Guadalupe Hidalgo transferred to the United States the disputed area in Texas, New Mexico, California -- and an immense Rocky Mountain region north of those provinces that Mexico had claimed but had not colonized. The United States made sure that it would possess several secure overland routes to California. Mormon colonists, Goshutes, Pahvants and Southern Paiutes all came under United States sovereignty.

NATIONAL WAGON ROADS

National programs affected the native peoples in the study

area within little more than a year of the negotiation of the Treaty of Guadalupe Hidalgo. Individual citizen initiatives quickly outran national policy planning when workers at a sawmill near Sacramento discovered gold in the millrace in 1848. A gold fever gripped U. S. citizens soon after they learned of the discovery at the end of the year. A gigantic Gold Rush began in the spring of 1849. From 40,000 to 50,000 Forty-Niners emigrated westward to California. Some boarded sailing ships to round South America; others sailed to Panama or Nicaragua, crossed the isthmus and boarded other ships to journey north to California. Many others packed up their household goods and families in wagons, hitched up their horses, mules or oxen, and emigrated lock, stock and barrel. Overlanders from southern states typically crossed northern Mexico or followed the wagon road opened by Lt. Col. Philip St. George Cooke and his Mormon Battalion in 1846 (Cooke 1878) and Col. Lawrence Graham's dragoons in 1848 (Couts 1961). Most overlanders followed the central route ascending the Missouri and Platte Rivers and crossing the Rockies to Mormon Salt Lake City. From 10,000 to 15,000 are thought to have traveled through Salt Lake Valley in 1849 and an equal number in 1850 (Arrington 1958:68). Then most of them crossed passes through the Sierra Nevada directly to the gold region of California. Others detoured south very near the study area through Goshute, Pahvant and Southern Paiute territory to Cajon Pass and Southern California. The latter route offered the advantage to late-starters that it remained snow-free during the winter when deep snows blocked passes in the central Sierra Nevada.

The surge of emigration intensified Euroamerican pressure on that sector of Southern Paiute territory from Mountain Meadow southwest across the desert. For the emigrants simply followed the well-marked Old Spanish Trail from Mountain Meadow to Southern coastal California, or most did so. The Pahvants and Goshutes suffered the greatest shock from the mass migration that began in 1849, because they had largely escaped the earlier impact of caravans moving along the Old Spanish Trail. Suddenly, the Goshutes found themselves competing for very scarce grass seed and game resources with the largest stream of migrants traveling all summer west from Salt Lake City to the Humboldt River.

In and very near the study area, the Southern Goshute division suddenly found itself confronted by emigrants traveling south from Salt Lake City to the lower Sevier River. They appear to have attempted to trade with the travelers who tended to encamp near the river to allow draft and riding animals to graze. Identified as "Snake Indians," the then-current term for Shoshone-speakers, they traded ponies for firearms (Young 1954:64). Modern editors impressed with the fame of Chief Walker have inferred that the Native American traders exchanging a pony for a gun early in October of 1849 were members of Walker's raiding band (Pratt 1954:71.43). The contemporary identification of the traders as "Snakes" and

their location on the traditional Goshute north bank of the lower Sevier River indicates, however, that they were Goshutes. This phase did not last long. By mid-October Forty-Niners recorded no Native Americans on the lower Sevier River. The Goshutes may simply have run out of ponies to offer in exchange for guns, or they may have gone into the hills to pick pinyon nuts in season. Lack of later mention of them leads to the inference that later emigrants proved to be antagonistic, so that the Goshutes made themselves scarce along the new wagon road. They did winter in the delta in 1850, hunting oxen of passing Mormons,but fled when mounted Mormons pursued them (Larson 1952:126-28).

One reason for such action was that it became dangerous on the road, and difficult to subsist near it. A Mormon in one wagon train recorded Euroamerican hunting behavior on Chalk Creek (future site of Fillmore). Emigrants discovered a number of jackrabbits hiding under some sagebrush. They loosed their dogs to start the rabbits, "when the rifle balls began to fly in every direction." The wildly firing hunters managed to slaughter about 100 jackrabbits, plus some sage hens (A. Pratt 1954:72-73). Such indicriminate shooting could well have frightened the local Native Americans. Such large-scale slaughter of game birds and animals no doubt quickly depleted stocks sufficiently to handicap Native American hunters very significantly.

By the time this shooting incident occurred, Pahvants were not seen along the wagon road. Passing Chalk Creek, the Forty-Niner just cited commented that the Pahvant tribe was located on its headwaters (A. Pratt 1954:73). The wagon road veered eastward crossing Pahvant territory, away from the study area and east of the Mineral and Black Mountains (the study area being located west of those ranges). The impact of migration on the Native Americans may be further illustrated by migrant behavior in Southern Paiute country. The Forty-Niners continued shooting numerous jackrabbits (A. Pratt 1954:75).

The Euroamerican travelers also caught fish. One Forty-Niner caught a two-pound trout (A. Pratt 1954:74). Farther along where a stone dam pooled Beaver River, others hauled out "some beautiful trout" that weighed up to five pounds. At Little Salt Lake, geese and ducks were plentiful on the water, and jackrabbits and sage hens in the bottoms. Native Americans who appeared quite friendly visited the migrants passing in late October (A. Pratt 1954:76). Again, later Forty-Niners did not mention meeting any Native Americans at Little Salt Lake. The Southern Paiutes, like the Goshutes on the Lower Sevier River, pulled back away from the wagon road.

The result differed in the two ethnic groups. When the Goshutes moved away from the wagon road, they more or less left the study area, because it is quite near the old wagon road. When the Southern Paiutes of the Eastern Division pulled back

from the road, however, they more intensively utilized the Colorado Plateau highlands to the east, and the Escalante Desert-Needles Range foothills to the west. The study area crosses the latter refuge region, so the proposed right-of-way constitutes a geographic slice through a zone of relatively intensive Southern Paiute land use from 1849 to the urbanization of the surviving population well into the twentieth century. These people found game and a wide variety of wild food plant resources, as well as medicinal plants, in the higher elevation on and near the study area. While the lower altitude desert valleys offered some jackrabbits and plant foods, they were forbidding places to cross because of lack of water. Southern Paiutes lived in the hills and mountains where springs provided domestic water.

Disease Transmission. Massive migration by Euroamericans often spread contagious diseases that were endemic among them to Native Americans, among whom they became epidemic. That phenomenon occurred in 1848 and 1849. In 1848, before the Gold Rush, emigrants already were leaving the United States for Oregon. The Oregon Trail ascended the Platte River, and emigrants in 1848 transmitted measles to the Snake Indians. The Plains Crow contracted the measles from the Snakes (Denig 1961:185). During the second summer of Mormon emigration, some LDS contingent crossing to Great Salt Lake Valley appears to have carried the measles there. Mormons may have taken it directly to the new Provo outpost on Utah Lake. The disease spread to the Utes of that region in 1849 (Anderson 1942:101). Given the highly contagious nature of the measles virus, it is quite likely that Goshutes, Pahvants and Southern Paiutes all contracted it. There is later indirect evidence that it spread all the way south to decimate the Kaibab Paiutes (Euler 1966:90).

North Americans in general struggled through the second great cholera assault on the continent during the Gold Rush. Cholera mortality ran high in many United States cities that summer, and many if not all overland wagon trains carried persons ill with cholera westward. The sanitary conditions in wagon trains were such that cholera transmission to new, susceptible persons continued for long periods of time, so that sick individuals reached far western areas. There they contaminated the water supplies of various Native Americans, causing epidemic cholera mortality among them.

On the Southern or Gila River route, ill emigrants survived to reach the Middle Gila River oasis inhabited by the Pima and Maricopa. Those Native Americans sold the emigrants large quantities of food that enabled thousands of improvident migrants to reach California. They contracted cholera from their customers, however, and some of them fled to nearby Salt River to escape the disease (Bartlett 1854:II:241). The Middle Gila River is about as far west as the wagon road south from Salt Lake City across the lower Sevier River, and the pathogen

that reached the Gila no doubt also reached the Sevier. In fact, the wagon train that left Hobble Creek early in October of 1849 may have carried cholera patients. On 11 October 1849 part of the train "lay in camp" for a day because two men were too sick to travel (Young 1954:64). The day before, another portion of the long train had laid over south of the river "on account of some sickness" (A. Pratt 1954:71). Thus, the Goshute traders trafficking with the emigrants exposed themselves to whatever illness debilitated members of the wagon train company.

The apparently precipitous Native American flight from the wagon road may, therefore, not have occurred for lack of ponies to trade, or because pinyon nut picking season began, or because emigrants turned hostile. Goshutes and Southern Paiutes alike probably contracted whatever disease the wagon train carried, suffered an unknown number of deaths, and fled the wagon road in fear. If the disease was cholera, the Native Americans probably had oral tradition of its symptoms, and lethalness in 1832-34.

COLONIZING THE "MORMON CORRIDOR": 1850-1857

Having reached Salt Lake Valley in the fall, the pioneer Mormon colonists had to subsist on foodstuffs they brought in their wagons, supplemented by fishing, hunting and wild plant food collecting until the following summer of 1848. They nonetheless expanded their settlements to Ogden in Weber Valley north of Salt Lake City that year. Then in the spring of 1849, Brigham Young dispatched a party of men to found Provo at Utah Lake south of Salt Lake City (Arrington 1958:84). That was the Mormon position when the Gold Rush began. The Mormon economy was precarious. Few of the Latter-Day Saints had been well-to-do prior to emigration across the Plains, many having lost property during the persecutions of the sect in Illinois and elsewhere. The trans-Plains emigration in itself limited the stock of worldly goods the Mormons could transport to their Rocky Mountain Zion during their initial colonizing push westward. Consequently, the colonists typically struggled along with few clothes, building such houses as they could with a shortage of hand tools, seeking out a subsistence with crops upon which they depended for their very survival.

Then the Forty-Niners by the thousands provided the Mormon colonists with a veritable bonanza of precisely those things in shortest supply in Zion: livestock, a variety of foodstuffs, clothing, tools, wagons and iron. Some emigrants taking wagons to California planned to profit by outfitting others in California. They purchased hand tools for digging, carpentry kits, and large quantities of foods. They loaded their commodities on numerous substantial wagons and set out for the gold fields. Not long before reaching Salt Lake City, many of

these companies reportedly heard that fast sailing ships laden with competitive goods were also on their way to the Pacific coast. Fearful that the sale of their commodities in California would not pay the cost of freighting them there, many of the frustrated entrepreneurs decided to sell to Mormons for what they could realize. Such decisions enabled Mormons, who profited from selling small grains and fresh vegetables to the Forty-Niners at high prices, to purchase a wealth of clothes, tools, vehicles, etc., at half the price of new, and save on freight costs besides.

Moreover, teams pulling the wagons of many emigrants were exhausted by the time they reached Great Salt Lake Valley. Mormons no doubt carefully informed emigrants that truly arid deserts still had to be crossed between Salt Lake City and the gold fields. Anxious to reach the diggings, many emigrants sold their possessions and vehicles for a fresh pack-animal. Consequently, Mormons who arrived poor in 1847 and 1848 acquired comparative wealth in goods during 1849 and 1850. They may not have amassed large sums in United States coins, but they laid in large supplies of iron and steel for blacksmithing, spades, shovels, picks, scythes, handtools, wagons, clothing, cloth, harnesses, etc. (Arrington 1958:67-68). Consequently, the centrally directed Church of Jesus Christ of Latter-Day Saints was enabled to well-equip its own arriving immigrants and outfit them with wagons, livestock and tools and clothes when it sent them out to establish new villages.

Send them out the Church did. Brigham Young and other Mormon leaders were always alert to possibilities for profit, and for opportunities for strengthening the "wilderness" Zion. They planned to establish a Mormon Corridor of settlements from Salt Lake City to the Pacific Coast and a seaport. They also envisioned that towns along the corridor would continue to profit from overland migration as had the pioneer Mormon towns in 1849 and 1850. They also planned to establish Mormon settlement at or near the edges of what they knew would become a territory in the United States system. The material accumulated in 1848 and 1850 enabled the Mormons to colonize rapidly along the planned Mormon Corridor.

The Mormon Corridor parallels the study area, usually some distance to the east. The development of permanent Euroamerican settlement along the corridor, coupled with continued Euroamerican overland travel along the national wagon road, changed the nature of Native American land use in the corridor and the study area (see TABLE 9). The large number of Euroamericans traveling along the corridor, many lacking previous personal experience with Native Americans and conditioned by dominant group literature and history to regard them as hostile, made Native American resource exploitation dangerous along the route. Native Americans previously tended to travel more or less east-west between the eastern plateau and mountains and Lake Sevier. The corridor tended to disrupt

that pattern, leading to some diminution of Native American use of the study area. The Mormon settlements, moreover, quickly attracted local labor gangs of Native Americans who subsisted primarily on earned, begged, given or stolen food.

Fillmore on Chalk Creek. In 1851, the First Presidency of the LDS Church dispatched a group southward to establish a town on Chalk Creek. As already indicated, Chalk Creek appears to have been, until that time the main oasis habitat of the Northern Pahvant or Ankateko Band. Eager to achieve early statehood, the leadership named the new settlement Fillmore after the incumbent United States president. Just in case Millard Fillmore failed to respond to the honor of having Fillmore named after him, the Utah authorities also called the county of which it was the county seat Millard. Moreover, they designated Fillmore as the territorial capital (Alter 1932:I:131).

Other Mormons were almost simultaneously establishing villages farther south in Southern Paiute territory. Thus, the church-territorial leadership perceived Fillmore as being located approximately in the center of the new territory both north-south and east-west. Federal officials typically preferred the relatively greater comfort of rapidly urbanizing Salt Lake City, however, and in 1856 the territorial capital moved there to stay (Alter 1932:I:232).

The impact of Euroamerican colonization on the Pahvant was immediate and far-reaching. Whether colonization was the decisive event is not clear, but certainly the chief, known as Kanosh, by 1853 was already firmly aligned with the colonists (Huntington 1853:2) and remained so until his death. By the spring of 1854, "many" Pahvants worked for Mormons at Fillmore, seemingly happy to work in exchange for food and clothing (Brooks 1972:13). Colonial dependency began for the Pahvant when Mormons colonized their corridor toward the Pacific, sharply diminishing their use of land in the study area.

Mormon Colonies Among Southern Paiutes. The Mormons chose some sites for colonization because they offered natural resources to be exploited (see TABLE 9), as well as locations along the Mormon Corridor to the sea. In mid-January of 1851, a company founded Parowan in Little Salt Lake Valley (Anderson 1942:105). Excavating an irrigation canal 7 miles long, these colonists raised a successful summer crop. In November, 35 Parowan colonists advanced southwest along the corridor to establish Cedar City on Coal Creek (Anderson 1942:121). They also diverted surface stream flow into irrigation canals to raise food. The greater objective of these two colonies was, however, to mine iron ore and coal and to smelt iron. Brigham Young recognized that the bonanza of wagons and surplus iron emigrants sold cheap or abandoned in and near the Mormon villages would not last long. He sought Mormon self-

sufficiency in iron to save the high cost of purchasing iron implements in the United States and freighting them across the Plains.

Three apparently independent-minded families moved even farther south to what became known as Shirt's Creek after one of them. They engaged in making salt from a saline flow (G. A. Smith 1852:2). These earliest Mormon colonies in Southern Paiute country all were in the Great Basin watershed and the territory of the Eastern Division.

Crop yields in 1850 and 1851 encouraged the Mormons to continue their advance. Late in 1852 a party with 15 men crossed the drainage divide and started a colony on Ash Creek in the Virgin River system. They chose their site poorly, and had to relocate in 1854 (Corbett 1952:56).

When the Ash Creek colony moved from Harmony to New Harmony, some of the colonists split off to found another settlement on Santa Clara Creek in December of 1854 (Corbett 1952:66-67). Both the Harmony colony led by John D. Lee, and the Santa Clara colony led by Jacob Hamblin consisted of Latter-Day Saints designated by church leaders as missionaries to the Southern Paiute Lamanites--the Mormon term for Native Americans whom they believed to be descended from a lost tribe of Israel.

The colonization of Santa Clara Creek at the low-altitude Sonoran Desert oasis exposed the Mormons, recruited from temperate climates, to warm winters and very hot summers. Many of them simply could not endure the summer heat. Two years after leading the people to found Santa Clara, Hamblin led an exodus into Pine Valley near the headwaters of the creek on Pine Mountain. There he and other Mormons established summer homes at a higher, cooler altitude where rich natural pasture sustained Mormon livestock (Corbett 1952:96-97).

Brigham Young designated additional missionaries to establish a colony at the Las Vegas spring-flow oasis. There, the Mormons managed to make peaceful contact with the Paranayi Paiutes displaced from the oasis by constant Euroamerican travel. The Mormons obtained what they reported as Paiute permission to live on Paiute lands, and agreement that the natives would preserve the peace with all emigrants traveling the wagon road (Bringhurst 1855:174). The Paiutes often entered the Mormon camp with suspicion, having been driven from the oasis by emigrants shooting at them. "They will show us the bullet holes and marks they have received from white men, and tell us that they will try and forget it, although their brothers have been killed, etc." (Steele 1855:232). While Brigham Young apparently originally envisioned the colony at Las Vegas occupying a very strategic oasis on the Mormon Corridor to the Pacific Ocean, it became something more. Members of the group prospected in the nearby hills and located deposits of lead. Some rich samples sent to the territorial

TABLE 9. MORMON COLONIZATION IN PAHVANT AND SOUTHERN PAIUTE TERRITORY. 1850-1857

DRAINAGE	SETTLEMENT	RESOURCE	DATE
Chalk Creek	Fillmore	Irrigated Fields	1851
Little Salt Lake	Parowan	Irrigated Fields	1851
Coal Creek-Cedar Valley	Cedar City	Iron, coal	1851
Shirt's Creek	Walker/Shirt's	Fort Salt	1851
Ash Creek	Harmony	Irrig. Fields	1852
Santa Clara Creek	Santa Clara	Irrig. Fields:cotton	1854
Virgin River	Washington	cotton	1857
Santa Clara Creek	Pine Valley	cool pasture	1856
Las Vegas Springs	Las Vegas	Irrig. Fields	1855
Santa Ana River	*San Bernardino	Irrig. Fields	1851

*San Bernardino was not located within Southern Paiute territory, but Mormon travel to and from that settlement crossed the entire length of Southern Paiute land, so that the settlement brought significant impacts to the Southern Paiutes.

governor awakened his interest. In 1856, church headquarters dispatched Nathaniel Jones to carry out a rushed lead mining and smelting program. (Jensen 1926:231ff). By that time, the LDS leader-territorial governor had come very close to defying the authority of the federal government. The LDS church leadership was making serious efforts to arm the congregation and lay in a supply of powder and lead balls.

A number of influences combined to propel the Mormons toward a goal of economic self-sufficiency. Sheep flourished in temperate Zion, but homespun and even manufactured woolen clothing was hot and itchy during the hot summers. The Latter-Day Saints did not necessarily act very saintly during the uncomfortable summers unless they could change into lighter clothing. Cotton clothes cost scarce cash, however, so the leadership envisioned the hot riverine oases of the Virgin River system as Zion's own Dixie. That vision led to colonization at Washington, on the Virgin River not far above the mouth of Santa Clara Creek. Brigham Young and others in Salt Lake City hoped and evidently expected that Mormon colonists sent to the new village would be able to grow sufficient cotton to enable the population of Zion to clothe itself for summer temperatures. They intelligently chose most of the 28 families sent to the Virgin River from former residents of southern cotton-producing states (Brooks 1961:202). Once again, Mormon inexperience in the Lower Sonoran Desert environment handicapped the great cotton-growing campaign. Much of the alluvial soil along the Virgin River proved to be thoroughly impregnated with alkali or unsuited for growing cotton for other reasons (Brooks 1961:203).

Reared in a forest culture, Mormons also failed to comprehend that Southern Paiutes rather effectively managed vegetation in the riverine oases and elsewhere with fire. The natives used fire drives to hunt, and probably for other reasons. The vegetation had evolved during a period of 20,000 years of lightning-caused and man-made fires, so frequent burns actually favored plants economically productive in the Native American exploitation system. From the Mormon viewpoint, however, "The Indians here seem to be possessed with the spirit of burning, for there is scarcely a day but what we can see fires both on the mountains and in the valleys." To the colonists, a tree possessed monetary value, and pasturage was vital. "We have talked to them about burning up the grass, and they seem willing to spare it, and so set their fires among the sage bush, but it often gets into the grass, and they have already burned much of it...." (Atwood 1855:224). As Mormon colonists gained numerical strength relative to the Southen Paiutes, they insisted increasingly that fires be suppressed. Consequently, Euroamerican colonization along the Mormon Corridor resulted in a long-range transformation in the vegetation in the study area. As the frequency of burns decreased, the economically desirable plants lost their competitive advantage. Those valued plants decreased in

abundance and yield, and less valuable species gained in abundance. Thus, Euroamerican colonization indirectly changed vegetational balances within the study area even though it occurred along the Mormon Corridor parallel to the area and not within it.

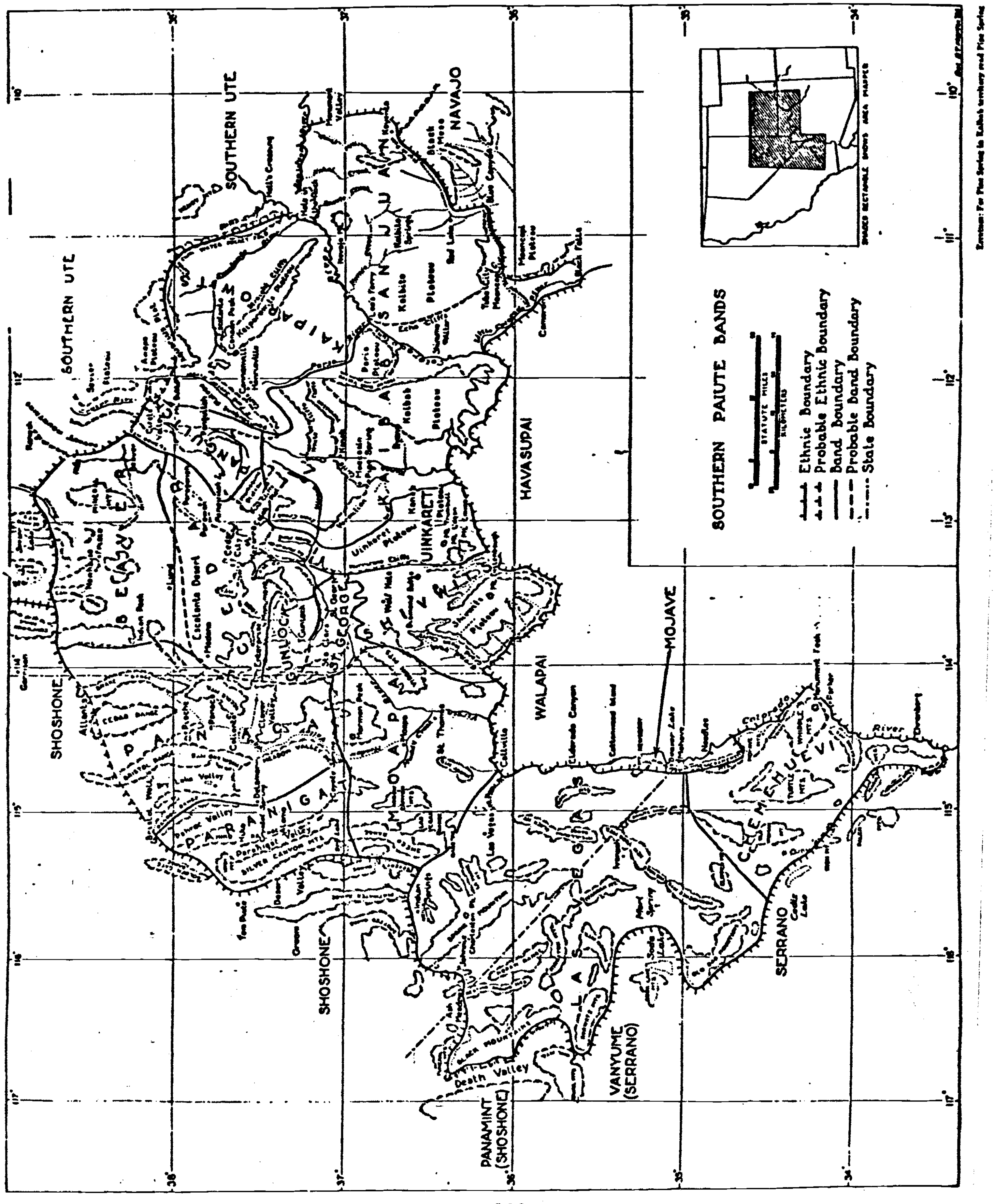
Euroamerican colonization along the Mormon Corridor also had a prompt and expanding impact on trees. The Mormons cut pine trees and set up sawmills to saw them into lumber for building frame houses in the upland colonies, although they used stone and sundried bricks as well as lumber in the Sonoran Desert colonies. The lead smelting efforts at Las Vegas, and the iron smelting attempts at Cedar City also levied heavily on the pine, pinyon and juniper trees in the areas. Depauperation of forested areas began.

The early burst of Mormon colonization along the Mormon Corridor, given its initial boost by material garnered from Forty-Niners and later emigrants, halted in 1857. Learning that President James Buchanan had dispatched United States troops to assert federal authority in Utah Territory, Governor Brigham Young called in people from outlying colonies. The Saints abandoned San Bernardino.

Economic Transition: Gathering Camps to Labor Gangs. The Southern Paiutes had combined semi-sedentary settlement in their riverine and spring-flow oases with transhumant trips to hunt in the mountains and to collect wild food products when they were locally abundant. Mormon colonization in Southern Paiute oases very quickly transformed the basic social structure of these people. Inasmuch as Mormon colonists typically chose oasis sites, existing Southern Paiute preferences for oasis habitation favored their staying where they were. In addition, Mormon seizure of natural resources almost immediately made Southern Paiutes dependent on agricultural food supplies they could no longer raise themselves. The Southern Paiutes also appear to have been driven by a work ethic that would not let them see good food spoil in the fields.

In the fall of 1852, Southern Paiutes helped Parowan Mormons to harvest wheat, maize, squash, pumpkins, turnips, beets and potatoes. A colonist admitted: "I will say this much concerning the Indians -- only for their labor, there would have been hundreds of bushels of produce lost, that could not have been saved by the white population." This Mormon made an even more startling observation: "I consider myself a common hand, to work, but I must give up to some of the piedes for quickness." From 100 to 200 Southern Paiutes camped near Parowan through that summer and fall (Adams 1852:2), forming the first labor gang documented as having emerged from the sharply altered environmental circumstances of the Southern Paiutes.

MAP 3.


SOUTHERN PAIUTE BANDS
Ethnic Boundary
Probable Ethnic Boundary
Band Boundary
Probable Band Boundary
State Boundary
SOUTHERN UTE
NAVAJO
HAVASUPAI
WALAPAI
MOJAVE
SHOSHONE
SERRANO
VANYUME (SERRANO)
PANAMINT (SHOSHONE)
ST. GEORGE
UINKARET
Death Valley
Escalante Desert
Uinkaret Plateau
Kaibab Plateau

The transformation of Southern Paiute economy and social organization occurred almost everywhere Mormons colonized. At Harmony, in December of 1852, "ten men and several Indians are constantly employed building the Fort" (G. A. Smith 1852:2), the Euroamericans thought was necessary for their safety. When some of the Harmony colonists moved to Santa Clara Creek in 1854, they cut cottonwood trees to build log cabins. Some of the reported 800 Southern Paiutes living there aided them (Corbett 1952:66-67).

In 1856, when a special work-party of Mormons sought to mine and smelt lead from the Potosi deposit near Las Vegas, the local Southern Paiutes packed the excavated minerals down a steep slope for two months in exchange for their food while working, and some clothing (Jensen 1926:273).

All along the Mormon Corridor to the Pacific, then, Southern Paiutes quickly made the transition from economic self-reliance to partial dependence on Mormon agricultural colonists who seized key native oasis resources. The very earliest thrust of Euroamerican colonization in Southern Paiute country began to diminish the importance of the food collecting and hunting camp, and foster the organization of labor gangs exchanging Native American labor at a variety of tasks for clothing and food. The attraction that Euroamerican clothing held for Southern Paiutes was considerable. Until colonization began, they wore rabbit skin robes during cold and inclement weather, and little else besides a breech clout. Euroamerican clothing was warmer, and far more colorful.

Demographic Collapse. The Forty-Niners carried with them cholera and other diseases, but they were transients passing through Goshute, Pahvant and Southern Paiute country. Mormon colonists came to stay, on the other hand, and they also brought with them pathogens which were frequently highly lethal to Native Americans. Moreover, many of the Mormons traveled directly from European urban slums across the Atlantic, through the United States and across the Plains to Zion. Their relatively rapid movement enabled them to bring numerous ailments with them, and their rapidly growing numbers allowed some contagious diseases to become endemic, apparently, in the nucleated Utah towns.

Malaria is one disease the Mormon immigrants seem to have imported into Zion. San Pete had hardly been founded when anxious relatives inquired about a colonist there who suffered from "chills" (Deseret News 21 Feb. 1852:2). Many migrants passing through Kanesville the eastern jumping-off point for Mormon emigrants, suffered from chills and fever (Benson 1852:1). Malaria frequently affected residents of Salt Lake City "who have previously suffered from it" (Deseret News 11 Dec. 1852:3). Thus, the Mormon immigrants brought an abundant stock of Plasmodium with them, and there appears to have been a large stock of Mosquito vectors waiting in various riverine oases.

At least four contagious diseases were available among Mormons or neighboring Native Americans for transmission to Goshutes, Pahvants and Southern Paiutes during 1853. Scarlet fever appears to have been epidemic among the Mormon children, in Tooele County in the midst of Goshute territory (Deseret News 27 April 1854).

Another childhood disease, whooping cough, was also epidemic among Mormon children. Some died with it (Deseret News 10 July 1853:3; 1 Oct. 1853:3). Among Native Americans, whooping cough can still cause high child mortality. In 1960, more than 60 children died of whooping cough in a total population of approximately 2,000 at Vicos, Peru (Dobyns 1982). That whooping cough epidemic death rate of some 30 per 1,000 may be considered a conservative estimate of the 1853 death rate among Goshutes, Pahvants and Southern Paiutes from this disease.

Southern Paiutes and Utes traded with Hopis in 1853. A United States railroad surveying expedition sent Zuni guides to the Hopis in December to recruit guides for a westward trip. The Zuni returned on 5 December with the chilling news that the Hopis were in the grip of a smallpox epidemic. They said the disease had killed "nearly every male adult" in three pueblos, and claimed only two adult males survived from 100. Survivors shoved bodies down the slopes of mesas, unable to bury them (Foreman 1941:157). Whether the smallpox virus spread from Hopis to Southern Paiutes or Utes is not known; most likely it did.

Immigrant Mormons brought tuberculosis bacilli with them. Young women died in Salt Lake City and Springville (Deseret News 10 July 1853:3). Deadly "inflammation of the lungs" in Palmyra was probably also tuberculosis (Deseret News 10 Oct. 1850:3). A year later, Mormon missionaries on Santa Clara Creek saw a man die with tuberculosis (Brooks 1972:42).

It was little wonder that church President Brigham Young said in the fall of 1853 that "The Indians in these mountains are continually on the decrease, bands that numbered 150 Warriors when we first came here number not more that 35 now;..." (Young 1853:1). The drastically worsened pathogenic environment was relatively lethal to the Native Americans, to whom viruses and germs newly imported from Europe were transmitted.

The next year provided the Native Americans along the Mormon Corridor no respite from the invading pathogens. These spread from the Utes (Anderson 1942:144-45), to the Southern Paiutes (Lee 1854). On 11 May, Mormon missionaries who practiced laying on of hands and praying, treated the wife of one of their workers. She was suffering from post-partum complications (Brooks 1972:22). On 14 May, a Southern Paiute bearing testimony during Sunday services mentioned that his

brother, who lived farther south, was ill (Brooks 1972:27). On 18 May, a Mormon "administered to" a native child nearly dead from diarrhea. It "was almost instantly restored, taken to the Mormon fort and fed" (Brown 1854). The food and no doubt liquid given the child countered the dehydration from which it no doubt suffered in the warm May temperature on the desert.

Another local child died "a few days" prior to 30 May (Brooks 1972:42). The following day the tubercular adult was buried.

The source of Native American illness is revealed by the fact that Mormon adults and children were suffering at the very same time, and some children were also dying. At Cedar City on 20 May, visitors found the son of a Provo man "who was very sick." They "administered" to a wife who was sick in one of five households visited. In the fifth, a 4-year girl died (Brooks 1972:32). Thus, a casual visitor reported one death and two cases of serious sickness in five households; 60 percent of Cedar City Mormon families appear to have had a person ill.

A report from Parowan in July stated: "We have some sickness here; Angeline Carter died aged 7 years; also William Harding died of the liver complaint; mumps and whooping cough in abundance" (Martineau 1854:3). Thus, whooping cough appears to have become endemic among the Mormons, and seems the most probable cause of the Native American mortality. Mumps cannot be discounted as a serious malady; it can be quite lethal among susceptible adults, and Native Americans along the Mormon Corridor in 1854 were almost certainly susceptible. The whooping cough had been lethal in Salt Lake City in March (Deseret News 16 March 1854).

There were two other contagious diseases abroad that may have been transmitted along the Mormon Corridor to Goshutes, Pahvants and Southern Paiutes. In the Salt Lake City area, a one-year old infant died from scarlet fever in January (Deseret News 2 Feb. 1854:3). Apostle Charles C. Rich's wife Sarah, living in Davis County, lost a 4-year old and a 2-year old daughter to scarlet fever on 3 August 1853 and 31 March 1854 (Deseret News 27 April 1854). Thus, travelers going south from Salt Lake City to Zion's Dixie apparently carried scarlet fever there.

At the Pacific coast end of the Mormon Corridor, another menace arose. Some of the Latter-Day Saints at San Bernardino perished with typhus (Deseret News 16 March 1854). Whether either scarlet fever or typhus was transmitted to the Native Americans along the Mormon Corridor is not certain. That those natives suffered severely in the summer of 1854 is clear. The mortality among Southern Paiutes gardening in their riverine oases brought additional labor and perhaps famine in its wake. For the Southern Paiutes held to a taboo against cultivating

the following summer a field where a person died (Corbett 1952:84). Consequently, parents who lost children on Santa Clara Creek during the summer of 1854 were seeking new irrigable fields to cultivate in 1855. That threw an added physical burden on the survivors of the 1854 epidemic(s).

During the summer of 1855, what was termed cholera affected Salt Lake City. The physician reported only seven deaths among 398 known cases (France 1855:228). If the disease really was recurrent cholera, it probably was carried along the Mormon Corridor. At Las Vegas, Chief Antunip attended a prayer meeting, and asked the Mormons "to lay their hands on him, ... for he was sick all over." His fellow Paiutes had expected him to die a month before the service (Jensen 1926:169-170). At least one child is known to have died in mid-November (Jensen 1926:178-79). In December, the elders "administered to" a sick child (Jensen 1926:189-90). The ill children taken to the missionaries no doubt constituted a fraction of all those sick. The epidemic continued into 1856.

About 19 January, a Pahvant woman evidently married into the Las Vegas group, set off across the desert. She progressed only 15 miles before becoming too ill to travel, and died on 25 January. "The disease with which she was carried off was erysipelas of the head and throat" (Jensen 1926:199-200). Shortly afterward, missionaries set out from Las Vegas to the Moapa River, and discovered that some people were ill, and others had died "just previous to our visit" (Jensen 1926:201-203). The Paranayi Band people on Moapa River attributed the disease to sorcery by a native shaman, rather than recognizing the Euroamerican source of the contagion. Many decades later, Southern Paiutes still remembered the disease spread down the valley. "There were so many deaths that instead of receiving regular burial, the corpses were dumped into a near-by gully" (Kelly 1939:160). Southern Paiute mortality was, in other words, on a scale similar to that among Hopis during the 1853 smallpox epidemic. Such behavior generally has resulted when mortality approached or exceeded 50 percent of the population.

That summer the epidemic disease apparently reached the Pahvant. For John D. Lee played on the native belief that the Mormons could cause disease. He warned the inhabitants of the Corn Creek oasis in June that if they did not stop stealing "they would all be sick and die off" (Deseret News 16 July 1856:148).

The disease environment worsened in August when smallpox broke out among members of an emigrant company encamped near Salt Lake City. Brigham Young, Heber C. Kimball and Jedediah M. Grant (1856:181) attempted to persuade Mormons to quarantine the wagon train, but failed. The virus spread quickly to 30 inhabitants of the valley (Young, Kimball & Grant 1856:205). By December, the town of Nephi on the Corridor toward Fillmore

had active smallpox cases (Deseret News 17 Dec. 1856:325). Thus, it appears most unlikely that the virus did not spread southward along the Mormon Corridor to the other new settlements, and to the Native Americans living in and near them.

The Goshute, Pahvant and Southern Paiutes living near the study area along the Mormon Corridor between 1850 and 1857 were exposed to a number of contagious Old World diseases in rapid succession. Most seem to have been transmitted almost directly from European populations where they were then endemic, so may well have been strains to which Goshutes, Pahvants and Southern Paiutes had not been previously exposed. Scarlet fever, whooping cough, mumps and tuberculosis spread among the native Americans, almost without doubt. Typhus, smallpox, cholera, and other diseases may have spread to them. The late 1855-early 1856 epidemic episode, unidentified, caused such high mortality that Southern Paiutes could not bury the bodies of the dead. Such behavior usually occurs when mortality passes half the population (Camp 1966:60, etc.). So one must infer that whatever the demographic trend had been among the three groups prior to Mormon colonization within the Corridor to the Pacific, a collapse of Native American numbers occurred in 1850-1857. Given the disease environment of those years, Southern Paiute numbers may have decreased by 75 percent, with Pahvant and Goshute perhaps less (if they escaped the 1855-56 epidemic). The study area fell into comparative disuse in the wake of that mortality.

EXPANSION OF MORMON COLONIES: 1858-1872

The United States troops sent to Utah Territory in 1857 halted far enough east of the inhabited area to avoid armed confrontation. Federal representatives and leaders of the LDS negotiated. Then the federal contingent moved into the inhabited zone to establish Camp Floyd. The garrison actually enlarged the market for Mormon-grown crops and injected cash payrolls into the territorial economy. Once the crisis passed and the Mormon leadership accepted the necessity for working toward political accomodation within the United States, sectarian colonization continued. LDS missionaries still worked in significant numbers overseas, and those in Europe especially succeeded in making numerous converts and persuading many of them to emigrate to Utah. Consequently members of the denomination continued to arrive who could be organized into new colonies in additional locations.

Occupation of Riverine Oases. The Mormon leadership continued after the 1857 crisis, as before, to pursue the ideal of economic self-sufficiency for members of the LDS Church in Zion. The reasons that led to initial colonization of the riverine oases of the Virgin River system to try to grow

cotton, seemed as compelling after 1857 as they had before. So hundreds of additional Mormon colonists were selected for the Cotton Mission in Utah's Dixie.

Cotton yields at Washington were disappointingly low. Brigham Young and other leaders sent 15 young men to farm at the confluence of Santa Clara Creek and the Virgin River. The small colony formed in the spring of 1858 was known variously as Tonaquint, Heberville, Lick Skillet, Never Sweat, and Sedom Sop (Brooks 1961:209). The U. S. Post Office Department authorized a post office named Tonaquint (Deseret News 8 Jan. 1861:217). Exceptionally heavy precipitation fell on the watershed in January of 1862, eroding away the fertile alluvium (Brooks 1961:210).

Additional colonists established another riverine oasis village in the spring of 1858 on Ash Creek three miles upstream from the Virgin River. Known as Toquerville after a local Southern Paiute chief, this colony occupied prime Native American fields. Only 8 acres was planted to cotton during the first season (McNight 1858:141). Actually, making molasses from cane became more profitable (Bull 1860:13).

The following year, 1859, more colonists arrived to establish a village called Gunlock farther up Santa Clara Creek (Brooks 1961:201). Once again, the colony occupied what had been important cultivated areas and riverine oasis vegetation exploited heavily by Southern Paiutes.

The same cotton-growing push led to colonization of another section of the Virgin River system that same year, 1859. Colonists formed Pocketville on the North Fork of the Virgin River not far above its junction with the East Fork (Brooks 1961:204). The early 1862 flood eroded much of its farm land (Brooks 1961:210) so it proved to be short-lived.

Perhaps the relatively poor economic returns of cotton growing in Utah's Dixie might have dissuaded the leadership from further attempts to produce the fiber. The great sectional conflict between Union and Confederacy intervened. From the dissident Mormon point of view, the War of the Rebellion seemed to offer an opportunity to profit. Even larger scale colonization resulted. LDS Church leaders called 300 northern Utah families in October of 1861 to join the Cotton Mission (Anderson 1942:229). They arrived on the Virgin River early in December and had a post office approved by early 1862 (Deseret News 8 Jan. 1862:217). The colonists destroyed mesquite trees, that had provided Southern Paiutes with rich food, in order to clear fields for planting cotton (Snow 1862:280). The massive storm system that generated flooding throughout the Southwest struck while the St. George colonists still lived in their wagons or in tents (Dobyns 1981:170-172). Rain fell for three weeks. The River eroded away a 5-mile long canal the colonists had excavated. As fast as they dug new,

inadequately engineered canals, the flooding stream eroded them away (Brooks 1961:209-20). The destruction of the Paiute resource base by direct Mormon occupation, and the environmental destruction triggered by Mormon irrigation works, left the local Native Americans little choice but to become worker-satellites of the colonists. By 1869, tribal head chief Tutzeguvut led a much reduced work-gang numbering about 200 individuals living "close to and around St. George" (Fenton 1869:203). Within a few years, members of this work gang generally wore Euroamerican clothing and put their earnings, beyond subsistence needs, into buying horses (Lockwood 1872:75).

After the concept of a Mormon Corridor to the Pacific via San Bernardino faded, the Utah villages remained even though Las Vegas had been abandoned as well as San Bernardino. When the War of the Rebellion led federal authorities to withdraw regular army troops from Utah for war service in the east, LDS Church leaders flirted for a period with a modified corridor to the sea. In 1852, river steamboat service had been started from the head of the Gulf of California up the Lower Colorado River to Fort Yuma. In 1858, exploratory trips by a federal expedition and a steamboat captain demonstrated that in periods of high flow, steamboats could navigate to Mojave Valley and El Dorado Valley upstream. When Fort Mohave was established in 1859 to overawe the Mojave warriors and open another transcontinental wagon road, steamboats supplied it (Stoffle and Dobyns 1982:175-179).

In the fall of 1864, the Church Presidency chose Anson Call to establish a Mormon river port above Fort Mohave on the Lower Colorado River. Call reached the river in mid-December, and began constructing a warehouse. He picked a watermelon the day after he arrived (Fleming 1967:151-52), evidence that he settled at a Paiute garden spot on the river bank.

Callville lay a long distance from the existing Mormon villages, so the strategic plan for the Mormon corridor to the Pacific via the Lower Colorado River and Gulf of California envisioned establishing intervening colonies. That meant Mormon colonization along lower Moapa River, the core riverine oasis of the Western Division, or Paranayi Southern Paiutes, who had been free from Mormon colonies after the abandoment of Las Vegas. Euroamerican miner invasion of northern Paranayi territory had begun, however, in 1863.

Early in 1865, colonists from farther north established Saint Thomas in the Moapa River Valley -- usually called the Muddy River by the Latter-Day Saints (Fleming 1967:155). More colonists quickly followed the pioneers.

By June, the Mormon population at St. Thomas was large enough for part of the group to move 12 miles upriver to start Saint Joseph (Fleming 1867:157). Before the end of the year, enough people had arrived in the valley to found a third town

called Simonsville. Its inhabitants set up a water-powered cotton gin in 1866 (Fleming 1967:158-59).

The Paranayi Southern Paiutes then opposed Mormon expansion to additional riverine fields, bows and arrows in hand and faces painted black (Fleming 1967:162-63). A direct order from Brigham Young then restrained the Moapa River Valley colonists until 1869. Then they started a fourth village called West Point (Fowler and Fowler 1971:109; Lockwood 1872:65). The Southern Paiutes had lost most of their manpower during the lethal 1850-1857 period. On the other hand, the LDS Church sent approximately 3,000 people in some 800 families to Dixie during the early 1860s (Arrington 1958:217). Thus, the Mormons gained numerical superiority over those Native Americans who had survived in their own Holy Land.

Other geopolitical considerations led to Mormon abandonment of the Moapa River Valley settlements in that portion of the Virgin River oasis system. The Union administration granted statehood to the miners in Nevada in 1863, even though the beleaguered leaders refused to admit Mormon Utah. Adjustments in the Nevada-Utah border placed it east of the Moapa River Valley agricultural colonies. The colonists paid taxes, in kind for the most, part to Rio Virgin County, Utah, until surveyors clearly located the border. Then Lincoln County, Nevada, demanded taxes paid in precious metals. In February of 1871, over 600 LDS Church members abandoned the Moapa River Valley, 150 homes, 500 acres of cleared fields, irrigation ditches, and 8,000 bushels of standing wheat (Fleming 1967:171).

About one-third of the colonists moved almost due east to colonize in Long Valley -- the lower valley of south-southwestward flowing East Fork of the Virgin River. Earlier Mormon colonists had started to settle in Long Valley in 1865, but Navajo raiders persuaded them to leave. It remained Southern Paiute territory for half a dozen more years. The 1871 Mormon colonists seized some 1,300 acres of arable land plus extensive grazing lands, forcing the Eastern Division Southern Paiutes gardening in the bottomlands to leave (Stoffle and Evans 1976:183; Arrington 1954:8). Adhering to the City of Zion colonization model, the colonists formed the villages of Glendale and Mt. Carmel.

The year 1871 also witnessed the beginning of Southern Paiute loss of the fishery and other resources along the upper Sevier River. Latter-Day Saints colonized Panguitch Lake in 1864 (Chidester 1955:387). The Eastern Division people resisted, however, and open hostilities broke out in 1866; the Mormons retreated. Colonists returned to Panguitch Lake in 1871, although the native fishermen initially refused to allow them to fish its waters (Chidester 1955:389).

A quartet of Mormon prospectors in 1858 discovered lead ores in the Mineral Mountains at the northern edge of Southern

Paiute territory. The continued LDS Church separatism and self-sufficiency drive led to colonization of Minersville on Beaver River. Eueroamerican colonization on this stream had quick and profound influences on Southern Paiute utilization of the Beaver bottoms downstream. Diversion of water for purposes associated with mining and ore processing, and for irrigating crops, began to dry up the lower Beaver River. Without constant stream flow, the Escalante Desert was true desert, without resources for human beings. So the establishment of Minersville and lead mining activities led to progressive Native American abandonment of the Escalante Desert, including that portion of the study area near Minersville.

The Latter-Day Saints diversified their economy into cattle ranching during this period. Cattle owners colonized spring-flow as well as riverine oases. In the uplands south of the Virgin River Valley, a St. George stockman started a ranch home at Pipe Springs in 1863. He brought a flock of sheep and a herd of cattle (Stoffle and Evans 1976:180; Olsen 1965:13). Another family settled at Moccasin Springs the same year, and another went to Short Creek 25 miles west of Pipe Springs (Olsen 1965:13; Woodbury 1944:166).

Other Mormon colonists started a cattle ranch at Kanab Creek in 1864. Union forces in New Mexico Territory had by that time sent most Navajos to internment at Fort Sumner, New Mexico. Some Navajos took refuge near the Colorado River, however, and raided fledgling Mormon ranches including Kanab and Pipe Springs in 1865 (Olsen 1965:13). The colonists under this military pressure treated the native Southern Paiutes as allies, and allowed them to continue to irrigate gardens along Kanab Creek. The Southern Paiutes acted as sentries and fought with the colonists against the Navajo raiders (Stoffle and Evans 1976:182). In May of 1866, Church authorities in St. George ordered abandonment of the ranches east of Pipe Springs. By 1868, the Church had sent a militia contingent to Pipe Springs (Olsen 1965:15). The federal government that year negotiated a peace treaty with Navajo leaders who assumed responsibility for maintaining peaceful intergroup relations. Mormon families recolonized Kanab in 1869 (Olsen 1965:16).

By 1870, Latter-Day Saints had colonized most of the water-wealthy oases in central Eastern Division Southern Paiute country. The surviving Native Americans perforce retreated to refuge areas, typically at higher elevations with less irrigable land or water with which to irrigate. The Willow Springs and Kaiparowits groups managed to carry on a largely traditional economy without joining labor gangs living close to Mormon villages. For a while the Kaibab group did also, although it was forcibly removed later in the century. What came to be called the Indian Peak group retreated northwestward into the Needle Range and the uplands near the Nevada border. Its exploitation of the study area between the border and the Escalante Desert somewhat in the neighborhood of Modena intensified.

The relatively rapid immigration of European LDS converts to Utah allowed a steady proliferation of European/Euroamerican farm towns in areas other than Zion's Dixie. Some of the settlements established in the 1858-1872 period exploited what had been Pahvant resources in the Sevier River delta zone. People left Fillmore in 1858 to establish a new Mormon style colony at Oak City on Oak Creek at the western margin of the Canyon Mountains. This farming village became an additional stopping point on the Mormon Corridor of travel to Southern California and Dixie.

In 1859, Mormon colonists ventured well beyond the corridor to begin farming in the Sevier River delta itself. They called their town Deseret (Day and Ekins 1951:436-37, 473). The westward Mormon advance into the delta zone discouraged later Pahvant utilization of natural resources in that area. The farming development at Deseret initiated a process of individual acquisition of title to public domain lands in the delta zone. A dozen years after Deseret was founded, it constituted an economically attractive station for the planners of the Utah Southern Railroad. Over a century later, the proposed IPP right-of-way for Bipole I skirts the irrigated farmlands and farm towns in the delta.

Southern Paiute Food Collecting. Mormon colonization in oases, both riverine and spring-flow, materially altered the subsistence economy of Southern Paiutes. These people had been largely dependent upon irrigated food crops prior to colonization. As the colonists seized their fields, and especially after the colonists diverted huge quantities of irrigation water into water-wasteful unlined, large canals, Southern Paiute cultivated plants withered. As already indicated in the present report, many Southern Paiutes quickly became dependent laborers living near the Mormon colonies. They exchanged labor for food and clothing, and eventually cash, although Mormon Utah continued to be relatively poor, particularly in the southern counties organized in Southern Paiute aboriginal country. Even those Southern Paiutes in the labor gangs had to continue to hunt to the extent possible as game was generally overhunted and locally exterminated in many instances, and to collect wild plant foods.

When Mormons hired no laborers, gang members had to find wild plant foods in order to survive. Those Southern Paiutes who chose to try to survive in refuge areas distant from the Euroamerican towns and ranches also had to rely primarily upon hunted game and collected wild plant foods. They could raise some horticultural produce, but not enough to subsist. Consequently, Southern Paiute aboriginal knowledge of wild plant foods was not forgotten. Hungry people preserved ethnic group knowledge of edible fruits, nuts, berries, roots, exudates, and so on (see TABLES 10-17). Southern Paiutes ate parts of about 70 plants.

TABLE 10. PLANT SEEDS GATHERED BY SOUTHERN PAIUTES

	BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
1.	Agropyron smithii	Paxankwa	Wheat grass	grind
2.	Agrostis exarata		Spike Bentgrass	grind
3.	Allenrolfea	Tu-bo-weets	Iodine bush	grind
4.	Amaranthus albus hypochondriacus leucarpus powellii retroflexus	Tokimont Kumont	Pigweed Powell's amaranth	various
5.	Ammannia coccinea			grind
6.	Artemisia dracunculoides ludoviciana		Sagebrush	grind
7.	Atriplex powellii canescens confetifolia lentiformis	Que-aheque	Powell's Saltbush	grind
8.	Cucurbita foetidissima		Wild gourd	grind
9.	Descurainia pinnata halictorum	Hahck Ok,Ak	Tansymustard	grind
10.	Elyemus glaucus triticoides canadensis		Wild ryegrass	grind
11.	Echinochloa muricata microstachya		Cockspur	grind parch
12.	Eragrostis		Love grass	grind
13.	Fagopyrum sagittatum		Buckwheat	grind

Table 10. Continued.

	BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
14.	*Lepidium fremontii lasiocarpum*		Fremont's peppergrass	grind
15.	*Mulenbergia sp.*		Muhly	parched
16.	*Oryzopsis hymenoides*	Wa'ai	Rice grass	grind
17.	*Panicum sp.*		Parnicum	grind
18.	*Portulaca retusa*	Topuene	Purslane	grind
19.	*Poa bigelovii longiligula*		Bluegrass	grind
20.	*Sacrobatus vermiculatus*		Greasewood	grind
21.	*Scirpus paludosus*		Bullrush	grind
22.	*Sporubulus sp.*	Postushukunt	Dropweed	grind, mix with others
23.	*Sueda diffusa*	Ahrr Aah-ap-weep Sah-ap-weep	Seepweed	grind
24.	*Viguiera multifolia*			grind
25.	*Yucca brevifolia*		Joshua tree	grind raw

Bye 1972:90-95, 97-98; Kearney & Peebles 1942:91-92, 100-01, 103, 211; HDR Sciences 1980:33.

TABLE 11. BERRIES GATHERED BY SOUTHERN PAIUTES

	BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
1.	Amelanchier utahensis alnifolia	Toyaba Toyabe	Serviceberry Serviceberry	fresh
2.	Berberis fremontii		Fremont's Barberry	fresh
3.	Juniperus osteosperma	Noo-ahntup	Juniper, cedar	roast
4.	Fragaria sp.		Strawberry	fresh
5.	Lycium pallidum andersoni berlandieri		Squawberry	fresh
6.	Rhus trilobata	Huiupi	Squawberry	fresh
7.	Rosa sp.		Rose bush	fresh
8.	Rubus neomexicanus		Raspberry	fresh
9.	Sambucus racemosa		Elderberry	fresh
10.	Shepherdia rotundifolia argenta	Paxomp	Buffaloberry	fresh
11.	Smilacina racemosa		False Solomonseal (Coyoteberry)	fresh
12.	Vaccinium oreophilum		Blueberry	fresh

Burton 1862:478-79; Bye 1972:98; Corbett 1952:52; HDR Sciences 1980:34; Kearney & Peebles 1942:200, 393; Laird 1976:109.

TABLE 12. ROOTS AND BULBS DUG FOR FOOD BY SOUTHERN PAIUTES

	BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
1.	*Alium sp.*		Wild onion	bulb/cook
2.	*Calochortus* *nuttallii* *kennedyi* *luteus*	sigo'o	Mariposa lily Wild sego	bulb/?
3.	*Cymopterus* *newberryi* *purpurens*		Water parsnip	roots/ pound
4.	*Claytonia rosea*		Spring beauty	racimes
5.	*Frasera speciosa*	Kwiu	Deer-ears	root/
6.	*Fritillaria* *atropurpurea*		Fritillaria	bulb
7.	*Iris sp.*		iris	bulb
8.	*Juncus sp.*		Tule	root
9.	*Orobanche* *fasciculata* *multiflora* *ludoviciana*		Broom rape	
10.	*Perideridia sp.*	Yampa		roots
11.	*Psoralea* *castorea* *memphitica*		Scruff pea	roots/raw roasted
12.	*Scipus* *validus* *acutus*		Bullrush	roots
13.	*Typha angustifolia*	Tonoz	Cattail	pound root
14.	*Valeriana edulis*		Tobacco root	racimes

Burton 1862:479; Bye 1972:93, 97-98; Kearney & Peebles 1942:162, 194-95, 300, 837, 859: Kelly 1934:558; HDR Sciences 1980:34

TABLE 13. FRUITS GATHERED BY SOUTHERN PAIUTES

	BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
1.	*Arctostaphylos patula pungen*		Manzanita	fresh dry grind
2.	*Comendra umbellata*		Bastard toad-flax	eat raw
3.	*Echinocactus engelmanni*		Nail-keg cactus	eat raw
4.	*Opuntia basilaris*	Yuavimp	Prickly pear	eat raw, sun dry
5.	*Prunus virginiana*	Tonap	Chokecherry	mash, dry
6.	*Yucca baccata*	Tcimpi	Yucca	roast, pound sun dry

Bolton 1950:211; Bye 1972:98 Kearney & Peebles 1942:198, 411, 610; Laird 1976:107-08; Stewart 1942:251.

TABLE 14. EDIBLE BLOSSOMS GATHERED TO EAT BY SOUTHERN PAIUTES

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
1. Opuntia basilaris		Prickly pear	fresh buds
2. Yucca brevifolia		Joshua tree	fresh
3. Yucca baccata	O-u-se	Yucca	fresh
4. Typha domingensis		Cattail	fresh raw, cook as soup

Bye 1972:91; Kearney & Peebles 1942:198, 610; Stewart 1942:251.

TABLE 15. MAJOR WILD NUT CROPS COLLECTED BY SOUTHERN PAIUTES

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
1. Pinus edulis monophylla	Tivah	Pinyon	roast, grind
2. Quercus pungens	Tomump	Acorn	roast

Bolton 1950:212; Bye 1972:98 Jones 1879:216; Kearney & Peebles 1942:61, 420; Laird 1976:106, 109; Stewart 1942:250.

TABLE 16. PLANTS CONSUMED IN WHOLE OR IN PART BY SOUTHERN PAIUTES

	BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
1.	*Agave utahensis*	Nanta Yant	Mescal	cut, pit roast, pound
2.	*Amaranthus*	Punkont	Pigweed	pot herbs
3.	*Caulanthus crassicaulis*		Squaw cabbage	fresh
4.	*Descurainia* *pinnata* *halictorum*	Hahck Ak Ok	Tansymustard	pot herbs
5.	*Echinocactus* *johnsoni* *leconti*		Nail-keg cactus	cook peeled plant
6.	*Eriogonum inflatum*		Desert trumpet	cook plant
7.	*Opuntia sp.*	Manavi	Prickly pear	boil new leaf
8.	*Orobanche fasciculata*		Sand food	raw
9.	*Stanleya pinnata*	Tumaru	Desert plume	raw

Burton 1862:478; Bye 1972:90-91, 93-94, 98; Euler 1966:112; Kearney & Peebles 1942:97, 204; Laird 1976:108 Train *et al.*, 1941:108.

TABLE 17. PLANT EXUDATE SCRAPED UP BY SOUTHERN PAIUTES

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
1. *Phragmites communis*	Pahgump	Honey dew	scrape off leaf

Bye 1972:91; Euler 1966:112; Heizer 1945:140-45; Kearney & Peebles 1942:97; Train *et. al*, 1941:116.

Disease Environment. Continued immigration of European converts to the Church of Jesus Christ of Latter-Day Saints renewed the stock of germs and viruses that threatened the Goshute, Pahvant and Southern Paiute populations after 1857. On the other hand the virtually annual invasion by highly contagious and lethal pathogens that characterized the 1850-1857 period had apparently diminished.

In 1859, both dysentery and what was called cholera morbus were epidemic in Salt Lake City at the end of September (Deseret News 28 Sept. 1859:236). Mormon folk medicine advised avoiding eating green fruits to avoid the symptoms, but apparently one or more pathogens was spreading through the population. This malady, and the by then endemic diseases continued to be deleterious to the Native Americans. "The aborigines in this part of the Territory seem to be wasting away very fast" according to an observer in Manti. Some of the apparent decrease may simply have resulted from migration and shifting band allegiances. Walker's former band "has dwindled down to a mere handful of warriors" (Deseret News 8 Feb. 1860:388), but differentiating between shifting band membership and depopulation is difficult.

In the spring of 1861, Euroamerican children were dying in Salt Lake City from "putrid soar throat" (Deseret News 10 April 1861:48), which probably was diptheria. If the disease had not previously spread to the Native American population, it constituted another grave threat. Goshutes were exposed to an additional health problem that spring. After a Shoshone raid, the Euroamericans imprisoned a number of Goshute men for complicity. Their families abandoned their homes near Grantsville and fled into the mountains. When they returned early in March many women and children suffered from badly frostbitten hands and feet as well as malnutrition (Deseret News 6 Mar. 1861:5).

To the south in the Virgin River oasis system, the main endemic disease problem arose not from cold, but lack of freezing temperatures. The local mosquitos evidently feasted on Mormon immigrants with malaria and spread the disease. Members of the Cottom Mission dressed in home-spun, blue-dyed cotton clothing exhibited faces as blue with chills as their clothes (Anderson 1942:232). On the Moapa River many colonists fell ill with malaria or dysentery during the initial year of settlement there by Euroamericans. Four people died at fledgling St. Joseph -- about one in every ten families in the colony (Fleming 1967:159). The Mormons by 1869 set out to drain the ancient swamps along the river that had provided Southern Paiutes with fish, waterfowl, cattail, tule roots, honey dew, and the like. They were motivated not only by a desire to farm rich swampland instead of alkali impregnated alluvium, but also by an urge to destroy the breeding waters of the swarms of mosquitos that "bothered them from warm weather in the spring to the first frost in the fall" (Fleming 1967:167).

On the other hand, floods the following year "bred disease in the settlement" of West Point (Fleming 1967:170), no doubt water-borne. The serious disease difficulties of the Euroamerican colonists themselves indicate that the Southern Paiutes who attempted to remain in the Moapa riverine oasis were probably at even greater risk, especially from water-borne diseases not formerly present in that environment.

LDS church burial records show a pattern of high child and infant mortality that persisted as long as the Mormons themselves drank from streams and irrigation canals. At St. George, for example, 506 individuals died from the founding in 1862 until 1881. No less than 324 of those individuals were children under 5 years old, and another 57 were children 5-15 years of age (Anderson 1942:360). That is, 64 percent of all deaths were those of children under 5 years old. The Mormon missionaries to the Southern Paiutes initiated colonization of St. George. There is no reason to suppose that contamination of the system did not begin in 1852, and that part of the reason for the rapid diminution in Southern Paiute numbers prior to 1857 stemmed from deaths and debilitation from intestinal parasites, typhoid, and perhaps other diseases. The Native Americans drank from the same streams as the colonists, and probably from the same irrigation canals, with less efficient utensils for boiling water and no concept of germs.

The incidence of malaria among the Paranayi Southern Paiutes living on Moapa River persisted even after the Mormon 1871 exodus. In 1873, there appears to have been a new infusion of Plasmodium there (Rambeau and Holmes 1976:98). By that time, venereal disease was endemic in the Uintah Reservation Ute population, as was pulmonary disease, probably tuberculosis (Critchlow 1872:548). The endemic disease situation of the Goshute, Pahvants and Southern Paiutes was probably much the same as that of the Uintah Utes, with the Southern Paiutes suffering the additional inroads of malaria.

Another focus of typhoid infection was the mining camp, often dependent on water packed from springs by Native American women until expensive pipes could be laid. This disease was at the time viewed as typical of mining camps in the West. An outbreak was specifically noted at Pioche, Nevada, where many Southern Paiutes lived and worked in August of 1875 (Pioche Daily Record, 22 Aug. 1875:3). Frequently malnourished, and lacking a pre-colonization tradition of nursing, Native Americans were more likely to die with typhoid and similar diseases than were Euroamericans whose relatives carefully nursed them through the illness (Trego 1959:17-18).

Another apparent danger to the Native Americans in and near Euroamerican colonies was influenza. During the winter of 1872-73, cities all across the United States reported epizootics among domestic animals. At the same time, human beings suffered severe headaches, quivering limbs and

difficulty breathing (Pioche Daily Record, 1 Feb. 1873:3). The symptoms point toward an influenza epidemic that would have afflicted Native Americans more severely than Euroamericans, many of the latter having been exposed to the same strain earlier.

At the same time, Goshutes, Pahvants and Southern Paiutes had little if any access to Euroamerican medical practitioners or nurses. They perforce continued to rely on their traditional herbal remedies (see TABLES 18-30), and experimented with known plant preparations to try to cure new diseases or at least alleviate their symptoms. Desperately ill individuals probably treated traditional herbal cures as even more important than they had been in pre-colonization times. Knowledge of medicinal uses of plants persisted and persists.

MECHANIZED TRANSPORTATION CORRIDOR

The first transcontinental railroad, completed in 1869, linked Salt Lake City and the northern portion of Utah Territory into the national United States mechanized transportation network (see MAP 4). The telegraph lines that had already been constructed brought communications into the high-energy world, and the railroad brought the Mormon metropolis into the rapid, fossil-fuel powered, mechanical transport world. Completion of the railroad through Mormon territory spelled the demise of Brigham Young's denominational self-sufficiency goal and meant that members of the Church of Jesus Christ of Latter-Day Saints could not colonize an exclusive territory. The railroad also unalterably changed Goshute land exploitation patterns, with the effect of pushing them away from the east-west transportation corridor into refuge areas along the former transcontinental mail-wagon road. The shift of Euroamerican travel from the wagon road to the railroad actually reduced dominant group pressure on the Goshute fields at Deep Creek and Skull Valley.

However often national policy and technological innovations impinged upon Mormon goals, Brigham Young and his associates were nothing if not adaptable to changing circumstances. They decided that the LDS Church ought to embark upon its own program of railroad building in order to link up sectarian settlements within Utah Territory (see TABLE 31). They set about constructing a central Utah railroad, but their Utah Southern Railroad established the industrial transportation corridor that is most pertinent to the study area.

The Mormon leaders perceived several advantages to be gained by building a railroad southward from Salt Lake City. A short-range gain was important to Brigham Young and his colleagues. The Church had started erecting its major temple

TABLE 18. SOUTHERN PAIUTE MEDICINAL LEAF TEAS.

	BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT
1.	Achillea lanulosa millefolium	i'itsikwasipi	Yarrow	coughs weak, upset stomach
2.	Anemopsis californica		Yerba mansa	venereal
3.	Arctostaphylos pungens	ada'dimipipi	Manzanita	rheumatism
4.	Artemisia tridentata dracunculoides ludoviciana filifolia	sanwa'bi pas pass-pahs salmapweep	Sagebrush	colds, coughs, stomach ache childbirth, worms, swelling and bruises
5.	Cowania mexicana	uhnop	Cliffrose	venereal, colds
6.	Ephedra veridis torreyana	tutu'pi	Jointfir	internal disorder, V.D., stomach ache
7.	Eriodictyon	weepoo-enub	Yerba santa	coughs, colds
8.	Larrea tridentata	ya'tampi Yahtemp	Creosotebush	internal disorders, cramps, colds, stomach ache
9.	Ligusticum porteri	Pahnetsnap		stomach ache
10.	mentha canadensis	paxwa'nanimpi	Mint	colds
11.	Penstemon palmeri	toxo'awatsip		fever
12.	Porophyllum gracile	pa'kwitupip		stomach ache

TABLE 18. Continued

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT
13. *Salvia carnosa*	siguwiipi seegoowe-up	Purple sage Desert ramona	colds sores
14. *Thamnosma montana*		Turpentine broom	colds

Bye 1972:90, 92; Kearney & Peebles 1942:70, 516; Kelly 1939:153, 162; Train *et al*. 1941:61, 68, 122 136.

TABLE 19. SOUTHERN PAIUTE ROOT, TWIG-BRANCH, AND BARK TEAS.

	BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT
1.	Cercocarpus ledifolius	dunumbe	Mountain mahogany	Tuberculosis blood tonic
2.	Cucurbita foetidissima	ankompi ahn-noquav arnocup	Desert gourd	gonorrhea
3.	Cycladenia	pawa'ma'anim pitinab		
4.	Dalea fremontii	i-eramidja	Indigo bush pea bush	indigestion medicinal
5.	Eriodictyon angustifolum	kutsa'rimpi	Yerba santa	pulmonary veneral
6.	Garrya flavescens	ka'ninkwap	Silktassel	heart trouble
7.	Gilea aggregata	anka'siti	Skyrocket	stomach ache
8.	Heliotropium curassavicum	wa'ateyowimpi	Heliotrope	internal disorders
9.	Juniperus communis	pahwaporuit	Alpine juniper	veneral
10.	Phaecelia palmeri			internal disorders
11.	Pluchea sericea		Arroweed	indigestion diarrhea, passing blood
12.	Salix sp.	kahnav	Willow	blood purifier
13.	Wyethia scabra	tixu'si taxanti taxu'itcaxantip tikoitcixantipi tixu'si taxantip	Mules' ear	cathartic emetic venereal stomach ache

Kearney & Peebles 1942:658, 736, 739; Kelly 1939:153, 162; Train et al. 1941:53, 62, 71, 91, 133.

TABLE 20. SOUTHERN PAIUTE MEDICINAL PLANT POULTICES & POWDERS.

	BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT
1.	Annemopsis californica		Yerba mansa	VD sores
2.	Atriplex canescens	murunibi	Saltbush	sores
3.	Cucurbita foetidissima		Wild gourd	piles, sores
4.	Cyclandenia	pawa'ma' animpi		granulations in the eye
5.	Echinocereus coccinens	lva'xobi cacuusov'xobi		boils
6.	Ephedra nevadensis torreyana	tutupe	Mormon tea Jointfir	burns venereal
7.	Eriodictyon angustifolium		Yerba santa	rheumatism, paralysis
8.	Krameria grayi	nah kah vah dah tonub	white ratany	sores
9.	Larea tridentata	ya'ta'mpi	Creosotebush	measles
10.	Ligusticum porteri	pahnet snap		sprains, bruises
11.	Nicotiana attenuata	koap	tobacco	cuts sore eyes
12.	Penstemon palmeri	toxo'awatsip	Beardtongue	fever
13.	Perezia wrightii			root styptic
14.	Rhus trilobata	see-awimp	Squawberry	astringent for smallpox
15.	Saida torryana			chicken pox eruptions

Bye 1972:93-94; Kearney & Peebles 1942:273, 422; Kelly 1939:153-54, 162.

TABLE 21. SOUTHERN PAIUTE MEDICINAL PLANT WASHES

	BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT
1.	Anemopsis californica	cheupahniv	Yerba mansa	muscular pains sore feet
2.	Artemisia tridentata	sanwa'bi	Sagebrush	sore eyes
3.	Desmanthus illinoensis	pahohpim		trachoma
4.	Eriodictyon angustifolium	pa'sinipi	Yerba santa	sore eyes
5.	Euphorbia albomarginata	tava'namu'obi	Spurge	sore eyes
6.	Euphorbia arenicola	tahweecarib	Spurge	sore eyes swollen
7.	Hymenatherum pentacheatum			sore eyes
8.	Hymenoclea salsola	paiab	Burro bush	bath infants sick persons
9.	Larrea divaricata	yahtemp	Creosote bush	rheumatism, measles, chicken pox
10.	Prosopis odorata	quee-etumb	Screwbean	sore eyes
11.	Salvia carnosa	siguwiiipi seegoowe-up	Purple sage Desert ramona	sores

Kearney & Peebles 1942:543, 739; Kelly 1939:153-54, 162; Train et. al., 1941:33, 67, 71, 74, 96, 123, 136.

TABLE 22. SOUTHERN PAIUTE MEDICINAL PLANT CHEWS.

	BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT
1.	*Berberis repens*		Oregon grape	cold
2.	*Datura meteloides wrightii*	mimip mainophweep manopweep	Jimsonweed	cough
3.	*Glycyrrhiza lepidota*		Desert root licorice	tonic
4.	*Ligusticum porteri*	paxu'ranip	Lovage	toothache
5.	*Phragmites communis*	hohgohkoh	Honey dew (exudate)	pneumonia
6.	*Pluchea sericea*		Arrowweed	indigestion
7.	*Thamnosma montana*		Turpentine broom	constipation
8.	*Yucca baccatta*		Yucca	cathartic

Bye 1972:90, 94; Kearney & Peebles 1942:516; Kelly 1939:160; Train *et. al.* 1941:66, 166, 120.

TABLE 23. SOUTHERN PAIUTE MEDICINAL SMOKE PLANTS.

	BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT
1.	*Arctostaphylos patula pungens*		Manzanita	fevers
2.	*Angelica sp.*	tontsabi		cough
3.	*Cornus stolinifera*		Dogwood	
4.	*Dyssodia pentacheata*			sore eyes
5.	*Eriodictyon angustifolium*		Yerba santa	lungs
6.	*Euphorbia algomarginata*	tava'namu'obi	Spurge	sore eyes
7.	*Nicotiana attenuata*	koaop tsaw-wap	Tobacco	coughs
8.	*Salvia carnosa*	sigimwiap siguwiipi seegoowe-up	Purple sage	coughs
9.	*Symphoricarpus sp.*		Snowberry	

Bye 1972:92-93; Kearney & Peebles 1942:422, 543, 993: Kelly 1939:154, 162.

TABLE 24. GOSHUTE MEDICINAL LEAF TEAS (Chamberlin 1911:360ff)

	BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	FORM/COMPLAINT
1.	Artemisia tridentata	po'-ho-bi	Sagebrush	for fever
2.	Cowania mexicana	hi'-na-bi	Cliffrose	
3.	Juniperus californica	wa'-pi; wap	Cedar, juniper	coughs, colds
4.	Kalmia glauca	tim'-pin-tu-nump	American laurel	
5.	Spiraea caespitosa	tim'-pin-tim-bo-ump	Meadow sweet	bowels

TABLE 25. GOSHUTE MEDICINAL ROOT, BARK AND OTHER TEAS.

	BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	FORM/COMPLAINT
1.	Achillea millefolium	wan'-go-gip	Yarrow	biliousness, headache
2.	Aquilegia coerulea	pa'-wa-gum-pi	Columbine	abdominal pains; sick all over
3.	Ceranium fremontii	ka'-na-gwa-na pa-hu-ip	Wild geranium Crane's bill	diarrhea astringent
4.	Geum macrophyllum	nin'-un-tsai		root
5.	Heuchora rubescens	wi'-gun-dza	Alum root	colic, astringent
6.	Lithospermum pilosum	tso'-ni-baip	Stickseed	diuretic
7.	L. multiflorum	tsom-ba; tso'-nap	"	"
8.	Mitella trifida	pi'-a-nank to'-sa-na-tsu	Mitre wort	colic
9.	Prunus demissa	bu'-i-natsu	Chokecherry	hemorrhaging

TABLE 26. GOSHUTE MEDICINAL ROOT POULTICES

	BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	FORM/COMPLAINT
1.	Balsomorrhiza sagittata	ku'-si-a-ken-dzip	Arrowroot	chewed, pounded on fresh wounds
2.	Ferula multifida	to'-czup		bounds, bruises
3.	Potentilla glandulosa	pa'-wa-wi-gump	Five finger	swollen areas
4.	Smilacina stellata	pa'-ya	False Solomon's Seal	to limbs for rheumatism
5.	Spiraea caespitosa	tim'-pin-tim-bo-ump	Maedowsweet	burns
6.	Valeriana edulis	toi'-ya-bi-tum-ba-ga	rheumatism	

TABLE 27. GOSHUTE MEDICINAL SMOKES

	BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	FORM/COMPLAINT
1.	Cornus stolonifera	an'-ka-kwi-nup	Dogwood	
2.	Nicotiana attenuata	pu'-i-ba-u	tobacco	mixed with above
3.	Sedum debile	oi'-tcun-goi-djok	stonecrop	
4.	Silene menziesii	yo'-go-ti-wi-ya	catchfly	
5.	Vaccinium caespitosum	ti'-da-kai-mi-ya	blueberry	

TABLE 28. GOSHUTE MEDICINAL POULTICES AND POWDERS

	BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	FORM/COMPLAINT
1.	Ambrosia psilostacha	ti'-ro-sip	Ragweed	afflicted eyes
2.	Antennaria dioica	toi'-ya-na-tsu	Everlasting	snow blindness
3.	Cercocarpus ledifolis	tu'-nam-pi	Mtn. mahogany	burns
4.	Chaenactis douglasii	wan'-gin-gip		aching limbs
5.	Cleme intergrifolia	a'-na-gwa-nup		sore eyes
6.	Eriogonum villiflorum	toi'-gup-a-gunt	Silverplant	burns
7.	Gilia gracilis	i'am'bip		burns
8.	Linum lewisii			bruises
9.	Mentzelia abicaulis multiflora pumila laevicaulis	ku'hwa pi'-a-ku-hwa		burns
10.	Peucedanum graveolens	i'-djaip		sore throat
11.	Wyethia amplexicaulis	pi'-a-ken-dzip		bruises

TABLE 29. GOSHUTE MEDICINAL ROOTS AND OTHER PLANT PARTS

	BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	FORM/COMPLAINT
1.	Angelica pinnata	pa'-si-go-up		root medicine
2.	Arenaria congesta triflora	koi'-na-tsu wi'-djan-gwo-djop	sandwort	bowel medicine
3.	Brickelia grandiflora	wa'-na-tsi-mu-gi		root medicine
4.	Carex sp.	pa'-ra-we-ci-gop		root medicine
5.	Chamaebatiaria millefolium	tin-go-ip		gonorrhea medicine
6.	Clematis lingustifolium	o'-bin-da-ma-nump	clematis	
7.	Eriogonum ovalifolium	sa'-na-kun-da	silverplant	stomach ache
8.	Eurtia lanata	tci'-cip	white sage	fevers
9.	Grindelia squarrosa	mu'-ha-kum	gum plant	cough medicine
10.	Oenothera caespitosa	ka'-na-gwa-na	Evening primrose	root medicine
11.	Rumex salicifolius	an'-ka-pa-dja-rump	Dock, sorrel	suppository
12.	Silene acaulis multicaulis scouleri	tim'-pi-wa-gwup	catchfly	colic emetic
13.	Spiranthes romanzoffiana	sai'-gi-tamp	Ladies tresses	V. D.
14.	Valeriana sylvatica	ku'-yi-gwa-nup		arrow poison
15.	Zygadenus nuttalli	ta'-bi-si-go-up	Poison sego	emetic; V. D.

Chamberlin 1911:360 ff.

TABLE 30. GOSHUTE MEDICINAL WASHES AND CHEWS

	BOTANICAL NAME	GOSHUTE NAME	ENGLISH NAME	FORM/COMPLAINT
1.	Achillea millefolium	wan-go-gip	Yarrow	rheumatism, bruises
2.	Aquilegia coerulea	pa'-wa-gum-pi	Columbine	heart medicine
3.	Cnicus eatoni	po'-gwo	Thistle	cuts, sores
4.	Eriogonum ovalifolium	sa'na-kun-da	Silverplant	eye medicine
5.	Senecio spp.	tim'pi-dza-na-kwo	Groundsel	Chewing gum

Chamberlin 1911:360ff.

MAP 4. EUROAMERICAN MECHANIZED TRANSPORTATION CORRIDOR IN WESTCENTRAL UTAH

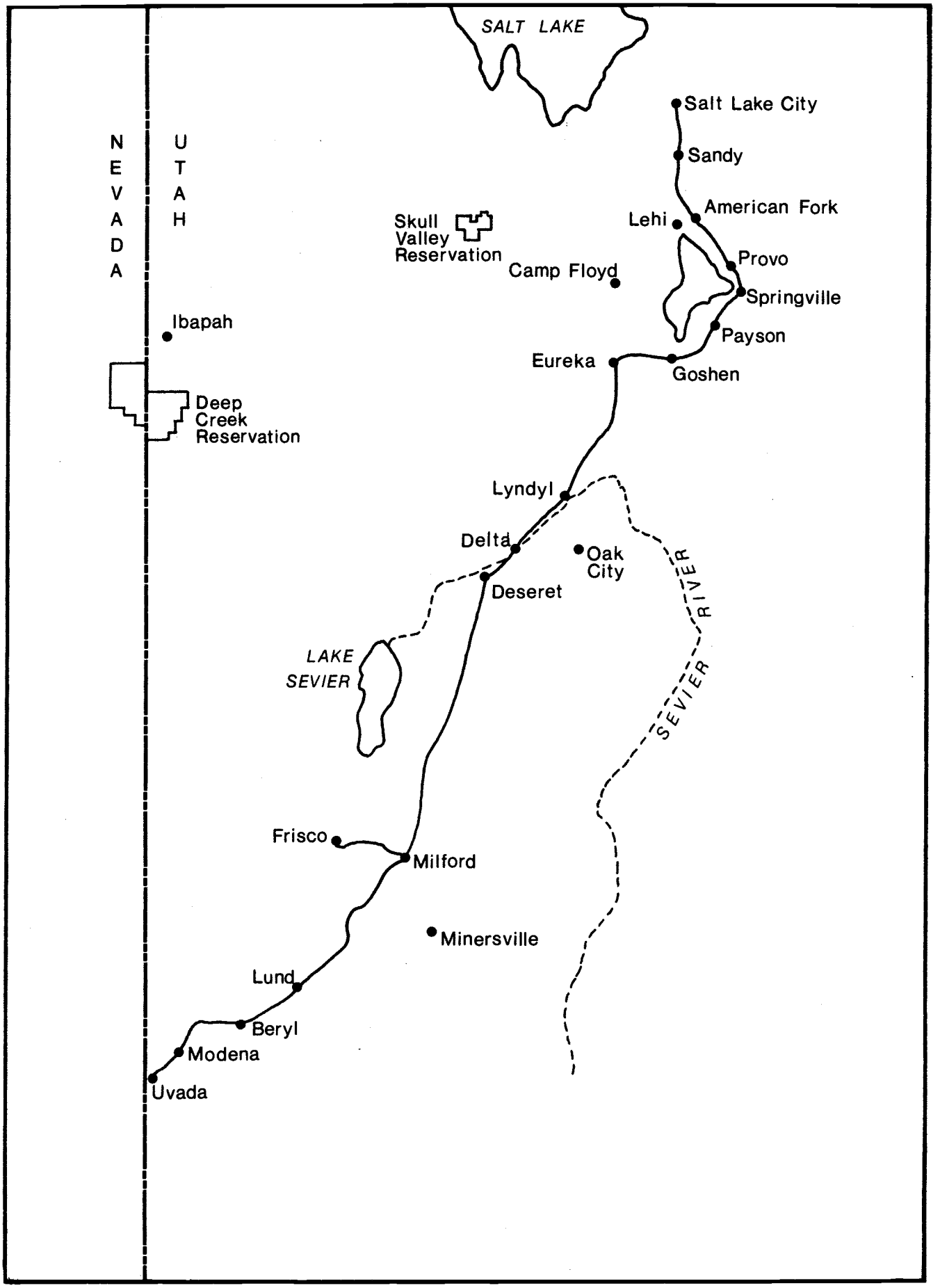


Table 31. EUROAMERICAN COLONIZATION IN MECHANIZED TRANSPORTATION CORRIDOR.

DRAINAGE	SETTLEMENT	RESOURCE	DATE	RAILROAD
Salt Lake	Salt Lake City	Irrigated Fields	1847	1871
Salt Lake	Sandy			1871
Utah Lake	American Fork	Irrigated Fields		1873
Utah Lake	Provo	Irrigated Fields	1849	1873
Utah Lake	Springville	Irrigated Fields		
Utah Lake	Payson	Irrigated Fields		
Utah Lake	Goshen	Irrigated Fields		
Sevier Desert	Eureka			
Sevier River	Lyndyl		1879	1879
Sevier River	Delta	Irrigated Fields	1913	1879
Sevier River	Oasis	Irrigated Fields	1879	1879
Sevier River	Deseret	Irrigated Fields	1859	1879
Beaver River	Riverside	Industrial water	1873	ephemeral
Beaver River	Milford	Industrial water	1870	1880
San Francisco Mts.	Frisco	silver/galena	1875	1880
Escalante Desert	Minersville	lead ore	1869	road link
Escalante Desert	Lund	freight		1899
Escalante Desert	Beryl	freight		1899
Escalante Desert	Modena	freight		1899
Escalante Desert	Uvada			1899

in Salt Lake City. Granite for the edifice was quarried in Cottonwood Canyon. Rail transport would facilitate moving very heavy granite blocks from the quarry to the temple construction site. Built farther south, a Mormon railroad could establish a rail connection with growing colonies engaged in farming, facilitating shipment of their products to market. Thirdly, if the railroad were built far enough, it could reach mining camps set up during the 1860s so that ore and metal shipments would make the company profitable (Arrington 1958:277).

The Mormon planners incorporated the Utah Southern Railroad on 17 January 1871, a year after finishing the Utah Central. Capitalization was $1,500,000 to initially build 65 miles south of Salt Lake City to Payson. The new company commenced building on 1 May, and Brigham Young drove the first spike in the first rail in June. By September, the railroad operated trains to Sandy, 13 miles south of Salt Lake City. That was the junction for shipping granite blocks to the Mormon Temple in the city (Arrington 1958:278).

The LDS Church leaders still perceived discrimination against them by federal authorities. Young arranged for the Union Pacific to acquire stocks and bonds in the Utah Southern Railroad in hopes that its lobbyists would enjoy greater success in Washington, D. C., than did Mormon representatives. The Union Pacific provided rails and rolling stocks for building and operating the Utah Southern Railroad south of Sandy Station. Worked out in 1872, this arrangement lasted until the line had been extended southward to Lehi and Union Pacific had acquired partial control of the local company (Arrington 1958:280).

By 1872, there was new mining demand for economical rail transport closer to Salt Lake City than the eastern Nevada mines known for several years. Discoveries had been made in the Tintic Mountains, and miners were at work extracting ore. Smelters had been erected at Homansville, in the East Tintic District. The Wyoming Silver Mining Company of Cincinnati owned a 10-stamp mill there, the Eureka Mining Company had a 12-stamp mill, and the Utah Smelting and Milling Company, a territorial corporation, had two furnaces there capable of handling 20 tons per day. The Tintic Smelting company at Diamond City also could process 20 tons per day in two furnaces.

Even farther south, the Chicago Company had a small steam battery mill capable of processing six to eight tons of ore daily in the Ohio District near the Sevier River. (Alter 1932:I:410-11). Consequently, the Utah Southern Railroad had cargo waiting if it could build rails southward.

Brigham Young met with residents of Utah County at Lehi on 21 July 1873 to urge them to volunteer cash, labor and ties to build more track. Young's goal was to persuade fellow Mormons to extend the railroad at least as far as Provo. The 13

colonies in Utah County responded by forming a committee of the Mormon bishops of each town and set about the task (Arrington 1958:280-81).

Brigham Young proved that he was still capable of exhorting Latter-Day Saints to undertake large-scale sectarian projects. By fall, the railroad had been completed to American Fork, and train service to that point began while construction continued southward (Alter 1932:I:412). The project was bringing the study area to the eve of a final transformation into a mechanized transportation corridor. The newly discovered mines meant that Euroamericans established additional settlements in the mountains that constituted the major Native American refuge from Mormon farm village settlement in riverine oases. The miners created rude wagon roads that were often impassable during periods of precipitation. Brigham Young and the Union Pacific were approaching the Tintic mining region with the Utah Southern Railroad as quickly as they thought they could build it.

Beyond the Tintic region, the mines of the San Francisco Range beckoned. Substantial quantities of copper and silver had been discovered there in 1870, about 18 miles northwest of modern Milford. The Star Mining District began to boom in 1872. Its boom would last only until 1875, but in 1872 and 1873 no one could predict that quick demise. The Mormon construction crews completed the Utah Southern Railroad line to Provo on 24 November 1873. Then the Union Pacific assumed a larger role, and carried the tracks 27 miles farther to Juab County and York (Arrington 1958:281). That brought the new railroad within striking distance of the mines, yet York remained the terminus for several years.

The first mining district in Southern Paiute territory near the study area in westcentral Utah was the Star District. Organized in 1870 it was 12 miles square and located a few miles southwest of present Milford in the Picacho Range. In 1871, it was divided into the North Star and South Star Districts. By the end of the decade, over 1,600 mining locations had been filed. Mining camps grew up known as Shauntie, Shenandoah City, Elephant City, South Camp, and Star City.

Developers erected a smelter at Shauntie in 1873, tore it down in 1874 and replaced it with a larger one. This smelter burned in 1875 and was promptly rebuilt. The 40 houses in Shauntie also burned in 1876. Then the smelter closed in 1877 (Arrington 1963:211). By that time the Milford mill could handle much of the ore still extracted at Shauntie.

Copper mines also offered the prospect of paying freight shipments. Prospectors formed the Beaver Lake District in northwestern Beaver County in 1871. A little work accomplished during the next two years recovered ore running 30 percent

copper, plus some silver and gold. A mill built in 1873, seven miles north of Milford, worked the copper ores, but it did not operate very long. While in operation, this Riverside Smelter turned out heavy copper matte and lead bullion (Hansen 1963:264), indicating the good prospect for railroad freight revenues. The Riverside Smelter was located directly in the mechanical transport corridor that was created a short time later, and no doubt helped to influence the choice of railroad track-laying when the line finally was extended to Milford in 1880.

Farther away, colonists living in St. George on the Virgin River began about 1870 to extract high-grade copper ore from the Grand Gulch Mine just south of the Arizona Territory border in the Arizona Strip. In 1875, the miners built a furnace on the Virgin River near St. George, but soon abandoned it (Hansen 1963:265). Southern Paiutes native to the area attempted to collect tolls from the miners riding north and south between St. George and the Grand Gulch Mine (Adams 1955:396). Copper extraction did not become very profitable until trucks could haul ore out to the railroad for shipment to a Salt Lake City smelter from 1906 on (Paher 1970:289). Meanwhile, the Euroamerican activity at Grand Gulch mine helped to reduce Southern Paiutes to dependency and stimulated creation of the mechanical transportation corridor.

Even though the Star Mining District boom ended in 1875, four districts had been established in the San Francisco Mountains by that year. Moreover, prospectors moved into the Milford and Minersville area, and the mountains. James Ryan and Samuel Hawkes discovered a fabulous vein of silver-bearing galena at Frisco in September of 1875. In 1876, they sold out for $25,000. The new owners soon extracted 25,000 tons of ore that sold for an average $100 per ton. The mining camp of Frisco quickly "acquired a reputation as the wildest camp in Utah. Each of the twenty-one saloons had its stories of the killings" (Horton 1957:41).

The Horn Silver Mine developers sold it in 1879 to Jay Cooke, who organized the Horn Silver Mining Company of Utah. The mine operated for 55 years. During that period, it produced almost 190,000 tons of lead, 17,000,000 ounces of silver, 33,000 ounces of gold, 9,000,000 pounds of copper and 19,000 tons of zinc. The deposits proved to be one of the richest in minerals in Utah, averaging $42.68 per ton of ore. The company shipped bullion to refineries in Chicago (Merkley 1948:252-56, 258-63, 270). This profitable operation drastically affected vegetation in the district, inasmuch as 36 beehive charcoal kilns furnished fuel for its furnaces. Located in 8 groups from six to eighteen miles from Frisco, kilns ranged from sixteen to twenty-six feet in diameter (Merkley 1948:225-56). They required cutting huge numbers of trees to convert into charcoal, and depauperated an extensive region.

Finally, the Utah Southern Railroad Extension Company organized earlier in the decade began building in 1878-1879 from York to Juab on Chicken Creek, 14 miles south of Nephi. There it reached a length of 105 miles from Salt Lake City (Arrington 1958:282). Another extension company was organized to extend the tracks south from Chicken Creek 130 miles to Milford and on to Frisco. Jay Gould and S. H. H. Clark of Union Pacific formed the new extension company, and it actually completed construction as far as Milford in 1880. This corporate restructuring essentially terminated direct Mormon involvement in railroad construction. The construction from Juab to Milford also created an enduring industrial-age transportation corridor through the Goshute territory immediately north of the lower Sevier River and Pahvant territory immediately south of it, on through the northern edge of Southern Paiute Territory in the Beaver River bottoms. Land use patterns permanently changed.

The first Utah Southern Railroad terminus in 1880 was known as Smyth, then Reed. Later it was moved to the present site of Milford. That settlement had begun ten years earlier when a Mormon cattle owner built his ranch headquarters at the edge of a swamp in the Beaver River bottoms. Other colonists came to farm the margins of the swamp (Horton 1957:24-27). Probably Southern Paiutes exploiting the swamp resources were among those whose warning smoke signals Jedediah S. Smith reported in 1826. In 1876, one family built a 10-stamp mill to process ores freighted in from the nearby mining districts. The town reportedly received its name because freighters had to ford the Beaver River two miles south or two miles north of town to reach the mill (Arrington 1963:211).

Economical railroad transportation from Milford to the transcontinental tracks allowed the commercial exploitation of sulphur deposits on Cove Creek. The initial discovery had been made in 1869, but the Dickert and Meyers Sulphur Company began successful operation of a mine only in 1883. Profitable mining appears to have required production of around 1,300 tons annually. Production peaked in 1896 at 5,260 tons. In the twentieth century, the deposits have been worked only sporadically (Romney 1963:228-29). For two decades at the end of the nineteenth century, the Cove Creek sulphur deposits attracted increased Euroamerican settlement in this area on the pre-colonization frontier between Pahvants and Southern Paiutes. It strengthened the economies of Beaver 22 miles away, and Milford on the railroad in the Beaver River bottoms. While the sulphur mines were not located within the mechanical transportation corridor, they were near the earlier Mormon Corridor. Thus, they helped to change the ethnic settlement and land use patterns of all peoples in the zone.

In 1880, Milford became the railhead for all of southwestern Utah. Stage lines carried passengers between the station and such Euroamerican settlements as Cedar City,

Parowan, St. George, and Frisco. From 1880 to 1885, Frisco held a population of about 6,000 persons. A newspaper was published there, schools taught miners' children, and stores provisioned them. A smelter functioned at Frisco until 1882; a stamp mill worked on low grade ores until 1905 (Merkley 1948:252-256). The railroad tracks between Milford and Frisco were removed in 1943 (Merkley 1948:290).

Sheep shearing constituted another dimension of the diversified Milford economy. As entrepreneurs began to graze flocks of sheep in the adjacent grasslands, shearing sheds were set up at Milford.

In the twentieth century when automobiles became common, the state constructed a highway from Snake Valley to the northwest to Beaver, east of Milford. That led to the development of motels and other businesses oriented to automobile travelers. Thus Milford has been essentially a transportation town from its founding until the present time. (Merkley 1948:232-251). It is a Euroamerican town in the midst of aboriginal Southern Paiute lands once heavily exploited, and close to the study area.

Pahvants and Southern Paiutes participated to an unknown extent in railroad construction, and laboring at the mine camps in the San Francisco Mountains, Minersville, and at the transportation center of Milford. By 1873, they were irrevocably split up into local labor gangs at mine camps, transportation towns, and Mormon farm villages. They depended economically on exchanging labor for food and clothing, although they continued to rely on natural resources for shelter and game and wild plant foods and medicines for decades more. The refuge areas of the Eastern Division Southern Paiutes remained the Needle Range on the northwest and the Colorado Plateau to the southeast until the end of the nineteenth century.

The Utah Southern Railroad terminus stalled at Milford, as a junction point for extensions to the San Franscisco Mountain mines, particularly Frisco. Not until 1899 did new construction lay track from Milford southwest across the Escalante Desert and then westward to the Nevada state line at Uvada. By that time, the prospect of local freight loadings beckoned, along with the long-distance link between Los Angeles and Salt Lake City. For silver ores had been discovered in 1896 near Beryl Junction on the southwestern margin of the Escalante Desert. Unemployed iron workers migrated to Newcastle to exploit the discoveries.

The creation of a mechanized transportation corridor extension effectively ended the isolation and refuge character of the region the tracks crossed for the Indian Peak band Southern Paiutes. Its members integrated increasingly with the Cedar City labor gang, although they apparently continued

moving back and forth between violated refuge area and town for some years.

Senator W. A. Clark entered the railroad construction business at the end of the century, engaging in economic and legal struggles with the Oregon Short Line that had acquired the former Utah Southern tracks. In 1900, Clark bought the Nevada grade created by the Short Line for back taxes. Litigation ensued, but in 1902 Clark succeeded in having track laid from the state line to Caliente, Nevada. There the terminus stayed until 1905, when Clark and the Oregon Short Line comprimised. Then workers rapidly laid track along Meadow Valley Wash to Las Vegas and in 1905 service began on the tracks of the San Pedro, Los Angeles & Salt Lake Railroad (Scrugham 1935:609-61). Just as the beginning of transcontinental train service in 1869 transformed Salt Lake City, so the beginning of regional train service in 1905 transformed Las Vegas, Caliente, and to some measure Lund and Milford and the northern cities on the line.

When the railroad was extended from Milford to the Nevada border, automobiles and paved highways were still several years in the future. Consequently, the stations scattered along the railroad right-of-way became small transportation hubs for wagon freighting and passenger stages. Even when the San Pedro, Los Angeles and Salt Lake Railroad was formed, but had not yet established through service, that company operated a network of passenger stage lines to the stations along its tracks. Milford functioned as the break-down point for stage passengers going from settlements served by the railroad to Minersville, Adamville, Greenville and Beaver.

Modena served as the break-down point for freight, and for passengers taking railroad stages to Pine Valley, Pinto Valley, Hamblin, Enterprise, Hebron, St. George, and State Line and Fay, Nevada.

Lund was the break-down point for passengers riding stages the railroad company operated to Cedar City, Kanarra, Parowan, Leeds, St. George and Summit (San Pedro, Los Angeles and Salt Lake Railroad, Schedule, July, 1903).

These wagon and stage services radiating from the railroad helped to fix the latter as the enduring mechanical transportation corridor through this sector of Southern Paiute aboriginal homeland. Even when automotive highway engineers selected different routes, they still built access roads to the same freight-stage stations on the railroad.

Wagon roads scarred the land, often with deep, eroding ruts, but potentially the natural environment might recover from an abandoned wagonroad. Many of the ore deposits that were discovered proved to be shallow lodes, and created numerous ghost towns which are difficult to locate even in the

twentieth century. The steel rails of the railroad endured, and the Union Pacific tracks across Goshute, Pahvant and Southern Paiute aboriginal territory continue to carry trains. Thus, completion of the railroad in 1905 finally completed the Euroamerican transformation of the industrial-age transportation corridor that the study area closely parallels. The initial impact of Euroamerican transportion of commodities and people occurred between 1878 and 1905. paved truck-automobile highway construction later added another element to the corridor in some places. Constructing transmission lines parallel to the railroad will add one more commodity transportation component to an extant corridor. It can only add to the previous impacts.

The Southern Paiute-Pahvant population in southern Utah adjusted to surviving after termination of federal recognition in 1954 just as it had adjusted to demands imposed by Euroamerican colonization in earlier years. The labor gangs split into smaller economic household units, and some of them made a living on or near the mechanized transportation corridor. In 1973, almost 7 percent of the "Southern Paiutes" living in southwestern Utah lived in the former refuge region west of Milford. Two Native Americans comprised the entire population of Beryl; four lived at Beryl Junction and thirteen in Newcastle.

Most Southern Paiutes (including Pahvants) lived at towns in the Mormon Corridor established prior to the mechanized transportation corridor. With the development of highways and automobiles, the twentieth century transportation network connected the towns in the older Mormon Corridor rather than those along the railroad. Consequently, over 71 percent of these Native Americans lived in such towns as St. George, Washington, Santa Clara, and Kanosh (see TABLE 32). The largest single group resided at Cedar City -- 121 persons or 43 percent of the total ethnic complement.

In 1973 nearly 22 percent of the enclave lived in a labor gang situation at Richfield on the middle Sevier River (see TABLE 32). The 1973 distribution reflects the complex historical interaction of several major influences: natural resource distribution, a series of innovations in transportation technology, and Southern Paiute-Pahvant cultural change.

LARGE SCALE IRRIGATION AGRICULTURE

LDS leaders initiated construction of the Utah Southern Railroad partly to link up some of their agricultural villages with the national market. After the Union Pacific extended its tracks to Milford in 1880 in pursuit primarily of mining

TABLE 32. UTAH LOCATIONS OF SOUTHERN PAIUTES (AND PAHVANTS) IN 1973. (Knack 1980:17)

MECHANIZED TRANSPORTATION CORRIDOR		OLD MORMON CORRIDOR + I-15		SEVIER RIVER VALLEY	
Beryl	2	Cedar City	121	Richfield	59
Beryl Jct.	4	St. George	11	Elsinore	1
Newcastle	13	Washington	7	Koosharem	1
		Meadow	19		
Total	19	Santa Clara	20	Total	61
		Middleton	5		
		Ivins	4		
		Total	199		
% 6.8		% 71.3		% 21.3	

business, availability of relatively economical transportation stimulated development of large scale irrigation projects in the lower Sevier River delta, and smaller deltas near the transportation corridor.

Meanwhile, the railhead at Milford provided a transportation outlet for cattle ranchers throughout southern and central Utah. Cowboys drove cattle to the shipping pens at Milford from the Snake River area, from Pine Valley, and elsewhere. The town resembled a cattle shipping station on the Plains during those periods when the cowboys more or less took it over (Horton 1957:69). Commercialization of the range cattle industry fostered its systematic utilization of all range within cow-walking distance of water. That meant that range cattle quickly cropped bunch grasses and other plant species that had long yielded nutritious seeds to Native Americans. Livestock consumed the biomass before the plants could ripen seeds, adding another factor to the forced dependence of Goshutes, Pahvants and Southern Paiutes upon wage labor on the ranches and at Mormon farming villages.

From 1880 until trucks and roads took over freight movement in the twentieth century, Milford also was the focus of wagon freighting across much of Pahvant and Southern Paiute aboriginal territory. Freighters distributed machinery and merchandise, and hauled in ores (Horton 1957:62).

By the middle of the decade following construction of the railroad through Millard Country to Milford, major irrigation projects transformed the ancestral Pahvant area more than ever before. On 6 March 1885, the Deseret Reservoir and Irrigation company was incorporated with a capital of $50,000 in 10,000 shares. Located immediately west of the railroad adjacent to the Sevier River, Deseret clearly was created by the conjunction of mechanical transportation with arable land and a supply of irrigation water. Soon after the Deseret Company was legally organized, the Gunnison Bend Canal Company was incorporated on 17 February 1886, with only $25,000 in capital in 1,000 shares. The result was the Gunnison Bend Reservoir in the delta, designed to build up a large head of irrigation water to allow rapid, efficient watering of fields.

Residents of Oasis, also on the railroad and only a short distance from Deseret, organized the Oasis and Riverside Canal Company on 13 February 1886, with $50,000 in capital in 10,000 shares. A few years later, on 15 May 1893, the Oasis Canal Company was established with half that amount of capital (Brough 1898:196).

The economy of the delta zone was somewhat diversified in 1888 with construction at Abraham of a small copper smelter. It produced 130,000 pounds of copper bullion before it was destroyed by fire. Reportedly that was the largest quantity of copper bars produced in the territory up to the time (Hansen

1963:266). Copper smelter fumes not being healthy for plants, the short life of the Abraham smelter no doubt proved beneficial to agricultural development in the Sevier River delta.

Even larger scale development began at the end of the century. Developers incorporated in 1897 the Lake Bonneville Water and Power Company. Authqrized $3,000,000 in capital stock, it quickly sold $1,000,000 worth. Having developed 15,000 acres, it set about building a large dam across the Sevier River far upstream. It was planned to impound 382,000 acre-feet of water in a 10,535 acre pool. Long canals through Leamington Canyon delivered impounded water to the irrigated fields in the delta zone, through 750 miles of lateral canals (Brough 1898:67). Later, the Delta Land & Water Company undertook development. By the beginning of 1916, it claimed to have sufficient water to irrigate 33,400 acres. Meanwhile, starting in 1898, the farming town of Delta grew up on the railroad northeast of Oasis and Deseret. During World War I, it emerged as an important shipping point for sugar beets going to a processing plant at Payson, Utah. In 1913, Delta shipped one carload of sugar beets. In 1914 it produced 35 carloads. In 1915, the plant contracted with farmers to plant acreage capable of growing 15,000 tons of the beets (Alter 1932:I:494). Sugar beets were at that time a labor-intensive crop at harvest time. Pulling beets and throwing them into wagons to be hauled to the railroad loading platform required numerous harvest hands in order to move the beets from field to factory when their sugar content peaked. The factory-in-the-field agriculture at Delta recruited, ironically, workers from the Native American ethnic groups that once owned and exploited the Sevier River delta. That is to say that Goshutes and Pahvants labored in the beet fields, along with Southern Paiutes from nearly all of the labor gang satellite settlements. Even Willow Springs Band Southern Paiutes migrated to the Sevier River delta beet fields to work for cash during the beet harvest.

As a curious consequence of large-scale agricultural development in the Sevier River delta, therefore, contemporary Goshutes, Pahvants and Southern Paiutes have lived and worked in or near the study area where it crosses the irrigated farmlands. Thus, persistent cultural system knowledge of the delta region has been refreshed during the twentieth century.

Smaller irrigation projects resulted in additional enduring Euroamerican farming colonies within aboriginal Pahvant territory. The agricultural economic base for Fillmore was stabilized through the incorporation of Cove Creek Irrigation Company on 15 January 1887. Its capitalization was $19,692.50. Slightly earlier formation of the Fillmore Irrigation Company on 14 June 1886 with capital of $20,000 began the regularization of the management of irrigation water there. These companies impounded and distributed the flow of Chalk Creek.

Half a dozen miles northnortheast of Fillmore, the town of Holden became the scene of a similar corporate endeavor. The Holden Irrigation and Canal Company was incorporated on 3 May 1886 with capital of only $1,500. Its canal carries water from the western slope of the Pahvant Mountains out into the valley edge.

About four miles south of Fillmore, the Meadow Irrigation Company sought to stabilize the water supply for the town of Meadow. The company was incorporated on 2 March 1887 with capital of $7,128 in only 297 shares.

East of the Sevier River Delta developments, the town of Oak City grew up west of Oak Creek. The Oak Creek Irrigation Ditch and Canal Company was incorporated on 1 February with $1,270 in capital distributed in 234 shares (Brough 1898:196).

Several of these irrigation projects involved local farmers subscribing capital to corporations established to legalize water title and management. Others involved urban investors, in sometimes far-distant cities, seeking to profit from federal and Utah law that allowed transfer of public title to water to private corporations. All by their nature excluded Native Americans.

INEFFECTUAL LAND BASE DEFENSE

Toward the end of the nineteenth century, Mormon colonists had displaced and communicable diseases had decimated the Southern Paiutes who once gardened along Santa Clara Creek. Yet, the valley of the Santa Clara became the location of a small reservation for descendants of some of the people who once produced food there. An economically well-to-do resident of St. George purchased much of the Shivwits Plateau, and stocked it with hundreds of head of range cattle. When the cattle spread over the highland pastures, the area served as a refuge for conservative Shivwits Southern Paiutes. These people seem to have been the remains of the recalcitrantly nativistic group that had joined their Walapai neighbors south of the Colorado River during the 1866-1869 Walapai War. They levied a tax on the intruding cattle. The stockman, mayor of Mormon St. George, wielded sufficient influence with the federal government to obtain its intervention to remove the patriot Shivwits from their highland refuge area to the Santa Clara Valley. The Congress appropriated money with which to purchase from colonists land that had been exploited and owned by Southern Paiutes prior to the Euroamerican invasion. The stockman's power was so great that the federal government actually made him its representative to disburse the land purchase funds and to fence the tract (Rambeau and Holmes 1976:113).

The removal of the refugee Shivwits terminated one more pocket of Southern Paiute cultural and economic independence. One of the main changes in the Shivwits social environment was the availability of English-language classroom instruction which soon brought most of the children into school, and equipped them with basic language skills for integration into Euroamerican-dominated society (Rambeau and Holmes 1976:114). In 1916, President Woodrow Wilson issued an executive order enlarging the reserved area (Rambeau and Holmes 1976 :115), the first tract having finally been purchased in 1903.

During the same national administration, the president acted on 2 August 1915 to reserve a small portion of the refuge area of the Indian Peaks Southern Paiutes (Rambeau and Holmes 1976:116). Once again, the federal action was ineffective in terms of guaranteeing the refugee Southern Paiutes a land base adequate for economic subsistence in either traditional or twentieth century economics. Consequently, members of the Indian Peaks refugee group traveled back and forth frequently between the partial refuge area and Cedar City, where they obtained wage labor.

The federal government failed to reserve any lands for the Cedar City labor gang. The Church of Jesus Christ of Latter Day Saints long allocated five and a half acres of land for Native American use near Cedar City (Rambeau and Holmes 1976:128-29). Even after the national government reserved more or less token areas for Southern Paiutes elsewhere, they did not reserve any at Cedar City.

The Cedar City labor gang Southern Paiutes did begin to receive a modicum of federal services after 1916. That was the year when the federal government finally organized an agency for the Goshutes. The bureaucrats in Washington assigned responsibility for the Cedar City labor gang to the representatives at the Goshute Agency.

On the middle Sevier River, Euroamericans legalized their water rights and expanded irrigation with large-scale projects beginning almost a decade after the delta zone developments. The Annabella Irrigation Canal Company was incorporated on 12 August 1895 with $7,726.33 in capital, followed by Annabella Reservoir and Canal Company on 23 January 1897 with $10,000 in capital stock. Across the river to the southwest, the Elsinore Canal Company was incorporated on 19 March 1895 with $15,000 in capital. South-southeast of Elsinore, the Monroe South Bend Canal Co. had been incorporated on 11 March 1892 with $20,000 in capital and the Monroe Irrigation Company was set up on 11 February 1896 with capital stock of $40,000. The Richfield Irrigation Canal Company was incorporated on 18 April 1893 with $30,000 in capital stock (Brough 1898:199). These corporations established to manage water distribution to colonists blanketed the middle sector of the valley.

Farther upstream, the Junction Irrigation Company was incorporated on 28 December 1897 with capital stock of $5,500 in 5,500 shares. Above Junction, the Circleville Irrigation Company was incorporated on 7 June 1897 with $6,000 in capital stock in 12,000 shares. The earliest water management corporation established in this zone was the Koosharem Irrigation Co. It was incorporated on 29 June 1889 with $20,000 in capital stock in 2,000 shares to irrigate 2,000 acres (Brough 1898:197).

Significantly, the Euroamerican colonists firmly controlled water supplies before the federal government created the Koosharem Reservation on 3 March 1928 (Rambeau and Holmes 1976:116). The situation of the 920-acre purchased Kanosh Reservation created by an executive order signed on 11 February 1929 (Rhoads 1929:10) was the same. The legal organization of water control under state/territory law had been carried out well before 1900 as discussed above.

FINAL DEPOPULATION AND AMALGAMATION

Numerous Native American groups began to increase in population in the final decade of the nineteenth century. Disease continued to be so serious among the Southern Paiutes, and apparently the Pahvants and Goshutes, that they did not begin to recover until the twentieth century.

The Shivwits relocated to Santa Clara Creek reservation are an example of the dangerous disease environment in which these Native Americans continued to live. In 1917, the Bureau of Indian Affairs reported 85 percent of the population infected with trachoma, and a high incidence of rheumatism, colds and influenza. The 1918 influenza pandemic killed a number of Shivwits (Rambeau and Holmes 1976:115). The influenza generally decimated these peoples.

Perhaps the worst hit Southern Paiute population was the refugee Kaiparowits band that eked out a scant livelihood in its high altitude plateau refuge area. So many people perished in their homes that the few survivors abandoned the Kaiparowits Plateau in desperation. They migrated south across the Colorado River to amalgamate with the Willow Springs band. That southeasternmost refugee group also suffered high influenza mortality (Bunte and Stoffle 1981).

In general, the cumulative impact of epidemic mortality on the interrelated Goshute, Pahvant and Southern Paiute appears to have diminished the population until the 1930s. Then individual and family economic adjustment to the wage labor economy, improved knowledge of sanitation, smallpox vaccination, and minimal health care delivery enabled these peoples to begin to increase slowly in numbers.

TERMINATION OF FEDERAL SERVICES

The Republican majority in the Congress after the end of the second World War discussed terminating federal responsibility for Native American reserved lands, and a number of federal services. Many Congressman perceived a precedent in the successful dissolution of the War Relocation Aithority -- a wartime agency that also dealt with an ethnic minority population. Set up to administer Japanese and Japanese-Americans forced to leave their Pacific Coast homes, the WRA had ten internment camps full of forced relocatees from 1942 to 1945. One of those camps was Topaz, located near Delta, and Utah's fifth most populous city for three years (Ulibarri 1972:223). Thus, federal policy reinforced the distinctive socio-economic character of the mechanized transportation corridor and its Sevier river delta sector.

In 1947, the Bureau of Indian Affairs presented to Congress a list of Native American groups considered to be ready for final social and economic integration into the general population without a reserved land base. None of the Utah Southern Paiute, Pahvant or Goshute groups was on that original list. Senator Arthur Watkins of Utah exercised so much power, however, that by the time discussion became legislation, in 1954, the smaller Utah groups were terminated.

Forcible removal to Santa Clara Creek had done little to benefit the refugee Shivwits. They numbered fewer than 100 persons in 24 families, none of which supported itself (Rambeau and Holmes 1976:116). Although formal reports claimed that the Shivwits had requested termination, no representative of the Congress visited the reservation to interview members of this small population. Senator Watkins held hearings at Richfield, Utah, with representatives of the group. The Superintendent of the Uintah-Ouray Reservation, nominally responsible for the Shivwits, may have carried on what passed for discussion of the future. It appears doubtful that the Shivwits fully understood that termination of federal trusteeship of their lands would make them responsible for paying Utah taxes on those lands -- a change that led directly to their losing their land base following their termination (Rambeau and Holmes 1976:117). The Shivwits may not have realized that termination dissolved their autonomous government.

The Walker Bank & Trust company in Salt Lake City became trustee for the Shivwits lands. The Secretary of the Interior selected the trustee. The Shivwits lived so far from Salt Lake City that they found it virtually impossible to have regular contacts with the trust officers. They also found access to the trust officers difficult even when they managed to reach the city. The trustees leased lands without group consent or even consultation. Their objective appears to have been to realize approximately enough lease income to pay taxes. Consequently, nearly all of the two dozen Shivwits refugee

families abandoned the area. They found their subsistence elsewhere (Rambeau and Holmes 1976:118).

The Termination Act (PL 83-762) was signed by President Dwight Eisenhower on 1 September 1954. It terminated federal responsibility for the Kanosh and Koosharem groups -- Pahvant and intermarried Southern Paiutes -- as well as the Shivwits and Indian Peaks groups (Rambeau and Holmes 1976:116-17, 131). Inasmuch as the Cedar City labor gang continued to live on Mormon-owned land after the federal government in the 1920s failed to purchase a small tract for it, the framers of termination legislation overlooked this group. Consequently, federal services were not legally terminated, yet almost everyone in the Bureau of Indian Affairs and Utah behaved as though they had been (Rambeau and Holmes 1976:132).

In 1973, the Utah Southern Paiutes and associated Pahvants obtained a federal grant of $491,999 to build multipurpose structures at Cedar City, Kanosh and Richfield. The Cedar City group, with some external guidance, established a construction company to provide job training and jobs (Rambeau and Holmes 1976:133).

RE-RECOGNITION OF UTAH "PAIUTES"

National attitudes toward Native American policy began to change during the Eisenhower administration. Before the end of the two Eisenhower terms in office, the president had halted the termination process, and the Congress had abandoned the policy. The unhappy experiences of the Wisconsin Menomini and the Utah groups with termination eventually generated reversal of policy. Congress voted first to restore the Menomini to trusteeship, and on 3 April 1980 passed the "Paiute Indian Tribal Restoration Act." That enactment re-recognized 503 "Paiute" Indians (Cardall 1982:1).

As stated in earlier chapters, the act lumps the Koosharem and Kanosh intermarried Pahvant-Southern Paiutes -- decendants of the Pahvant Southern Division -- with the Southern Paiute Cedar City, Indian Peaks and Shivwits groups. All five scattered groups are united in the new legal entity, the Utah Paiute Indian Tribe (Associated Press 1982). The restoration act authorized the reconstituted government of the scattered families to choose up to 15,000 acres of federally controlled land in Utah. Significantly, one choice of 430 acres near Fish Lake in a National Forest "is remembered by tribal elders as the site of traditional religious ceremonies." Yet standard ethnographic/ ethnohistorical belief has been that the Fish Ute constituted an independent and distinct entity (Steward 1974:62). Recent action by the Utah Paiute Indian Tribe indicates that the Fish Ute formed part of the Pahvant-Southern Paiute intermarriage continuum, or that descendants of the Fish

Ute intermarried into the Pahvant-Southern Paiute amalgamated populations since colonization.

The relationship between the members of Utah's Congressional delegation and members of the re-recognized Utah Paiute Indian Tribe has changed remarkably since the 1950s. Both Senator Orrin Hatch and Representative Dan Marriott sponsored the legislation authorizing selection of new reserved lands. Allowing the persistent cultural group the option of selecting its reserved lands has demonstrated how adversely nineteenth and early twentieth century federal unilateral designation of reserved lands affected these Native American groups. Apart from selecting the 430-acre Fish Lake tract on historical and sentimental grounds, the reconstituted tribe wants 9,520 acres in the Manti-La Sal National Forest because of its coal mining potential (Associated Press 1982). The new tribe also wants 2,475 acres adjacent to Interstate Highway 15 near the Kanarraville exit, a few miles to the south of Cedar City. A similar 560-acre tract at the Cove Fort interchange on Interstate Highway 15 is another selection with commercial development potential in mind, as is a 500-acre parcel close to Cove Fort itself, a 520 acre parcel near Joseph, and a 715 acre parcel near Koosharem Reservoir (Cardall 1982:4).

The tribal land selections have been made in terms of potential royalty income from the coal deposit, and small enterprise development for Native Americans in the transportation corridor. Tribal officials envision a restaurant, gasoline station, and such businesses generating employment and profits for members of the still poverty-stricken group. Family income averages only about $3,000 annually (Cardall 1982:6). Inevitably, the land choices have not aroused enthusiasm among local Euroamerican colonists' descendants. For the new tribe is competing for what other residents of the area regard as scarce economic resources, in a permanently poor regional economy. What has been termed the "Southwest Poverty Diagonal" passes on a northwest-southeast diagonal between Fillmore and Beaver, and between Richfield and Beaver (Kneese and Brown 1981:9). That is to say that it intersects the intersection of Interstate Highway 15 and State Route 13, which is the Cove Fort interchange (Army Topographic Command 1962). Even Native Americans benefitting from trust status reserved lands in 1970 had median family incomes ranging from a high of 64 percent of the U. S. median family income at Laguna Pueblo to a low of 21 percent among the Navajos and Hopis (Kneese and Brown 1981:12 Table 2-3).

REGIONAL SOCIO-ECONOMIC CHARACTERISTICS

The organization of not only belief but also behavior of members of the Church of Jesus Christ of Latter Day Saints, admirably adapted it to rapid large-scale colonization.

Contemporary observers of the European migration to Zion were greatly impressed with the very low cost per immigrant achieved by Mormon social organization (Arrington 1958:488; Remy and Brenchly, 1861:II:220). The cash outlay for the immigrant was low compared to that of the non-Mormon overland traveler who had to pay for services and supplies. It resulted, on the other hand, from a high tax/tithe collected from the other members of the denomination in kind and labor. LDS organized subsidization of mandated colonization in Utah's Dixie succeeded very well in placing thousands of loyal members of the denomination in riverine, spring flow oasis and other towns during the 1850s and 1860s as outlined in earlier sections of this report.

Although Mormon cooperative organization succeeded in colonizing the land, it failed to make the colonists prosper. What the tight Church organization and values achieved was to keep most of the colonists at approximately the same level of genteel poverty, although some determined entrepreneurs did manage to amass some comparative wealth. Mormon values clustered around the family farm as well as conversion to the faith. Consequently, by the final decade of the nineteenth century, the success of the missionaries and efficient immigration and colonization had virtually exhausted Utah's supply of arable and irrigable lands. There was no more Native American land to be seized and converted to Mormon ends. This is not to imply that non-Mormon land use policies succeeded much better in Utah. By the end of the century, miners had discovered, and mined out nearly all of the surface lodes with rich ores. Ghost towns dotted the mountains. Further mining development depended upon large infusions of risk capital to sink deep shafts or open great pits with large machines.

The result of these economic trends was a massive emigration out of poverty-stricken, overpopulated areas. Some migrants did move into the Pahvant Valley in Millard County where the Sevier River Delta irrigation projects -- themselves products of large-scale capital investment -- brought under irrigation nearly the last expanse of land on which water could be diverted. There was migration to Uintah Valley when the federal government weakened its trusteeship of Uintah Reservation lands and opened "surplus" land to Euroamerican settlement. Most of the migrants went, on the other hand, to eastern Oregon, to Idaho, to Wyoming, Arizona, New Mexico, Southern California, and to escape federal arrest for polygyny to Sonora and Chihuahua in Mexico or to Alberta in Canada (Arrington 1974:5). Utah had barely gained its long-sought admission into the Union as a state when a major demographic and economic crisis occurred. Poverty was characteristic of the two-generation-later aftermath of successful large-scale conversion, immigration to Zion and colonization, accompanied by simultaneous non-Mormon mining activity.

An institutional dimension of the poverty at the end of the nineteenth century was a lack of infrastructure, and basic economic institutions. As long as the LDS leaders dominated economic as well as religious and social organization, the Church performed multiple economic functions. Consequently, Mormon residents had not by century's end developed and participated in banking institutions, retail stores and service industries on the same time schedule as people in the other states. At statehood, Utah had fewer than 5,000 individuals employed in both wholesale and retail trade. Two decades later, it had more than 12,000 persons so engaged. The primary economic engine in the state's economy turned out to be not any enterprise congenial to the traditionalistic Mormon values, but the non-Mormon mining of copper (Arrington 1974:6-7). That commodity characteristically varies greatly in price over a period of time, with the technology of extraction and refining increasing steadily in cost. Thus, as Chile and other nations have discovered, it is an undependable economic engine.

Another primary resource is absolutely limiting in the study area, and the mechanized transportation corridor within which it is located for the most part, and the adjacent terrain. This is water. Mormon organized colonization succeeded admirably in planting settlers in the riverine oases and the spring-flow oases of Utah's Dixie. Mormon enterprise and corporate organization, as well as Church mediation of disputes over allocation of water, succeeded for several decades in heading off serious disputes over water utilization. The Mormons succeeded at the cost of Native American horticulture, during a period when very few Euroamericans honored Native American land or water rights any more than did the Latter-Day Saints.

Water is a very finite resource in the arid Southwest, and in the study area and the region nearby. Increasing human settlement and diversification of activity in the region places growing stress on both the water supply and the institutions established to manage it (Kneese and Brown 1981:67). Native Americans once managed water resources in this arid region differently than do Euroamericans, but their very hydraulic systems and food-chains were destroyed by swamp draining, large-scale but under-engineered irrigation projects, erosion triggered by use of machinery, fire suppression, and grazing. Consequently, today's Native Americans whose rights to water to use on their reserved lands are protected by federal law, compete for this scarcest of regional resources much on the same terms as Euroamericans. The one advantage that Native Americans still preserve is a detailed knowledge of the uses of plants that long since adapted to the water-scarce environment. Otherwise, they are economically limited by the same constraint on riverine and spring-flow oasis agriculture and stock raising as Euroamericans.

CHAPTER V. NATIVE AMERICAN VALUES

KEY RESPONSE FACTORS

Numerous historical and contemporary factors have influenced the Goshute, Pahvant, and Southern Paiutes' evaluations of the natural and man made resources that occur in the proposed IPP right-of-way. The key historical factors have been discussed in the preceeeding chapter and so need only be summarized here. In addition, there are a series of contemporary factors which have also influenced Native American responses to the IPP proposal. Together these two sets of factors are essential for better understanding the specific responses contained within the remainder of this chapter.

HISTORICAL FACTORS

Native American groups contacted during the IPP studies have been interacting with Euroamerican peoples and cultures for hundreds of years. These previous interactions are viewed as critical background for understanding the responses made or not made to the current IPP right-of-way proposal. Briefly, the key historic factors which are discussed in detail in the previous chapter are:

(1) These Indian people have lived in the IPP right-of-way area for at least 800 years (Euler 1964:379).

(2) During this time, each of these Indian people have viewed portions of the study area as their Holy Land (Spicer 1957:213) where their ancestors were created.

(3) During this time, at least until Euroamerican colonization, these Indian people adjusted the fauna and flora of the area to meet numerous human needs.

(4) These Indian people continually adapted their own cultures and societies to capitalize on the natural environment, and more recently to cope with Euroamerican colonists and severe depopulation.

(5) During this time, a profound and intimate relationship developed between these Indian peoples and portions of this study area. This

relationship is with an ethnic Holy Land and all of its resources. So while specific places such as a recent burial or a cave that bestows power to a religious person can be pointed out as being sacred, such sites primarily have value as components of the Holy Land itself.

(6) The emphasis that is placed on defining specific plants, animals, artifacts, or places as sacred or even more sacred than others which are also potentially impacted by a project like IPP is the result of Euroamerican cultural perceptions that are embodied in the NEPA process. From the perspective of these Indian people, the parts of the Holy Land are not understandable without reference to the whole. Although such a separation procedure is recognized as inevitable by many Indian people, they generally prefer to respond to a project's potential impact on the entire Holy Land rather than to its specific impact on a narrow segment.

(7) Since the early nineteenth century, these Indian peoples and their Holy Lands have been encroached upon by Euroamericans. This encroachment has resulted in:

(a) The death of many Indian people, and even the extinction of some groups caused by:

i. Old World diseases new to them; and

ii. loss of their best food-producing lands;

(b) The loss of the ability to have traditional Indian life styles;

(c) the loss of political and economic independence; and

(d) immeasurable mental anguish and psychological stress.

(8) Euroamerican colonization of these Holy Lands, coupled with extensive depopulation of the native inhabitants, also brought about a series of changes in social structure.

(a) For the Southern Paiute the institution of head chief became extinct, or nearly so, by 1875; tribal unity disappeared and the traditional specialized role of runner became meaningless.

(b) After each of these tribes had lost most of its economic resources and experienced depopu-

lation, sub-tribal or band chiefs became a special kind of ethnic labor-camp leader as the people formed labor camps satellite to Euroamerican mine camps, farm towns and ranches.

(c) Segregated ethnic labor camps persisted near certain long-term sources of wage labor. Consequently, when ethnographic research began in the twentieth century, such post-colonization labor camps as those at St. George, Gunlock, Cedar City, Kanosh, Richfield, and Beaver were mistakenly assumed to have been aboriginal groupings (Kelly 1934:552-553; Steward 1938).

(d) After the federal government reserved some areas for these Indian Peoples during the twentieth century, a few established residences there. The majority, however, continued to live as occasional wage-labor nomads, often driving hundreds of miles in search of employment.

(e) Recent federal development programs improved conditions on a few reservations that survived the termination policy. These improvements attracted additional Indian families, and fostered yet another recombination of families.

To summarize, a century and a half of cultural and demographic change, and particularly more than a century's dependence on widely scattered employment, has combined these Indian peoples in new ways over and over again. Consequently, most contemporary individuals have resided in three or more localities, and possess an ethic identification with their entire ethnic Holy Land. An example from our field notes may serve to illustrate this point:

> One Southern Paiute elder was born in 1904 in the western portion of the Kaiparowits Plateau in southeastern Utah. As a young adult he herded horses and cattle in House Rock Valley, Arizona; herded sheep around the Vermillion Cliffs north of Kanab; ran cattle and caught wild horses while living on the Moapa Indian Reservation in Nevada; and was a cowboy on a ranch in the Delamar Mountains near Caliente, Nevada. As an adult he married a Paiute lady from the St. George band. After marriage the family moved to Enterprise, Utah where he worked as a "cat skinner" on Euroamerican farms. In latter life he and his wife moved to the Kaibab Paiute Reservation in Arizona. During his lifetime he has lived for extended periods with the Kaiparowits, Kaibab, Moapa, Panaca, St. George, and Cedar bands of Southern Paiutes. Because of these experiences and his kinship ties he has

direct familiarity with and personal concern for most Southern Paiute cultural resources.

Inasmuch as this case is similar to many other ones, it is clear that the vision of these Indian people is more like that of widely traveled adventurers rather than the narrow view of sedentary stay-at-homes. As such, Indian people we talked with often hold deep concerns for cultural resources which lie beyond the "traditional boundaries" (Kelly 1934:map; Steward 1938) of the groups where they are officially enrolled.

CONTEMPORARY FACTORS

These key historic factors have combined with contemporary factors causing these Indian people's responses to this IPP proposal to vary in quantity and in quality. Many Indian people are reluctant to discuss the presence of remaining sacred items. Some feel that sharing this knowledge with outsiders will endanger these resources. Others do not believe that the expression of their concerns will actually protect any Indian cultural resources. Still others may not know about specific resources in a 200 foot corridor because their great grandparents had been removed from the area generations ago.

Another factor that has influenced the quality of the Indian responses is previous experience with Native American Impact Assessment (NAIA) projects. Indian groups who have participated in the NAIA process before and found the results satisfactory have expended greater amounts of time on this study. Indian groups who had not been contacted before have responded slowly and with great caution.

Another factor that has influenced the responses is the size and wealth of the Indian groups being contacted. Some groups have a large administrative staff which has the time, resources, and training to participate in an NAIA. Other Indian tribes may have no full time administrators, few available resources, and little experience in dealing with such projects. This study contained a procedure designed to reduce the effect of the size and wealth factor. We have provided funds so that each tribe can have an Official Tribal Contact Representative (OTCR) on the project. Each of the OTCRs has received payment for his or her time spent on the project and training to help them understand the IPP proposal and the NEPA process.

INDIAN RESPONSES TO THE IPP UTAH PROPOSAL

GENERAL CONCERNS EXPRESSED

This report has repeatedly noted that the Indian people of this region define portions of the IPP Utah right-of-way as belonging to their traditional Holy Land. People generally hold the belief that all of the land and its resources are sacred and that the power line will disturb the sacred nature of this land. The title of this report, Puaxant Tuvip--sacred land, symbolizes the perception of their traditional territory as a Holy Land. Another such statement was made by Chairman Benioh and published during the Kaiparowits Study (ERT 1980:4-54)

> "I, as like many of the Southern Paiute Indians, oppose any project that will bring destruction and unequal balance to sacred territorial lands of Native Americans. God created this earth with all living matter, and he told us to respect all life including the plants, trees and wildlife. Each animal has a legend behind it, each plant has a spirit within it; we bring upon ourselves injustice if we are not in harmony with respect to each living matter that God has created . . . It is not right, in the Indian's eye, for man to disturb that habitat based on Indian belief and religion. There are sacred elements there that have meaning to the Paiute people."

In addition to expressed concerns for all living matter in the Holy Land, many people expressed concerns for sacred minerals, water, and even the soil beneath the surface. To this last point one elder commented,

> "Well the white man still owns the surface. I don't know how much surface they own, but under that it is all still Indian. As much as down to the middle of the earth. If they are going to dig a post hole over there or maybe a cement foundation for a power line tower, well they're still on Indian ground."

The interrelationship between the cultural items found within the traditional Holy Land is another consideration that appears frequently in the conversations with these Indian people. While people may mention a particular site, perhaps in response to the survey questionnaire, the response often reflects more than just a concern for that site. The strongly expressed concerns for springs illustrates this point. Springs are an interesting resource because to some Euroamericans they may not even appear to be a cultural item because they occur naturally. Springs were, however, the source of significantly different habitat in the arid environment, causing a concentration of natural plants and animals. Springs also were

utilized as areas for planting Native American cultigens. As the major points of hunting, gathering, and plant cultivation, springs became focal points of Native American activity. Springs became sites of recurring religious ceremonies focussed on birth, rites-of-passage, death, curing, and hunting. Connecting these culturally significant places were trails. The whole complex was often preserved in religious songs. Springs were usually so important that local Indian groups referred to themselves by the name of a major spring within their territory. Ethnographers who became aware of this fact elicited discussions of traditional activity and territory by asking the question, "Where was your family's water?" Still today, family gatherings for ceremonies such as birthdays are begun with a prayer and a drink of water from a common bucket. Thus springs became central in the definition of group, family, and individual identity. So when these Indian people express concerns for springs, they often are combining a variety of concerns ranging from burial to medicinal plants, into a single statement.

Given the importance of the Holy Land and the perceived functional interrelationship between its various components, it follows that Native Americans perceive it as inappropriate to select out portions of the Holy Land or some of its resources as more important than others. Establishing a hierarchy of concerns is an even clearer violation of this holistic value orientation. Why then will Native Americans fill out survey forms (see appendix B) which call for a ranking of resources or answer ranking questions in direct interviews? Some Indian people clearly do not perceive of the rankings as appropriate and do not respond. Others realize that separation of resources and ranking them is part of the Euroamerican values that are built into the Environmental Impact Assessment procedures, and that that participation in this EIA process is a means of protecting cultural resources. The following sections which point out several specific concerns should be understood in light of these considerations.

SPECIFIC CONCERNS EXPRESSED BY TRIBE

The following responses were made by Native Americans regarding the potential impact of the Utah section of the IPP Intermountain-Adelanto Bipole I transmission line proposal on their values. Official announcement of the Utah ethnographic study of the IPP proposal came in mid-February 1982. OTCR training sessions were held at the Paiute Tribe of Utah offices in Cedar City, Utah on March 1, March 21, and May 5, 1982. Public meetings to which all local Indian people were invited were held on March 18 at the Community Building on the Kaibab Paiute Reservation, on March 18 at the Confederated Tribes of the Goshute Reservation tribal office, and on March 21, 1982 at

the Paiute Tribe of Utah tribal office. Tribal leaders of the Ute Indian Tribe cancelled a public meeting that had been planned for the second week in May. The reasons for that decision are contained in Appendix C. During this same period interviews were held with key tribal members who are known to be informed and interested in the cultural resources contained within the IPP right-of-way.

In addition to interviews with tribal elders conducted during March and May 1982, 376 IPP-Utah survey instruments were mailed to members of the Paiute Tribe of Utah, the Kaibab Paiute Tribe of Arizona, and the Confederated Tribes of the Goshute Reservation. The postal service was unable to deliver two of the 65 surveys sent to the Cedar City group, and 20 of the 118 which went to the Shivwits people. The response rate of the 352 surveys that were delivered was 13.7% (N=47). No list of names came from the Skull Valley Goshute Tribe and the Ute Indian Tribe position has already been discussed.

Although the procedures used to collect these Native American responses have been discussed in detail in Chapter III, a brief discussion of the specific methodologies used with each tribe are mentioned in this chapter. Also included are certain important points of history or traditional culture needed to understand a specific group. Finally, each section contains a discussion of the group's concerns divided by either the type of the resource or the location of the resource. Where available, the mitigation recommendations of each group are also included at the end of their section.

THE PAIUTE TRIBE OF UTAH

BACKGROUND

The Paiute Tribe of Utah is one of the federally-recognized groups of Native Americans consulted by the staff of the present study. This persistent cultural group was created by a 1980 act of Congress, which accorded re-recognition to diverse small enclaves whose trust relationship with the federal government had been terminated in 1954. The 1980 act defines five local groups as constituting the Paiute Tribe of Utah: (1) Koosharem, (2) Kanosh, (3) Indian Peaks, (4) Cedar City, and (5) Shivwits.

These five twentieth century enclaves include descendants of the Southern Paiute and Pahvant Ute aboriginal occupants of the study area south of the Sevier River to the Nevada state line. The Kanosh and Koosharem enclaves consist of families descended from the southern band of Pahvants. Individuals formally identified as belonging to the Pahvant group have intermarried frequently with persons formally considered

Southern Paiutes. A high degree of kinship interrelationship between members of these enclaves existed when Euroamerican colonization of their Holy Land began. Intermarriage persisted from the middle nineteenth century until the present. Moreover, during the twentieth century, families have been typically mobile in quest of work whatever their kinship connections. Consequently, the 1980 congressional definition of the Paiute Tribe of Utah reflects historic intermarriage, migration, and contemporary self-perception of members of the five enclaves.

The five local components of the Paiute Tribe of Utah elect delegates to a council, and a chairman. These representatives speak for the entire group, and have been consulted in carrying out the study reported here.

Although each of the five constituent enclaves has had its own distinctive microhistory since colonization began, general processes of economic and cultural change have buffeted them all in similar ways. All were terminated in 1954 and re-recognized in 1980; all depend economically on wage labor in widely distributed places and have for many years. Earlier, each group constituted an example of a segregated Native American labor gang dependent on a specific Euroamerican colony in its aboriginal homeland. The distinctive microhistories may be summarized briefly.

Koosharem. Euroamerican large-scale irrigation projects carried out by corporations composed of colonist shareholders reshaped the landscape of the middle Sevier River late in the nineteenth century. The southern band of Pahvant Utes had by then long depended economically on wage labor, having lost their own riverine oasis irrigated lands to Euroamericans. The Koosharem group appears to have originated as a labor gang attracted to the expanding irrigated area by employment opportunities. A late (1929) reservation of land provided a federal trust bedroom community land base rather than natural resources that the people could exploit to make a living comparable to that of Euroamerican colonists.

Kanosh. Large-scale Euroamerican irrigation development altered the natural landscape along Corn Creek at about the same time as along the Sevier River. A federal farm for the Pahvants led by Chief Kanosh was established on Corn Creek in the 1850s, but by the 1920s it had disappeared. The Pahvants who survived in this area worked to subsist, and their late (1928) reservation also was little more than a bedroom community for people working for Euroamerican farmers.

Indian Peaks. Euroamerican colonization of Southern Paiute territory began late in 1850, and as it expanded, some members of the Eastern Division of the Southern Paiute Tribe sought and found a temporary refuge. They continued to utilize aboriginal technologies to exploit relatively rich natural resources in

the southern Needles Mountains and nearby uplands. They became known as the Indian Peaks Band. They managed to stay in their refuge area for the most part until 1889 when extension of the Utah Southern Railroad from Milford to Uvada violated it. Even before that, however, members of the Indian Peaks group would on occasion move to Cedar City to work for cash. Their personal relations with the people constituting the Cedar City labor gang were close. In post-railroad times, cultural changes and rising expectations impelled more and more Indian Peaks people to Cedar City. After termination in 1954, the remaining 28 people living at the Indian Peaks lost all access to their refuge area which was turned into a State Fish and Game Park. The people moved to Cedar City and became difficult to distinguish from that group.

Cedar City. The Mormon drive toward industrial self-sufficiency led to early colonization at Cedar City. The Mormons sought in 1851 to start up iron mines, coal mines, an iron smelter, casting, and manufacture. They did not succeed notably, but they did colonize Southern Paiute country, and immediately began to employ Native American workers. Despite high mortality among the original natives, Southern Paiutes continued to seek and find employment at Cedar City. Mormons eventually provided a small tract of land on which Indian wage laborers could reside once they had been completely dispossessed of their aboriginal homeland. Cedar City generated perhaps the first Southern Paiute labor gang. The population of the Cedar City Native American labor force fluctuated through time, but in the twentieth century tended to stabilize. People began to speak of a Cedar City Band. Yet, members of that enclave intermarried at a high rate with people called the Indian Peaks Band, with the Kaibab reservation group, and with others. None of these Numic-speaking groups is large enough to be endogamous. In order to avoid marrying close relatives, individuals born into the various local groups usually must seek mates in one of the other groups. Consequently, all five of the groups re-recognized in 1980 as the Paiute Tribe of Utah are interrelated.

Shivwits. One group of Eastern Division Southern Paiutes known as Shivwits rebelled early on against Mormon domination. This group took refuge south of the Colorado River among the Northeastern Pai, and two dozen Shivwits warriors fought beside the Pai in the Walapai War of 1866-1869. Later, the Shivwits returned to the north side of the Colorado River, but they remained culturally conservative. They managed to eke out a poor living in the uplands until a Mormon cattleman living in St. George purchased their homeland. He had enough political power to obtain federal appropriations to purchase land on Santa Clara Creek on which to relocate the refugee Shivwits. There, their children had to attend English language school, and they were exposed to numerous Euroamerican influences, including lethal germs. Close to St. George, the Shivwits

reservation became to a considerable extent yet another wage workers' bedroom community.

METHODOLOGY

Permission to interview Southern Paiute and Pahvant people was sought from the Utah Paiute Tribe chairman, Mr. Travis Benioh. The mechanics of beginning the study among these people was greatly facilitated by Mr. Benioh's administrative experience with such studies. He had worked with study team members Stoffle, Evans, and Bunte on numerous occasions including the Kaiparowits Coal Development And Transportation Study (ERT 1980) and the Nevada Section of the IPP proposal (Stoffle and Dobyns 1982).

Because of strong support for the study by the administration of the Paiute Tribe of Utah and their familiarity with the research process, the amount and variety of their expressed concerns that could be documented by the research team exceeded that of any other Indian group. As has been mentioned in Chapter III and at the beginning of this chapter, variations in the quantity and quality of Native American responses are often the result of many factors other than their actual level of concern.

Initial discussions with Chairman Benioh suggested that the cultural resources primarily impacted by the Utah IPP proposal would have belonged to Indian Peaks, Cedar City, and Kanosh Bands of the Paiute Tribe of Utah. It was assumed that other bands represented by the Paiute Tribe of Utah also would have concerns and that surveys and public meetings could serve to make them aware of the project and elicit their concerns. Thus it was decided to concentrate personal interviews on only these three bands.

The Pahvant Utes were split during the reservation period between a number of settlements but primarily came to reside at Kanosh and on the Ute Indian Tribe's reservation, at Uinta-Ouray, Utah. Therefore, in this report the concerns of the Pahvant Utes are officially represented by both the Paiute Tribe of Utah and the Utah Indian Tribe.

The Paiute Tribe of Utah quickly appointed an OTCR, Mr. Ivan Benn, to work on the study team. With his and the tribal administration's help a series of interviews with key persons were arranged. A total of 10 persons were interviewed from the Cedar City, Indian Peaks, and Kanosh bands. Three persons were interviewed twice producing 13 interviews in all. One male elder spent a full day on the ethnobotanical on-site visit. Another dozen persons attended the public meeting held on March 21 in the tribal office. Additional persons visited during the three OTCR meetings held at the tribal office.

Except for one woman in her twenties, our researchers were directed to elders for the in-depth interviews. Of the 9 elders interviewed 3 were male and 6 were female. In each case the person interviewed had either lived in the study area or had recently used some of the Indian resources located in the area. The focus on elders as tribal experts reflects a Native American cultural pattern of deferring to elders because of their extensive knowledge, age, and wisdom. It does not, however, suggest a lack of concern on the part of the younger generations. Quite the contrary is evident by their close attention when present during interviews and their participation in public meetings and OTCR training sessions. Many of the mitigation recommendations came from the younger generation members who are generally more familar with how Native American ethnographic studies fit into the Environmental Impact Assessment process.

All members of the Paiute Tibe of Utah were offered an opportunity to express their concerns for cultural resources that might be adversely impacted by transmission line construction on the IPP-Utah right-of-way. A survey, patterned on the 1979 AWVES and the 1982 IPP-Nevada surveys, was mailed to the 281 members of the Tribe. The Postal Service retunred 24 surveys that they were unable to deliver. Forty seven (18.3%) of the remaining 257 IPP-Utah surveys were filled out and returned to the University of Wisconsin-Parkside. The average age of those who answered the questionnaire is 36.7 years. The average length of residence in their present location is 20.9 years. Fifteen (55.6%) respondents said that their parents had lived in the same area.

EXPRESSED CONCERNS FOR PLACES

The following section discusses the concerns expressed for particular places crossed by, or immediately next to, the proposed IPP right-of-way. The areas discussed in-depth begin just east of the Cricket Mountains and continue until the right-of-way crosses the Utah-Nevada state line. These areas include the Sevier Desert, lands around the towns of Milford and Lund, and finally the foothills of the Needles (or Indian Peaks) Mountains.

During the 1982 IPP-Utah survey period, members opf the Paiute Tribe of Utah were asked to express the intensity of their concern for a list of 23 place names located along the IPP right-of-way, using a 1 to 3 point scale. TABLE 33 ranks the degree of their concern for these places. AS the table shows, Lund (2.59) was ranked highest and Escalante Desert (2.37) and Modena Reservoir (2.35) were ranked lowest. In addition, TABLE 33 shows that the distance between the place name and the place of residence has no apparent bearing on the degree of their expressed concern. This random pattern

persists when the responses of each of the five groups are analyzed separately.

Sevier Desert Area. According to the Kanosh people they used the land all the way from the mountains in the east to the Sevier Dry Lake. The area immediately next to the right-of-way as it passes through the Sevier Desert is currently used to hunt rabbits. Traditionally Indian people used that area in the winter to hunt rabbits, in summer to gather seeds and berries such as ku'u (Mentzelia spp.) lycium, and iis (the fruit of the sumac).

In the fall Indian people went to the San Francisco Mountains to the west of the proposed right-of-way to gather pinenuts. The Kanosh people say that the seeds and berries are no longer there because of sheep grazing. They feel, therefore, that the transmission line can not specifically damage the plants of the area further. There are, however, lots of camping places in the San Francisco Mountains and there might be burials inasmuch as "they buried them anywhere a person died - wherever they were camping."

Milford Area. The site of the current town of Milford is called Marupats in Paiute. It is mentioned as one of the many places where the "old people" used to live before the white people came. In addition, one Paiute elder mentioned that his uncle used to "hang around" Milford town. As there were mines and ranches in the area, it seemed probable that this town had a local Paiute labor gang at one time but confirming data has not been located. The area is now noted by Indian people for its large number of eagles. Some Paiutes still go there looking for eagle feathers and eagle fluffs. There are also obsidian deposits in the Milford area which would have been camping sites. West of the Milford area are the San Francisco Mountains which would have been a location for intertribal ceremonies held when the Pahvants and the Southern Paiutes would meet to share the area's abundant resources.

Lund Area. The site of the present town of Lund was an important stopping place for Paiutes who were traveling between the Cedar City area and Milford area and the Cedar City area and the Indian Peaks area (see PLATES 12 and 13). Although oral history documents that one young Paiute runner ran the distance from Cedar City to Indian Peaks in one day, the rural wagon trip lasted two days and involved an overnight stay in the Lund area. According to one Paiute, her father told her that before the white people came her great grandparents used to camp at the Lund spring where foot races and other games were held during ceremonies. The old Paiute camping and gathering place is located at a spring just north of the town of Lund. The spring is currently fenced off and used as a watering place for cattle.

TABLE 33: ENGLISH NAMES FOR INDIAN PLACES RANKED BY INTENSITY OF THE PAIUTE TRIBE OF UTAH CONCERN (1982 IPP-UTAH).*

Indian Places	Average Degree of Concern N=26
Lund (north and west to mountains)	2.59
Sevier River	2.58**
Baker Hot Springs	2.58**
Eight Mile Spring	2.56
Hamblin Valley	2.52
Wah Wah Mountains (southern tip)	2.52
Topache Peak	2.52***
Cricket Mountains	2.50**
Beaver River	2.50**
Sevier Lake	2.50**
Carr Lake	2.50**
Little Drum Mountains	2.48***
Rocky Range	2.44***
Drum Mountains	2.44***
Needle Range	2.42**
Swasey Wash	2.42**
Whirl Wind Valley	2.40***
Star Range	2.40***
Red Rock Knoll	2.40***
Sevier Desert	2.40***
Topaz Slough	2.40***

TABLE 33: continued

Indian Places	Average Degree of Concern N=26
Escalante Desert	2.37
Modena Reservoir Area	2.35***

* "No concern" responses have a 1 value, "some concern' responses have a 2 value, and "much concern" responses have a 3 value.

** Excludes one "no response"

*** Excludes two "no responses"

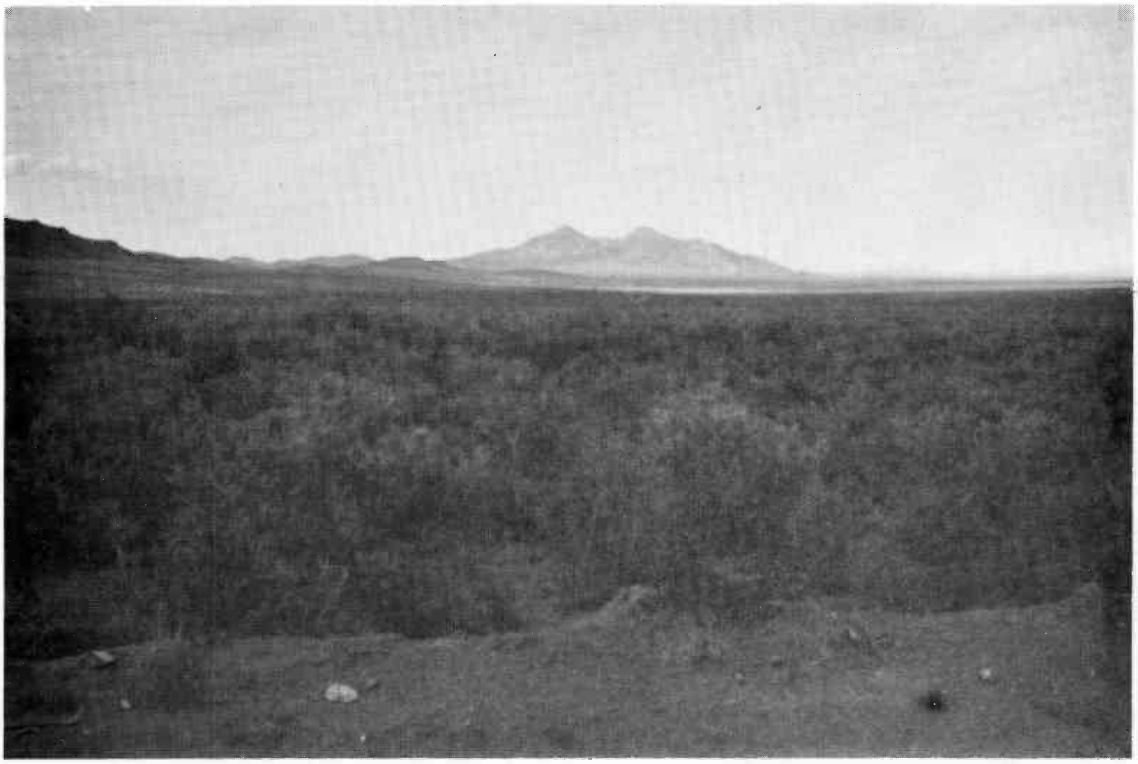
Hilly Border Area. When Indian people were shown the project map and noticed that the proposed right-of-way passed through the "Hilly Area" near the western Utah state border and the southern border of the Needles (Indian Peak) Mountain Range they questioned the placement of the line there. "That's where all the pinenuts are," one person said. Another commented, "There's a lot of deer in those hills." All agreed that the hilly area was where many Paiute used to live and that the line would disturb numerous camping sites, burials, plants, and animals of significance to Paiute people. Particular emphasis was placed on a site where the proposed right-of-way passes over a spring, called skumpapats in Paiute.

Because of the strongly expressed concern for the Hilly Border Area it was selected as a location for an on-site visit. The visit occurred on May 4, 1982. Participating in that all-day trip were Mr. Dan Bulletts; an Indian Peak elder who is also a former tribal chairman; the project's botanist, Mr. Steve Boyd; Dr. Pamela Bunte serving as linguist; and Dr. Stoffle serving as ethnographer. During the day the group visited the spring site (see PLATES 14 and 15), portions of the right-of-way as it passes over the mountain to the east of the spring (see PLATES 16 and 17), the valley just east of the spring (see PLATES 18 and 19), the IPP right-of-way as it parallels the dirt road to Lund, and a sacred site near Lund which overlooks the proposed right-of-way. The names of these sites have been withheld from this section of the report to protect the cultural resources remaining at these sites. The exact locations of the materials are listed in the Confidential Appendix of this report.

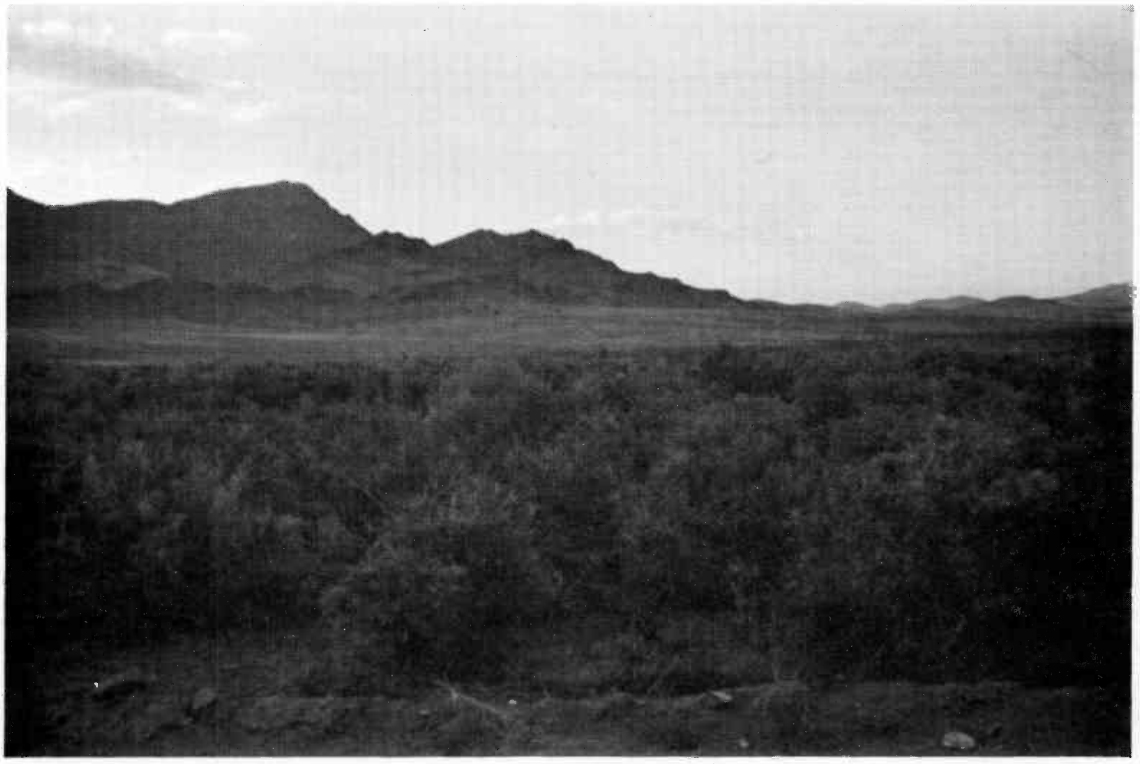
At the skumpapats (spring) the tribal elder was asked to make any comments about the site that he felt appropriate. The full text of these comments is too extensive to reprint here but one section best illustrates the breadth and quality of the comments. This text occurred while Stoffle, Bunte, Bulletts, and the elder were sitting near the spring located in an almost totally enclosed valley. Descriptions of the materials found by the IPP archaeological survey crew (Janetski and Holmer 1982), were read into the conversation for the elder's response. The transcript has topics placed in brackets and "RS" stands for Richard Stoffle's quotes and "TE" stands for the Tribal Elder's quotes:

[OCCUPANCY OF SITE]

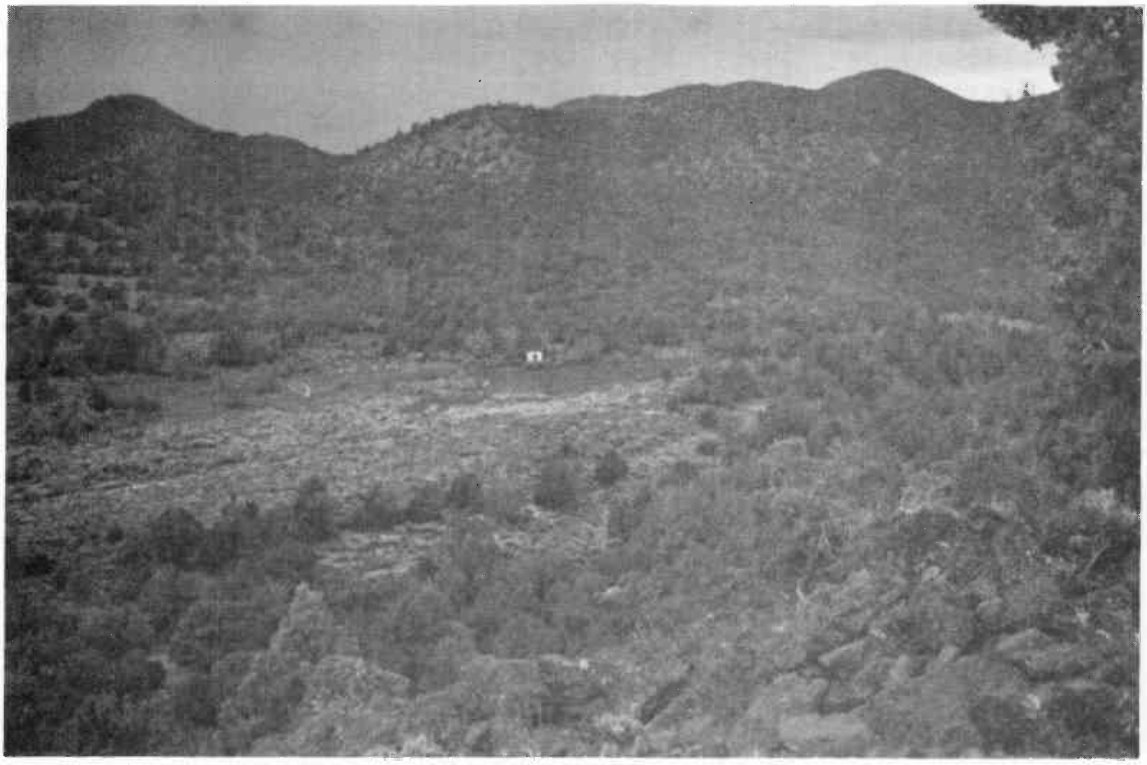
> RS - In the Utah archaeology report, this site is described as a "temporary camp: for processing of plants and animal resources," yet, you (the elder) were saying the site was a permanent living area rather than temporary.



P-12. IPP Right-of-Way Where It Passes Over Flats Northwest of Lund, Utah



P-13. IPP Right-of-Way Where It Passes Over Flats Southwest of Lund, Utah

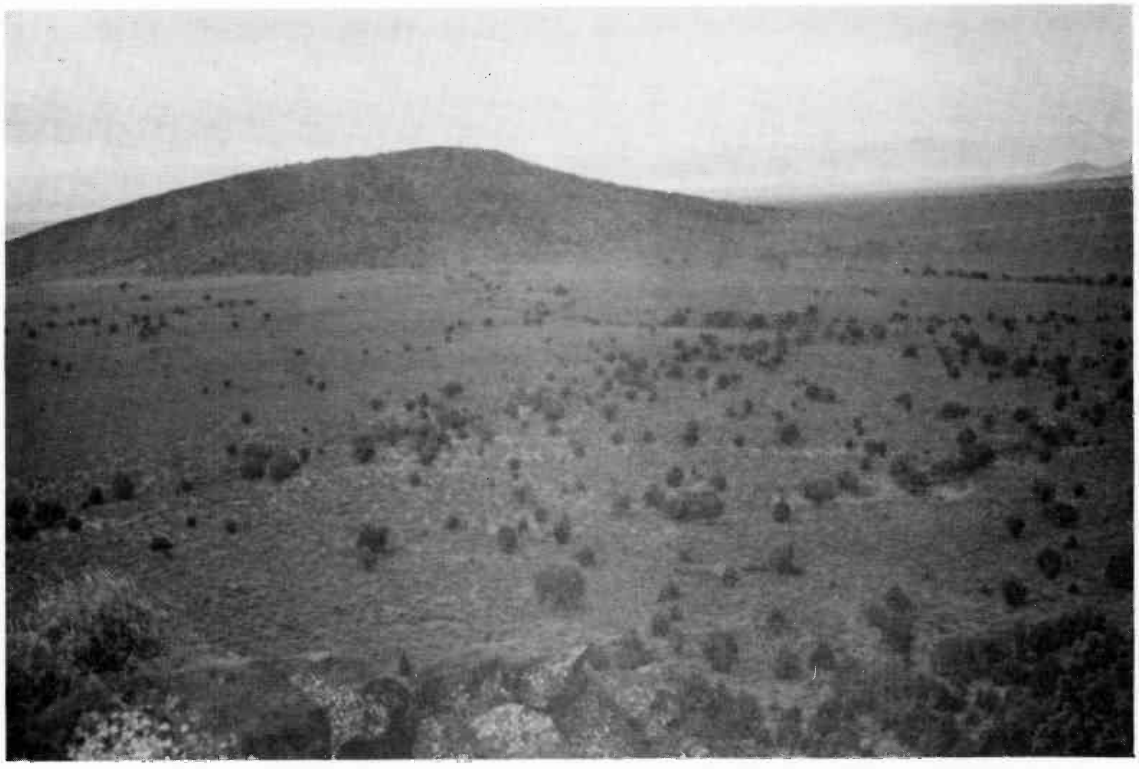


P-14. Overview of Sacred Spring Site

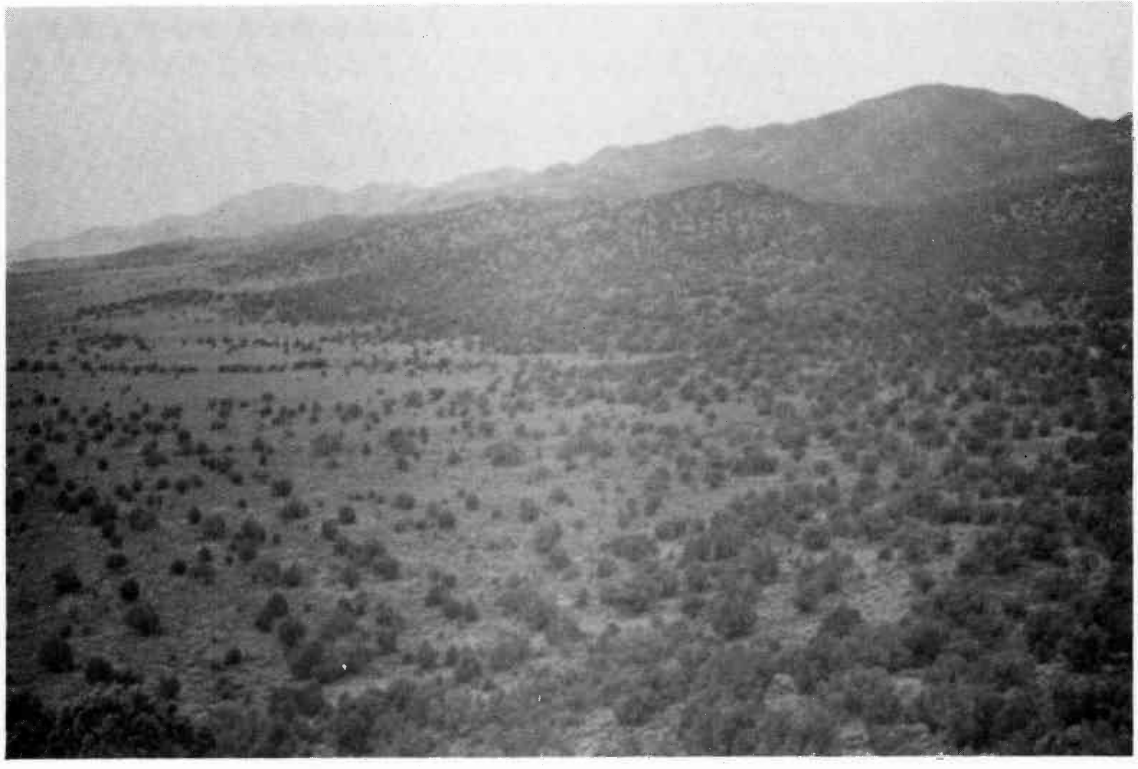
P-15. Close-up View of Sacred Spring Site

P-16. Mountains East of Spring Site Where Trees Have Been Cut Down in IPP Right-of-Way

P-17. Cactus of Expressed Concern Which is in IPP Right-of-Way Near Sacred Spring



P-18. Overview of Mary's Hollow, Looking From the Hills North of the IPP Right-of-Way



P-19. Overview of Mary's Hollow Flats Looking at Area Where IPP Right-of-Way Enters the Hills Near the Sacred Springs

TE - Living area, yah. Some people might travel from here, though, and, some people that live around here, may come over to visit--maybe live here for a month or a couple--maybe a couple of years. Harvest time, that's the time people comes in and then leave in the fall time when they're having their hunting seasons. But right here (indicating the floor of the valley) seems to me like that area is where they used to camp and live, you know.

RS - Would some of the people have stayed here in the winter or would they have gone down south towards Moapa?

TE - Oh, I don't think so. A lot of people--you know--down there at Moapa. In that time--you know--Indians was pretty strong to stand the weather--some stayed here. All around through this area here is that way--you know--permanent place for the person that's born and raised here.

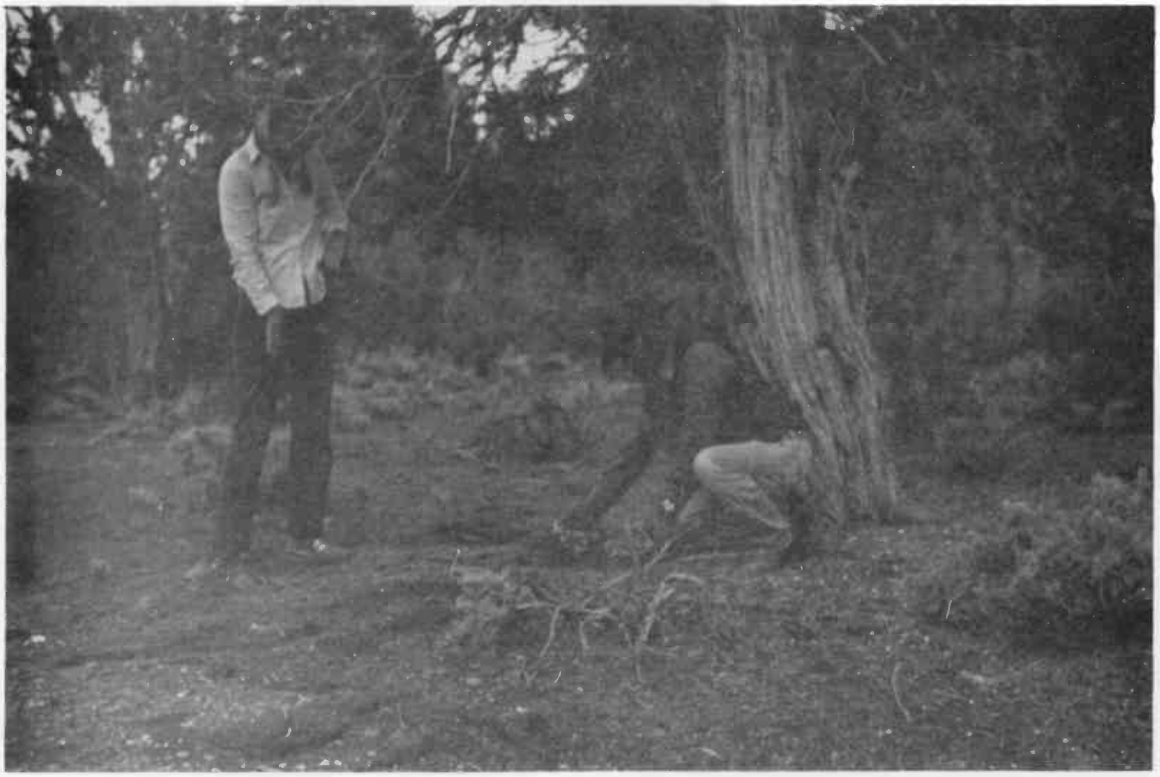
[ACTIVITIES AT SITE]

RS - When we look again at the archaeology report it says that they found ground stone tools - metates. They found, in fact, 9 metate fragments, one whole metate with a shallow basin, and one whole metate with a deep basin. What would they have used those metates for?

TE - Well, the grinding of corn or pinenuts or that Ku'u [mentzelia sp.] or something like that--maybe Wa'ai [rice grass]. And they usually gather this wa'apumpi that's on the cedar tree, that little berries (see PLATES 20 and 21). They usually grind that, too. They used to eat that, too. That Cedar berries--what they do is grind it up, kinda. Sometimes they got that jerky meat, too. They pound on that, too, you know. They make it soft and powdery--you know--exactly the way they want it to be fit to eat. Some old elders, they have to eat too--you know. (He laughs).

RS - The archaeologists recorded finding 20 pieces of pottery here. Twenty broken fragments.

TE - Uh huh. So, there's mud over there (near where the spring comes out of ground). The soil has been treated--you know--and it's really fine when they make that pottery. In the early days--you know--that's how they shaped it. They make fire out there--you know--from certain wood. I don't know what kind of wood they used at that time. They fired and



P-20. Clifford Jake and Dr. Pamela Bunte Looking at Metate-Spring Site Under Cedar Tree

P-21. Elder's Hand Holding wo Obsidian Arrow Points Found at Site. He Wants Such Artifacts Returned to Tribe for Safekeeing

cooked that pottery to make it hard like cement--you know. That's the way they used to use it in the early days.

RS - So the mud for clay pots is here and some of the Paiute pots were made right in this place.

TE - Yah, right in here, yah. Also at some of the other springs in the area--you know.

RS - Did the Paiutes use to burn the grass in this valley to keep the grass down?

TE - I think this was bare -- one time, you know when the Indians were here. They dwelled inside the bare ground. My belief that there was all along in here they had the brown plains around here. You know--where they had played games. You know--foot races and horse races and every other, down in that area (pointing to the eastern portion of the valley). (Pause).

The games--you know. The people in that days. The Indians were really a-playful. You know--liked a good time and that. They have, say one guy might have one fast guy in the family. Well, they had competition in him. They say Well, well, shall we all get together and, well, run races--see if they can beat him. They'd have all of them run against him. Same way with horse races. Same way with a lot of little things--games, you know. They'd have a big pow wow circle dance there. Some sacred ceremonies in this area here (long pause). Probably that (a hill top near the mouth of valley) was look out point. They did things like that you know. To see the people coming to this spot. There was a lot of places like that.

RS - Right out there is a low pool of water. Would the people have dug out that pool to make it bigger?

TE - No. I think--it's my belief--they had to take up the water where it was. Raised according to where it came out. They might just take and make a little pool of water where they could get a willow jug into it and get some water. And maybe they had some kind of a willow dipper and fill that jug with that... Or else they should make a nice little waterfall with a rock. There so high--you know--and put that water in a jug and seal it up.

I know they used to do that over there (Indian Peaks). I know some of my people--my dad--the older

people had real, real pretty water pitchers what they made, all pitch sealed inside--you know. Even the little ones and big ones about 2 and 3 gallons. They done that over three gallons--older people used to do that.

The water was sacred to these places, too. It is something really sacred, the water is. They have to live really close to water. Some of them--you know--some people live a long distance from water--from those springs. They come back with their little basket where the water is jugged and they haul it right to--they make so many trips. I guess they have to make a dozen of them baskets too. That's less than for a week or so of water.

[ASSESSMENT OF POWER LINE IMPACT]

RS - You can see the Cedar Mountains all the way across the Escalente Desert from here--can't you?

TE - Yah. (Pause) Quite a view.

RS - What would a power line do to the ability of a Paiute to come back and experience this place?

TE - Well, it's my (pause) my belief is that they really damage a place like this here. They (Paiute people) think a lot of it. Some of them don't say this--say that--(pause) say anything about anything like this area--you know. (Clears throat) But it's very sacred. They want (pause) they want to keep it to theirself. I think they would be pretty well hurt. This particular area. That is what I think.

RS - We are setting in the IPP right-of-way right now. The lines would pass over the spring itself. Am I correct that you are saying that the towers' presence would harm not only the spring but the whole valley?

TE - Yes, it's my belief that. They (Paiute people) won't say it, though, but you know, they wouldn't come out with it because it's a sacred place. That's where my belief is. If the Indians go out there (indicating towards Cedar City) and build something on a cemetery, how would the people (white people living in Cedar City) feel? They wouldn't like it, would they? The town people, they would be doing everything the same way the Indians are.

GENERAL CONCERNS FOR CULTURAL RESOURCES

In the 1982 IPP-Utah survey, members of the Paiute Tribe of Utah were provided a list of Native American cultural resources and a 1 to 3 point scale on which they could record the intensity of their concern for each resource. TABLE 34 ranks each cultural resource by the average intensity that was expressed for it. The highest concern of those who returned the survey was for Indian burial sites, springs were ranked second and religious sites were ranked third. Clay-rock mines were of the least concern to these respondents. This is a pattern much like that of other Native Americans who were asked the same question during the 1979 AWVES and 1982 IPP-Nevada studies.

EXPRESSED CONCERNS FOR PLANTS

The day-long on-site ethnobotanical visit provided the opportunity for the concerns of the Paiute elder for plants to be specifically checked by a botanist and for a specimen to be collected. A list of plants found while walking over the IPP right-of-way is in Table 35. This list incorporates all the specific concerns mentioned during the interviews.

The depth to which these expressed concerns for the plants themselves are felt by Indian people are made clearer by the following quote from an interview:

> The God created these herbs for the purpose of the medical use of the Indians, in the early days. Nowadays, you got the doctors here that tell you that. They show the inside of the blood--what you call 'em--in your blood veins. But in early days, you take it (a medicine plant) and you have to talk to it. All over, long time ago, they didn't have any medical supply like what white man now they got. This was it. You know, all the little plants--some where it grows. That was it. But you have to talk to it first before you go pick it up or else it won't work. You have to explain why you are picking it and what you want it to do for you. You gotta understand it--the Indian way of doin' that, the Indian way of understanding it, see.

TABLE 34: NATIVE AMERICAN CULTURAL ITEMS, RANKED BY INTENSITY OF THE PAIUTE TRIBE OF UTAH CONCERN (1982 IPP-UTAH SURVEY).*

Cultural Items	Average Degree of Concern N=27
Burial Sites	2.96
Springs	2.86
Religious Areas	2.85**
Large Ground Animals	2.77**
Small Ground Animals	2.73**
Birds	2.73**
Trails-Shrines	2.72***
Food Plants	2.70
Medicine Plants	2.67
Rock Art	2.66
Basket Plants	2.59
Clay-Rock Mines	2.48***

* "No concern" responses have a 1 value, "some concern" responses have a 2 value, and "much concern" responses have a 3 value.

** Excludes one "no response"

*** Excludes two "no responses"

TABLE 35. Plants in Hilly Border Area of Concern to Southern Paiutes

	BOTANICAL NAME	NUMIC NAME	COMMON NAME	USE
1.	*Anemone tuberosa*		windflower	
2.	*Arabis* sp.	toxopakuv	rockcress	medicine
3.	*Astragalus* spp. *purshii*		locoweed milkvetch rattleweed	
4.	*Calochortus* sp.	sixo'o	sego lily mariposa lily	food
5.	*Carex douglasii*		sedge	
6.	*Chrysothanmnus nauseosus*	sikump	rabbitbrush	salve, sweets, gum
7.	*Cowania mexicana*	unapu	cliffrose "buckbrush"	medicine, clothing
8.	*Cymoterus* sp.		water parsnip	food
9.	*Descuraninia pinnata*	aku	tansymustard	food
10.	*Eleocharis palustris*		spikerush	
11.	*Equisetum laevigatum*	paxwav	horsetail rush	
12.	*Eriogonum caespitosum*		buckwheat brush	
13.	*Juncus* sp.	paxwav	rush; tule	resting mats, baskets
14.	*Juniperus osteosperma*	wa'apu wa'apumpi	juniper(branches) juniper(berries)	medicine food
15.	*Lappula redowskii*		stickseed	
16.	*Lewisia rediviva*	none	bitterroot	

TABLE 35, Continued 2

BOTANICAL NAME	NUMIC NAME	COMMON NAME	USE
17. Mentzelia spp.	ku'u	blazing-star	food
18. Opuntia spp.	manavimp	beavertail cactus	food
		cholla cactus	food
		buckhorn cactus	food
		pencil cactus	food
	yuavimp	prickly pear cactus	food
19. Oryzopis hymenoides	wa'ai	ricegrass	food
20. Penstemon sp.		beardtongue	medicine
21. Phlox covillei hoodii		phlox	
22. Pinus monophylla	tuva	singleleaf pinyon	food
23. Poa fenderiana	uxwishuv	muttongrass	
		bluegrass	food
24. Prunus virginiana		chokecherry	food
25. Purshia tridentata	antelope brush		
26. Rhus trilobata	su'uv	squawbush	baskets
	i'is	squawberry	food
		skunkbush	
27. Salvia columbariae	saywav	chia sage	food
28. Sambucus racemosa	kunuxwi	elderberry	food
29. Senecio sp.		groundsel	
30. Yucca spp.	tachumpi	yucca	fiber
	uus	yucca fruit	food

Sources: S. Boyd field notes 5/21/82; Bunte and Stoffle field notes 5/4/82; Kerney and Peebles 1942.

EXPRESSED CONCERNS FOR ANIMALS

Expressed concerns for animals were not as extensive as for plants. A similar response pattern occurred during the Allen-Warner Valley Study (Bean and Vane 1979:6-21) and the IPP-Nevada study (Stoffle and Dobyns 1982). Although these Indian people do hold concerns regarding the local animals it is generally believed that the animals would simply move out of the powerline right-of-way. Only the large birds like eagles are perceived by Native Americans to be directly threatened by the power transmission lines.

Table 36 lists the animals that were mentioned during interviews. All but the deer and antelope were observed during the on-site ethnobotanical visit as being in or near the IPP right-of-way. It is certain that deer do occur near the Hilly Border Lands Area but the presence of antelope on the flats near Lund and to the north is not documented.

EXPRESSED CONCERN OVER POWER LINES

Proposal to Build More HVTLs. Twenty-two (81.5%) members of the Paiute Tribe of Utah who returned the IPP-Utah survey responded negatively to the question, "How do you feel about the proposal to build more tansmission lines through your traditional lands?" One of the twenty-two commented, "I feel they should put this line through Escalante Valley instead of near the mountain." One person (3.7%) said, "If you must build one, anticipate now for growth and have only one large power line." Four (14.8%), who returned the survey, did not answer this question.

Seeing Large Power Lines. In response to the 1982 IPP-Utah survey question, "What are your feelings when you see large power lines and their towers crossing the desert valleys or mountains?" 14 (51.9%) of the 27 members of the Paiute Tribe of Utah who returned the surveys said that they had negative feelings. These feelings ranged from the adverse effect on them personally to the bad effect on the environment. Two people (7.4%) mad qualified responses:

> "Better in desert valleys than in the mountains, but hard on eagles."
>
> "Fine if no plants are located there."

Two others who responded (7.4%) believed that power lines and their towers were a sign of progress, and one of these two added, "I helped to build them." While two members of the tribe (7.4%) felt no concern, one person (3.7%) believed that poer lines are necessary. Six people (22.2%) made no comment on this question.

TABLE 36: ANIMALS OF CONCERN TO PAIUTE TRIBE OF UTAH

	SCIENTIFIC NAME	NUMIC NAME	COMMON NAME
1.	Antilocapra americana	Waantsi	Antelope
2.	Haliaeetus spp.	Kwanantsi	Eagle
3.	Lanius excubiter		Butcherbird, Shrike
4.	Lanius ludovicianus		Loggerhead, Shrike
5.	Lepus californicus	Kamuntsi	Jack Rabbit
6.	Odocoileus hemionus	Tuuyi	Deer
7.	Sceloporus spp.	Changa' changats	Spring Lizard
8.	Speotyto cunicularia	Muku'uts	Burrowing Owls
9.	Stanisvariana spp.	Suxupich	Side-blocks Lizard
10.	Sylvilagus audubonii	Tavuuts	Cottontail Rabbit
11.	(various genera)	Muuputsi	Owls

Stoffle, Bunte, Boyd May 4, 1982 Field Notes; Whitaker 1980, Reilly 1968

MITIGATION RECOMMENDATIONS

Mitigation In General. The major concern expressed by these Paiute people is to protect the spring and its associated resources that occur in the Hill Border Lands. The only acceptable mitigation for this area is to move the IPP right-of-way out of the hills. One recommendation is to move it back along the dirt road which the line parallels all the way to Lund. These Indian people would prefer the line to remain away from the Hilly Border Area as much as possible. The flats are the best place to build the line according to the tribal elder from Cedar City.

A second mitigation recommendation is that a Native American Observer (NAO) or observers be present during ground breaking construction and archeological excavation. This NAO would be present whenever the right-of-way construction or archaeology activity occurs at recognized Indian living sites or temporary camps (see Appendix C).

In addition to the official recommendation from the Paiute Tribe of Utah regarding concern for plants, animals, burials, and artifacts, the following mitigation recommendations have been suggested by individual tribal members and during informal discussions with the tribal chairman.

Mitigation of Plants and Animals. Plants and animals singled out in this report should receive special attention by IPP planners (c.f. Table 35; 36). Wherever possible the habitats of these plants and animals should be preserved by spanning or by moving the line. Every precaution should be taken to protect the habitat and lives of Kwanantsi (eagles).

Mitigation of Burials. If a burial is found along the IPP right-of-way between where it crosses the Sevier River near Highway 50 the event should be reported to the chairman of the Paiute Tribe of Utah. If a burial is found along the IPP right-of-way between Red Rock Knolls and the Sevier River near Highway 50 the event should also be reported to the Director of Resources, Mr. Jason Cuch of the Ute Indian Tribe.

Regarding the disposition of burials, an elderly Kanosh woman commented:

> They should leave it alone or bury it in a different place nearby. It would be a good idea to have a Paiute there if they rebury it. The old people they buried them with something you know-- his belongings and everything-- you know. These things should be reburied with them.

> When members of the Paiute Tribe of Utah were asked the 1982 IPP-Utah survey question, "If the burial sites of Indian people are uncovered by power line

construction, what should be done with them?" twelve people (44.4%) said they should go around the site and leave the burials alone. While four members (14.8%) said the remains should be buried in a safe place, another four (14.8%) felt that such decisions should be made by the tribe. Three of the latter (11.1%) said the burials should be reburied in the same area or close to it. One person (3.7%) believed that Indian relics should be kept in a museum. Another person (3.7%) thought the appropriate tribe should be compensated. Two people (7.4%) did not respond to the question.

Mitigation of Artifacts. Because of the recent occupation and use of portions of the IPP right-of-way, some of the artifacts to be found there were produced by the parents and grandparents of living tribal elders. Such artifacts may still be used today during a pinenut harvest or as part of a grandfathers' lessons to his grandchildren. Especially heavy artifacts have not been moved away from their point of use near gathering spots. If such artifacts are found they should be reburied when found in association with a grave or given to a concerned tribe member for a museum. According to a Kanosh elder:

> Those artifacts (unless associated with a burial) should be given to Paiutes for a museum. If left someone might take it.

In response to the 1982 IPP-Utah survey question, "If Indian tools or habitation sites are uncovered by power line construction, what shold be done with them?" twelve (44.4% members of the Paiute Tribe of Utah said that construction should be rerouted and the sites be left untouched. Seven (25.9% who responded felt that the Indian tribe nearest the site should make the decision as to the disposition of the artifacts. Two members (7.4%) felt the artifacts whould be moved to a nearby area and reburied. The remaining four (14.*% responses were:

> "They should be returned to the original site or to the tribe who owns them or has ties to them."
>
> "They should be kept in museums."
>
> "Compensation to appropriate tribe to facilitate their appropriate use."
>
> "Take care of"

Two people (7.4%) made no response to this question.

Listening to Indian Opinions. In response to the 1982 IPP-Utah survey question, "Do you believe that Indian

peoples' opinions recorded in this study will be heard and listened to by the utility companies?" eleven members (40.7%) of the Paiute Tribe of Utah felt their opinions would not be heard. One of the eleven, a Cedar Band respondent commented, "No, they think the Indian people do not care, but I do." Eight people (29.6%) who ansawered the question felt there might be a chance that the utility companies would listen. Seven others (25.9%) believed their opinions would be heard. One of them, a member of the Kanosh group, siad, "Yes, they have a right to be heard, to speak their mind on what should and shouldn't be touched or uncovered." One member (3.8%) made no response to the question.

KAIBAB PAIUTE TRIBE OF ARIZONA

BACKGROUND

The Kaibab Paiute Tribe of northern Arizona is one of the federally recognized Native American enclaves descended from the aboriginal inhabitants of the study area. The reserved lands of this enclave are located in northern Arizona just south of the Utah border, in the Arizona Strip that Utah legislators once unsuccessfully tried to persuade Arizona legislators to cede to Utah. The reserved area constitutes but a small fraction of aboriginal Southern Paiute territory. Consequently, ancestors of the contemporary population exploited the study area and adjacent lands in the past, the modern state border constituting no real barrier to recent land use and not having existed in pre-colonization times.

The reserved area is too small to support the entire Kaibab population. It allows a few families to graze some cattle, but most of the residents depend economically on wage labor like other Southern Paiutes, Pahvants and Goshutes. Many people enrolled at this jurisdiction range widely through California, Nevada, Utah and Arizona to find employment. Nevertheless, the Kaibab group has developed a relatively experienced cadre of reservation resource managers, who share with elder members of the enclave a lively concern over sacred shrines and other sacred places in aboriginal territory. Members of this cadre have worked with several social scientists and government officials during the past two decades, and have expressed group concerns to such outsiders.

METHODOLOGY

On March 15, 1982 Bunte, Evans, Franklin, and Stoffle arrived on the Kaibab Paiute reservation to hold a public meeting and to begin interviews. On the advice of Chairman Bill Tom, the OTCR was to be whichever community member was elected to the position of Community Planning Committee (CPC) Chairman. The public meeting was held that night and Ms. Vivienne-Caron Jake was elected chairman of CPC and became the IPP OTCR. During the meeting Stoffle made a presentation describing the project. Concerns were expressed at that meeting.

On March 16th, the team of Bulletts, Evans, and Stoffle began private interviews while the team of Bunte, Franklin, and Jake conducted others. The first team interviewed four elders including 3 men and a woman. The second team interviewed five elders including four women and a man.

Inasmuch as many of the Kaibab elders had left the reservation on March 16th, a second interview session was arranged for March 22nd. This one was a group meeting involving six people including three men and three women. The meeting lasted for about three hours.

Finally, on May 7th and 10th, Stoffle met with Chairman Tom, Tribal council members, and the OTCR to discuss possible mitigation. Thus a total of 15 interviews were conducted plus a public meeting and various meetings with tribal officials. As a result a detailed official tribal response was produced for the IPP Nevada report (Stoffle and Dobyns 1982) which also reflects the concerns to be officially expressed for cultural resources in the Utah section of IPP (See Appendix C).

During the 1982 IPP-Utah study period, a survey was mailed to the 49 members of the Kaibab Paiute Indian Tribe. Eight (16.3%) of these surveys were filled out and returned. The average Kaibab respondent is 57.4 years of age. The youngest person who returned the questionnaire is 20 years old. The oldest person is 100 years of age. All members who returned the survey live on the reservation. The average length of residence is 52 years (N=6).

EXPRESSED CONCERNS FOR PLACES

When asked to rank the degree of their concern for 23 places along the IPP right-of-way, Kaibab respondents expressed their strongest concerns for places close to the Kaibab Paiute Indian Reservation: Lund (2.88), Modena

Reservoir area (2.88) and the Wah Wah Mountains (2.88). In TABLE 37 these places can be compared with those for places that were not within traditional Kaibab teritory. Places of least concern to the Kaibab respondents were the Escalante and Sevier Deserts (2.63) each.

GENERAL CONCERNS FOR CULTURAL RESOURCES

In the 1982 IPP-Utah survey, Kaibab people were asked to record the intensity of their concern for certain kinds of cultural items. TABEL 38 presents the average intensity of concerns expressed. Consistent with the responses of other Native Americans during the 1982 IPP study, there is a very strong concern for springs (3.0), burial sites (3.0) and medicine plants (3.0) among the Kaibab people. They express the same strong concern for rock art (3.0) and food plants (3.0).

CONCERNS FOR PLANTS AND ANIMALS

Inasmuch as the many hours of interviews produced concerns similar to those presented by the Paiute Tribe of Utah, these concerns are not repeated in this section. These are general concerns relating to plants, animals, habitation areas like springs and trails. The reader is referred to the appropriate sections of the Paiute Tribe of Utah for a full listing of such concerns.

Proposal to Build More HVTLs. All eight members (100%) of the Kaibab Paiute Trive who responded to the 1982 IPP-Utah survey gave a negative answer to the question, "How do you feel about the proposal to build more transmission lines through your traditional lands?" Representative of these responses are the following statements: "Angry," "Very concerned," "Awful." "Life threatening for us and future generations; resources for survival becoming limited."

Seeing Power Lines and Towers. In response to the 1982 IPP-Utah survey question, "What are your feelings when you see large power lines and their towers crossing the desert valleys or mountains?" six Kaibab respondents (75%) felt that power lines and towers were unnatural and distracted from the desert landscape. One member (12.5%) said, "I am fortunate that I cannot see them." There was one person (12.5%) who did not respond on this question.

TABLE 37: ENGLISH NAMES FOR INDIAN PLACES RANKED BY INTENSITY OF KAIBAB CONCERN (1982 IPP-UTAH SURVEY).*

Indian Places	Average Degree of Concern N 8
Modena Reservoir Area	2.88
Hamblin Valley	2.88
Eight Mile Spring	2.88
Needle Range	2.88
Wah Wah Mountains (southern tip)	2.88
Lund (north and west to mountains)	2.88
Topache Peak	2.88
Rocky Range	2.88
Red Rock Lnoll	2.88
Cricket Mountains	2.88
Carr Lake	2.88
Drum Mountains	2.88
Topaz Slough	2.88
Star Range	2.75
Beaver River	2.75
Sevier Lake	2.75
Sevier Lake	2.75
Swasey Wash	2.75
Whirl Wind Valley	2.75
Little drum Mountains	2.75
Baker Hot Springs	2.75
Escalante Desert	2.63
Sevier Desert	2.63

* "No concern" responses have a 1 value, "some concern" responses have a 2 value, and "much concern" responses have a 3 value.

TABLE 38: NATIVE AMERICAN CULTURAL ITEMS, RANKED BY INTENSITY OF KAIBAB CONCERN (1982 IPP-UTAH SURVEY).*

Cultural Items	Average Degree of Concern N=8
Medicine Plants	3.00
Food Plants	3.00
Rock Art	3.00
Burial Sites	3.00
Springs	3.00
Basket Plants	2.88
Religious Areas	2.88
Small Ground Animals	2.88
Large Ground Animals	2.88
Birds	2.88
Trails-Shrines	2.88
Clay-Rock Mines	2.75

* "No concern" responses have a 1 value, "some Concern" responses have a 2 value, and "much concern" responses have a 3 value.

MITIGATION RECOMMENDATIONS

Although the Paiute people living on the Kaibab Paiute Reservation share similar concerns with people of the Paiute Tribe of Utah, consultation with one tribal council will not permit both tribal units to be represented in the mitigation process. The Kaibab Paiutes have lived in approximately the same sections of the IPP right-of-way as other Paiutes, but the Kaibab people have their own special concerns for segments of the study area. Their areas of greatest concern are for the area west of Lund to the Utah- Nevada state line. It is to this portion of the study area that the following recommendations apply (See Appendix C for full text):

a) That IPP move or shift the transmission lines in accordance to the Paiutes request;

b) That IPP employ Paiute Cultural Resources people at intervals during the construction phase to oversee the archaeological projects;

c) That IPP and the BLM be in daily contact with Paiute groups through the Cultural Resources representatives and act on decisions relating to tribal artifacts and burials;

d) That the IPP line stay away from springs, watering holes and lakes.

In addition to these site-specific recommendations, the following mitigation recommendations were contained in the Kaibab Paiute Official response:

a) That IPP employ Paiute people on the construction crews;

b) That IPP and BLM, together, support the Paiute request for setting aside a Cultural Enhancement Site(s) and that these site(s) be closed to commercial users;

c) That IPP assist and support the Paiutes in their request for reduction on energy costs.

Mitigation of Indian Tools and Habitation Sites. In response to the 1982 IPP-Utah survey question, "If Indian tools or living sites are uncovered by power line construction, what should be done with them?" three (37.5%) Kaibab respondents said that the artifacts should be returned to the tribe nearest to the uncovered site. Two Kaibab members (25%) said the construction should go around the site so it would be left untouched. Another two people (25%) believed the artifacts should be placed in an Indian museum. One respondent (12.5%) did not answer this question.

Mitigation of Indian Burial Sites. Eight members of the Kaibab Paiute Tribe responded to the IPP-Utah survey question, "If the burial sites of Indian people are uncovered by power line construction, what should be done with them?" four members (50%) said the relics should be reburied in the nearest Indian cemetery. Two people (25%) felt that the Indians should make any decisions. One person (12.5%) said, 'Leave them be." One respondent (12.5%) said that it would be all right if the relics were reburied in the same general location.

Listening to Indian Opinion. The eight members of the Kaibab Paiute Tribe who returned the 1982 IPP-Utah survey gave a variety of answers to the question, "Do you believe that Indian peoples' opinions recorded in this study will be heard and listened to by the utility companies?" Four people (50%) believed they would be heard. One of the four said, "I will have to be heard and listened to." One respondent (12.5%) said, "It should be listened to before it's done." Two people (25%) found it hard to believe they would be heard. One of them said, "I think it will be, but not for me to say what the outcome will be. It can lead to another whiteman's bullet through our hearts."

The answer of the other was: "It's hard to believe that a whiteman would even be willing to hear and listen today. The whiteman is going to self-destruct, you know. He will not allow anyone or anything to prevent him from that." There was only one definite negative answer; it was simply, "No."

THE UTE INDIAN TRIBE

BACKGROUND

Early during the War of the Rebellion between Union and Confederacy, President Abraham Lincoln reserved the Uintah Valley for the various Ute tribes. During the 1860s and 1870s, federal and territorial officials alike strove to persuade, and at times to force, Ute raiding bands to settle on the reserved lands and abandon economic raiding. They succeeded on the whole remarkably well, partly because the valley and nearby mountains offered unparalleled hunting. Later, as big game became scarce, other natural resources afforded an opportunity for Utes who adopted European technologies to earn a good livelihood in the valley.

Nearly all of the Utes who settled in the Uintah Valley were members of mounted eastern bands. Goshutes, Pahvant Utes and Southern Paiutes generally refused to relocate to Uintah Valley under any circumstances. Southern Paiutes, who had suffered greatly from mounted Ute slave raids, absolutely refused to go to Uintah Valley. They explained that they

feared the power of Ute shamans too much to live among the Utes. Apparently, most of the southern band Pahvants shared the Southern Paiute perception of the mounted Utes; they were intermarried with Southern Paiutes to a considerable extent and clearly shared many cultural characteristics with them. Their descendants are now legally part of the Paiute Tribe of Utah recognized in 1980. A few Pahvant Utes, perhaps all from the northern band, evidently did move to Uintah Valley during the first two decades after its reservation was established. They seem to have been relatively few in number. Their descendants have lived far from the study area for well over a century.

METHODOLOGY

The Ute Indian Tribe was officially contacted on February 23, 1982 by ACT (See Appendix A). Within a few days they called ACT to learn more about the project. On March 8th a letter was sent from Dr. Stoffle describing the role of the OTCR and asking for one to be appointed for the first training session in Cedar City, Utah (See Appendix B). During the next few weeks a series of phone calls were made between Dr. Stoffle, the Ute Indian Tribe and ACT. On April 22nd Jason Cuch, Director of Resources for the Ute Tribe wrote a letter to ACT questioning the role of the tribe in a study located beyond its boundaries. On May 5th, the last OTCR meeting was held in Cedar City and still no Ute OTCR had been appointed. The next day a call to the Ute chairman resulted in the cancellation of the scheduled public meeting to have been held at Fort Duchesne, Utah. A letter dated May 6th explains the reason for the tribe cancelling that meeting (See Appendix C). On June 4th Stoffle called the Ute Tribe again to see if they had any general mitigation responses. This response is contained in the June 22nd letter of Appendix C.

Initially, it was assumed that the Utes did not understand the purpose of the project and/or did not have any cultural resources in the study area. In retrospect, it appears that they did not understand that they could participate in Native American Impact Assessments that occur beyond the reservation boundary. Their early cautious responses were designed, according to a recent phone conversation with Jason Cuch, to make sure the Paiute Tribe of Utah was contacted. There was also concern over allocating tribal resources to a new type of project far removed from the reservation.

After having more time to understand what was being proposed, the Ute Indian Tribe expressed a general concern for a portion of the IPP right-of-way and a desire to participate in the mitigation stage of the project.

MITIGATION RECOMMENDATIONS

The following is an excerpt from the June 22nd letter from the Ute Indian Tribe expressing their concerns for a segment of the Utah right-of-way, and mitigation recommendations to insure the protection of Pahvant Ute cultural resources remaining in the study area.

> Concerning the ethnographic study and the areas in the northern point of U.S. 50, the bottom portion of Sevier Lake, Cricket Mountain, Pahvant Range, and that area know as Red Rock Knolls: These areas are of particular concern to the Northern Ute Indian Tribe of Utah. As far back as 1855, the Northern Utes of Utah have occupied and roamed in the above mentioned areas. The Tribe gathered a variety of wild plant foods and did some hunting and fishing in these areas. The gathering of food from this area was one of the Tribe's main means of survival. In fact, the name "Pahvant" comes from the Ute's word meaning "near water".
>
> The preservation of culture and the construction activities associated with the proposed right-of-way could likely disturb any historical culture in these areas. As a mitigation measure, in association with the site identification of cultural and historical sites, would it be possible for a Tribal Preservation Officer to assist to maximize protection during the construction. This Officer would be paid from mitigation funds, as the Tribe plans to have an Archeological and Historical Preservation Officer. The Preservation Officer would conduct an environmental archeological survey of the areas to be disturbed and would be available, as needed, during surface disturbances. While in the area, the Preservation Officer would determine the archeological values, as well as the significance of any discoveries and would be oriented on appropriate actions to take in relation to any findings.

THE CONFEDERATED TRIBE OF THE GOSHUTE RESERVATION

BACKGROUND

The Confederated Tribes of the Goshute Reservation are one of the federally recognized Native American enclaves in Utah, living on lands reserved early in the twentieth century. There are two population components at this jurisdiction. The earlier reservation of land was made for Goshutes, decendants

of the aboriginal occupants of the area immediately north of the Sevier River in the study area. The later reservation of land was made for people from Ruby Valley, Shoshones without the intermarriage links into the Pahvant Ute population that the Goshutes had when colonization by Euroamericans began. The presence of descendants of two distinct Native American populations had complicated governance of the reservation.

The mixed population has also complicated ethnographic research. Anthropologists have been known to interview Shoshone informants thinking that they were interviewing Goshutes. Southern Goshute country lay far from Ruby Valley, and descendants of Native Americans from the latter area naturally lack knowledge of, or interest in, the study area immediately north of Sevier River.

An additional factor handicapping collection of oral history of Goshute land use in the study area, is the virtual extermination of the southern band during the 1860s. United States troops reportedly killed over 100 members of what appears to have been the southern band, in fighting that occurred simultaneously with the War of the Rebellion between Union and Confederacy. That campaign seems effectively to have terminated Goshute exploitation of the Sevier River delta zone, so that Goshutes have been absent from the area too long for oral tradition to retain much information about it. Moreover, the northern band members who survived may never have known much about the Delta zone.

METHODOLOGY

Mr. Dan Murphy, Chairman of the Confederated Tribes of the Goshute Indian Reservation was contacted on February 23rd by ACT and on March 8th by Dr. Stoffle regarding the Utah study. Like Chairman Benioh, Mr. Murphy was familiar with the IPP proposal because he participated in the Nevada portion of the IPP right-of-way study.

The study team of Stoffle, Bulletts, and Evans returned to the Goshute Reservation at Ibapah, Utah on March 18th. They met with the tribal council for two hours to discuss the project and seek guidance regarding key person interviews. The council appointed Mr. Earl Baker as the OTCR for the project.

During the remainder of the day and the next day Mr. Baker took study team members to talk with tribal elders. Four elders were interviewed in their homes. These included three men and one woman. Direct contact was made with 10 persons on the reservation including the 6 tribal council members.

Mr. Earl Baker attended OTCR training sessions in Cedar City on March 21st and May 5, 1982. An official mailing list

of tribal members was requested by Mr. Baker and sent to AUFS on June 19th. IPP questionnaire surveys were then immediately sent to all persons on this list.

During the 1982 IPP-Utah study period, a survey instrument was mailed to 46 adult members of the Confederated Tribes of the Goshute Reservation. The questionnaire asked them to indicate the intensity of their concern for cultural items and traditional Indian places. Twelve (26.1%) of the 46 members returned their surveys. The average age of the Goshute respondent is 34.7 years. All of them live on the Goshute Reservation, and ten (83.3%) of the respondents had parents that lived there too. The average length of residence for the Goshute respondents was 28.3 years.

GENERAL CONCERNS FOR CULTURAL RESOURCES

It should be noted that the following responses are derived from a small sample of the people who live on the Goshute Reservation at Ivanpah. These present responses are from key experts the study team was referred to by the tribal council and the OTCR. In general, they expressed a concern for resources that might be present in the IPP right-of-way but did not have any knowledge of what these resources might be or where they may be located. It was generally accepted that Goshute people had lived in the northern portion of the study area, especially north of Delta near the site of the power generating station, along the Sevier River as it emerges from Lake Sevier, and south along the Cricket Mountains. It was also recognized that the territory was jointly utilized by Pahvant Ute, and Southern Paiute peoples. In fact, a great concern was identification of burials as belonging to one or the other of these groups. When asked what they wanted to happen to Goshute burials, the most common response was, "How do we know that the burials belong to our tribe." Throughout the discussions with people at Goshute there seemed to be great surprise that the study was being conducted. Many persons simply did not believe that what they had to say about those resources could be of any use in a study of this type.

Field notes taken immediately after one interview may serve to illustrate the complex intermixture of miscommunication, lack of experience, and inadequate knowledge that seemed to influence so many of the Goshute interviews. Our field notes read:

> Mr. L. P. was very friendly, very open, he seemed to not have any problem with the project (IPP). He didn't have any recommendations regarding what would happen if we found either burials or artifacts. He answered in such a way that I don't think he quite

understood what we were talking about. In terms of the Delta area he said: "Those old people who use to know that area are all dead now and people my age remember some but don't know it much. We stay over here (at Ibapah), we were born on this side of the mountain. The young people don't know anything at all." He further commented, ..."but be sure to check with other people because I cannot speak for them." He also suggested that a group meeting would be useful.

Survey Responses. During the 1982 IPP-Utah study period, members of the Confederated Tribes of the Goshute Reservation were asked to express the intensity of their concern for 23 Utah place names. The responses of twelve members of the Goshute Reservation show that their greatest concern is for springs. For example, Eight Mile Spring, located a considerable distance from the Goshute Reservation, is ranked highest (2.67) and Baker Hot Springs (2.56) follows closely in ranking (see TABLE 39). Baker Hot Springs and Whirlwind Valley (2.56) are both located in traditional Goshute territory. The Sevier River (2.11), ranked lowest on the list of Utah place names. In general, the Goshute responses show a random pattern with equal concern shown for places close to and far from the Goshute Reservation.

EXPRESSED CONCERNS FOR PLACES

In the IPP-Utah Survey, members of the Confederated Tribes of the Goshute Reservation were asked to express the intensity of their concern for a list of Indian cultural resources. TABLE 40 shows that on a 1 to 3 point scale, seven cultural items on the list were given the highest possible responses, 3.0, and no resource on the list was rated less than 2.78.

EXPRESSED CONCERNS OVER POWER LINES

Proposal to Build More HVTLs. The IPP-Utah survey question, "How do you feel about the proposal to build more transmission lines through your traditional lands?" brought negative responses from eight (66.7%) of the twelve Goshute respondents. One of the eight said:

> "My opinion, I really don't care for it. But if the nation's expanding, there's not much my people or any other tribes can really do. Right?"

Three people (25%) approved of the project. One of them said, " I like it because we people didn't have power since 30 years ago." One member (8.3%) said, "It would be fine with me as

long as our Indian sacred burial lands are not tampered with and used for museum shows to the public."

Seeing Large Power Lines. In reply to the IPP-Utah question, "What are your feelings when you see large power lines and their towers crossing the desert valley or mountains?" eight (66.7%) members of the Goshute Reservation disliked them. One of the eight said, "I see them as killers of our sacred birds, the Eagles," and another said, "They ruin the beauty of this country. Everywhere you look, there's some big ugly thing blocking your view." Two respondents (16.7%) approved of power lines. One person (8.3%) approved, "as long as it doesn't lay on the Indian lands." One person (8.3%) said, "I really don't know."

MITIGATION RECOMMENDATIONS

The only mitigation recommendation expressed during the interviews was made by a council member during the March 18th meeting. He recommended that a tribal member be present during the construction period just in case Goshute burials were uncovered.

Mitigation of Indian Tools and Habitation Sites. When members of the Goshute tribes were asked the IPP-Utah survey question, "If Indian tools or living sites were uncovered by power line construction, what should be done with them?" five Goshute respondents (41.7%) felt the Indian tribe nearest the site should make the decision as to the disposition of the artifacts. Three people (25%) said that they should not be touched; construction should go around them. Two others (16.7%) wanted them placed in an Indian museum. Two people (16.7%) said they did not know.

Mitigation of Indian Burial Sites. In response to the IPP-Utah question, "If Indian burial sites of Indian people are uncovered by construction, what should be done with them?" five (41.7%) of the twelve Goshutes who responded said that construction should be rerouted around the sites. Four respondents (33.3%) felt they should be reburied in a safe place. Three people (25%) wanted them left alone. One of the three said, "Just leave it there, since there been lots people buried there."

Listening to Indian Opinion. In response to the 1982 IPP-Utah survey question, "Do you believe that Indian peoples' opinions recorded in this study will be heard and listened to by the utility companies?" seven Goshute respondents (58.3%) did not believe they would. One of them said, "No, to tell you the truth, I really don't think so." Two people (16.7%) were

TABLE 39: ENGLISH NAMES FOR INDIAN PLACES RANKED BY INTENSITY OF GOSHUTE CONCERN (1982 IPP-Utah Survey).*

INDIAN PLACES	AVERAGE INTENSITY OF CONCERN N=12
Eight Mile Spring	2.67
Whirlwind Valley	2.56
Baker Hot Springs	2.56
Drum Mountans	2.44
Little Drum Mountains	2.44
Star Range	2.44
Topache Peak	2.44
Modena Reservoir	2.44
Sevier Lake	2.33
Cricket Mountains	2.33
Sevier Desert	2.33
Beaver River	2.33
Rocky Range	2.33
Carr Lake	2.25
Swasey Wash	2.22
Topaz Slough	2.22
Red Rock Knoll	2.22
Needle Range	2.22
Wah Wah Mountains - Southern tip	2.22
Lund - North and West to the Mountains	2.22
Hamblin Valley	2.22
Sevier River	2.11
Escalante Desert	2.11

* "No concern" responses have a 1 value, "some concern" responses have a 2 value, and "much concern" responses have a 3 value.

TABLE 40: NATIVE AMERICAN CULTURAL ITEMS, RANKED BY INTENSITY OF GOSHUTE CONCERN (1982 IPP-Utah Survey).*

CULTURAL ITEM	AVERAGE INTENSITY OF CONCERN N=12
Springs	3.00
Burial Sites	3.00
Religious Areas	3.00
Medicine Plants	3.00
Food Plants	3.00
Large Ground Animals	3.00
Birds	3.00
Trails-Shrines	2.89
Small Ground Animals	2.89
Basket Plants	2.78
Rock Art	2.78
Clay or Rock Mines	2.78

* "No concern" responses have a 1 value, "some concern" responses have a 2 value, and "much concern" responses have a 3 value.

more hopeful. One of them said:

> "I believe we should be listened to this time, after all, we use to own this land and should (know) what's good for it, so I hope the utility company study recorded its study."

Three people (25%) made no response to this question.

SKULL VALLEY GOSHUTE TRIBE

BACKGROUND

The Skull Valley Goshute Reservation is a small tract of land reserved to this Native American enclave by the federal government. The reservation occurred relatively late--long after Euroamerican settlement had thoroughly disrupted Goshute aboriginal subsistence strategies and forced them into economic dependency on Euroamericans. The lands reserved for these Goshutes are so circumscribed and of such poor quality, furthermore, that few Goshutes have ever been able to make a living from resources on this jurisdiction. Consequently, few Goshutes actually reside on the reserved tract at any time, and fewer at any one time. Consequently, they are widely scattered in Utah towns, cities and farms, earning their livings.

METHODOLOGY

Mr. Burt Wash, Chairman of the Skull Valley Goshute Tribe was sent a letter on February 23rd by ACT, and on March 8th by Dr. Stoffle regarding the IPP study. From that time to the end of June 1982, more than a dozen phone calls and three follow-up letters were addressed to the Skull Valley Tribe. At one point, a BIA officer (at Chairman Wash's request) called Dr. Stoffle to attempt to better understand the relationship between the IPP proposal and the Skull Valley Goshute Tribe. On March 20th, the study team of Stoffle, Bulletts, and Evans visited the Skull Valley reservation and failed to make contact with Chairman Wash or any other tribal officers.

The end result of these communication attempts was no participation in the study by the Skull Valley Goshutes. No OTCR was ever appointed nor did any Skull Valley representative ever appear at the training sessions in Cedar City. No names were received at AUFS for a survey to be sent. No interviews were conducted. In fact, Goshute people belonging to the Skull Valley Tribe did not even have the opportunity to review the draft of this report because it could not be delivered to Chairman Wash. The draft report was returned unopened to the AUFS on August 4, 1982.

It should be noted that the Skull Valley Tribe does not have a tribal office building or any full-time tribal personnel. The great majority of tribal members live away from the reservation. There is only one phone on the reservation and it belongs to a commercial corporation which hires some of the on-reservation tribal members. There is no formal system of leaving messages for any of the three part-time tribal officers. The communication of complex issues such as the present study is severely hampered by these facility-staff problems. Therefore, the lack of a Skull Valley Goshute response should be attributed to staffing and communication problems rather than being interpreted to mean they do not have any cultural resources in the study area or that they do not care about whatever tribal resources may be present in the IPP right-of-way.

CHAPTER VI. MITIGATION RECOMMENDATIONS

This chapter contains a synthesis of documented and expressed Native American concerns with study team recommended impact mitigations. Here the term "impact mitigation" is being used, following Leistritz and Murdock (1981:17), to mean efforts to minimize those impacts on pre-construction conditions and resources which are viewed as undesirable and to enhance those changes which are considered beneficial. This chapter also discusses Native American concerns according to general geographic location and by specific sites.

At each location, there is a discussion of site specific mitigation as recommended by the various tribal councils and/or tribal members and the study team. The chapter does not contain a discussion of the non-site specific mitigation recommendations which have been communicated by these Indian peoples to the study team. These recommendations involve decisions that are not specifically related to the protection of cultural resources. They are listed in Chapter V by tribe.

GENERAL MITIGATION RECOMMENDATIONS

Some recommendations regarding the disposition and protection of Native American cultural resources are so consistent from tribe to tribe that they can be discussed for the entire Utah IPP right-of-way. These recommendations have to do with (1) the presence of a Native American Observer during certain groundbreaking activity; (2) the disposition of burials and artifact assemblages found during construction and/or archaeology excavation of sites, and (3) the disposition of plants of special value to Native Americans.

NATIVE AMERICAN OBSERVER

The tribes have expressed the concern that they have a representative present during certain groundbreaking activities at areas considered sensitive and associated with the IPP. This representative is called here a Native American Observer or NAO. These activities may include tower pad construction, grading of the right-of-way access road, and archaeological excavation of Indian habitation-burial sites. The concerns are limited to traditional tribal areas. Because no tribe has argued for a traditional boundary that is different than those contained in this report, these boundaries will be used to demarcate the limits of a particular tribe's NAO involvement.

It is recommended that there be a preconstruction meeting held with NAOs present before IPP right-of-way groundbreaking activities occur within sensitive areas. This meeting minimally should involve (1) an official representative of the Paiute Tribe of Utah, the Kaibab Paiute Tribe, the Ute Indian Tribe, the Confederated Tribes of the Goshute Indian Reservation, and the Skull Valley Goshute Tribe, (2) a BLM representative, and (3) ACT personnel, probably an archaeologist and an ethnographer. Depending on the meeting's agenda, a representative of the IPP and candidates for the NAO positions may be included at this time. The meeting's agenda should minimally include (1) the selection of NAOs, (2) training of NAOs, (3) NAO's financial reimbursement (4) a discussion of the NAO's rights and responsibilities, and (5) when and where the NAOs should be on the site of groundbreaking activities. In addition, the disposition of artifacts-burials found during groundbreaking may be discussed at this time.

This meeting will serve to clarify the tribes' expectation(s) of the NAOs and provide an opportunity to communicate the financial and legal constraints the BLM and IPP have regarding the IPP Intermountain-Adelanto Bipole I transmission line and the lands on which it may be built. Negotiated points should be agreed to in writing.

NAO training-orientation should occur once general guidelines have been defined. The NAOs should be (1) made aware of the various agreements made during the preconstruction meeting, (2) given an understanding of the groundbreaking activities they are expected to observe, and (3) given a preliminary coordination plan and a preliminary schedule of the times and extent their services will be needed.

MITIGATION OF FORMERLY UNKNOWN CULTURAL RESOURCES

It is understood that no set of archaeological and ethnographic studies can reveal the existence and location of every Native American sacred resource located in the IPP right-of-way, although this is the goal of these studies. When a Native American sacred resource, such as a burial or extensive artifact assemblage, is found during additional surveying, groundbreaking, or construction, there should be an agreed upon (1) procedure for notifying potentially concerned Native American group(s) and (2) response time within which the Native American group(s) should respond with mitigation recommendations. The previous NAO discussions and training should greatly facilitate the speed and acceptability by which impacts to these formerly unknown cultural resources can be mitigated.

MITIGATION OF NATIVE AMERICAN PLANTS

Throughout this report the great importance of plants to these Indian peoples has been expressed (see TABLE 41). Unfortunately, plants are among the most difficult resources to be successfully mitigated. Some plants such as Mentzelia may actually be encouraged by groundbreaking activity. Other plants such as the pinyon pine clearly could be destroyed by construction. Federal legal protection of plants is limited to those defined as "rare" or "endangered." Indian concerns recorded in this report are for the plants themselves and modifications that will occur in the overall ecology of their Holy Lands as the plants are removed. In this case the federal law almost always provides too little protection for too few species of plants.

During construction of the IPP transmission line, adverse impacts to plants should be minimized. Those plants specifically mentioned by Indian people during this ethnographic study are discussed below in the site-specific section. A second mitigation recommendation is for IPP or BLM personnel to discuss with the appropriate tribal officials the physical possibility and economic feasibility of transplanting a portion of certain plant species which will be destroyed to tribally controlled lands where the tribe can oversee their protection and use. Finally, if the plants that are to be destroyed have commercial value--as has been suggested by a number of tribal elders--then IPP and/or the BLM should discuss with the appropriate tribe the harvesting or commercial sale rights.

The following portion of this chapter discusses site specific mitigation. Here, actual locations along the IPP right-of-way are discussed. The locations are referenced according to USGS Topographic Quadrangles. Each tribal OTCR has received a set of IPP project maps based on such quads. These USGS quads are generally available to the public in libraries and through state and federal government offices, such as the Bureau of Land Management.

The IPP right- of-way is divided for the purpose of making specific mitigation recommendations into "sections" and portions of sections called "areas." These are described in terms of (1) the expressed concerns of Native American peoples, (2) the archaeological record as established by the IPP Utah archaeologists, (3) historic records, and (4) the extent to which the area and its cultural resources have already been disrupted. Based on these criteria, a level of "cultural significance" is assigned to each area. Three broad categories of significance are used: "high," "moderate," and "low." A few areas are judged to fall somewhere between two or three of these categories. The level of cultural significance is combined with a consideration of the types of cultural resources

TABLE 41: Plants of Indian Concern Found in IPP Utah Right-of-Way

	BOTANICAL NAME	NUMIC NAME	COMMON NAME	LOCATION
1.	Anemone tuberosa		windflower	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
2.	Arabis sp.	toxopakuv	rockcress	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
3.	Astragalus spp. purshii		locoweed milkvetch rattleweed	Bannon Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 27-28
4.	Calochortus sp.	sixo'o	sego lily mariposa lily	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
5.	Carex douglasii		sedge	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
6.	Chrysothanmnus nauseosus	sikump	rabbitbrush	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
7.	Cowania mexicana	unapu	cliffrose "buckbrush"	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
8.	Cymoterus sp.		water parsnip	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
9.	Descuraninia pinnata	aku	tansymustard	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
10.	Eleocharis palustris		spikerush	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
11.	Equisetum laevigatum	paxwav	horsetail rush	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31

TABLE 41, Continued 2

	BOTANICAL NAME	NUMIC NAME	COMMON NAME	LOCATION
12.	Eriogonum caespitosum		buckwheat brush	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
13.	Juncus sp.	paxwav	rush; tule	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
14.	Juniperus osteosperma	wa'apa wa'apumpi	juniper(branches) juniper(berries)	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
15.	Lappula redowskii		stickseed	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
16.	Lewisia rediviva	none	bitterroot	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
17.	Mentzelia spp.	ku'u	blazing-star	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
18.	Opuntia spp.	manavimp yuavimp	beavertail cactus cholla cactus buckhorn cactus pencil cactus prickly pear cactus	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
19.	Oryzopis hymenoides	wa'ai	ricegrass	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
20.	Penstemon sp.		beardtongue	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
21.	Phlox covillei hoodii		phlox	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31

TABLE 41, Continued 3

BOTANICAL NAME	NUMIC NAME	COMMON NAME	LOCATION
22. *Pinus monophylla*	tuva	singleleaf pinyon	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
23. *Poa fenderiana*	uxwishuv	muttongrass bluegrass	Bannion Spring, UT. 7.5', T. 33 S, R. 18 W Sec. 27-28
24. *Prunus virginiana*		chokecherry	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
25. *Purshia tridentata*		antelope brush	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 31
26. *Rhus trilobata*	su'uv i'is	squawbush squawberry skunkbush	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 3
27. *Salvia columbariae*	saywav	chia sage	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 3
28. *Sambucus racemosa*	kunuxwi	elderberry	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 3
29. *Senecio* sp.		groundsel	Bannion Spring, UT. 7.5', T. 33 S, R. 18 W Sec. 27-28
30. *Yucca* spp.	tachumpi uus	yucca yucca fruit	Eightmile Spring, UT., 7.5', T. 33 S, R. 18 W Sec. 3

Sources: S. Boyd field notes 5/21/82; Bunte and Stoffle field notes 5/4/82; Kearney and Peebles 1942; USGS maps provided by ACT.

found in an area in order to determine mitigation recommendations. Average scores rating the intensity of Native American concerns are based on mailed surveys (discussed in previous chapter) and are included in the site-specific mitigation discussion.

SITE-SPECIFIC MITIGATION

The following site-specific mitigation recommendations are based on data of varying quantity and quality. Reasons for this variance have been discussed in the general methodology section of Chapter III and the tribal-specific methodology sections in Chapter V. These sections should be consulted before proceeding with this chapter. For example, only one section, the "Hilly Border Area," of the IPP Utah right-of-way was studied with an ethnobotanical team.

DRUM MOUNTAINS SECTION

The Drum Mountains Section begins where the IPP right-of-way leaves the IPP generating plant (Delta, UT., 15', T. 15 S., R. 7 W., section 24) and extends for about 27 miles until the point where the IPP right-of-way crosses highway 50 just southwest of Delta, Utah (Rocky Knoll, UT., 7.5', T. 18 S., R. 9 W., section 1). It includes the IPP right-of-way marked on the following USGS Utah Quads: Delta (15'), Rain Lake, Baker Hot Springs, Fumarole Butte, Smelter Knolls East, Smelter Knolls West, Clay Knoll, and Rocky Knoll.

Old River Area. This area begins at the IPP generating plant and extends to where the right-of-way turns to the southwest (Fumarole Butte, UT, 7.5', T. 15 S., R. 9 W., section 24). Goshute people expressed some of their strongest concerns for places located near to this area: Baker Hot Springs (2.56) and the Drum Mountains (2.44) (see TABLE 39). This area corresponds with Sensitive Region #1 as defined in the IPP Utah archaeology report (Janetski and Holmer 1982:180-182). A series of archaeology sites and numerous isolated finds suggest a "highly patterned exploitation of this region." The area is generally undisturbed by development. Documents indicate that Goshute people primarily occupied this area. The area is considered of high cultural significance to the Goshute people.

Drum Mountain Flats Area. This area begins where the IPP right-of-way turns to the southeast (Fumarole Butte, UT., 7.5', T. 15 S., R. 9 W., section 24) and extends southeast and then south to where the right-of-way crosses highway 50 (Rocky Knoll, UT., 7.5', T. 18 S., R. 9 W., section 1). Goshute peoples expressed strong concern for places located near this

area: Whirlwind Valley (2.56), and Little Drum Mountains (2.44) (see TABLE 39). On the other hand, Swasey Wash (2.22) and Topaz Slough (2.22) received moderate levels of concern. The IPP Utah archaeology survey revealed only three isolated artifact finds in this area (Janetski and Holmer 1982:Map 14). The area has not been disrupted by development. Documents indicate that Goshute people primarily occupied this area. The area is considered of low to moderate cultural significance to the Goshute people.

Drum Mountains Section Mitigation. It is recommended that a NAO be present during all groundbreaking activity in the Old River Area where either archaeological features or sand dunes are involved. This corresponds with the recommended archaeological mitigation for this Sensitive Region #1 (Janetski and Holmer 1982:182). No mitigation is recommended for the Drum Mountain Flats Area because no Goshute cultural resouces could be identified there. If burials or artifact assemblages are found during IPP construction in this section, then the discovery should be reported to the tribal chairman of the Confederated Tribe of the Goshute Indian Reservation and the Skull Valley Goshute Tribe.

SEVIER DESERT SECTION

The Sevier Desert Section begins where the IPP right-of-way crosses highway 50 (Rocky Knoll, UT., 7.5, T. 18 S., R. 9 W., section 1) and extends for about 40 miles to where the right-of-way turns south at the southern end of the Cricket Mountains near Red Rock Knoll and Black Rock Pass (Beaver Lake Mts., UT., 154' T. 24 S., R. 11 W.). This section includes IPP right-of-way marked on the following USGS Utah Quads: Rocky Knoll, Pot Mountain, Neels, Borden, Candland Spring, Cat Canyon, Black Rock, and Beaver Lake Mts. (15').

Sevier River Area. This area begins on the south side of highway 50 (Rocky Knoll, UT., 7.5', T. 18 S., R. 9 W., section 1) and extends for about five miles across the old and new channels of the Sevier River to the southeastern corner of section 20 (Rocky Knoll, UT., 7.5, T. 19 S., R. 9 W., section 20). Goshute people expressed moderate concern for the Sevier Lake (2.33), Sevier Desert (2.33) and Sevier River (2.11) (see TABLE 39). Pahvant Ute concerns were expressed about this area through the Ute Indian Tribe's letter of June 22, 1982 (see Appendix C). Pahvant Ute concerns expressed through the Paiute Tribe of Utah were strong for the Sevier River (2.58), Sevier Lake (2.50) and Sevier Desert (2.40) (see TABLE 33). IPP Utah archaeology survey revealed "30 cultural loci, primarily isolated," which, combined with the previous known archaeological sites, were sufficient to have this area designated Sensitive Region #2 (Janetski and Holmer 1982:182-186). The area has been disrupted by development

projects and visits by local collectors. Documents indicate that the area was occupied by both Goshute and Pahvant peoples. The area is considered of moderate cultural significance to the Goshutes and of high cultural sensitivity to descendants of the Pahvant Utes as they are currently represented by the Ute Indian Tribe and the Paiute Tribe of Utah.

Beaver River Area. This area begins where the IPP right-of-way leaves the southeastern corner of section 20 (Rocky Knoll, UT., 7.5', T. 19 S., R. 9 W., section 20) for approximately 25 miles until the right-of-way turns south near Red Rock Knolls (Beaver Lake Mts., UT., 15', T. 24 S., R. 11 W.). The right-of-way follows between the eastern flank of the Cricket Mountains and the western bank of the Beaver River. Members of the Paiute Tribe of Utah expressed strong concern about two places found within this area: The Cricket Mountains (2.50) and the Beaver River (2.50) (see TABLE 33). The Ute Indian Tribe expressed concern for this area in their letter of June 22, 1982 (see Appendix C). IPP archaeological survey indicated the presence of 18 isolated finds and 4 sites (Janetski and Holmer 1982:Maps 18-31). Only one of the sites, a rock shelter 42MD750), located outside the right-of-way, was considered to have subsurface features. Portions of this area (including the rock shelter) have been disrupted by development and/or artifact collectors. Documents indicate that the area primarily was occupied by Pahvant Utes. The area is considered of moderate cultural significance to the descendants of the Pahvant Utes as they are currently represented by the Ute Indian Tribe and the Paiute Tribe of Utah.

Sevier Desert Section Mitigation. It is recommended that a NAO be present in the Sevier River Area during groundbreaking activities in locales which have the potential for buried deposits, e.g., dune ridges and fill terraces within the Sevier River flood plain and Lake Gunnison sediments. This recommendation corresponds with the archaeological mitigation of Janetski and Holmer (1982:185) and also reflects the strong cultural concerns expressed by the descendents of the Pahvant Utes at the Ute Indian Tribe and the Paiute Tribe of Utah. If no single NAO can be agreed upon by these two tribes then it is recommended that each group have its own NAO in this area. It is recommended that the Goshute people at the Confederated Tribes of the Goshute Indian Reservation and Skull Valley Goshute Reservation be informed if burial or artifact assemblages are found during IPP construction.

No NAO is recommended during construction in the Beaver River Area. If archaeological groundbreaking activity does occur in this area, however, a NAO should be present to represent the Pahvant Ute concerns. If any burials or artifact assemblages are found during IPP construction the discovery should be reported to the Paiute Tribe of Utah and the Ute Indian Tribe.

ESCALANTE DESERT SECTION

The Escalante Desert Section begins where the IPP right-of-way turns south near Red Rock Knoll (Beaver Lake Mts. UT., 15', T. 24 W., R. 11 W.) and extends for approximately 95 miles to a point west of Lund where the IPP right-of-way ceases to parallel an existing dirt road and turns west into the foothills of the Needle Range (Bannion Spring, UT., 7.5', T. 33 S., R. 18 W., section 26). This section includes the IPP right-of-way marked on the following USGS Utah Quads: Beaver Lake Mts. (15'), SE, Milford, Milford Flat, Thermo (15'), Burns Knoll, Latimer, Lund, Avon NW., Zane, Beryl, and Bannon Spring.

Red Rock Area. This area begins where the IPP right-of-way turns south just at the end of the Cricket Mountains (Beaver Lake Mts., UT., 15', T. 24 S., R. 11 W.) and extends for approximately seven miles to the Millard-Beaver County Line (Beaver Lake Mts., UT., 15', T. 26 S., R. 11 W., section 2). Strong concern was expressed for Red Rock Knoll by members of the Kaibab Paiute Tribe who gave both it and the Cricket Mountains a 2.88 degree of concern (see TABLE 37). Moderate concern (2.40) was expressed for Red Rock Knoll by members of the Paiute Tribe of Utah (see TABLE 33). The site is mentioned in the Ute Indian Tribe letter as a marker of their southern territory boundary (see Appendix C). IPP Utah archaeologists found sufficient evidence to specify this area as Sensitive Region #3 (Janetski and Holmer 1982: 186-187). Portions of the area have been disrupted by development but the sandy-dune topography may have preserved cultural features. Documents suggest that this is a transition area between Pahvant Utes and Southern Paiutes. The area is considered of high cultural significance to Southern Paiute people represented by the Paiute Tribe of Utah and the Kaibab Paiute Tribe.

Milford Area. This area begins where the IPP right-of-way crosses the Milford-Beaver County line Beaver Lake Mts., UT., 15', T. 26 S., R. 11 W., section 2) and extends for approximately 49 miles to a point where the right-of-way turns southwest and parallels the Union Pacific Railroad (Thermo, UT., 15', T. 30 S., R. 12 W., section 2). Mountainous areas to the west of this area were given high degree of concern by the Kaibab Paiutes: Topache Peak (2.88), Rocky Range (2.88), and Star Range (2.75) (see TABLE 37). Members of the Paiute Tribe of Utah assigned these mountainous areas moderate to high scores: Topache Peak (2.50), Rocky Range (2.44), and Star Range (2.40) (see TABLE 33). The IPP Utah archaeological survey indicated only a few isolated finds and four sites in this area (Janetski and Holmer 1982: Maps 32-39). One nearby site (42BE619), located outside the right-of-way was considered by them as of National Register quality (1982: 117) but they did not recommend any mitigation. The degree to which sites are disturbed in this area could not be specified by the ethnographic study. Documents indicated that the area was used until recent historic time for hunting and seed gathering by

Southern Paiutes. It also contains a focus of Paiute wage labor at Milford during the historic period. This area is considered of moderate cultural significance to the Southern Paiute people.

Thermal Hot Springs Area. This area begins where the IPP right-of-way begins to parallel the Union Pacific Railroad (Thermo, UT., 15', T. 30 S., R. 12 W., section 2) and extends for approximately five miles until the right-of-way crosses the Beaver-Iron County Line (Burns Knoll, UT., 7.5', T. 30 S., R. 13 W., section 36). Southern Paiutes contacted during the ethnographic study consistently indicated a strong concern for springs and their associated resources (see TABLES 34 and 38). Hot springs were used for medicinal purposes. The IPP Utah archaeology survey documented a series of 18 isolated finds and six sites in area (Janetski and Holmer 1982: Maps 39 and 40). None of these sites appear to have any depth. The area has been disrupted by railroad construction and various access roads. Documents indicate that this is a Southern Paiute use area. The area is considered of high cultural significance to the Southen Paiute people as represented by the Paiute Tribe of Utah and the Kaibab Paiute Tribe.

Lund Area. This area begins where the IPP right-of-way crosses the Beaver-Iron County Line (Burns Knoll, UT., 7.5, T. 31 S., R. 13 W., section 1) and continues for approximately 37 miles until the IPP right-of-way ceases to parallel an existing dirt road and turns west in the foothills of the Needle Range (Bannion Spring, UT., 7.5, T. 33 S., R. 18 W., section 26). The mountainous areas to the west and north of the right-of-way received high concerns from Southern Paiutes. Lund (and the areas north and west to mountains) received 2.59 and Wah Wah Mountains (southern tip) received 2.52 concern scores from the Paiute Tribe of Utah (see TABLE 33). Similarly, both Lund and the Wah Wah Mountains received a score of 2.88 from the Kaibab Paiutes (see TABLE 37). Lund and the springs around it were camping and gathering areas in recent times for Paiutes. The IPP archaeology survey indicated 42 isolated finds of historic and prehistoric materials and 13 sites in this area. Much of the right-of-way closely parallels existing dirt roads or the Union Pacific Railroad. Documents indicate the presence of Southern Paiutes in this area. The area is considered of high cultural significance where there are springs but of low cultural significance where dry flats such as those west of Lund are crossed.

Escalante Desert Section Mitigation. It is recommended that a NAO be present in the Red Rock Area (Sensitive Area #3) whenever an archaeologist is brought in during IPP construction activities. This will probably only be needed in areas where there are sand dunes as suggested by Janetski and Holmer (1982: 187). The NAO should be a Paiute who can represent both the Paiute Tribe of Utah and the Kaibab Paiute Tribe. If no one NAO can serve this purpose then both tribes should have

a representative. If burials or artifact assemblages are found during groundbreaking activities where no NAO is present then the chairman of both tribes should be contacted.

In the Milford Area no NAO is recommended during IPP construction. A NAO is recommended if archaeological groundbreaking is decided upon as a mitigation for any of the sites in the area. If burial or artifact assemblages are found during IPP groundbreaking activities, the discovery should be reported to the Paiute Tribe of Utah and the Kaibab Paiute Tribe.

The Thermal Hot Springs Area is considered of high significance to the Paiute people but much of the area has been disrupted and no archaeological mitigation is recommended. This is an area of potential botanical concerns. The ethnographic study further indicates the presence of traditional Indian trails in this area but was unable to document their location by an on site visit with tribal elders. Because of this area's expressed importance it is recommended that the Paiute Tribe of Utah and the Kaibab Paiute Tribe be consulted regarding the possibility of placing a NAO in this five mile area during groundbreaking activities.

The Lund Area is generally considered of high cultural significance; however, this concern is focused on areas where springs afforded camping and gathering activities. Inasmuch as Paiutes worked on the Union Pacific railroad construction in this area, some of the historic artifacts may be of cultural significance to Paiute people. The location and importance, if any, historic artifacts was not identified by the ethnographic study within the IPP right-of-way. It is recommended that no NAO be present during IPP construction but that a Paiute NAO be present if any of the 13 sites in the area received ground-breaking archaeological mitigation.

HILLY BORDER SECTION

The Hilly Border Section begins where the IPP right-of-way ceases to parallel the dirt road to Lund and turns west into the foothills at the southern tip of the Needle Range (Bannion Spring, UT., 7.5', T. 33 S., R. 18 W., section 26) and continues through the mountains until reaching the Utah-Nevada state border (Prohibition Flat, NV., 7.5, T. 34 S., R. 20 W., section 2). This section includes the IPP right-of-way located on the following USGS Utah Quads: Bannion Spring, Eight Mile Spring, Deer Lodge Canyon, and Prohibition Flat.

Mary's Hollow Area. This area begins where the IPP right-of-way turns west into the Needle Range foothills (Bannion Spring, UT., 7.5', T. 33 S., R. 18 W., section 26) and continues until the right-of-way passed at the southern boundary of section 29 (Eight Mile Spring, UT., 7.5', T. 33 S., R. 18 W., section 29). Paiute people at Kaibab expressed strong concern for the Needle Range (2.88) as well as other topographic features in the area already noted in the previous section (see TABLE 37). The Paiute Tribe of Utah has expressed a moderate concern for the Needle Range (2.42) and strong concern for the Lund area west of the mountains (2.59) (see TABLE 33). The IPP Utah archaeology survey recorded eight isolated finds in this area and two sites just north of the right-of-way (Janetski and Holmer 1982: Map 55). They define this area, and all of the "Hilly Border Section" as Sensitive Region #4 due to the extensive obsidian quarries and dense occupation sites (1982: 187-188). The ethnographic study team made an ethnobotanical on-site visit to Mary's Hollow and Eightmile Spring and is separating the two areas based on differences in botanical assemblages. Plants of expressed Native American concern that were found in the IPP right-of-way are listed in TABLES 41 and 42. In Chapter V, however, the two areas have been defined as a single interaction sphere with the living-working-agricultural area being at Eightmile Spring and the gathering-hunting area being the Mary's Hollow flats. Documents place Southern Paiutes in this area throughout the historic period. The area is considered of high cultural significance to Southern Paiutes.

Eightmile Spring Area. This area begins where the IPP right-of-way rises higher than 6,500 feet at the southern boundary of section 29 (Eightmile Spring, UT., 7.5, T. 33 S., R. 18 W., section 29) and continues across the spring, up the mountain to the west of the spring, and ends at the Modena Draw (Eightmile Spring, UT., 7.5, T. 33 S., R. 19 W., section 35). This area received high concern by the Kaibab Paiute Tribe (2.88), the Paiute Tribe of Utah (2.56), and the Goshutes (2.67) (see TABLES 37, 33, 39). The spring has been discussed in depth in Chapter v and is a point of strong concern for the Southern Paiutes. The IPP Utah archaeology termed the Eightmile Spring a single site inasmuch as the lithic scatter and other artifacts extend over the entire area (Janetski and Holmer 1982: Map 56). Plants recorded as of concern and in the IPP right-of-way are listed in TABLES 41 and 42. Documents place Southern Paiutes in this area in recent time. The area is largely undisturbed by development. The area is considered of high cultural significance to Southern Paiutes and to Goshutes.

Newels Spring Area. This area begins at Modena Draw (Eightmile Spring, UT., 7.5, T. 33 S., R. 19 W., section 35) and continues until the Utah-Nevada Border (Prohibition Flat, NV., 7.5, T. 34 S., R. 20 W., section 2). The Modena Reservior Area received a strong concern from the Kaibab Paiutes (2.88) but a low level of concern from the Paiute Tribe of Utah

(2.35). Each group, however, ranked springs as one of thier cultural resources of greatest concerns (see TABLE 38, 34). The IPP Utah archaeology survey recorded 7 isolated finds and four sites (Janetski and Holmer 1982: Maps 57-60). The heaviest concentration of these cultural resources were near Newels Spring. This reflects the pattern of spring utilization already mentioned. The area is largely undisturbed by development. No on-site visit was made to this area but it may be assumed that the botanical profile would be similar to that of Eight Mile Spring. The area is considered of high cultural significance to Southern Paiute people.

Hilly Border Section Mitigation. Due to the high cultural significance of all areas in the Hilly Border Section and the undisturbed nature of the section, it is recommended that the IPP be redesigned to avoid springs and to minimize impacts to other cultural resources. Specifically, it is recommended that the IPP right-of-way be relocated to avoid the Mary's Hollow and Eightmile Spring areas by placing the line back onto the flats near the existing dirt road from T. 33 S., R. 18 W., section 29 (Bannion Spring, UT., 7.5') until T. 34 S., R. 18 W., section 5 (Eightmile Spring, UT., 7.5'). From this point the line should be redesigned to avoid the archaeological site 42MD833 at Eightmile Spring. For areas within the Hilly Border Section which will be impacted by the IPP, it is recommended (1) that a NAO be present during all groundbreaking activities, and (2) that discussions be undertaken to consider that certain plants of cultural importance be transplanted to the Kaibab Paiute and/or the Paiute Tribe of Utah reservation.

TABLE 42: Location of Indian Plants In IPP Utah Right-of-way

IPP LOCATION	USGS MAP	PLANT KEY (from TABLE)
DRUM MOUNTAINS SECTION		
Old River Area	Desert 1 NE, UT., 7.5' T. 15 S, R. 7 W, Sec. 24	n.i.*
Drum Mt. Flats Area	Fumarole Butte, UT., 7.5' T. 15 S, R. 9 W, Sec. 24	n.i.
SEVIER DESERT SECTION		
Sevier River Crossing Area	Rocky Knoll, UT., 7.5' T. 18 S, R. 9 W, Sec. 1	n.i.
Beaver River Area	Rocky Knoll, UT., 7.5' T. 19 S, R. 9 W, Sec. 20	n.i.
ESCALANTE DESERT SECTION		
Red Rock Reservoir Area	Preuss Valley 4 NE, UT., 7.5' T. 24 S, R. 11 W	n.i.
Milford Area	Preuss Valley 4 SE, UT., 7.5' T. 26 S, R. 11 W, Sec. 2	n.i.
Thermal Hot Springs Area	Lund 4 NW, UT., 7.5' T. 30 S, R. 12 W, Sec. 2	n.i.
Lund Area	Burns Knoll, UT., 7.5' T. 30 S, R. 13 W	n.i.
HILLY BORDER SECTION		
Mary's Hollow Area	Bannon Spring, UT., 7.5' T. 33 S, R. 18 W, Sec. 26	3;23;29
Eightmile Spring Area	Eightmile Spring, UT., 7.5' T. 33 S, R. 18 W, Sec. 29	1;2;4;5;6;7;8; 9;10;11;12;13; 14;15;16;17; 18;19;20;21; 22;24;25;26; 27;28;30

TABLE 42: continued

IPP LOCATION	USGS MAP	PLANT KEY (from TABLE)
Newels Spring Area	Eightmile Spring, UT., 7.5' T. 33 S, R. 19 W, Sec. 35	n.i.

Sources: Boyd field notes; Bunte and Stoffle field notes; Kearney and Peebles 1942: USGS maps provided by ACT.

* n.i. = no information available

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APPENDIX A: ACT LETTERS TO TRIBAL CHAIRMEN

act
APPLIED CONSERVATION TECHNOLOGY, INC.

223 EAST IMPERIAL HIGHWAY, SUITE 155
FULLERTON, CALIFORNIA 92635 ● (714) 738-8992

February 23, 1982

Mr. Travis Benioh, Chairman
Pauite Indian Tribe
Cedar City, Utah 84720

Dear Mr. Benoih:

Applied Conservation Technology (ACT), Inc. is providing environmental consulting services to the owners of the Intermountain Power Project, to coordinate cultural and ecological resources studies required prior to the construction of a transmission system that will begin in Delta, Utah, cross through Nevada and California to a terminal point near Adelanto, California.

We are hereby presenting ourselves in this Letter of Introduction that contains information describing the project, the studies we are required to conduct, and the advice we need from you.

Dr. Richard Stoffle, University of Wisconsin-Parkside, has been selected as our ethnographic subconsultant who will perform the required ethnographic resources field studies in Utah. Dr. Stoffle will be contacting you directly regarding the arrangements to be made for initiating a series of interviews with tribal members. Should you have any immediate questions, please call me at (714) 738-8992.

Yours truly,

Gary L. Dudley

Gary L. Dudley
Vice-President

GLD/rh

Enclosure

act
APPLIED CONSERVATION TECHNOLOGY, INC.
223 EAST IMPERIAL HIGHWAY, SUITE 155
FULLERTON, CALIFORNIA 92635 ● (714) 738-8992

February 23, 1982

Mr. Dan Murphy, Chairman
Goshute Indian Tribe
General Delivery
Ibapah, Utah 84034

Dear Mr. Murphy:

Applied Conservation Technology (ACT), Inc. is providing environmental consulting services to the owners of the Intermountain Power Project, to coordinate cultural and ecological resources studies required prior to the construction of a transmission system that will begin in Delta, Utah, cross through Nevada and California to a terminal point near Adelanto, California.

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Gary L. Dudley

Gary L. Dudley
Vice-President

GLD/rh

Enclosure

act
APPLIED CONSERVATION TECHNOLOGY, INC.

223 EAST IMPERIAL HIGHWAY, SUITE 155
FULLERTON, CALIFORNIA 92635 ● (714) 738-8992

February 23, 1982

Homey Secakuku
Ute Indian Tribe
Business Committee, Chairman
P. O. Box 190
Fort Duchesne, Utah 84026

Dear Chairman:

Applied Conservation Technology (ACT), Inc. is providing environmental consulting services to the owners of the Intermountain Power Project, to coordinate cultural and ecological resources studies required prior to the construction of a transmission system that will begin in Delta, Utah, cross through Nevada and California to a terminal point near Adelanto, California.

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Yours truly,

Gary L. Dudley

Gary L. Dudley
Vice-President

GLD/rh

Enclosure

cc: Mr. Robert Thomson (at his request)

act
APPLIED CONSERVATION TECHNOLOGY, INC.
223 EAST IMPERIAL HIGHWAY, SUITE 155
FULLERTON, CALIFORNIA 92635 ● (714) 738-8992

February 23, 1982

Mr. Bill Tom, Chairman
Kaibab Paiute Tribe
Tribal Affairs Building
Fredonia, Arizona 86022

Dear Mr. Tom:

Applied Conservation Technology (ACT), Inc. is providing environmental consulting services to the owners of the Intermountain Power Project, to coordinate cultural and ecological resources studies required prior to the construction of a transmission system that will begin in Delta, Utah, cross through Nevada and California to a terminal point near Adelanto, California.

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Yours truly,

Gary L. Dudley

Gary L. Dudley
Vice-President

GLD/rh

Enclosure

act
APPLIED CONSERVATION TECHNOLOGY, INC.

223 EAST IMPERIAL HIGHWAY, SUITE 155
FULLERTON, CALIFORNIA 92635 ● (714) 738-8992

February 23, 1982

Mr. Burt Wash, Chairman
Skull Valley Indian Tribe
P. O. Box 74
Stockton, Utah 84071

Dear Mr. Wash:

Applied Conservation Technology (ACT), Inc. is providing environmental consulting services to the owners of the Intermountain Power Project, to coordinate cultural and ecological resources studies required prior to the construction of a transmission system that will begin in Delta, Utah, cross through Nevada and California to a terminal point near Adelanto, California.

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Yours truly,

Gary L. Dudley

Gary L. Dudley
Vice-President

GLD/rh

Enclosure

APPENDIX B: AUFS LETTER TO TRIBAL CHAIRMEN

University of Wisconsin—Parkside
Kenosha, Wisconsin 53141
Telephone: AC 414 553-2658

Division of Behavioral Science

March 8, 1982

Dear Chairman:

By now you should have received a letter from Applied Conservation Technology (ACT) introducing themselves and the Utah Native American section of the Intermountain Power Project. In that letter they described a proposed power transmission line that potentially impacts Native American sacred sites in the state of Utah. Ute, Goshute, and Paiute peoples are being consulted as part of this study.

As the ethnographic consultant to ACT my role is to see that your tribal concerns are accurately and completely represented in the final report. That report will involve two sections (1) an ethnohistory of the local area and (2) a record of concerns expressed by Indian People.

In order to increase your tribe's awareness of the project, I am asking that you and your council appoint an Official Tribal Contact Representative (OTCR) to the study team. The OTCR will be paid for about 6 days work over a 5 month period to (1) attend a one day orientation session where the project will be discussed in detail, (2) help arrange for and participate in interviews with your tribal members, and (3) help arrange for a public meeting on your reservation at which the project will be described by study team members, and (4) review drafts of the report.

The OTCR serves as a resource person to the tribal government. The OTCR will know about the project in great detail and will be able to answer questions for the chairman, council, or other members of the tribe. Any questions the OTCR can not answer will be answered by contacting me directly. Although the OTCR does not speak for the tribe he or she does help them respond to the IPP transmission line proposal. I look forward to receiving a letter formally naming your OTCR.

Because of the short time we have to complete this complex project, I hope to begin interviewing by the 15th of March. Early interviews are expected to occur among Paiute and Goshute people. Interviews among the Ute people may occur in late April if that is appropriate. So far the following preliminary project schedule has been pulled together. Please take a look at it and see if the interviews and public meeting on your reservation fits your schedule.

Thank you for your attention to this important matter. I look forward to hearing from either by phone or by letter.

Sincerely yours,

Richard W. Stoffle
Director, AUFS

cc: ACT
Project Staff

APPENDIX C: TRIBAL RESPONSES TO PROJECT

Uintah and Ouray Agency
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, Utah 84026

(801) 722-5141

22 April 1982

Mr. Gary L. Dudley, Vice-President
Applied Conservation Technology, Inc.
223 East Imperial Highway, Suite 155
Fullerton, California 92635

Dear Mr. Dudley:

I received your Letter of Introduction, addressed to Mr. Homey Secakuku, Chairman, containing information on the Intermountain Power Project. I have reviewed the information and am somewhat confused.

The Ute Indian Tribe, Uintah and Ouray Agency, is located in Uintah and Duchesne Counties. According to the maps, your studies would not extend to this portion of Utah.

I am wondering if it might be more appropriate to correspond with the Piute Tribe to coordinate your studies.

Please notify me if I have interpreted this information incorrectly.

Sincerely,

for Margaret Grant

Jason Cuch
Director of Resources

RECEIVED APR 2 6 1982

Uintah and Ouray Agency
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, Utah 84026

(801) 722-5141

6 May 1982

Dr. Richard Stoffle
223 East Imperial Highway
Suite 155
Fullerton, California 92635

Dear Dr. Stoffle:

Reference is made to your request of April 14, 1982, regarding the arrangements to be made for initiating a series of interviews with the Ute Indian Tribal members (ethnographic study), although there are no ties that can be recognized at this time between your study area and the Uintah and Ouray Agency, Utah.

As I have previously indicated, this Tribe consists of a young generation. We do recognize the ancestral ties to the two regions; however, the Tribe reserves the opportunity to comment at any time as further review proceeds and as more information becomes available concerning the ethnographic field study in Utah.

We appreciate this opportunity to comment and will continue to work with you should that become necessary - it is likely that this may not occur.

Very truly yours,

UTE INDIAN TRIBE

Homer Secakuku
Ute Tribal Chairman

cc: Resources

Received AUFS - June 28, 1982

Uintah and Ouray Agency
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, Utah 84026

(801) 722-5141

June 22, 1982

Dr. Richard Stoffle
294 Tillent Hall
University of Wisconsin
Parkside
P.O. Box 2000
Kenoska, WS 53141

Dear Dr. Stoffle:

First of all, my apologies for not writing sooner in response to our conversation of June 4, 1982, concerning the ethnographic study and the areas in the northern point of U.S. 50, the bottom portion of Sevier Lake, Cricket Mountain, Pahvant Range, and that area known as Red Rock Knolls. These areas are of particular concern to the Northern Ute Indian Tribe of Utah. As far back as 1855, the Northern Utes of Utah have occupied and roamed in the above mentioned areas. The Tribe gathered a variety of wild plant foods and did some hunting and fishing in these areas. The gathering of food from this area was one of the Tribe's main means of survival. In fact, the name "Pahvant" comes from the Ute's word meaning "near water".

The preservation of culture and the construction activities associated with the proposed right-of-way could likely disturb any historical culture in these areas. As a mitigation measure, in association with the site identification of cultural and historical sites, would it be possible for a Tribal Preservation Officer to assist to maximize protection during the the construction. This Officer would be paid from mitigation funds, as the Tribe plans to have an Archeological and Historical Preservation Officer. The Preservation Officer would conduct an environmental archeological survey of the areas to be disturbed and would be available, as needed, during surface disturbances. While in the area, the Preservation Officer would determine the archeological values, as well as the significance of any discoveries and would be orriented on appropriate actions to take in relation to any findings.

Sincerely,

Jason Cuch
Director of Resources

JC/ma

cc: Homey Secakuku, Tribal Chairman

Received HUFS
May 24, 1982

KAIBAB PAIUTE TRIBE

TRIBAL AFFAIRS BUILDING ★ FREDONIA, ARIZONA 86022 (602) 643-5519

May 17, 1982

Dr. Richard W. Stoffle
IPP Study
University of Wisconsin-Parkside
Kenosha, WI 53141

Dear Dr. Stoffle:

We have studied the NΘVΘGANTΘ, Nevada Indians Comment on the Intermountain Power Project, Adelanto Bipole I Proposal and concur with the Study. We especially are pleased of your use of the OTCR team. To us, it is a significant indication of the kind of cooperation that can be achieved through proper approach.

Enclosed are copies of our Planning Committee's memorandum and our Tribal Resolution No. 12.

Sincerely,

Bill Tom
BILL TOM
Chairman

BT:jal

Enclosures

KAIBAB PAIUTE TRIBE

PLANNING COMMITTEE

TRIBAL AFFAIRS BUILDING ★ FREDONIA, ARIZONA 86022 (602) 643-55-14

May 17, 1982

M E M O R A N D U M

TO: Tribal Council

Through: Fred Drye

FROM: Planning Committee

SUBJECT: IPP (Intermountain Power Project)
Nevada Indians Comment on Adelanto
Bipole I Proposal

The Planning Committee appreciates the opportunity to review and comment on the Cultural Resources Assessment Study, NUVUGANTU, and feel that it is a well documented, in depth study of Southern Paiute History. With the personal involvement of Mr. Dan Bulletts leading the way as Kaibab's Consultant and Research Associate, this study includes his contribution of a great deal of factual information, of which it would otherwise lack, and become just another study based on alot of assumptions.

It pleases us a great deal that our Nevada Tribesmen have stated their concerns to the Study Team.

Our duty as Paiute people, then, is to support their concerns, and as there is no stopping the IPP, our participation is expected and desired as is mandated by The American Indian Religions Freedom Act and the National Environmental Policy Act. The Nevada groups have brought the following requests to the attention of the Study Team. Some of these may be negotiable and/or at least be presented as mitigating measures:

a) That IPP move or shift the transmission lines in accordance to the Paiutes request;

b) That IPP employ Paiute Cultural Resources people at intervals during the construction phase to oversee the archaeological projects.

c) That IPP and the BLM be in daily contact with Paiute groups through the Cultural Resources representatives and act on decisions relating to tribal artifacts and burials;

d) That IPP employ Paiute people on the construction crews;

e) That the IPP line stay away from springs, watering holes, and lakes;

f) That IPP and BLM, together, support the Paiute request for setting aside a Cultural Enhancement Site(s) and that these site(s) be closed to commercial users.

g) That IPP assist and support the Paiutes in their request for reduction of energy costs.

Accompanying this is a draft Resolution for your consideration and action. This Resolution, along with a cover letter must be sent to the Study Team as soon as possible.

The Utah portion of the Study is expected to be out June 18th. We will need to comment on that study as well and the same type of action will apply in that matter, as well.

Vivienne-Caron Jake

VIVIENNE-CARON JAKE
Planning Committee
Chairman

jal

KAIBAB
PAIUTE
TRIBE

TRIBAL AFFAIRS BUILDING ★ FREDONIA, ARIZONA 86022 (602) 643-55/4

RECEIVED AT AUFS: AUGUST 20, 1982

RESOLUTION

K-74-82

KAIBAB BAND OF PAIUTE INDIANS

WHEREAS, the Intermountain Power Project is a consortium of twenty-three Utah municipalities who have been authorized to build and operate a coal-fired, 3,000 megawatt steam electrict generating facility near Delta, Utah; and

WHEREAS, IPP is scheduled to begin construction of the generating plant on August 1982; and

WHEREAS, this transmission system is to convey electricity from four planned 750-mw generating units to the participants, the Utah System and the Southern California System; and

WHEREAS, the Southern California component is comprised of two 500 kV Direct Current (DC) Transmission Lines crossing portions of Southwestern Utah, Southern Nevada and Southern California; and

WHEREAS, the PUAXANT TUVIP, is a study that deals with Native American Cultural resources within the Utah Section of the corridor for the northern line in the Southern California System--the Intermountain-Adelanto Bipole I line; and

WHEREAS, the present study identifies certain Southern Paiute, Goshute and Pavant people across whose aboriginal territory the proposed IPP corridor for the IPP Intermountain-Adelanto Bipole I transmission line would be constructed; and

WHEREAS, tribal members of Southern Paiutes, Goshutes and Pavants, in the State of Utah have expressed their concerns regarding the value they place upon cultural resources they feel will be adversely affected by this development of high voltage transmission lines; and

WHEREAS, this present study includes the Southern Paiute, Goshute and Pavant people's recommendations for mitigating adverse impacts of the HVTL development upon their cultural heritage; and

WHEREAS, legal mandates require that Southern Paiutes, Goshutes and Pavants participate in such studies; and

WHEREAS, the Kaibab-Paiutes are a part of the Southern Paiute Nation, and are, thus, indirectly affected by this IPP construction;

NOW, THEREFORE, BE IT RESOLVED that:
the Kaibab-Paiute People wholeheartedly endorse and support the concerns and requests of the Utah Paiute and Goshute Tribes which is addressed in the report submitted 7/2/82, by the Applied Urban Field School, University of Wisconsin-Parkside to the Applied Conservation Technology Incorporated.

C E R T I F I C A T I O N

I hereby certify that the foregoing resolution was regularly adopted by the Kaibab-Paiute Tribal Council on July 28, 1982, at a special meeting at which a quorum was present with 5 in favor, 1 opposed, 0 absent pursuant to authority vested in the Kaibab-Paiute Tribal Council by Section 1 (k) of Article V of the Tribal Constitution and By-Laws, ratified by the Tribe on May 15, 1951, pursuant to Section 16, of the Act of June 18, 1934.

Bill Tom
BILL TOM, CHAIRMAN
KAIBAB-PAIUTE TRIBAL COUNCIL

ATTEST:

C. Claudina T. Benson
CLAUDINA T. BENSON, SEC/TREAS.
KAIBAB-PAIUTE TRIBAL COUNCIL

PROPOSAL FROM THE SOUTHERN PAIUTE NATION FOR A FULL SERVICE BIA AGENCY

INTRODUCTION

For too long, the members of the Southern Paiute Nation have had a relationship with the Bureau of Indian Affairs (BIA) marked by inadequate services, inappropriate interaction, and unacceptable neglect. The burden of dealing with BIA agencies that are far away and/or severely limited in the delivery of services have placed a tremendous handicap on our quest for self-sufficiency and positive growth.

This deplorable situation can no longer be tolerated and the barriers placed in the Tribes' path by the BIA must be removed to insure our socio-economic future. The members of the Southern Paiute Nation have met informally on several occasions and we have determined that a full service agency must be created in our area to meet both the individual and the collective needs of our tribes.

Therefore, we, the Southern Paiute Nation, consisting of:

- -the Kaibab Paiute Tribe of Arizona, established by an Executive Order in 1906; and
- -the Moapa Band of Paiute Indians of Nevada, established by an Executive Order in 1874; and
- -the Las Vegas Paiute Tribe of Nevada, established by an Executive Order in 1911; and
- -the Utah Paiute Tribe, established by an Act of Congress in 1980;

do hereby petition the Phoenix Area Director and the Acting Director of the Western Regional Service Center to begin the process of creating a full-service BIA agency in our centralized area.

STATEMENT OF PROBLEM

The extreme distances between ourselves and our respective agencies and the travel expenses incurred by tribal representatives and BIA employees are costly, ineffective, and inefficient.

In addition, the Southern Paiute Nation has suffered severe side effects as a result of the extreme distances that must be traveled.

The Southern Paiute Nation is denied the opportunity of having the same kind of informal relationship that exists between the other tribes located closer to their agencies. They can sit down for long extended visits across from the desk of a BIA employee and completely familiarize that individual with their problems. The agencies can become quite involved with providing the technical assistance to these other tribes and assuring them their programs and/or problems receive the highest priority. All of this can be accomplished at a minimal cost to the other tribes and the agencies.

The Southern Paiute Nation does not have this ideal working relationship with the agencies nor can we afford it. This informal working opportunity is virtually non-existant to us. All communications between us and our agencies must be done on a formal level. We must either telephone long distance or write letters to explain our problems. This opens the door for ambiquity and leads to the poor delivery of services to our tribes. Also, because of the extreme distances, we are continually confronted with frequently called meetings at our agencies, cancelled meetings, changed agendas, budget constraints, hazardous weather conditions and transportation limitations.

Since these other tribes condescendingly manipulate the agencies' time, we are not recognized as important but rather as foster children. Our tribal needs and programs are dealt with unsympathetically and unempathically. Consequently, a great schism has occured between the Southern Paiute Nation and the other tribes under the same agencies. This will greatly erode even more with the current budget cuts undergoing in BIA if something is not done immediately to correct this situation.

Also, our unique culture and heritage as Southern Paiute prople are being seriously threatened. We are not allowed to function as one entity because we have been divided into three different BIA agencies. Not only are we culturally one tribe, but we are socio-economically bounded together.

Since travel to one another's reservation or homesite is within a fairly easy commutative distance, we share and participate together in tribal ceremomies, social events and offer assistance in time of need. This places us in a position to be sympathetic and empathic with one another's problem. If we were under the same agency rather than three separate ones, we would be more able to support each others' concerns and programs.

GOALS AND OBJECTIVES

The foremost principal goal of the Southern Paiute Nation is to achieve self determination for our tribal governments and people. We feel several key result areas must be met before we can start making favorable strides towards accomplishing this endeavor.

1. Economic Self-Sufficiency:

   This is one of the most important key result areas, without it we could never fully obtain self determination but rather we would probably rely heavily upon the federal government and other agencies for funding. Tribal agriculture, private and livestock enterprises must be explored as possible areas for obtaining tribal financial independance thru a viable economy.

2. Land Base:

   Because of a political whim the Southern Paiute Bands of Utah have had what was left of their ancestral lands unjustly stripped away from them. All our people must have a land base. This would give us the essential tool we need to create and strive for our own economic self-sufficiency and betterment. Also, it is imperative we have protection for our tribal lands and/or minerals and natural resources. Therefore, the restoration and protection of our land bases are vital to our survival and dignity.

3. Strengthen Tribal Government:

   Our tribal governments must be strengthened to solidify our own political autonomy. As a prerequisite, we must obtain the necessary managerial and administrative skills to carry out our tribal responsibilities in an efficient and effective manner.

METHODS AND APPROACH

Based on our goals and objectives in conjunction with the spirit and direction that the BIA has undertaken in its newly conceived realignment roles for the agencies, we are in agreement with the tenor. The BIA has written for the record:

> "The role of the Agency Level is to assist tribes in the day-to-day delivery of necessary and appropriate government services to their members. Agencies are responsible for counsel, technical expertise, and personnel to assist in the tasks of public works development and maintenance, social services delivery, enforcement activities, economic programs and projects, and education."

These declarative services, as we have pointed out, are virtually nonexistant to the Southern Paiute Nation. We therefore recommend to the BIA some positive methods that can help us to receive the assitance from the BIA which conforms to the outlines responsibilities stated in the "Bureau of Indian Affairs Realignment Roles and Responsibilities" handout.

A full service BIA agency must be established in either St. George or Cedar City, Utah. Both of these areas are ideal to the Southern Paiute Nation because they are centralized and easily accessable by all our people and tribal personnel.

All the BIA's trust responsibilities, contracting and financial obligations should be transferred from our respective agencies and placed under jurisdiction of this newly created agency.

This agency should be staffed by the required number of personnel to carry out efficient and effective day-to-day services to our programs. All the required positions for this agency should be made competive, thus assuring the most capable and competent staff. This agency's personnel roster should consist of the following: a superintendant, an administrative officer, a realty specialist, a tribal operations specialist and a land operations specialist. These positions are necessary to uphold the BIA's trust responsibility to the Southern Paiute Nation and assuring us of the necessary technical assistances.

Also, to coincide with the socio-economic development goals of the Southern Paiute Nation, the agency should be staffed by the following required positions: an employment assistance officer, a social service officer and a comparable secretarial staff to accomodate the work required to operate an effective agency on a day-to-day basis.

SUMMARY

In summary, we respectfully request that the Phoenix Area Office, the Western Regional Service Center and the Central Office do everything in their power to transfer jurisdictional authority from our respective agencies and place them under a newly establish full service agency designated for the Southern Paiute Nation. This will help to eliminate most of our problems and help to put us on the correct path leading to tribal self-determination.

Based on the premise of the nationwide Bureau of Indian Affairs' realignment concept and since, this offers the perfect opportune moment, the Southern Paiute Nation, in the spirit of co-operation, recomends to the Bureau of Indian Affairs this positive solution to help remedy our continual problem of receiving poor and inadequate delivery of agency services to our tribes.

SIGNATURES OF TRIBAL CHAIRMAN (S)

Bill Tom
BILL TOM
KAIBAB PAIUTE

Preston Tom
PRESTON TOM
MOAPA PAIUTE

Billy J. Frye
BILLY FRYE
LAS VEGAS PAIUTE

Travis Benion
TRAVIS BENION
PAIUTE IND. TRIBE OF UTAH

THE PAIUTE INDIAN TRIBE OF UTAH

600 North 100 East Cedar City, Utah 84720 (801) 586-1111

June 23, 1982

Dr. Richard Stoffle
IPP Study
University of Wisconsin-Parkside
Kenosha, WI 53141

Dear Dr. Stoffle:

We have studied the NƁVƁGANTƁ, Nevada Indians Comment on the Intermountain Power Project, Adelanto Bipole I Proposal and have passed Tribal Resolution Number 82-21 which is enclosed. This resolution contains our suggestions for mitigation of the adverse impacts to the Nevada part of the study.

If you have any questions please call.

Sincerely,

Marguerite Lane
Vice-Chairperson

ML/RJ:mb

THE PAIUTE INDIAN TRIBE OF UTAH

600 North 100 East Cedar City, Utah 84720 (801) 586-1111

RESOLUTION NO. 82 - 21

Subject: Intermountain Power Project

Whereas: Public Law 96-227 entitled the "Paiute Indian Tribe of Utah Restoration Act" was signed into law by President Jimmy Carter on April 3, 1980, and;

Whereas: The Tribal Council is recognized by the Secretary of the Interior as being the duly elected official governing body of the Tribe and;

Whereas: The NƁVƁGANTƲ, is a study that deals with Native American Cultural resources within the Nevada Section of the corridor for the northern line in the Southern California System--the Intermountain-Adelanto Bipole I line; and

Whereas: The present study identifies certain Southern Paiute people across whose aboriginal territory the proposed IPP corridor for the IPP Intermountain-Adelanto Bipole I transmission line would be constructed; and

Whereas: Tribal members of Southern Paiutes in the State of Utah have expressed their concerns regarding the value they place upon cultural resources they feel will be adversely affected by this development of high voltage transmission lines; and

Now therefore be it resolved: That the Tribal Council of the Paiute Indian Tribe of Utah does hereby recommend the following for mitigation of the adverse impacts of the IPP in Nevada on the Southern Paiute Nation:

A) That any burial grounds/sites, traditional sacred areas, ancestoral artifacts (such as local clays and plants), battle grounds, campsites and homesites be left untouched and the transmission lines moved or shifted.
B) That IPP employ a Paiute Cultural Resource Adviser during the construction to oversee the archaeological projects.
C) That the IPP and BLM remain in contact with all Paiute groups before taking any action relating to American Indian artifacts.
D) That IPP employ Paiute Indians during the construction.

C E R T I F I C A T I O N

I hereby certify that the foregoing resolution was fully considered by the Tribal Council at a duly held meeting at Cedar City, Utah at which a quorum was present

and that same was passed by a vote of 3 in favor, 0 opposed, and 0 abstained, this 14 day of June 1982.

Marguerite Lane
Vice-Chairperson

Geneal Anderson, Secretary

THE PAIUTE INDIAN TRIBE OF UTAH

600 North 100 East Cedar City, Utah 84720 (801) 586-1111

August 3, 1982

Dr. Richard W. Stoffle
Applied Urban Field School
Talent Hall 294 Box 2000
University of Wisconsin
Kenosha, Wisconsin 53141

Dear Dr. Stoffle:

After reviewing the PUAXANT TƟVIP, Utah Indians Comment on the Intermountain Power Project, Adelanto Bipole I Draft. The Paiute Indian Tribe of Utah would like to amend the section on Mitigation, recommendations to include the following:

1. Mitigation in General:
   The major concern of the Paiutes is still to protect the Spring and its associated resources that occur in the Hill Border Lands. The only acceptable mitigation for this area is to move the IPP right of - way out of the hills. The recommendation is to move it to the dirt road that parrallels the area.
2. Request a Native American Observer NAO.
3. That IPP and BLM be in daily contact with Paiute groups through the Cultural Resources Representatives and act on decissions relating to tribal artifacts and burials.
4. That IPP employ Paiute people on the construction crews, in all phases.
5. That IPP assist and support the Paiutes in their request for reduction on energy cost.
6. All artifacts removed from the area should be turned over to the Paiute Indian Tribe through the NAO or cultural resource person. Request funding to build/acquire suitable museum facilities to house Paiute artifacts.
7. Request assistance in obtaing permission and in making selection of area for reburial operations, if it become necessary to move burial sites.

The Tribal Council reaffirms Resolution 82-21. If you have any questions, please call.

Sincerely,

Travis N. Benioh, Chairman

Attest:

Ivin Benn

APPENDIX D: UTAH SURVEY AND COVER LETTER

University of Wisconsin—Parkside
Box No. 2000
Kenosha, Wisconsin 53141

Assistant Chancellor
Administration & Fiscal Affairs
Telephone 414 553-2141

June 9, 1982

Greetings:

A group of electrical companies are asking for permission to build a large power line through lands that once belonged to Indian People. Before the Bureau of Land Management can give that permission, studies must record what effects the power line may have on Indian cultural resources. This survey is one way for you as an Indian person to make your feelings known.

Since mid-February of 1982 we have talked with tribal governments of the Paiute Tribe of Utah, the Confederated Tribes of the Goshute Reservation, the Skull Valley Goshutes, the Kaibab Paiute Tribe, and the Ute Tribe. Public meetings have been held at Cedar City, Ivapah, and Kaibab. We have also talked with people who know about the study area. Unfortunately, time has not allowed us to visit with every member in each tribe. This survey is a way to provide each adult tribal member an opportunity to comment.

Please take a few minutes to look at the enclosed map. The proposed route of the power line is marked with short dashes (- - - - - -). In the south it begins at the Utah-Nevada border near Modena on Highway 56. Then it moves north-east past the southern tip of the Needle Range and the Wah Wah Mountains. From Lund it passes to the north being located about half way between the mountains on the west side and the Union Pacific rail road tracks on the east side. It ends at the power plant north of Delta.

Although no reservations are crossed, all the land once belonged to Indian people. Are there things of importance to you along any portion of this route? Please fill out the enclosed survey so that we may record your comments.

The map is yours to keep. If you wish to help with this survey contact your tribal representative to this project. His or her name is listed on the last page of the survey. Then, as soon as possible, mail the survey form in the enclosed envelope.

Thank you,

Richard W. Stoffle
Director, A.U.F.S.
(414) 553-2499

1. The following Indian cultural items were mentioned by Paiute, Pahvant Ute, and Goshute peoples during earlier interviews. Next to the list of items that may be influenced by the power line is a space. Please circle the number that indicates how concerned you are about each item.

Cultural Items	My Degree of Concern is		
	No Concern	Some Concern	Much Concern
Basket Plants	1	2	3
Medicine Plants	1	2	3
Food Plants	1	2	3
Rock Carvings-Paintings	1	2	3
Clay or Rock Mines	1	2	3
Religious Areas	1	2	3
Burial Sites	1	2	3
Small Ground Animals	1	2	3
Large Ground Animals	1	2	3
Birds	1	2	3
Trails - Shrines	1	2	3
Springs	1	2	3

If you think there are other cultural items that may be changed by the building of this power line, please record them in the space below.

2. The following is a list of English names for places where Indian people lived. The place names are listed from the bottom to the top of the enclosed map. Each of these places will be crossed or be close to the route of the power line. Please read a place name and then circle to the right just how concerned you would be if the power line passed through that place.

Indian Places	My Degree of Concern is		
	No Concern	Some Concern	Much Concern
Modena Reservior area	1	2	3
Hamblin Valley	1	2	3
Eight Mile Spring	1	2	3
Needle Range	1	2	3
Wah Wah Mountains (southern tip)	1	2	3
Lund (north and west to mountains)	1	2	3
Escalante Desert	1	2	3
Star Range	1	2	3
Topache Peak	1	2	3
Rocky Range	1	2	3
Red Rock Knoll	1	2	3
Cricket Mountains	1	2	3
Beaver River	1	2	3
Sevier Lake	1	2	3
Sevier River	1	2	3
Sevier Desert	1	2	3
Carr Lake	1	2	3
Swasey Wash	1	2	3
Whirlwind Valley	1	2	3

Little Drum Mountains	1	2	3
Drum Mountains	1	2	3
Topaz Slough	1	2	3
Baker Hot Springs	1	2	3

NOTE: Are there other places you are concerned about? If so, list them here:

Now I would like to ask you just a few more short questions about this proposed power line. Please write you answers in the space bwteeen questions or on the back of the page.

3. How do you feel about the proposal to build more transmission lines through your traditional lands?

4. What are your feelings when you see large power lines and their towers crossing the desert valleys or mountians?

5. If Indian tools or living sites are uncovered by power line construction what should be done with them?

6. If the burial sites of Indian people are uncovered by power line construction what should be done with them?

7. Do you believe that Indian peoples' opinions recorded in this study will be heard and listened to by the utility companies?

If I may, I would now like to ask a few background questions.

8. Where do you now live? _____ On a reservation or off a reservation?

9. How long have you been in the area you now live in?

10. Did your parents live in this area or in a different one?

    If it was a different area, where did they live?

11. What is your occupation?

12. What year were you born? _____

Thank you for taking the time to answer these questions. If you would have any questions concerning this survey, please contact me:

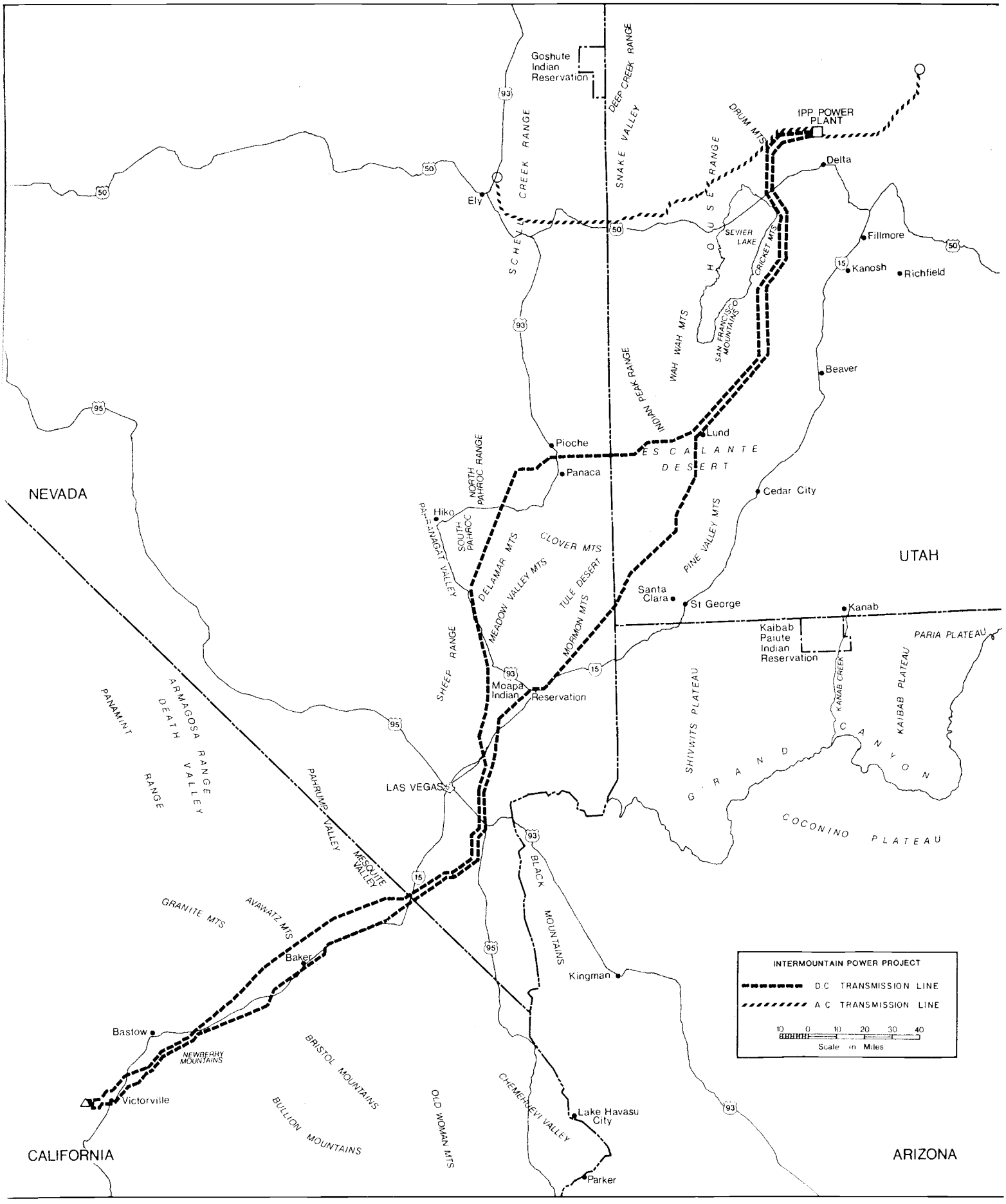
by phone at: (414)-553-2499

or write:
Dr. Richard Stoffle
294 Tallent Hall
University of Wisconsin-Parkside
Box 2000
Kenosha, WI 53141

or speak to your own tribal representative:

Earl Baker - Goshute
Ivan Benn - Paiute Tribe of Utah
Vivienne -Caron Jake - Kaibab Paiute Tribe

or discuss the project with your tribal leaders, who will receive a copy of the report for their comments.


Goshute Indian Reservation
DEEP CREEK RANGE
SNAKE VALLEY
DRUM MTS
IPP POWER PLANT
Delta
Ely
SCHELL CREEK RANGE
HOUSE RANGE
SEVIER LAKE
CRICKET MTS
Fillmore
Kanosh
Richfield
SAN FRANCISCO MOUNTAINS
WAH WAH MTS
INDIAN PEAK RANGE
Beaver
Lund
Pioche
ESCALANTE DESERT
Panaca
NORTH PAHROC RANGE
SOUTH PAHROC
Hiko
PAHRANAGAT VALLEY
NEVADA
DELAMAR MTS
CLOVER MTS
MEADOW VALLEY MTS
TULE DESERT
MORMON MTS
PINE VALLEY MTS
Cedar City
UTAH
Santa Clara
St George
Kanab
Kaibab Paiute Indian Reservation
PARIA PLATEAU
SHEEP RANGE
Moapa Indian Reservation
SHIVWITS PLATEAU
KANAB CREEK
KAIBAB PLATEAU
GRAND CANYON
PANAMINT RANGE
ARMAGOSA RANGE
DEATH VALLEY
LAS VEGAS
PAHRUMP VALLEY
MESQUITE VALLEY
COCONINO PLATEAU
BLACK MOUNTAINS
GRANITE MTS
AVAWATZ MTS
Baker
Kingman
Bastow
NEWBERRY MOUNTAINS
BRISTOL MOUNTAINS
BULLION MOUNTAINS
OLD WOMAN MTS
CHEMEHUEVI VALLEY
Lake Havasu City
Victorville
Parker
CALIFORNIA
ARIZONA
INTERMOUNTAIN POWER PROJECT
D C TRANSMISSION LINE
A C TRANSMISSION LINE
10 0 10 20 30 40
Scale in Miles