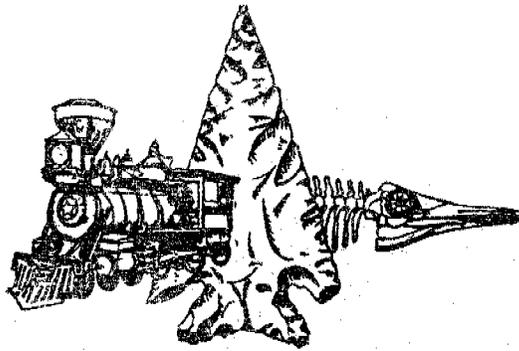


**American Museum of Natural  
History, New York**

**Bureau of Land Management  
Nevada**



# **Cultural Resource Overview Carson City District West Central Nevada**

**Lorann S.A. Pendleton  
Alvin R. McLane  
David Hurst Thomas**

**CULTURAL RESOURCE SERIES No.5  
Part 1  
1982**



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# Cultural Resource Overview Carson City District West Central Nevada

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September, 1982

## FORWARD

The Cultural Resource Overview Carson City District, West Central Nevada by Lorann S.A. Pendleton, Alvin R. McLane and Dr. David Hurst Thomas represents a jointly funded effort between the Carson City District Office of the Bureau of Land Management and the American Museum of Natural History (AMNH) of New York. It is the third in a series of overviews addressing cultural resources in various regions of the state. The Bureau contract was administered by Brian Hatoff, BLM Carson City District archaeologist; editing for publication of this volume was by the undersigned and the American Museum of Natural History.

As is common of federally supported data syntheses, the geographical scope of the present overview is confined to the Bureau's Carson City District administrative unit in western Nevada. The study addresses the entire span of human occupation in this region, a part of the semi-arid Great Basin province noted for ancient extensive lakes, perennial streams, abundant minerals and a relatively rich variety of biotic resources.

An important result of this effort was clarification of site record information held in the region's major repositories. The earliest archaeological research in Nevada occurred in the Carson City District and a vast quantity of work subsequently followed, sponsored by numerous organizations. Many changes in site record systems were introduced during the early decades of field work. It is hoped the present study has, in the course of compiling the data into a single comparative framework, led to the transformation of an old, fragmented data system into a more unified whole.

It should be noted that, in addition to reviewing extant prehistoric and historic data, this overview provides much new information on the history of western Nevada. Many previously unrecorded historic sites have been listed and should aid future research in the area.

In summary, this document should pull together a vast amount of past research information for both the professional and the generally interested reader, and leave the records in a more functional state.

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Fredric F. Petersen, Staff Archaeologist  
BLM Nevada State Office  
Brian Hatoff, District Archaeologist  
BLM Carson City District  
September, 1982

CULTURAL RESOURCE OVERVIEW  
CARSON CITY DISTRICT  
WEST CENTRAL NEVADA

By

Lorann S. A. Pendleton,

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and

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with contributions by

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## EXECUTIVE SUMMARY OF THE CARSON CITY DISTRICT

A synthesis of cultural resource information within the Carson City District was compiled from several sources, including museums, universities and governmental repositories as well as several colleagues currently concerned with cultural resource research in this area. Sources for primary data are summarized in the appendices. An exhaustive annotated bibliography was prepared for use in future research.

MAJOR FOCUS. In preparing a report of this nature, it is necessary to make certain procedural decisions which will influence the tone of the final product. We think it important to make these strategic decisions explicit from the outset so that users of this report understand our biases.

This report addresses both prehistoric and historic land-use patterns, each involving rather different sets of data. A prodigious amount of research has already been directed at the archaeological record of the District; to date, we have recorded approximately 2500 prehistoric sites.

From the outset, we decided that our most useful contribution would be to comb the relevant site files, attempting to bring some order into these site inventory records. Quite frankly, these records were often overlapping and confusing. We found, for instance, that the same site had been assigned multiple designations; in fact, one site had actually been assigned 27 informal names and site numbers. Conversely, we found several cases in which one number had been assigned to more than one site. Thus our first priority, as we perceived it, was to clarify the site nomenclature and recordation which had accumulated at several institutions over the past fifty years of archaeological research. No such comprehensive record search had been previously undertaken for this area.

Our second priority for the prehistoric section was to synthesize the prehistory of the Carson City District. Although a large body of literature exists on this general subject, most reports are strictly descriptive, primarily focused on the exigencies of cultural resource management. Although our synthesis is not definitive, it does provide a comprehensive summary of what is known about the prehistoric archaeology of the area, highlighting certain areas for future research and critical conservation efforts.

The historic part of this report posed a rather different set of problems. Scores of volumes are already available summarizing the rich history of Nevada. Although there are certain conflicts within these secondary sources - particularly with regard to exact dates and place names - we feel that the overall historic picture of the area is rather well known; our objective here was merely to provide a brief summary of this knowledge, buttressed by an extensive annotated bibliography.

The major gap in the historic period data base is the actual location and recording of key historic sites. Most historians to date have concentrated their efforts on library research and synthesis. Almost no effort has been invested in the actual, on-the-ground location of important historic sites. Because of this, we thought it prudent to attempt to upgrade the quality of historic site recording in the Carson City District. The tables in this report provide detailed information on nearly 900 historic sites in this area, many of which were previously unrecorded. Although these site tables are by no means exhaustive, they do provide considerable previously unavailable information. Various appendices to the historic section contain detailed primary references for the area.

Taken together, these two complementary approaches should provide the user with a detailed overview of the known cultural resources within the District.

THE PREHISTORIC RECORD: A Brief Overview. Although the evidence is extremely sparse, there are data which suggest that people first arrived in the Carson City District some 10,000 or 12,000 years ago. Several diagnostic Great Basin Stemmed and Concave base series points have been found on the shores of Washoe Lake, at the edge of Teels Marsh, at sites in the Carson Sink, and at others near Reno. Although no stratified sites have been reported for this early period, an apparently early stemmed point was found at the Bordertown site at Hallelujah Junction.

The earliest radiocarbon date for cultural materials in the Reno ES comes from Spooner Lake, suggesting an initial occupation at 5100 B.C. Relatively few sites have been recorded for this so-called "Altithermal period", dating from about 5000 B.C. to 2500 B.C., and there is some suggestion that the Sierra may have provided a high altitude refuge during this presumably adverse climatic interval. Sites from this time period in the Reno ES belong to the Spooner Phase, and are thought to be characterized by Humboldt and Pinto series projectile points. At least four dozen sites can be attributed to the Spooner Phase, a decided increase in site density over the previous period, but far fewer sites than are found in subsequent periods. Walker and Lahontan ES's contain about 50 sites ascribed to this period (termed Carson Phase), including Hidden Cave in the Carson Sink with initial use some 5000 years ago, but with the bulk of deposits dated between 2500 B.C. and 1600 B.C.

There appears to have been a major settlement pattern shift in the Basin by 2500 B.C., and all major ecological zones were inhabited by this time. This period coincides with the so-called "Medithermal" period, during which the climatic conditions apparently ameliorated somewhat over the Altithermal period, approximating the modern climatic conditions. In fact, during the Martis/Lovelock phase (from 1500 B.C. to A.D. 500), site density seems to be higher than in any other aboriginal period, suggesting

that the carrying capacity of the area was greater then than during ethnographic times. The artifact inventory for this period is diverse, including a variety of projectile point styles, scraper types, knives, drills, manos, metates, portable mortars and pestles. Basalt is the preferred raw material for chipped stone tools - particularly in the Reno area - but this is probably a reflection of the fine-grained tool stone locally available. More than 150 archaeological sites are recorded in the District for the Martis/Lovelock phase.

The subsequent Kings Beach/Late Prehistoric Period begins about A.D. 500, lasting with relatively few changes into ethnographic times. Distinct differences exist in the archaeological signatures of the Martis and Kings Beach complexes in the Reno ES, particularly relative to raw materials, tool size and the nature of grinding implements. Although artifact density appears to decrease during Kings Beach times, site density remains quite high. Kings Beach components have been recorded at more than 75 sites in the Reno ES, although many sites contain mixtures of both Martis and Kings Beach diagnostic artifacts. It has been suggested that the decrease in artifact density may reflect a less stable resource base and decreased reoccupation of traditional sites.

The Washoe lived in the Reno ES during the ethnographic period, and several excellent summaries are available describing their lifeway. Approximately 125 prehistoric and historic Washoe sites have been recorded, reflecting a seasonal round based on plant and animal exploitation, and bordering on semi-sedentary existence in areas of abundant natural resources.

The Late Prehistoric period in the Walker and Lahontan ES's are termed the Underdown and Yankee Blade phases. The Underdown Phase is characterized by Rosegate series points and varieties of bone and ground stone tools. One of the type sites for the period, Wagon Jack Shelter, is located within the District. In addition, the Walker and Lahontan ES areas contain another 40 sites which are safely ascribed to this period (A cautionary note: site totals do not accurately reflect site densities for any period, as the bulk of the collections have not been adequately analyzed).

The Northern Paiute occupied the Walker and Lahontan areas during the ethnographic period. Approximately 45 prehistoric and historic Paiute sites have been recorded, reflecting diverse adaptations focused around limnomobile patterns.

THE HISTORIC RECORD: A Brief Overview. The location of historic sites in the District is patterned by several key activities: mining/milling, ranching/farming, transportation, exploration and militarism, burial and ritual, urbanism and ethnic grouping. It is suggested that predictive models be developed to more precisely pinpoint site patterns in the District.

The historic period can be said to begin with the explorations of Jedediah Smith in May 1827. John C. Fremont traversed the region during the winter of 1844, and the first overland emigrant parties came through the District during the same year. In 1846, the Donner-Reed party was trapped by early winter snow at Donner Lake, following their lingering stay in the Truckee Meadows.

In 1849 the news of gold discovery flooded the District with emigrants. Gold was discovered in Gold Canyon in 1850, and the Territory of Utah was created, which included all the lands now within the State of Nevada. Genoa, established in 1851, became the first settlement in the State of Nevada. In 1854 several trading posts, including Asa Kenyon's, were constructed, and Carson County was created. The Mormon settlers in Nevada were recalled three years later to Salt Lake City to support the Mormon cause against the United States Government. The first newspaper in Nevada, the Territorial Enterprise, began publication in Genoa in 1858.

Early settlements sprang up in Smith and Mason Valleys, where cattle ranching began in 1859. This is also the year Virginia City was established following the discovery of the Comstock Lode.

In 1860 the "rush to Washoe" began, bringing hundreds, and then thousands of settlers to the District in search of gold and silver. Fort Churchill was established, and not coincidentally, this was also the period of the Pyramid Lake Indian Wars.

The State of Nevada was admitted into the Union in October of 1864, and the Central Pacific Railroad was completed to the new town of Reno in 1868.

The mining towns of the Comstock reached a peak of population (about 17,500) prior to the 1875 fire which destroyed much of the Virginia City business district. By 1880, the Comstock population fell to 11,000, and by 1900 there remained only 2700 souls.

Following the decline of the Comstock, Reno and Carson City became the major population centers. The University of Nevada, originally established in Elko, was moved to Reno in 1885.

The greatest impact on the Carson Desert region came in the early 1900s with the establishment of the Newlands Reclamation Project. This massive public works project changed the settlement pattern of Nevada by opening vast stretches of land to farming and ranching.

These and other activities left a variety of historic resources, and the BLM has taken a positive step towards their management by commissioning the present study. Comprehensive field studies may be the next step toward the identification and evaluation of local historic resources, geared toward the development of predictive models for historic land use.

## CULTURAL RESOURCES OVERVIEW ORIENTATION

PURPOSE. The objective of this project is to synthesize the cultural resource data within the Carson City District of the Bureau of Land Management. This report will facilitate identification, evaluation, and protection of prehistoric and historic cultural resources within BLM jurisdiction. The mandate for this overview stems from the Antiquities Act of 1906, the National Environmental Policy Act of 1969, the Indian Religious Freedom Act of 1978, Executive Order Number 11593, the Federal Land Policy and Management Act of 1976, and the National Historic Preservation Act of 1966 with amendments in 1980.

SCOPE OF PROJECT. The purpose of the Class 1 Overview is to provide information within a regional framework to be used as a foundation for cultural resource significance assessments. The Overview will be used to prepare subsequent assessments and statements within the management framework of the Bureau.

The study area encompasses the entirety of five million acres within the Carson City District boundaries, regardless of land ownership (see figs. 1 - 3). Located in the western portion of Nevada and small portions of eastern California, the District includes all of Douglas, Ormsby, Lyon, Storey, and Mineral Counties and portions of Washoe, Churchill, and Nye Counties in Nevada and Lassen, Alpine, and Plumas Counties in California.

The data in this report are presented in several formats varying in focus and specificity, including the overview narrative and accompanying appendices. Together, these elements provide a review of previous archaeological research within the District, a culture history for the area, and a summary of lifeways and land-use patterns from prehistoric times into the historic period.

The Cultural Resource Overview contains eight sections. The first section delineates the methods and personnel used for this project. The second section includes a brief introduction to the environmental setting of the District and provides a background for understanding prehistoric and historic cultural impacts on the land. Section three includes a summary of the prehistory of the area, emphasizing culture chronology and reconstruction of prehistoric lifeways. Finally, section three includes a summary of the ethnographic and contemporary native cultures within the District boundaries, emphasizing changing settlement patterns, land-use, migratory patterns and land tenure. Section four summarizes previous archaeological research within the District, and provides a historical perspective for the current research orientations. Section five details current research designs and offers suggested management options. Section six consists of the historic narrative, including a synthesis of contemporary historic research designs, and an outline of the historic themes in western Nevada. An annotated bibliography follows the narrative as section seven. Finally, section eight consists of a series of tabled

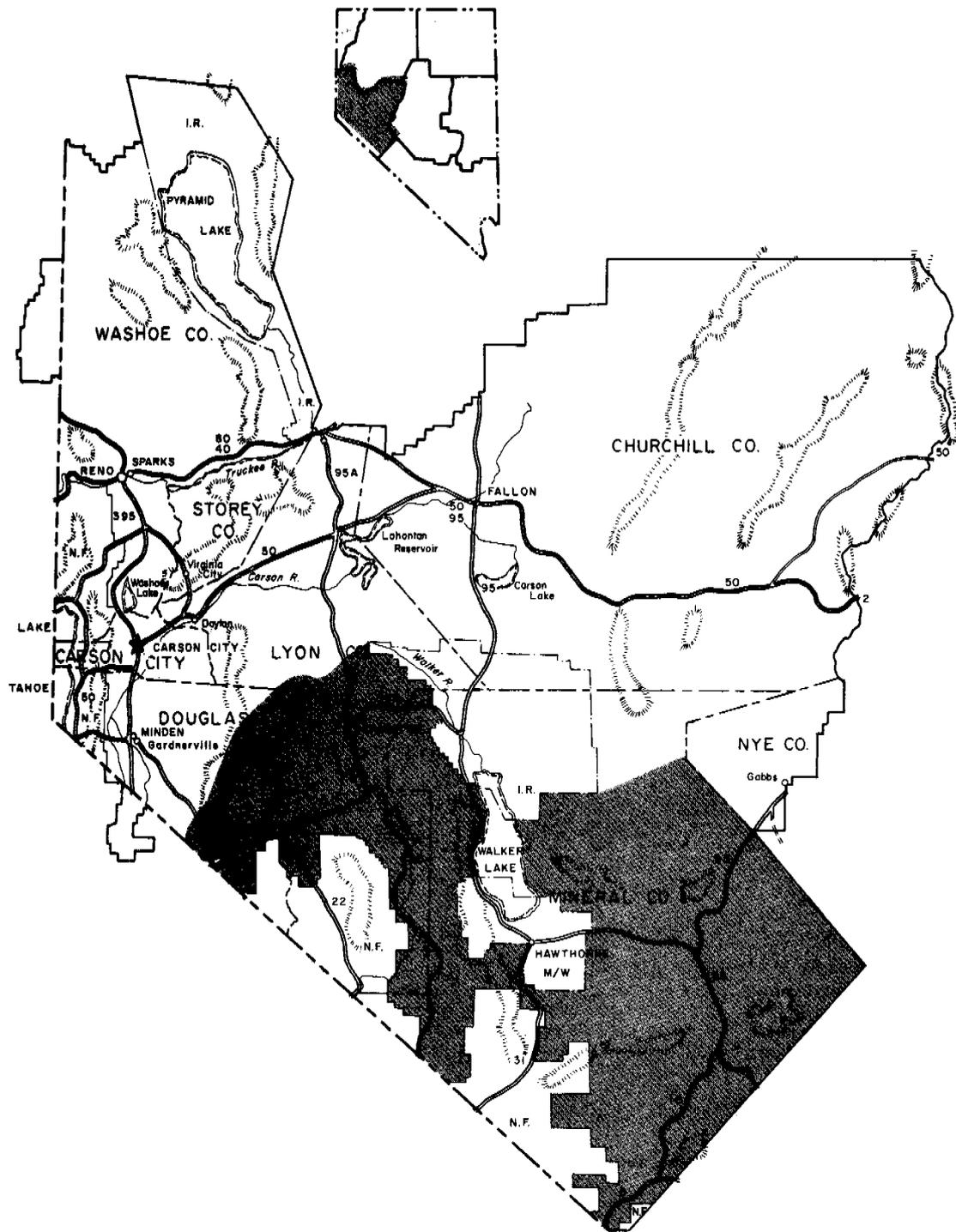


Figure 1. **CARSON CITY DISTRICT**  
**Walker Environmental Statement**

# LAHONTAN RESOURCE MANAGEMENT PLANNING AREA

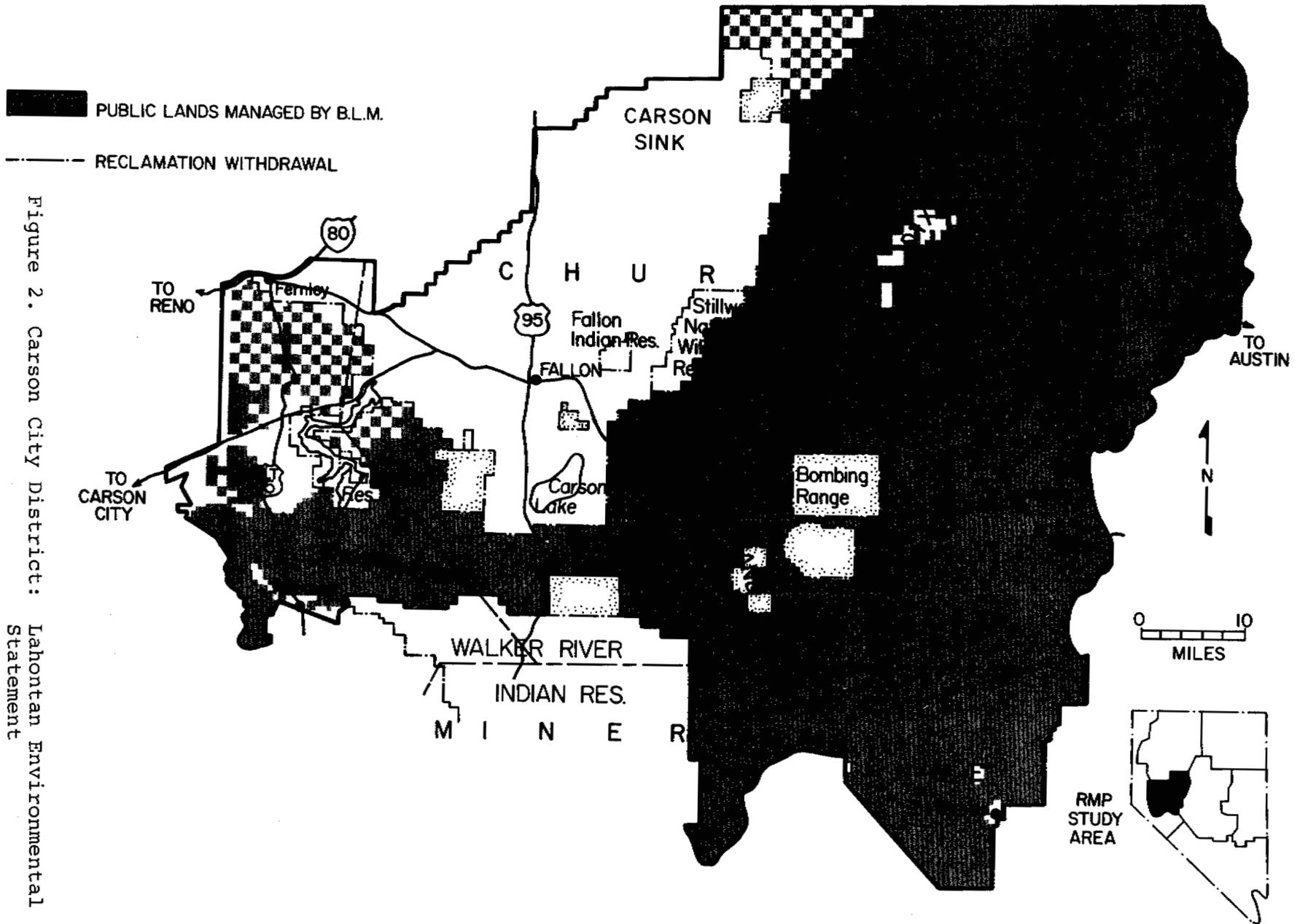


Figure 2. Carson City District:  
 Lahontan Environmental  
 Statement

# RENO PLANNING AREA

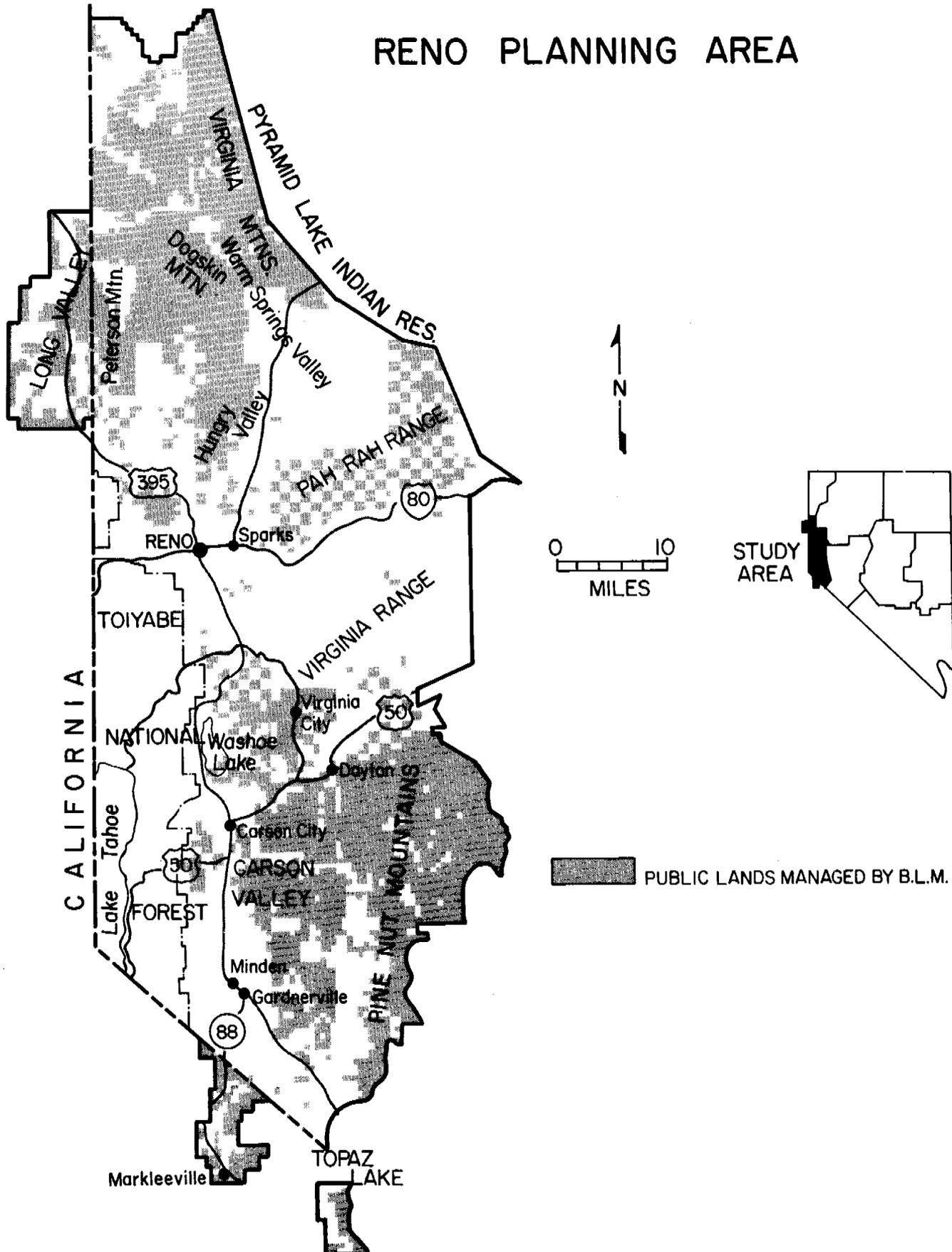


Figure 3. Carson City District: Reno Environmental Statement.

appendices arranged alphabetically by county (e.g., Alpine, Churchill, Douglas, etc.) including data on the historic and prehistoric sites recorded in the District as of March 1981. Prehistoric site data are found in Tables 1 through 3; Table 4 includes all historic sites. Table 1 (Synonymy of Sites) contains a numerical listing (by Nevada State Museum Number) of the various numbers, names and field numbers assigned to each site. This table also includes the current ownership status of the site, and the institution in which the collections from the site are housed. Table 2 provides locational data, including mapping and geographic data. This table is not published with the report; copies are on file at the BLM and Nevada State Museum. Table 3 is a summary of the diagnostic artifacts from each site, as well as published references to the site, and available radiocarbon dates. Table 4, the Historic Site Data, consists of locational information and brief narratives on the historic significance of each site.

Major gaps persist in our knowledge of the archaeological record within the District, and we highlight these problem areas. We offer specific recommendations regarding future research options, emphasizing those areas where these questions may best be pursued, and identifying those areas in greatest need of judicious preservation and management policy.

PROJECT BACKGROUND. The Class 1 Overview system of review was initiated to synthesize diverse cultural information into a single document, providing the baseline for intelligent management options. The American Museum of Natural History became interested in this project as an outgrowth of ongoing research conducted in the Carson Sink. In 1979 the American Museum initiated a project at Hidden Cave (26Ch46), Churchill County, Nevada. This project had a wide base of support including the American Museum of Natural History, the Bureau of Land Management, and the State Office of Historic Preservation. In addition, as part of the effort to disseminate the knowledge of archaeological science to the widest possible audience, the Churchill County Museum will receive an exhibit in September 1982 based on the research in the Carson Sink. Other institutions cooperating in the Hidden Cave Project are the Nevada State Museum in Carson City, which has provided full access to the artifacts and other original excavation materials from the area; the University of California Archaeological Survey, which allowed access to the materials from the second excavation of Hidden Cave. Various institutions have been involved in the research directly or indirectly through participation in several field school projects conducted over the summer. The Class 1 Overview was seen as a natural outgrowth of the intensive focus of our research in the Carson Sink.

The principal investigator, Dr. David Hurst Thomas has conducted 14 years of research on the lifeways of prehistoric Great Basin inhabitants. Lorann S. A. Pendleton, who received her Master of Arts degree in 1979, has spent seven years researching Great Basin archaeology. Ms. Pendleton was responsible for the prehistoric section of the report. Alvin R. McLane, with 16 years of experience in many aspects of Nevada historical and

environmental research was responsible for the historic sections of the report. Dr. Donald Hardesty generously provided a section on contemporary historic research interests. In addition, Mr. Rick Brigham, Ms. Linda Castillo, Ms. Sharlene Davis, Ms. Margo Dembo, Ms. Jean Gilbert, Ms. Stacy Goodman, Ms. Barbara Lewis, Ms. Deborah Mayer and Mr. Fred Wayne assisted in the preparation of the report.

Mr. Eric Moody provided expertise, especially on the modern communities that have recently formed in southern Washoe County. Mr. Moody also reviewed the historic manuscript. Ms. Eslye Cann and Ms. Lee Mortensen, both of the Nevada Historical Society, have provided professional courtesies, as have Brian Hatoff and Nancy Botti of the BLM. Ms. Elizabeth Warren, of the Nevada Historical Society; Ms. Sharon Edaburn, Director and Curator of the Churchill County Museum and Archive; and Dr. Donald Hardesty, Department of Anthropology, University of Nevada, Reno critically reviewed the historic portions of the manuscript.

The prehistoric portions of the manuscript were critically reviewed by Mr. Robert Elston, Intermountain Research; Dr. Warren d'Azevedo, University of Nevada, Reno; Mr. Donald R. Tuohy, Nevada State Museum; Dr. Stanley Freed, Curator of North American Anthropology, American Museum of Natural History; Dr. Eugene Hattori, Dr. Jonathan O. Davis, and Dr. Lonnie Pippin, Desert Research Institute; Dr. Fred Petersen, Bureau of Land Management; and Ms. Evelyn Seelinger, Nevada State Museum, who in addition, spent countless hours patiently unraveling the complexity of the Nevada site recording system.

METHODS. A project of this size and complexity requires detailed and specific procedures. The scope of work is overwhelming in detail and the methods of research develop interesting webs of complexity. With this experience, we hope to forestall similar problems on future projects of this scope.

The project began with an orientation of the Bureau of Land Management system of record keeping, unique in the field of archaeology. We worked closely with archaeologist Mr. Brian Hatoff of the Carson City district, who facilitated our progress enormously. All BLM site records and accompanying reports are recorded on a master index numerically by CR number. This system provided information on approximately 80 percent of the sites in the District. At the inception of Hatoff's tenure as District Archaeologist he compiled a complete set of the site forms within the District which were on file at the Nevada State Museum in Carson City. In subsequent years, he has maintained diligent management of the paperwork involved in archaeology. He and the other staff archaeologist, Ms. Nancy Botti, have given us countless hours of assistance.

After we assembled BLM site forms, we searched the Nevada State Museum records for additional sites. At that institution, once again we received total cooperation. Specifically, Mr. Donald R. Tuohy permitted full access to the Nevada State Museum files. Ms. Evelyn Seelinger worked unstintingly to solve confusion caused by years of mapping by diverse institutions.

Nevada State Museum and BLM map plots were transferred onto our U.S.G.S. topo quads (both 7.5' and 15'). Lists were made of map plot numbers and any missing site forms were requested from the Museum.

Once these data were correlated, using the above information and the BLM District site number equivalents ledger and County Site Assignment Ledgers from the Nevada State Museum, the missing site numbers were located and the persons to whom those numbers were assigned were contacted. This was the most exacting and frustrating portion of the correlation, as site forms missing for 10 years or so tend to be rather elusive.

Many of the sites not on file at the Nevada State Museum were located in the files of the Nevada Archeological Survey, Reno. The Survey is temporarily closed, but its files are now under the control of Dr. Donald Hardesty. They are in surprisingly good shape, considering the fact that they have not been maintained since 1979. The Survey map plots were also checked against the Nevada State Museum maps, especially for mapping data pertaining to sites recorded by the Survey.

In conjunction with correlation of the institutional records available in the State of Nevada, various other agencies were contacted for any information they might hold pertaining to the Carson City district. We corresponded with the State Historic Preservation Officers for California and Nevada; the Bureau of Land Management District Archaeologists in the Susanville, Folsom, Las Vegas, Battle Mountain and Winnemucca districts; the Western Archaeological Center of the National Park Service, University of California (Berkeley), Nevada State Highway Department, Caltrans, and United State Forest Service, the National Science Foundation, the Society of California Archaeology District Clearing House at California State University, Chico.

The next step in determining the status of the records was to conduct a thorough search of the literature for missing site data: University of California Archaeological Survey Reports; University of California Publications in American Archaeology and Ethnology; University of California Anthropological Records; Nevada State Museum Anthropological Papers; Desert Research Institute Publications in the Social Sciences; Cultural Resource Reports for the Bureau of Land Management, Nevada State Museum, Nevada Highway Department and Nevada Archeological Survey; Nevada Archeological Survey Reporter and Research Papers; Nevada Archaeologist; Dissertation and Masters Abstracts; National, State and local Registers of Historic Places; local tribal histories; Class 1 overviews of the Humboldt and Carson Sinks and the Owens Valley area; various scientific journals, and unpublished and locally available manuscripts.

In conjunction with the above literature search, we began a letter writing campaign to several anthropologists familiar with the area, including: Mr. Robert Elston, Dr. Catherine Fowler, Dr. Stanley Freed, Ms. Mary Rusco, Dr. Donald R. Tuohy, Dr. Eugene Hattori, Dr. Richard Shutler, Mr. Donald Hardesty, and Dr. Wilbur Davis. Personal interviews have been

conducted with Dr. Albert Elsasser, Mr. Franklin Fenenga, Dr. William Jacobsen and Dr. Warren d'Azevedo.

The cultural resources within the District were identified almost entirely through a literature search; little actual field research was undertaken. Unfortunately, the inventory remains incomplete due to insufficient data, imprecise locations and conflicting information. Nevertheless, this study is the most thorough inventory of the region to date.

Mr. Alvin McLane, responsible for the historic sites inventory, based most of his research on his personal library. Certain portions of his manuscript were checked at the Nevada Historical Society and the Special Collections Department of the Gatchell Library, University of Nevada, Reno. Due to time constraints, the Reno ES portion of the historic report was less detailed than that for the Walker and Lahontan portions.

## ENVIRONMENTAL BACKGROUND

AREA. The Carson City District lies wholly within the Great Basin, a name applied by Frémont after his 1843-1844 expedition through the region. The Great Basin is an area of internal drainage, bounded on the west by the Sierra Nevada and on the east by the Wasatch Mountains, and characterized by northwest trending block faulted mountain ranges. Within the Carson City District the ranges from south to north include: the Pilot Mountains, Cedar and Excelsior Mountains, Gabbs Valley, Gillis, Wassuk, Sweetwater, Pine Nut and Singatse Ranges, Desert Mountains, the Carson Range, Petersen Mountains, Sand Springs Range, Cocoon Mountains, Terrill Mountains, the Clan Alpine, White Thorne and Bunejug Mountains, the Stillwater Range, Dead Camel Mountains, the Virginia Range, Pah Rah Range and Dogskin Mountains. These mountains bound numerous valleys including Huntoon, Alkali, Stewart, Gabbs, Smith and Fairview valleys, Alkali Flat, Salt Wells Basin, Rawhide Flats, Edwards Creek Valley, Lahontan Valley, Carson Valley, Dixie Valley, the Carson Sink, Churchill, Spanish Springs, Warm Springs, Cold Springs, Long, Lemmon and Washoe valleys, Dry, and Honey Lake valleys, the Truckee Meadows, and Truckee River Valley (Basin). Most valleys contain numerous V-shaped canyons with alluvial fans at their mouths. Several valleys contain the remnants of extinct lakes or playas.

Some major rivers flow into the interior of the district including the East and West forks of the Walker River, the Carson and Truckee rivers. The viable Sierra-fed lakes within the District include Walker and Washoe; Pyramid and Tahoe lakes lie immediately adjacent to the District (Russell 1895). The Stillwater Slough, in the Carson Sink, is sporadically viable, but most of the water evaporates prior to significant accumulation.

PRESENT CLIMATE. Latitude, elevation and the continental effect are primarily responsible for Nevada's climate (see Houghton, Sakamoto, and Gifford 1975, for detailed discussions of Nevada's weather and climate). Temperature drops dramatically with increasing elevation, resulting in periodic freezing throughout the year on the highest peaks and concomitant temperatures of 100°F+ in the lowest valleys. In the winter, an inversion effect causes cold temperatures in the basins. The temperatures are somewhat warmer on the alluvial fans and low slopes. This winter inversion probably had a significant effect on human settlement patterns prehistorically. Latitude affects temperature with resultant differences of 15-20°F between the northern and southern parts of the state. Precipitation is affected by both elevation and the rainshadow effect, resulting in more abundant flora at moderate elevations on the lee slopes, and diminished vegetation on the windward side of the mountains. Precipitation is seasonal; Nevada is on a winter storm track.

FLORA AND FAUNA. Interest in Great Basin botanical data began with a small sample of representative plants gathered by Frémont (Cronquist, Holmgren, Holmgren, and Reveal 1972:47). Subsequent work includes Anderson's (1871) "Catalogue of Nevada Flora" which concentrated on a large

area around Reno. Clarence King undertook a survey of the fortieth parallel from the Sierra to the Rockies, accompanied by the famed botanist Jacob W. Bailey, who provided taxonomic status for many of the native Nevada flora (Bartlett 1962). The work was eventually published as Volume 5 of the "Report of the Geological Exploration of the Fortieth Parallel" in 1871.

Sporadic work continued within the study area (for a complete summary of previous work in western Nevada, see Cronquist, et al 1972:59). While the initial summary by Tidestrom (1925) was a significant contribution to Intermountain floristic studies, Munz and Keck's (1968) work in California was equally pertinent to western Nevada. Specifically pertaining to the study area are Billings' (1945, 1949, 1951) studies of plant association in the western Great Basin. The reader is also referred to Fautin (1946), and Young, Evans and Tueller (1976). Subsequent studies sponsored by the New York Botanical Society (Cronquist, et al 1972; Cronquist, et al 1977) promise to be definitive studies. The following summary will be drawn from the above sources.

The study area contains part of four floristic zones: the Lahontan, Reno, Tonopah, and Central Basin sections (fig. 4). The Lahontan Section includes the Truckee Range, and the Desert and Cocoon mountains. The Reno Section includes Petersen and Virginia Mountains, the Pah Rah Range, Pine Nut Mountains, Singatse Range, and Sweetwater Mountains. The Tonopah Section includes the Stillwater, Sand Springs, Paradise, and Gillis ranges, the Gabbs Valley Range, Cedar Mountains, Garfield Hills and Excelsior Mountains. Within the Central Great Basin Section are found the Clan Alpine Mountains, the New Pass Range, and the Desatoya Mountains. The southern half of the district through the Lahontan Basin is part of Billings' (1949) Shadscale Vegetation Zone, which includes the Lahontan and Tonopah floristic zones. It is characterized by low growing, sparse, spiny, grayish shrubs including Atriplex (shadscale), Artemisia (sagebrush), Sarcobatus (greasewood), Ephedra (Mormon tea), Lycium, and Grayia. Several other herbs are abundant whenever rainfall is sufficient: Oryzopsis hymenoides (Indian rice grass), Hilaria jamesii, Stipa speciosa, and several other annuals. Cactus is sparse (Billings 1951:108).

The montane zones are important areas in economic terms, receiving the most precipitation and offering the bulk of subsistence potential. According to Billings, the elevations from 5000 to 7500 feet are characterized by a Pine-Fir Zone. Elevations of 7500 to 8500 feet are usually characterized by pure stands of Red Fir, and above this zone is the Lodgepole Pine-Mountain Hemlock Zone to 9300 feet, where it is succeeded by the Whitebark Pine Zone. This zone is found at Mt. Siegel in the Pine Nut Mountains, rising to 9450 feet. The timberline is at about 10,300 feet and the area is characterized by the Sierran Alpine Tundra Zone, found for example in the Sweetwater Mountains which rise to 11,712 feet, and at Mt. Grant in the Wassuk Range at 11,239 feet.

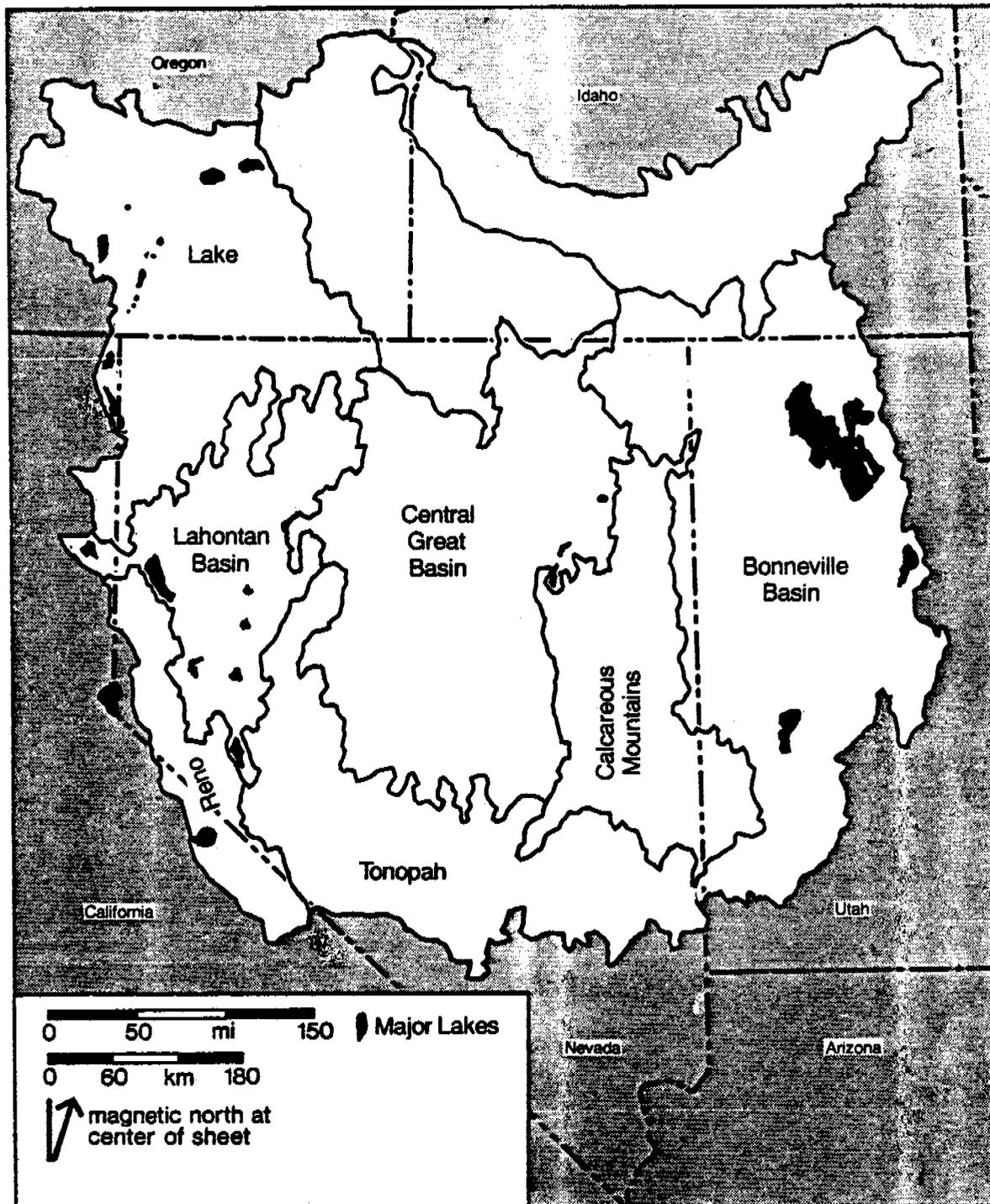


Figure 4. Great Basin Floristic Zones (from Thomas n.d.a).

The zone of secondary economic importance is the Basin Range series (Billings 1951:115), situated east of the Carson Range and including the Virginia and Pine Nut ranges. The Pinyon-Juniper Zone was of primary importance to native populations and is dominated by the single needle pine (*Pinus monophylla*) and the Utah juniper (*Juniperus occidentalis utahensis*). These species are more dependent on the condition of the shallow mountainside soils than on elevation for their boundaries, but are somewhat tied to valley elevation and exposure. Above the Pinyon-Juniper Zone is the upper Sagebrush-Grass Zone, followed by the Limber Pine Zone.

Within the Lahontan Section, the topography primarily reflects the effects of Pleistocene Lake Lahontan, with wide alluvial flat playas and low mountains. The most extensive community in the region is the Shadscale Zone, dominated by greasewood (*Sarcobatus baileyi*) and shadscale (*Atriplex confertifolia*). There are several sand dunes in the area with a primary vegetation of Nevada Dalea (*Psoralea polyadenia*). These dunes surround playas resulting from the desiccation of Pleistocene Lake Lahontan. Dune vegetation is dominated by xerophytic, salt tolerant plants, e.g. *Sarcobatus vermiculatus*, *Allenrolfea occidentalis* (in small isolated sections), and *Salicornia europaea*. In the wetland areas (or in practically any standing water) are found the typical reeds: *Scirpus americanus*, *Scirpus acutus*, cattail (*Typha latifolia* and *domingensis*) and *Distichlis spicata*. Cottonwood (*Populus fremontii*) occurs near major streams and channels (Cronquist, et al 1972:90).

Several species are confined to the Lahontan and Tonopah Sections, including *Abronia crux-maltae*, *Cymopterus corrugatus* and *Sarcobatus baileyi*. Restricted to the Lahontan Basin alone are *Astragalus porrectus*, *Eriogonum anemophilum*, *Eriogonum ribicaule* and *Oenothera nevadensis* (Cronquist, et al 1972:90).

The Reno Section follows the Sierra and is influenced climatically by the rainshadow effect of these high mountain ranges in the west. Within this section the Pah Rah, Wassuk and Virginia Ranges contain stands of Jeffrey Ponderosa Pine. The Virginia and Pine Nut Mountains contain the Western White Pine (*Pinus monticola*), and the Sweetwaters have the Sierran Lodgepole Pine (*Pinus contorta* var. *murrayana*) and Sierran White Fir (*Abies concolor* var. *lowiana*), but pinyon-juniper predominate in these ranges. Other endemic taxa include *Astragalus johannishowellii*, *Astragalus monoensis*, *Eriogonum baileyi*, *Eriogonum lemmonii*, *Heuchera duranii*, *Oenothera clavaeformis*, and *Penstemon rubicundus*, which is restricted to the Wassuks (Cronquist, et al 1972:90-91).

The Tonopah Section borders on Lake Lahontan in the vicinity of Walker Lake and runs up into Dixie Valley. It is dominated by shadscale vegetation with *Artemisia tridentata* and *Artemisia arbuscula* predominating from 5000 feet to the lower mountain tops. The pinyon-juniper Zone predominates between 6000 and 8000 feet. Endemic taxa includes *Iva nevadensis* in the Carson Desert and Lahontan Basin and *Astragalus*, *Cymopterus*, *Eriogonum*, *Gilia*, *Lupinus*, *Mirabilis* and *Penstemon* throughout the region.

A small portion of the Central Great Basin Section, characterized by high valleys (over 5000 feet), is also included in the eastern part of the study area. This is within the range of the singleleaf pinyon (Pinus monophylla) which is generally restricted to areas south of the Humboldt and Truckee Rivers.

The evolution of flora within the Carson City District is discussed by Adam (1967, 1974); Axelrod (1940, 1948, 1949, 1950); Mehringer (1967, 1977); Mehringer, Arno, and Petersen (1977); Sercelj and Adam (1975); and Tidwell, Rushforth, and Simper (1972).

For information on faunal resources within the District, see Alcorn (1945) and Linsdale (1936) for birds; Call's work on Great Basin molluscs (1884); Hall's Mammals of Nevada (1946); and Hubbs, Miller, and Hubbs (1974), La Rivers (1962), Miller (1946) and Snyder (1917) on fish.

GEOLOGY. The geologic framework of the district is somewhat varied. In the north, most of the Basin Ranges, like the Sierra Nevada, have a core of Mesozoic rock which is an intrusive granodiorite with an addition of older metamorphosed volcanic rock. The Mesozoic rocks are overlain by a series of Cenozoic continental volcanic and sedimentary rocks which consist of rhyolites, andesites, basalts and lacustrine sediments. These rocks have been offset by faulting and tilting, beginning in the Tertiary and continuing in lessening amounts to the present. Most of the Basin Ranges are bordered on one or both sides by faults. Since early Quaternary time in the Truckee Basin, extrusive volcanics have continued to erupt, providing the area with sources of basalt. Furthermore, diagenetically altered metasedimentary rocks occur as local sources of chert (Davis 1979:7; Rose 1969:1).

The area to the south is dominated by the mountains and valleys of the Pleistocene Lake Lahontan system (fig. 5). Mountains bordering this extinct lake are characterized by low relief, underlain by Tertiary volcanic and sedimentary units. The valleys within the district are composed of Tertiary and Quaternary sediments deposited by lacustrine, fluvial and aeolian processes. Pre-Tertiary rocks occur in exposures in the Stillwaters and Clan Alpine Mountains. The major component of bedrock west of the Carson Sink consists of Tertiary rocks including volcanics of basalt and rhyolite (Bonham 1965).

Triassic and Jurassic rocks are exposed in the south-central portion of the district and include the Luning, Gabbs, and Sunrise formations. Layered Mesozoic rocks are neither abundant nor well dated. The Tertiary deposits are usually volcanic (rhyolite and basalt), but also include fluviate and lacustrine sediments (Willden and Speed 1974).

Quaternary deposits are primarily terrestrial alluvium, plus lacustrine sediments coeval with Lake Lahontan. The Quaternary depositional history of Lake Lahontan included two main deep lake periods (Russell 1885) each with several minor oscillations. Each deep period was

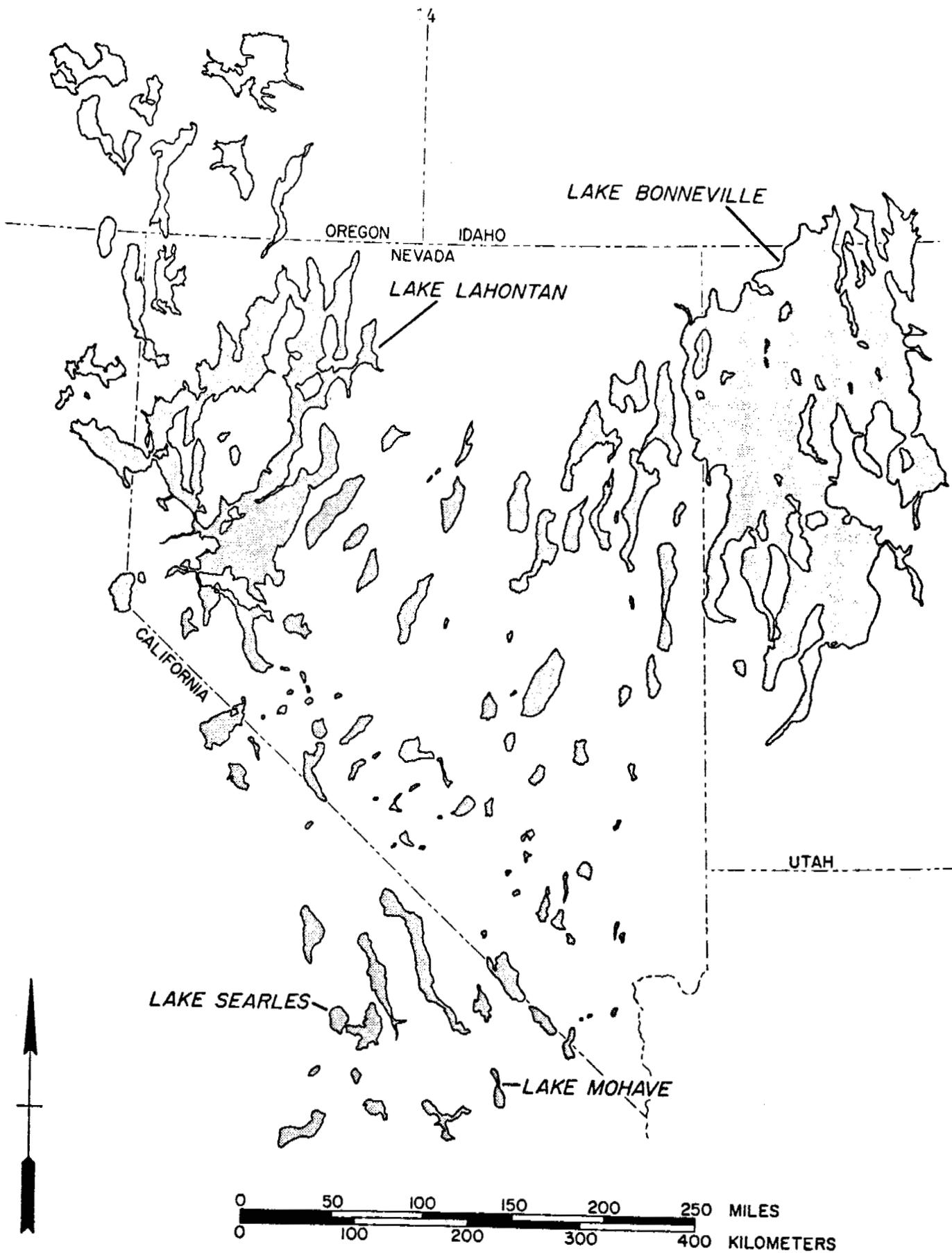


Figure 5. Great Basin Pleistocene Lakes (from Mehringer 1977).

separated by long intervals of complete desiccation (Morrison 1965b:18). At its maximum (fig. 5), the lake covered 8,665 square miles (22,442 km) and had a maximum depth of approximately 700 feet (213 m) near Pyramid Lake and 500 feet (152 m) in the Carson Sink (Morrison 1965a:270).

Recent work by Davis (1978) has revised somewhat the stratigraphy proposed by Morrison, and Davis' work serves as the basis for the following summary. The Pre-Wisconsinan sediments include the Rye Patch Formation which was deposited during Kansan times, and the Paiute Formation, deposited during a stable episode in the Yarmouth. Lahontan times (Illinoian and Wisconsinan) are characterized by the Eetza Formation, deposited during the Illinoian. The Eetza formation correlates with the Tahoe Glaciation in the Sierra (Birkeland 1968:477). The Wyemaha formation is a terrestrial sediment deposited during the Sansamon Interglacial. The Seho Formation was deposited by the second (Wisconsinan) high stand of the lake which can be correlated with the Tioga glaciation in the Sierra. The Turupah Formation consists of aeolian sands and may represent Antevs' (1948, 1952, 1953) Altithermal interval. The Fallon Formation consists of sediments coeval with five episodes of shallow lakes, all of which are younger than 5000 years (table 5).

A general summary of regional geophysics appears in Thompson and Burke (1974). The geology, mineralogy, and hydrology for the northern portion has been summarized by Birkeland (1965a, 1965b, 1969), with emphasis on the Truckee River Canyon, Reno, and Mt. Rose areas. Born (1972) synthesizes data on the Pyramid Lake delta formation. Bonham (1965, 1969) discusses the geology of Washoe and Storey counties, as well as the Lahontan area. Cohen and Loelitz (1964), and Bateman and Scheibach (1975) discuss the Truckee Meadows, and Moore (1969) deals with Lyon, Douglas, and Ormsby counties. Rose (1969) summarizes geology in the Wadsworth and Churchill Butte quadrangles; and Silberman, et al. (1968), Thompson, White, and Sandberg (1968), and White, Thompson, and Sandberg (1968) do the same for the Steamboat Springs area.

The geology and hydrology for the southern portion of the district have been analyzed by Benson (1978), Bonham (1965), Broeker and Kaufman (1965), Broeker and Orr (1958), Jones (1925), Morrison (1961, 1964, 1965a, 1965b), Mifflin (1965), Mifflin and Wheat (1979), Morrison and Frye (1965), Russell (1885, 1895), and Willden and Speed (1974).

PALEOCLIMATIC MODELS. The debate over the Pleistocene and Holocene paleoenvironments in the Great Basin is of particular interest to archaeologists.

Beginning with a synthesis of Great Basin paleoclimatological data by Antevs (1948, 1952, 1953, 1955), several studies attempted to deal with the nature and extent of Holocene environmental fluctuations and their effects on human populations: Aikens (1970), Aschmann (1958), Baumhoff and Heizer (1965), Butler (1972), Fry and Adovasio (1976), Grayson (1976), Jennings (1964; 1973), Madsen (1976), Madsen and Berry (1975), Malde (1964), Ranere (1970), Shutler (1961), and Weide (1976).

Table 5. Correlation of Observed Basin Features  
(from Mifflin and Wheat 1979:12).

Midwest Frye and Willman, 1960 Time Stratigraphy	Sierra Nevada (various authors) Rock Stratigraphy	Lahontan Basin Morrison and Frye, 1965 Rock Stratigraphy	Time Stratigraphy	Suggested Correlations of Basin Features
Recent	Neoglaciation	Fallon Formation (part lacustrine)	Lahontan	Recent Surficial playa deposits, active alluvial fans with distributary drainage and little soil development, collian features.
Wisconsinan Valderan Two Creekan Woodfordian Farmdalian Aftonian	Tioga Till Tenaya Till	Schoo Formation (lacustrine)		Late Age of most shoreline maxima, minor fan development in northern Nevada relatively more active in central and southern Nevada, active groundwater discharge/deposit formation in southern Nevada.
	post Tahoe Soil	Churchill Soil Wymaha Formation		Early Minor fan development, collian deposits, limited channel deposits of through flowing streams locally noted.
	Tahoe Till	Teiza Formation (lacustrine)		Extensive well-preserved high shore features in Lahontan Basin, terrain stability in northeast Nevada, less in southern Nevada. Active groundwater discharge/deposit formation in southern Nevada.
Sangamonian	pre-Tahoe Soil	Cacoon Soil Paiute Formation	pre-Lahontan	Prolonged development of alluvial fans, where now exposed; often have tributary drainage patterns and multiple strong soil profiles. Most inactive fans believed to be of this age.
Illinoian	Donner Lake Till (Mono Lakes Till)	Rye Patch Formation (lacustrine)		"Old" shore features believed of this age (Diamond Valley, Long Valley, Newark Valley). Evidence indicates lakes of this pluvial were equal or smaller than Lahontan age lakes. Capture by W. Walker, initial overflow of Smith Valley seems of this age.
Yarmouthian	strong soil	Humboldt Valley Soil Lovelock Formation		Prolonged development of active fans, associated multiple strong soil profiles. Landforms of this age rarely well preserved at land surface. Confident correlations unaccomplished.
Kansan	Hobart Till	Lacustrine unit reported		Basin landforms of this age range are usually buried or greatly modified in local exposure. Most ancient fans still retaining basic constructional form are of Paiute age, and perhaps a few might be of Lovelock age. Basinward lacustrine sequences generally buried by several hundred feet or more of younger sediments. In southern Nevada some basin landforms may be of this age range in favorable locations of preservation. Major hydrographic differences may have existed as late as Rye Patch time due to tectonism causing basin faulting and regional warping.
Aftonian		?		
Nebraskan	McGee Till	?		

Antevs was interested mainly in correlating lake levels in the Great Basin with those throughout the rest of the world. The correlations were critical to his synthesis of the Neothermal Sequence: the moist Anathermal was followed by Altithermal drying. The Medithermal is characterized by a return to relatively moist conditions, similar to the present climate (see table 6).

Table 6. Antevs' (various) Subdivisions of Postglacial Time (from Bard, Busby and Findlay 1981)

<u>TIME</u>	<u>TEMPERATURE AGE</u>	<u>MOISTURE CONDITIONS</u>
Present	Medithermal	Moderately Warm; arid and semi-arid. Rebirth of Great Basin Lakes.
2500 B.C.	Altithermal	Arid; disappearance of Great Basin Lakes. Warmer than present.
5000 B.C.	Anathermal	Climate initially similar to present, but growing progressively warmer. Great Basin Lakes higher than Medithermal.
7000 B.C.		

Subsequent paleoecologic research shifted from Antevs' generalized statements to an increasingly specific regional focus. While the Altithermal may have indeed existed, its impact may have varied widely between subregions within the Basin (Bryan and Gruhn 1964). Relatively little information is available for the paleoenvironments of specific areas within the Basin, as relatively few sites have been studied from this perspective (Thomas n.d.a., n.d.b.; see particularly, Davis n.d. for a summary of the problems with our current picture of Holocene paleoenvironmental change).

Benson (1978) has studied the processes responsible for the formation and destruction of fresh water lake systems, concluding that exact Basin-wide correlations of water level are impossible. Water level in each playa changes as the result of three variables: "the geometry of the basin, the rate of water influx, and the evaporation rate" (Benson 1978:302). After reevaluating data from Lahontan, Walker, Pyramid, and Searles lakes, Benson suggested that within the series of expansions and recessions of these lakes, there was indeed a period of "Altithermal" drying between 9000 and 5000 years ago. But the effect on each of these lakes was not consistent. Walker Lake, for instance, evaporated during this period, while Pyramid Lake did not.

Weide (1976) also takes exception to the Antevs' model, finding an inconsistency in the "Altithermal fit" as a response to the variability of Great Basin environments. He believes postglacial environments in the Basin emerge as "a mosaic dominated by the alternation in the availability of widely distributed hydrologic resource areas rather than any uniform decay in climatic or habitat conditions" (Weide 1976:175).

Weide, along with Mifflin and Wheat (1979), feels that the ratio between precipitation and evaporation is a critical factor in each specific area. A high evaporation/precipitation ratio would, for example, have considerably more effect on the shallow Great Basin lakes than it would on streams and would influence their exploitive potential accordingly.

Mehringner (1977) concurs, suggesting some Basin-wide statements are relevant to aboriginal exploitation, while others are not. Vegetation zones, for example, appear to have been elevationally depressed sometime prior to 12,000 to 10,000 years ago, when there also seems to have been a general trend toward aridity. We will have more basis for discussing regional trends as new pollen data are assimilated (e.g., Adam 1967, 1974; Byrne, Busby, and Heizer 1980; Kautz and Thomas 1972; Mehringer 1967; Madsen 1972; Thomas n.d.a., n.d.b.).

The current focus is to view the climatic changes of the last 10,000 years as relatively nondramatic; no more substantial than the variation encountered within a single year in the contemporary Great Basin (Mehringner 1977:148).

Essentially, we know relatively little about the specific paleoenvironment in the Carson City District because we know very little about the Holocene chronology, and can, therefore, make relatively little sense of those environmental data we do have. Furthermore, we are not yet at the stage to sort the effects of tectonic activity and/or river diversions from the effects of climate. Climate and environment should not be confused; enormous environmental change can take place without any climatic change (e.g., river diversions causing new lakes to form and old lakes to dry). In fact, a major climatic change can completely mask an environmental change. Until we find methods to better deal with these

variables, our understanding of Holocene environmental change in the Carson Sink remains quite incomplete (Davis, n.d., personal communications).

For further information on interregional paleoenvironmental correlations, see Benson (1978), Birkeland (1968, 1969), Birkeland, Burke, and Yount (1976), Birkeland, Crandele, and Richmond (1971), Blackwelder (1931, 1934, 1948), Broecker (1957), Curry (1969), Davis and Elston (1972), Davis, Elston, and Townsend (1976), Elston (1979a), Elston, et al (1977), Harper and Alder (1972), Hubbs and Miller (1948), Hubbs, Miller, and Hubbs (1974), Mifflin and Wheat (1979), Morrison (1961, 1964, 1965a), Neal (1975), and Snyder and Langbein (1962).

## CULTURE CHRONOLOGY

Tod Ruhstaller and Lorann S. A. Pendleton

PALEO-INDIAN TRADITION: Great Basin Concave Base Series. The archaeological literature is rife with works reportedly dealing with the earliest identifiable cultural remains in the Great Basin, and a number of these studies are directed to areas in the Carson City District. One of the earliest reports dealt with the discovery in the late nineteenth century of a human skull deep in the Ophir mine shaft in Virginia City. The provenience of the skull seemed to indicate great antiquity, but, subsequent analysis has shown it to be a hoax (Reichlen and Heizer 1966). In 1958, G.F. Carter described several lithic assemblages collected around the Reno area which he believed to be quite early - e.g., a mano reputed to be over 30,000 years old. Unfortunately, Carter's unfamiliarity with the material led him to include relatively late artifacts with his "early complexes" (see Carter 1958, fig. 4; Carter 1980, figs. 5 and 6). While early materials have been recovered at Washoe Lake (Tuohy 1967, 1977), they are restricted to isolated finds, leaving Carter's interpretation open to severe criticism (Bryan and Tuohy 1960).

Typically, claims of early man finds in the Great Basin are based on the presence of artifacts which are typologically similar to the fluted projectile points which form part of the diagnostic tool kits of the Big Game Hunting Tradition (Willey 1966). The early cultures of this tradition - roughly dated between 10,000 B.C. and 7,000 B.C. (Hester 1973) - were located in the southwest, plains and eastern woodlands of the United States, and are characterized by concave base lanceolate, or stemmed parallel-flaked points (fig. 6), which are found in association with now extinct megafauna.

Various studies focus on the distribution of these distinctive artifacts in the west (Davis and Shutler 1969; Pendleton 1979; Tuohy 1969b, 1974a) and, for the most part, these finds have been outside our study area. Recent articles by Hester and Jameson (1977) and Tuohy (1977) have discussed the occurrence of such points along the shores of Washoe Lake. Hester and Jameson mention two fluted points which they feel are morphologically quite similar to Clovis points. Tuohy describes 11 Clovis-like points, including the two mentioned above, all of which were collected along the eastern or northeastern shore. He goes on to state that the quantity of points probably suggests an early man camp or kill site.

Tuohy (1968a, 1974a) has argued that the typological similarities between early points found throughout the west and those from various Great Plains and eastern woodlands sites suggest a western manifestation of the Llano Complex (Sellards 1952) with its concomitant reliance upon extinct proboscidians. Taking exception with that position, Heizer and Baumhoff (1970), Hester (1973), and Wilke, King and Bettinger (1974) have pointed out that: 1) to date, the majority of these points have been found on the surface making chronological

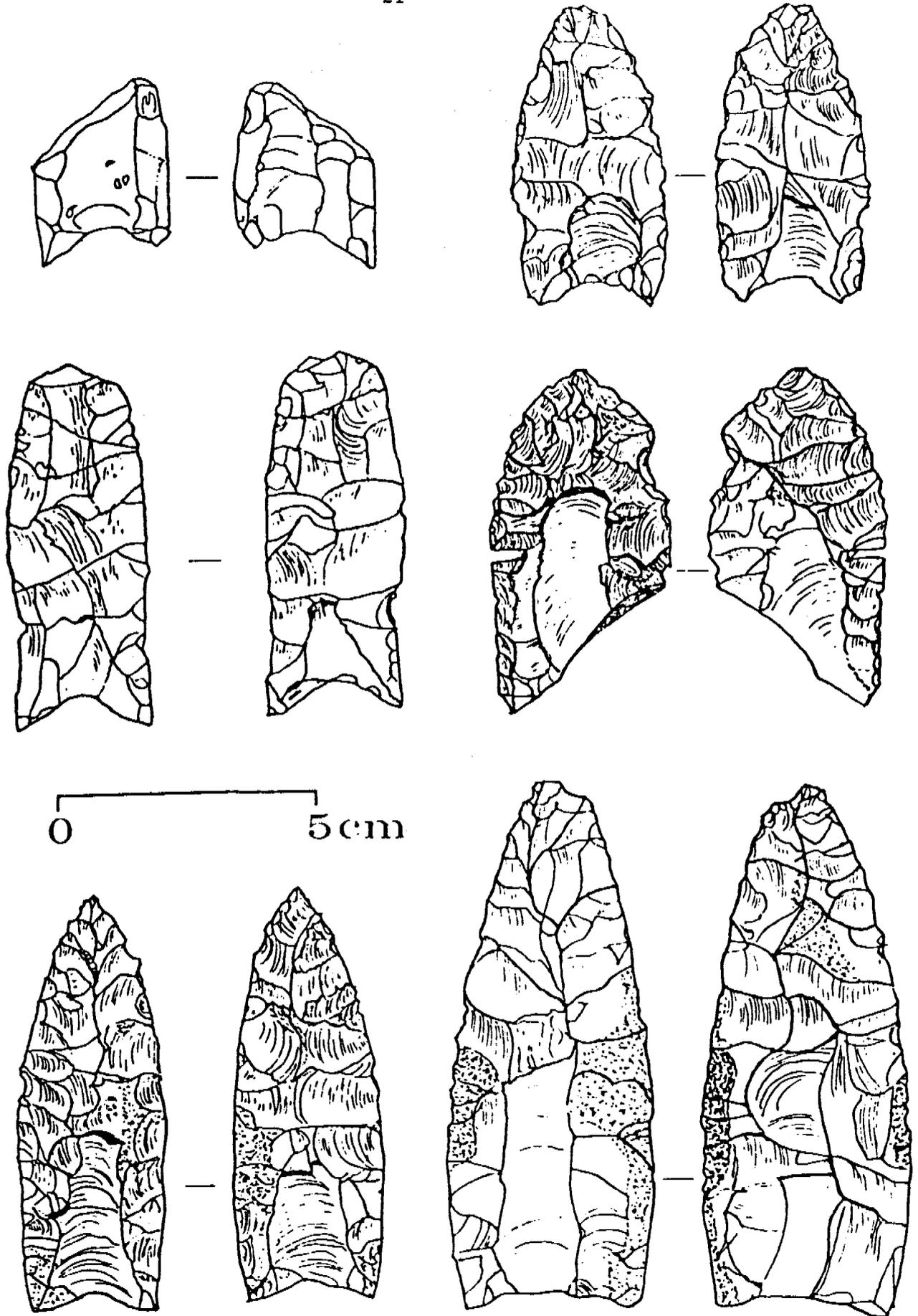


Figure 6. Typical Great Basin Concave Base Series Points.

determinations difficult; 2) the few that have occurred in a stratigraphic context lack definite association with the remains of Pleistocene "big game" animals; and 3) it is rather hazardous to posit cultural affiliations between assemblages based solely upon typological grounds. As Hester states:

"It is likely that most fluted points in the Great Basin are coeval with similar specimens in the Great Plains, but such typological contemporaneity does not necessarily mean that similar subsistence patterns were being followed in both areas." (Hester 1973:62).

But, Tuohy (1974a) counters that the variety of tools and subsistence activities, combined with the apparent typological similarities between the three culture areas by far outweigh the differences.

WESTERN PLUVIAL LAKES TRADITION: Great Basin Stemmed Series. The following phase bears less of an onus of controversy than the preceding phase. Over the past 40 years, several models have been proposed for this tradition, which is characterized by a distinctive artifact inventory, and which is usually found along the shorelines of pluvial lakes. Several of the models are oriented towards a regional focus for these groups (Campbell, et al. 1937; Davis 1967; Davis, Brott, and Weide 1969; Warren 1967). Others, however, have sought a wider perspective, basing their analyses on adaptational similarities between the groups (Davis 1966b; Heizer 1966; Heizer and Baumhoff 1970; Pendleton 1979; Rozaire 1963). Bedwell (1970, 1973), the foremost proponent of the latter interpretation, suggests an "omnibus term Western Pluvial Lakes tradition," (Bedwell 1973:171) for these groups.

Bedwell's environmental reconstruction follows Antevs' (1948) general tripartite climatic sequence, and he bases much of his cultural reconstruction on this temporal/climatic foundation. According to this model, pre-Anathermal conditions with their cool and moist periods followed by a generally temperate climate allowed the early inhabitants of the Great Basin to utilize a broad based subsistence network which did not restrict their movements (Bedwell 1973:156). With the onset of the drier conditions associated with the Anathermal, the economic base was restricted to lake or stream margins, somewhat reducing the movements of the Paleo-Indians in this area. It is this lacustrine-adapted way of life which Bedwell covered with his WPLT rubric and bracketed chronologically between 9000 B.C. to 6000 B.C. Diagnostic artifacts from one site are shown in figure 7. Also included are stemmed and non-notched lanceolate projectile points (designated Great Basin Stemmed series), e.g., Lake Mojave, Haskett, Parman; large lanceolate and ovate knives, various scrapers, graters and utilized flakes (Bedwell 1973:170); crescents, designated Great Basin Transverse series (Tadlock 1966); and possible core-blade and burin technologies (Hester 1973).

This tradition is represented by several sites within and adjacent to the District, including the Hathaway Beach, Sadmat, and other Carson Sink sites

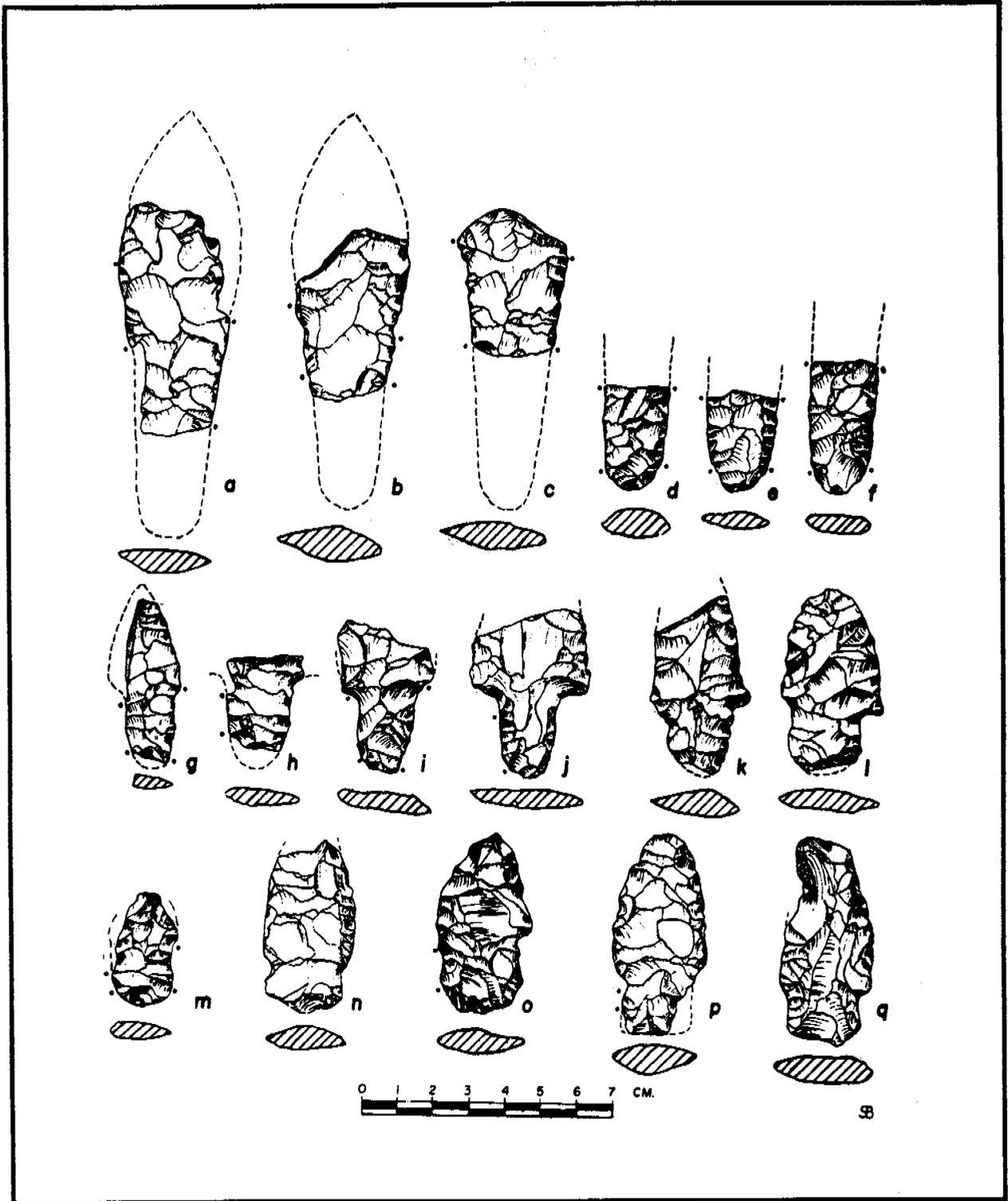


Figure 7. Great Basin Stemmed series points (from Layton 1979).

(Warren and Ranere 1968); the Dansie site (Tuohy 1968a); the Coleman site near Winnemucca Lake (Tuohy 1970a); and site 26Wal676 on White Lake playa near Reno (Elston 1979a).

In northeastern California the presence of crescents but the lack of other artifacts characteristic of this tradition present an enigmatic situation at the Karlo site in the Honey Lake area (Riddell 1960). Similar materials have been recovered from the northern and eastern shores of Washoe Lake, as well (Hester 1973; Hester and Jameson 1977).

It is worth noting that several sites contain both Great Basin Concave Base and Great Basin Stemmed series points (Hester 1973:61). Unfortunately, this apparent association rarely occurs in chronologically controlled contexts in the Great Basin. The sole exception is Last Supper Cave (Layton and Davis n.d.), which remains largely unpublished.

GREAT BASIN ARCHAIC TRADITION: Pinto/Gatecliff, Martis, and Elko Series.

The third phase in the cultural sequence of the pre-history of this area has had various designations at various times, ranging from the "Desert Culture" (Jennings 1953) to the "Desert Archaic" (Jennings and Norbeck 1955) to the "Great Basin Archaic" (Shutler 1961). The last, designated the Archaic Tradition in the Great Basin, is characterized by both arid-land and lacustrine resource adaptation. Chronologically, the Great Basin Archaic spans the period between 6000/7000 B.C. and A.D. 500.

Two phases of the Great Basin Archaic are recognized within the Reno ES area, based on the research of the past 25 years: the Spooner and Martis complexes (the latter, further divided into Early, Middle and Late periods). In the Walker and Lahontan ES areas these phases correspond with the Lovelock Phase in the Carson Sink (Hester 1973) and the Reveille and Devils Gate Phases in central Nevada (Thomas 1979:232).

The Spooner Complex initially defined by Elston (1971) using data recovered from the Spooner Lake and Daphne Creek sites in Douglas County was previously dated between 5000/3000 B.C. to 1000 B.C. (Elston 1971:135). Further excavations revised the dates to between 5000 B.C. and 2000 B.C. (Elston, et al. 1977).

Elston believes that specific differences between the Spooner Complex and subsequent complexes - i.e. the Martis Complex - have yet to be demonstrated; that the differences which do exist are stylistic or morphological in nature (Elston, et al. 1977).

Diagnostic artifacts from the Spooner Complex include Humboldt and Pinto/Gatecliff series points (figs. 8-11); the use of ground stone is inferred (Elston, et al. 1977:135). Bettinger and Taylor grouped Pinto types into the Little Lake period, using one of Elston's Spooner Lake specimens in their sample (Bettinger and Taylor 1974). Several other sites have yielded Spooner Complex components, including: Hobo Hot Springs site (26Dol2) (Elsasser 1960); the

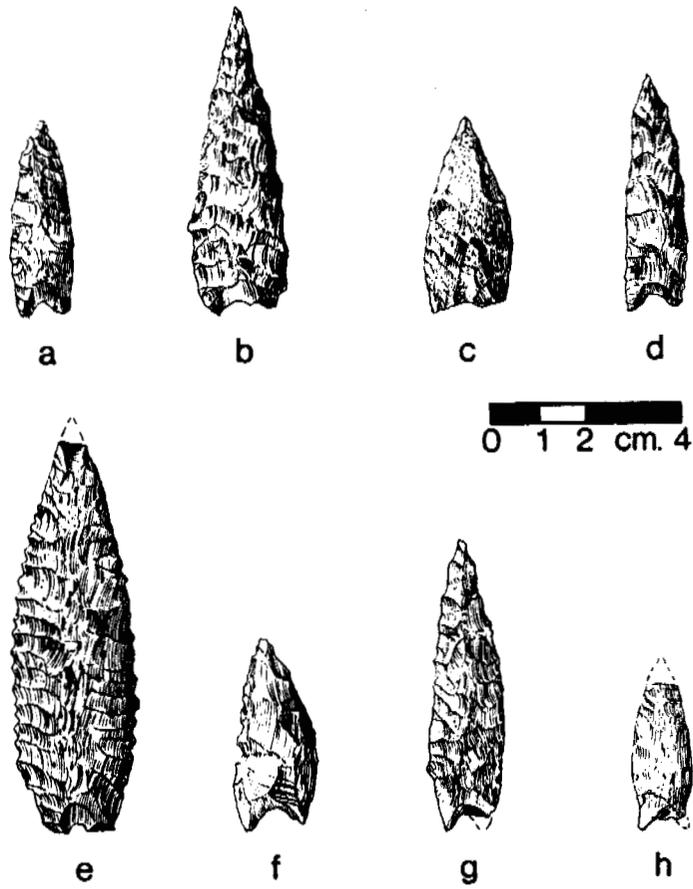


Figure 8. Humboldt series points from Hidden Cave, Nevada (from Thomas n.d.b.).

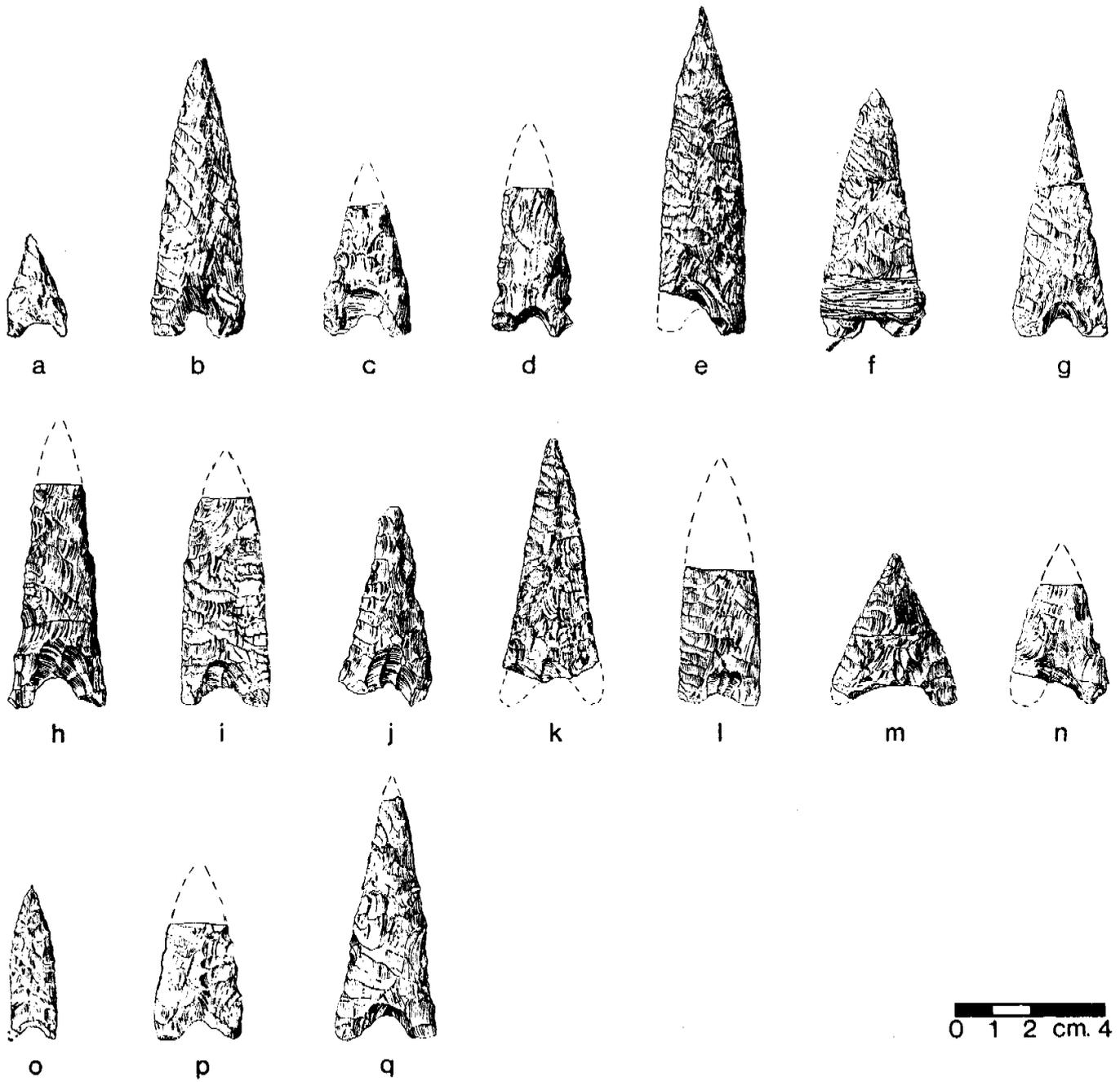


Figure 9. Humboldt Basal-notched bifaces from Hidden Cave, Nevada  
(from Thomas n.d.b.).

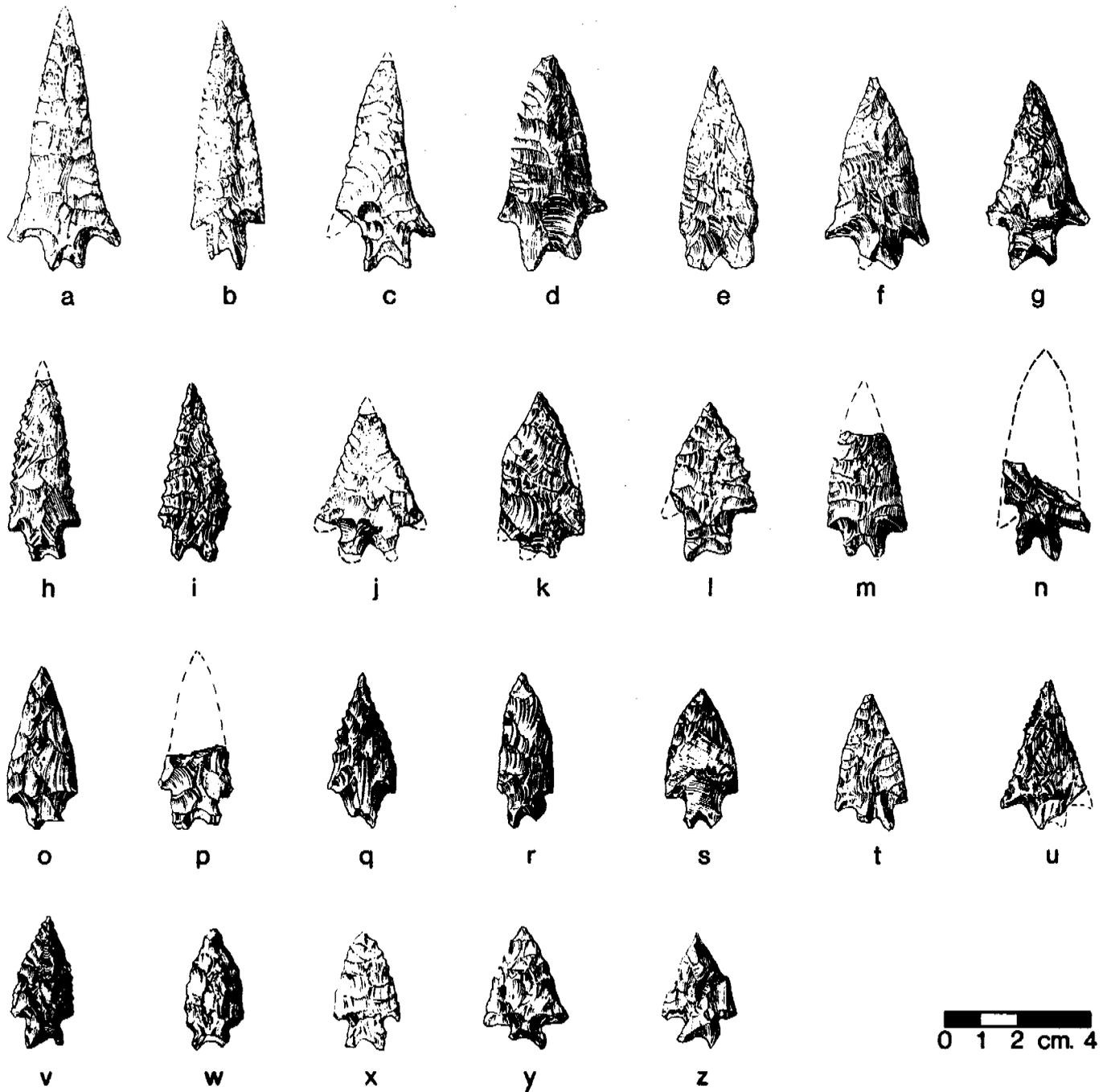


Figure 10. Selected Gatecliff Split Stem points from Hidden Cave, Nevada (from Thomas n.d.b.).

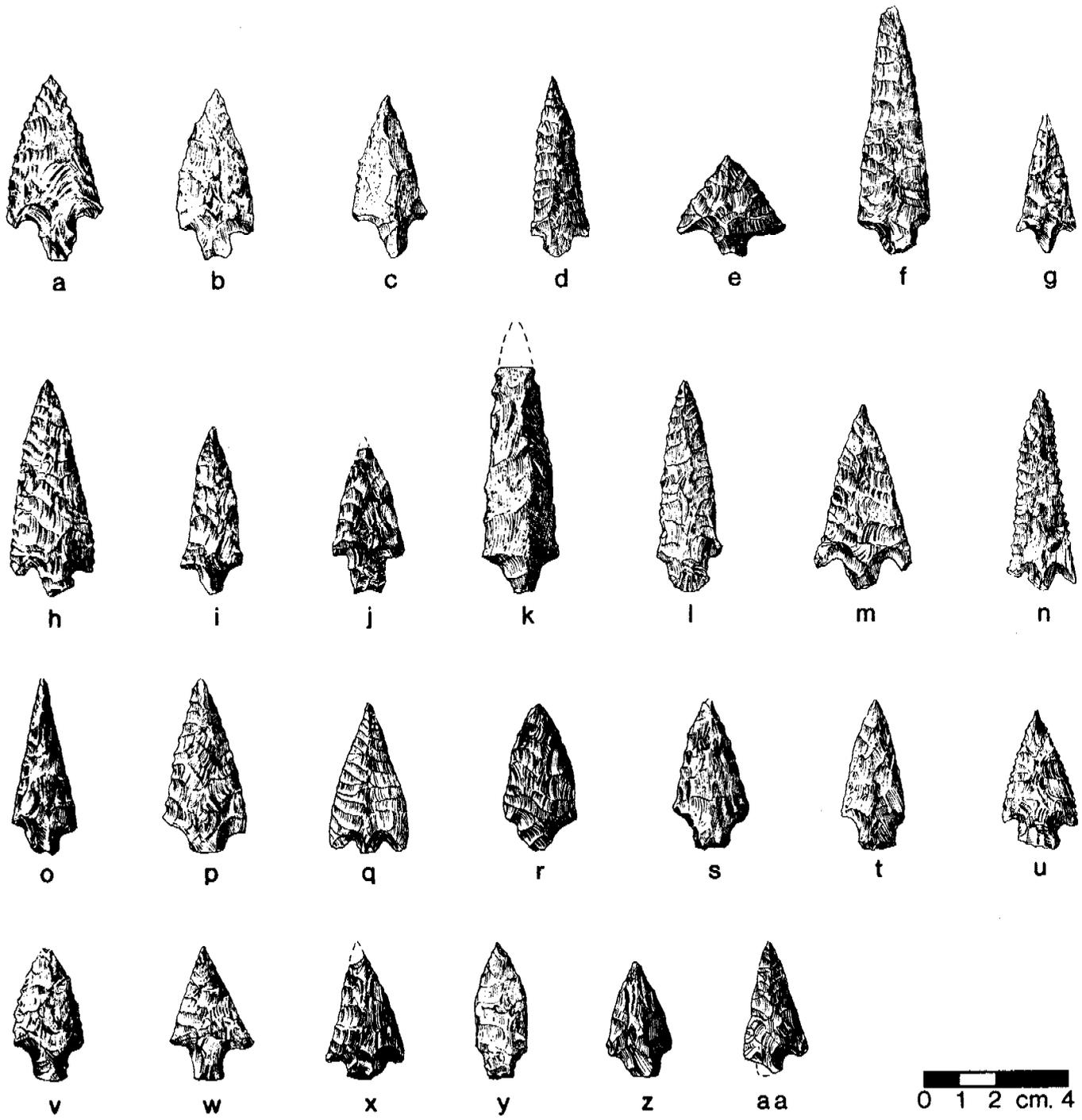


Figure 11. Selected Gatecliff Contracting Stem points from Hidden Cave, Nevada (from Thomas n.d.b.).

Black Springs site (26Wal200) (Fowler 1969); the Dangberg Hot Springs site (26Dol) (Elston 1970) and four sites along the Truckee River (Elston, et al. 1977). The early Lovelock complex, which is similar to the Spooner Complex, is found at Lovelock and Hidden Cave (Clewlow 1967, 1968b; Roust and Clewlow 1968; Thomas n.d.b.).

The Martis Complex is an interesting, yet somewhat puzzling, aspect of western Great Basin prehistory. Although there has been considerable interest in the origin of the "Martis People" and the reconstruction of their culture history, and lifeways, we find little reason to separate Martis from other coeval cultures in the western Great Basin. Basalt, as the primary raw material source, remains Martis' sole distinguishing characteristic. It is indistinguishable from other (e.g., Elko) contemporary assemblages in adjacent areas (see fig. 12).

Initial investigation of the Martis Complex by Heizer and Elsasser (1953) located 14 sites in Placer, Nevada and Alpine counties, California. Based on these survey data, the authors defined the Martis Complex (after the type site, 4-Pla-5 in the Martis Valley along Martis Creek). Heizer and Elsasser suggested that the "Martis economy" was hunting and gathering oriented. They estimated that it "flourished some time during the first 2 millennia B.C." (Heizer and Elsasser 1953:21). Seven years later, Elsasser (1960) published additional data on the Martis Complex in California and Nevada. He confirmed their previous conclusions, estimating the age of the complex between 1500 B.C. and A.D. 600. According to Elsasser, the "Martis area" lies generally within the transition zone between the western and eastern Sierra (between 2500-6000 feet). The Martis Complex contains both California and the Great Basin elements. Elsasser offered three hypotheses to explain the "areal distribution" of the Martis Complex: 1) it represents a summer, or high altitude, occupation by a Great Basin group; 2) it represents a summer, or high altitude, occupation by a California group; 3) it was an "autochthonous" culture, developing more or less independently (Elsasser 1960:72). The data were insufficient for any conclusions.

With this background, Elston (1971) proposed a research design to fill in the temporal gaps between Martis and other Great Basin cultures. Based on material from five excavations in Douglas and Washoe counties, he proposed major revisions to the initial Martis Complex concept.

Martis I (1000 B.C. to A.D. 1) marked the beginning of intensive occupation of the central Sierra; it was derived from the Spooner Complex. There were few changes in the material culture, other than the point types. The diversity of point types either suggests rapid stylistic change within a single cultural group, or multigroup occupation of the same site (Elston 1971:137).

Martis II (A.D. 1 to A.D. 500), a transitional phase, was marked by the introduction of the bedrock mortar and smaller, stylistically distinct points, e.g., the Rosegate series, which may have heralded the introduction of the bow and arrow into this area (cf. Aikens 1970).

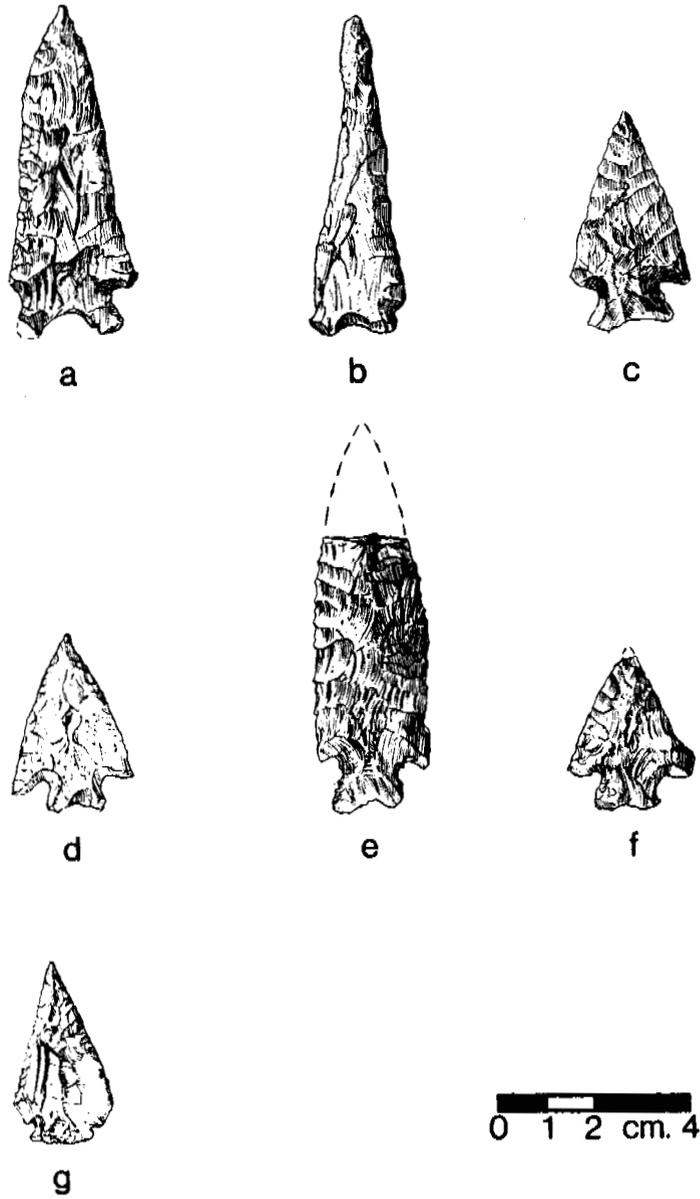


Figure 12. Selected Elko series points from Hidden Cave, Nevada (from Thomas n.d.b.).

Subsequently, Elston (et al. 1977) revised the Martis chronology. Additional radiocarbon dates from Douglas and Washoe Counties (Elston 1970; Elston and Davis 1972) extended the basal date of the earliest Martis period (now Early Martis) to around 2000 B.C. Other revisions included a Middle Martis (1500 B.C. to 500 B.C.?) and a late Martis (500 B.C.? to A.D. 500) period. These new divisions were based, in part, on climatic change and tool type differences. It may be of interest to note that the Rosegate component is excluded from the Late Martis phase in the 1977 revision.

Other Martis sites in the District include Cave Rock near Lake Tahoe in Douglas County (Smith and Elsasser 1962), several sites in Spanish Springs Valley (Matley and Turner 1967), several sites in the Pine Nut Mountains (Hagerty 1970b), Dangberg Hot Springs (Elston 1970), and the Towne and Thompson sites at Steamboat Springs (Elston and Davis 1972).

Martis point types roughly correspond with those in the Lovelock Phase in the remainder of the District. These Elko components (Heizer and Baumhoff 1961; O'Connell 1967) have been found at sites around Humboldt Lake (Lovelock Cave, Humboldt Cave, Humboldt Lakebed site), around Washoe Lake, at Borealis, Hobo and Dangberg Hot Springs, Daphne Creek and Spooner Lake, throughout Washoe County, and in Churchill county at Wagon Jack Shelter, Hanging Rock Cave and Topai Canyon Cave (see table 3).

KINGS BEACH/LATE PREHISTORIC TRADITION: Rosegate and Desert Series. This phase covers the period from A.D. 500 to historic contact, a span of 1300 years which encompasses both the Rosegate series and the Desert series (Desert Side-notched and cottonwood) points.

Initially the Kings Beach Complex was thought to span the years from A.D. 1000 into the historic in the Washoe area (Heizer and Elsasser 1953) but Elston's excavations at Daphne Creek pushed the basal date for Kings Beach back to A.D. 500 (Elston 1970), and thus established a link between the Kings Beach and Martis complexes. Recently, Elston (et al. 1977) divided the Kings Beach Complex into two phases - Early Kings Beach (A.D. 500 to A.D. 1200) marked by the Rosegate series (fig. 13); and the Washoe-Late Kings Beach (A.D. 1200 to Historic contact) marked by the Desert series points (fig. 14) (Elston, et al. 1977:171).

The transition from Martis to Kings Beach was once thought to mark the transition between hunting and fishing oriented cultures (Heizer and Elsasser 1953). Elston, on the other hand, suggests that Martis and Kings Beach had a similar settlement-subsistence regime, based on a varied seasonally transhumant lifeways (Elston 1971; Elston et al 1977).

The Kings Beach phase in the Reno ES area corresponds with the Dune Springs phase in the Walker and Lahontan ES areas. Among the sites in the District which contain Rosegate and Desert series components, are Spanish Springs Canyon, Black Springs, Dangberg Hot Springs and Steamboat Springs in the Reno ES; and Wagon Jack Shelter, Hanging Rock Cave and numerous open sites in the Walker and Lahontan ES's.

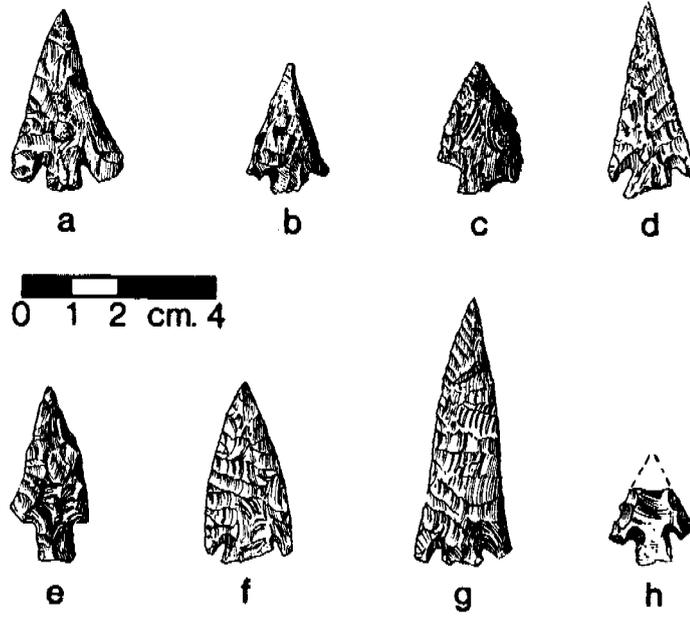


Figure 13. Rosegate series points from Hidden Cave, Nevada  
(from Thomas n.d.b.).

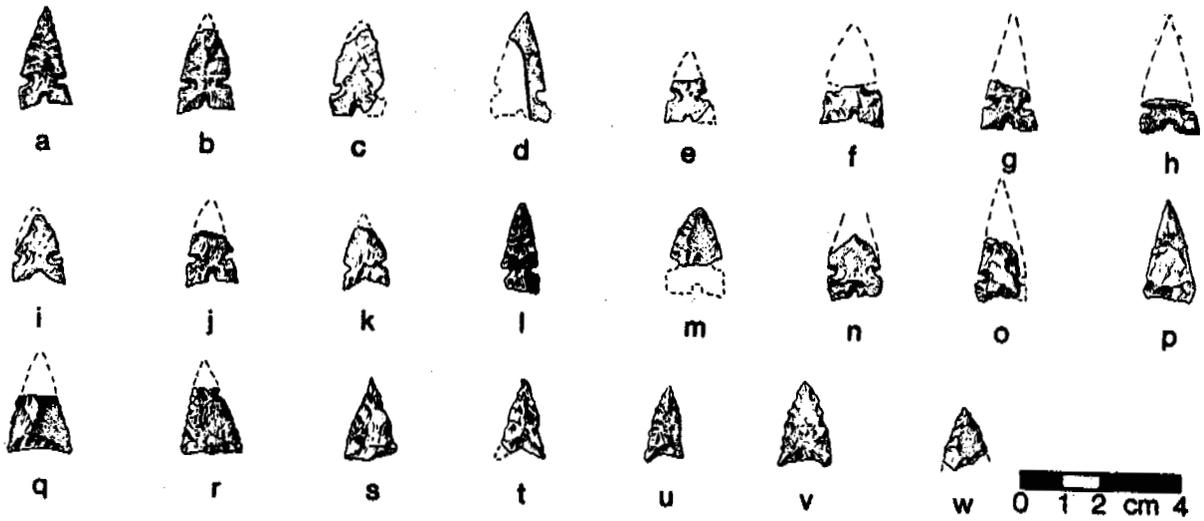


Figure 14. Desert series points from Gatecliff Shelter, Nevada (from Thomas n.d.a.).

## SUMMARY OF PREHISTORIC LIFEWAYS: CARSON CITY DISTRICT

This section describes as comprehensively as possible the current state of knowledge regarding prehistoric lifeways in the Carson City District. This topic has been dealt with in detail recently by Robert Elston (n.d.), and this summary relies heavily on Elston's synthesis and interpretations.

Many difficulties exist in any synthesis of this sort: broad, optimistic assumptions; imperfect data (particularly the lack of systematic survey data); inadequate and imprecise dating techniques; imperfect recovery of subsistence-related ecofacts; an overemphasis on one or two key sites; plus the inevitable bias introduced when a single investigator creates a synthesis relying almost exclusively on his or her own research. These difficulties notwithstanding, we think that this synthesis adequately reflects the state of current knowledge for this area, and will provide a major focus of research in the future.

THE DESERT CULTURE. The initial, overarching statement regarding the nature of prehistoric Great Basin lifeways was the well known Desert Culture concept promulgated by Jesse D. Jennings (1953, 1956, 1957). The concept was initially suggested to provide a meaningful referent for a coherent pattern that Jennings recognized in scores of archaeological sites scattered throughout the arid west (Jennings 1973). The Desert Culture concept carried with it an implied core of shared artifacts, clusters of tools, and technology geared to the special environments of the west. The original intent was to emphasize a basic and pervasive unity of lifeway implied by artifacts found in sites throughout the Great Basin, and to minimize the local and regional variations in the artifact inventories found from place to place (Jennings 1953). At the same time, regional variation is explicitly recognized, and set forth as an area for future research. In the final Danger Cave report (Jennings 1957) the term "Desert Culture" continued to be used to identify a widespread and reasonably uniform culture stage/lifeway originating in the northern Great Basin and characterizing prehistoric populations from central Oregon to central Mexico, from California to the High Plains. Some years later, Jennings modified his views by linking the Desert Culture with the widespread American Archaic culture stage; in this sense, the Desert Culture was "a general [term] implying not an unvarying complex of archaeological traits...but a culture stage for wide exploitation of available species" (Jennings and Norbeck 1964). Finally, Jennings (1968) decided to treat the Desert Culture as little more than the western version of the American Archaic.

Although Jennings initially thought that he was inventing the term "Desert Culture", he later discovered a number of previous usages, tracing the actual concept back to A.V. Kidder and A.L. Kroeber (see Jennings 1973:2).

The Desert Culture concept has conditioned the direction of much archaeological research in the Carson City District, often in the form of specific criticisms of the concept (e.g., Heizer 1956; Baumhoff and Heizer 1965; Davis 1966b; Heizer and Krieger 1956; Napton and Heizer 1970; Napton 1969; Roziare 1963; Ambro 1967; Cowan 1967b). Taking exception to the concept of an unchanging Shoshonean-like Desert Culture postulated by Jennings, the Berkeley school emphasized the diversity of Great Basin environments, both in prehistoric and in ethnographic times. The work of Ernst Antevs (1948, 1952) was commonly cited to document the degree of post-Pleistocene climate change. In general, Heizer and his colleagues argued that the western Great Basin was largely (or even completely) abandoned during the allegedly warm/dry Altithermal period between roughly 5000 B.C. and 2500 B.C.

As Elston (n.d.) has recently pointed out, the work of Heizer and others has been supported by additional research along the western periphery of the Great Basin. The Spooner Complex, for instance, was replaced by the Martis Complex (thought to be economically grounded in hunting and seed gathering); Martis in turn was supplemented by the Kings Beach Complex, the economy of which was allegedly based on seed collecting, fishing, and small game hunting (Heizer and Elsasser 1953; Elsasser 1960; Elston 1971). Riddell (1960) has also argued that the seemingly sedentary subsistence at the Karlo site north of Honey Lake differed in many significant ways from the Desert Culture model.

It now seems that the Desert Culture has completed its "short useful life" (Jennings 1973), and continual testing of the model in the western Great Basin can no longer function as a viable research focus (Elston n.d.; Thomas n.d.c.).

Research now commonly examines the variability between forager and collector strategies across the diverse Great Basin environments (see Binford 1980). Although much contemporary research employs the forager-collector continuum as a starting point, little of this has actually been published.

THE PALEO-INDIAN PERIOD. The Paleo-Indian period is characterized by a lithic technology based on the manufacture of large bifaces, the production of blades and large, side-struck flakes (Elston n.d.). The projectile points from this period are commonly edge-ground and collaterally flaked, occurring in both stemmed and concave base forms (Clewlow 1968a; Tuohy and Layton 1977; Pendleton 1979). The wide variety of additional artifacts found in Paleo-Indian contexts, show a "deliberate, formal approach to morphology and attention to the regularly modified edges, and the use of high quality raw materials. The incidence of curation seems to have been high; many tools and points show extensive wear and resharpening" (Elston n.d.).

Most Paleo-Indian sites occur as large surface scatters in association with pluvial lake margins, and Bedwell (1973) has gone so far as to coin the term "Western Pluvial Lakes Tradition" to characterize these assemblages. But as research continues on these problems, it seems that in the western Great Basin at least, Paleo-Indian sites are not necessarily restricted to lacustrine environments. Although Madsen (n.d.) argues that these early sites represent a semi-sedentary pattern, there are little or no data supporting such an assertion (Elston n.d.; Kelly n.d.).

Excavated sites from this period are extremely rare, and sites providing adequate subsistence data are almost totally lacking. The early Holocene Period was a time of major climatic change characterized by a gradual warming and drying (Davis n.d.). Rivers and streams were probably large, and extensive shallow lakes were present in many valley bottoms. The biotic communities of the western Great Basin remained vertically depressed. Elston (n.d.) suggests that population densities were quite low, and that the residential groups were small and mobile, travelling from resource to resource, perhaps even approximating a true foraging strategy (in the sense of Binford 1980).

Setting aside this largely speculative picture of subsistence and settlement patterns during Paleo-Indian times, it is clear that a major cultural and environmental change occurred approximately 5000 B.C. The climate continued to warm, the lakes continued to evaporate, and the vegetation zones shifted upward. Although some investigators (Davis 1966b; Napton 1969; Aikens 1978a; Tuohy and Clark 1979) suggest that these early lacustrine adaptations formed the nascent stage for the later lakeside Archaic cultures, there is little continuity to recommend this possibility; more significantly, very few sites are known in the western Great Basin dating between 4000 B.C. and 2000 B.C. Some years ago, Baumhoff and Heizer (1965) argued that this hiatus was due to a near-total Altithermal abandonment, but newer data suggest that the actual "hiatus" may be somewhat earlier than suggested by Baumhoff and Heizer (Elston n.d.).

THE EARLY ARCHAIC. The early Archaic period in the western Great Basin dates from 5000 B.C. to about 2000 B.C., roughly corresponding to Antevs' (1948) Altithermal period, during which the climate was considered to be relatively hot and dry. Although there are some lithic technological links with the Paleo-Indian occupations, the overall character of the early Archaic is really quite different. Projectile points are smaller and generally notched, the flaking patterns are different, and the use of specialized non-projectile point tools diminishes (Elston n.d.).

A number of sites were occupied initially during the early Archaic period. Some sites, such as Kramer Cave (Hattori 1982) and Hidden Cave (Thomas n.d.b.) contain deposits largely restricted to the early Archaic period, while many other sites continued to be occupied into later times. Structures from this period are known from the Cocanour Site in the Humboldt Sink (Stanley, Page, and Shutler 1970) and probably also at Borealis (Pippin, personal communication, 1981).

The Early Archaic population density was quite low, and household size seems to have been rather large, perhaps on the order of an extended family (after Elston n.d.). Seed processing tools are common in sites of this time period, suggesting a reliance on plant food, but the diverse artifact inventory also indicates continued hunting. Elston further suggests that the addition of plant processing created a resource diversity significantly higher than during Paleo-Indian times.

THE MID ARCHAIC PERIOD. Mid Archaic times lasted from about 2000 B.C. to A.D. 500, and Elston (n.d.) has characterized the Mid Archaic lifeway as "the good times". The first Fallon Lake appeared in the Carson Sink between about 2200 and 1200 B.C., the climate having shifted to a winter precipitation regimen. Slightly after this, Pyramid Lake rose, a shallow lake filled the Black Rock Desert, and cirque glaciers appeared in the Sierra Nevada. This change in climate seems to have corresponded to a period of cultural complexity and elaboration (Cowan 1972; Elston 1971, n.d.; Grosscup 1960; and Thomas n.d.c.). The Mid Archaic period is characterized by a diversity in textiles and other perishables, by changes in the size and complexity of house structures, by the stylistic variety of projectile points, by increasing evidence of trans-Sierran trade (particularly shell beads and obsidian) and perhaps also by craft specialization.

Mid Archaic people living in the deltas of the Truckee and Humboldt Rivers apparently lived in villages and exploited both riverine and lacustrine resources (Cowan and Clewlow 1968; Cowan 1967b; Grosscup 1956, 1960; Heizer 1956; Napton and Heizer 1970; Tuohy and Clark 1979; Elston n.d.). Mid Archaic houses have been excavated at the Humboldt Lakebed site (UCAS: 26-Ch-15) and at 26Wal016 on the Truckee River; these housepits are characterized by central hearths, interior cache pits, and occasional burials with grave goods beneath the floors. Tuohy and Clark (1979) suggest that the diet of people living near Pyramid Lake during this time was dominated by fish, small game, and non-aquatic plant foods. Other investigators suggest that people of the Humboldt and Carson Sinks utilized primarily seeds of aquatic plants and small game (Cowan and Clewlow 1968; Heizer and Napton 1970; Napton and Heizer 1970). Unfortunately, only a single randomized large-scale settlement pattern survey has been conducted in this area (Kelly 1981a, 1981b), so little can be said regarding the seasonal round during the Mid Archaic period.

There is a controversy about the degree of sedentism implied by these lacustrine resources. Heizer and Napton (1970) and Madsen (n.d.) among others, argue for a limnosedentary mode of adaptation. Robert Kelly (1980, n.d.) has recently conducted a regional survey of the eastern Carson Sink area, specifically to test the notion that marshland resources are in themselves insufficient to encourage (or even permit) a high degree of sedentism. The issue is unresolved, but remains a potent topic for further research.

To the west, along the northern Sierra Front, Mid Archaic sites of the Martis Complex - interpreted by Elston (n.d.) to be large winter camps - were situated at prime localities at valley margins: the Bordertown Site (Elston 1979a), Hobo Hot Springs (Elsasser 1960) and Dangberg Hot Springs (Elston 1970). If one assumes that "intensity of occupation" is satisfactorily monitored from simple counts of site size and site density, then the most intensive occupation in the Carson City District must have occurred in the Truckee Meadows fishery (Elston and Turner 1968; Elston and Davis 1972). An area favored by thermal waters, a rich and diverse suite of natural resources, plus a large deposit of high quality lithic source materials.

Houses in the Truckee Meadows and Steamboat Hot Springs area are similar to those at Pyramid Lake and along the Humboldt Sink during the Mid Archaic, with pits over 2 m. in diameter and 30 cm. deep, with interior features such as postholes, hearths, cache pits, and occasionally flexed burials with grave goods (Elston n.d.). The Bordertown and Hallelujah Junction houses contained heavy structural members, presumably covered with a lighter framework (Elston 1979a). Elston suggests that these houses were inhabited by large household units - perhaps extended families, that sites were generally nucleated, and that the houses were regularly reused. Other sites interpreted as winter camps but located in less favorable environmental circumstances, such as Daphne Creek (Elston 1971) and Hallelujah Junction (Elston 1979a), were occupied either less frequently or less intensively (or both). These sites have been interpreted as representing occupations by individual households, perhaps employing a backup strategy when the better provisioned areas fell into environmental stress (Elston n.d.).

Seed gathering camps are found throughout the margins of Sierra Front valleys, particularly on meadow margins and along streams; short-term hunting camps occur throughout various ranges. Heizer and Elsasser (1953) suggested an economic emphasis on hunting and seed collection with the initial definition of the Martis Complex. Elston (1979a) has recovered faunal data to test this suggestion at the Bordertown site where consumption of big game (both bighorn sheep and mule deer) was emphasized over small game. Seed processing artifacts are also common in Martis sites.

Although the transition between early and middle Archaic was gradual, there does appear to be a marked cultural upswing during the Mid Archaic (Elston n.d.): an increase in resource diversity, restriction of exploitative territories, residence in more substantial houses, more intensive use of storage facilities, higher population levels, larger household units, more nucleated villages, perhaps a tendency toward greater territoriality, and a well developed trade complex with California. All of this suggests to Elston (n.d.), "the possibility of a more complex and structured social organization...in most places than before and after. I assume that population grew at an accelerated rate throughout the Mid Archaic, but...there were no signs of stress on the resource base until the end of the period".

THE LATE ARCHAIC PERIOD. Sometime just prior to A.D. 1, the climate shifted from relatively cold and moist toward warmer and dryer, with a xeric peak at A.D. 500 (Davis n.d.). There are, however, conflicting data for the various sub-regions, and at this point it is unclear whether this diversity is due to incomplete data or to variable climates in the sub-regions. Cultural changes also occur at the beginning of the Mid Archaic (Elston n.d.): technological differences (introduction of the bow and arrow, plus the huller and various mortar forms, reorientation of lithic technology to the use of simple flake tools from locally available stone); stylistic change (introduction of Desert series projectile points and ceramics in some areas after A.D. 1300); ecological shifts (increase in both diversity of resources and the number of ecozones exploited); and social reorientation (shift toward more diverse, or smaller household groups, plus less frequent reoccupation of major habitation sites).

Sites interpreted as winter villages were still inhabited at the mouths of the Humboldt and Truckee rivers, but the Late Archaic houses were smaller, shallower, lacking post holes, interior hearths, cache pits or burials (Cowan and Clewlow 1968; Tuohy and Clark 1979). Tuohy (Tuohy and Clark 1979:415) has suggested that the most significant change during prehistoric times at Pyramid Lake occurred between A.D. 1000 and A.D. 1400, when twill twining completely replaced plaited coiling basketry techniques.

The Late Archaic is known as the Kings Beach complex along the northern Sierra Front. The original definition of the Kings Beach Complex suggested an economic emphasis on fishing and seed collecting, but more recent studies suggest that rabbits and hares were more important sources of protein in the winter villages (Dansie 1979). Hagerty (1970b), based on a survey in the Pine Nut Range, suggested that intensive exploitation of pinyon pine also began in Kings Beach times. According to Elston (n.d.): "virtually every base camp and winter camp site investigated on the northern Sierra Front has both Martis and Kings Beach components, but Kings Beach materials are much less abundant and are often found on the surface or mixed into the top few centimeters of the deposit". Although Elston (1971; Elston, et al. 1977) earlier suggested a more intensive use of sites during Martis times, he now thinks that the appearance of more intensive use may be due to "the overwhelming amounts of the basalt debitage [generated] by the Martis biface industry". If the numbers of Martis and Kings Beach projectile points from winter camps are equalized to account for the differential passage of time, Kings Beach points equal or outnumber those of the Martis Complex (Elston n.d.).

SUMMARY OF PREHISTORIC LIFEWAY DATA. This section has relied heavily on the recent innovative synthesis prepared by Robert Elston (n.d.). The current state of knowledge regarding prehistoric lifeways in the Carson City District can best be summarized using this interpretive framework.

Between about 9500 B.C. and 6000 B.C. "times were good": the climate was cool and wet (although becoming increasingly warm and dry); the population density was low, as was resource diversity. Little evidence exists regarding the prehistoric peoples who lived in the western Great Basin between 6000 and 4000 B.C. There may have been a "crash" due to overspecialization and climate change during the pre-Mazama period.

From 4000 B.C. to 2000 B.C., "times got as bad as they would ever get": adaptation centered on keeping populations low and increasing resource diversity (primarily by utilizing plant resources).

Between about 2000 B.C. and A.D. 500 "times were good again": resource diversity was up (increased use of upland site), artiodactyl hunting was emphasized, population was increasing. Times turned bad again towards the end of this period.

The post-A.D. 500 period is characterized by increasing resource diversity and a return to "good times" once again: the settlement pattern became dispersed, a wider range of plant foods was utilized and more peripheral resources such as jackrabbits were also exploited.

Elston's suggestions are highly speculative, but they do represent the most up to date synthesis of the archaeology of the Carson City District. At the very least, Elston's overview of prehistoric lifeways in this area will serve as a target against which future research will be directed.

## ETHNOGRAPHIC OVERVIEW

The Carson City District includes the former territories of the Washoe and Northern Paiute (fig. 15). Although the purpose of this section is a general overview of ethnographic lifeways, our emphasis is on techno-environmental and techno-economic factors.

Ethnographic data have served as basic models for archaeological interpretation (Baumhoff 1958a; Davis 1966a, 1966b; Fowler 1977; Kroeber 1923; Malouf 1966; Thomas 1973, 1974). These models function in the identification of native groups, defining their ethnographic territory, population, linguistic affiliation and extractive-procurement strategies.

Various cautions are in order, however, concerning strict adherence to ethnographic models; they can become an inhibiting force, limiting archaeological interpretation to strictly ethnographic options (Wobst 1978). Other criticisms include the basic reliability of the information, particularly in light of the condition of the groups from which those data were gathered; and the necessarily arbitrary ethnographic coverage of Great Basin groups.

The Washoe and Northern Paiute are discussed in separate sections. Two previous Class I Overviews contain summaries of each group, and this report will rely somewhat on that information (see Busby, Findlay, and Bard 1979 for the Washoe; and Bard, Busby, and Findlay 1981 for the Paiute).

### WASHOE

The Washoe belong to the Hokan linguistic stock, presumed the oldest family among California linguistic divisions (Jacobsen 1966, 1978; Kroeber 1925; Sapir 1917).

TERRITORY. Ethnographic boundaries for both the Washoe and Northern Paiute are the subject of considerable controversy among ethnographers (d'Azevedo 1966; Park 1938a; Steward 1937, 1939a, 1970; Steward and Wheeler-Voeglin 1974; Stewart 1939, 1966), but are now fixed by the Federal Government. The traditional boundaries were once fluid, according to Price (1962, 1980), and although the Washoe territory reportedly covered over 4000 square miles (6437km<sup>2</sup>), only some 2000 square miles (3219km) of that was considered nuclear lands (lands for the sole use of the Washoe). The remainder was peripheral land which was neither defended nor restricted to Washoe use.

The Washoe territory covered roughly the area from below Markleeville in the south, north to Doyle. Webber Lake in the Sierra was the westernmost boundary, extending east to around Mt. Siegel (Stewart 1966: map 28). The Washoe recognized three internal divisions for the tribe: The Northerners (welmelt'i), the Valley Dwellers (p'auwalo) and the Southerners (hanalet'i) (Siskin 1938:626).



Figure 15. Ethnographic Cultural Divisions in the Great Basin (from Johnson 1975).

ABORIGINAL POPULATION. There is little concensus on estimates of aboriginal Washoe population. Kroeber (1925) estimates approximately 1500 Washoe at the time just prior to white contact. Curtis (1926:91), based on the 1910 census, estimated the figure at 800. Mooney (1928) proposed a figure of about 1000 Washoe in 1845 and only 300 by 1907. Leland (1976), extrapolating the average rate of decrease of Great Basin aboriginal groups from 1873-1910, estimates at least 1365 Washoe existed in 1873.

D'Azevedo, likely the foremost Washoe ethnographer, suggests that some 2000-3000 Washoe lived in the Carson Valley, and this figure is well within the estimates of many of his informants (d'Azevedo 1966:323-324). A census of the tribal roll reveals 700 Washoe currently inhabit the reservations in the area (Leland 1976:30), but Price's (1980:68) data indicate there are over 500 Washoe in the Reno colony alone.

ETHNOGRAPHY. The Washoe ethnographic lifestyle is well documented. It is suggested that those interested in the full range of Washoe lifeway consult the following sources: Barrett (1917); d'Azevedo (1963, 1966); Curtis (1926:59), 89-98, 182-192); Dangberg (1927, 1968); Downs (1961, 1966); Freed (1960, 1963, 1966); Freed and Freed (1963a, 1963b, 1968); Jacobsen (1978); Lowie (1939); Park (1938a, 1941); Powers (1877); Price (1962, 1963a, 1963b, 1980). D'Azevedo and Price (1963) and Fowler (1970) are primary sources for bibliographical data on the Washoe. Nevers' (1976) Washoe tribal history includes summaries of the pre-contact, ethnographic and post-contact eras.

SUBSISTENCE-SETTLEMENT PATTERN. The Washoe, like other Great Basin groups, relied on a lifeway of seasonal transhumance, although the resources within their territory permitted more sedentism than was afforded neighboring groups. Plant foods, particularly the pinyon, constituted the bulk of the Washoe diet, along with abundant aquatic resources.

The Washoe geographical position, midway between the Great Basin and California, was reflected in their lifeway - producing a biregional orientation equally dependent on the resources in California and the Great Basin (Fowler, et al. 1981:5; Freed 1960:353). Downs (1966) suggests that the wide variety of habitats available to the Washoe lessened their dependence on caching as a primary subsistence mode; but alternately, this same variety increased the frequency of population movement, resulting in widely dispersed population. Downs seems to be alone in his opinion about the lack of Washoe dependence on cached goods.

Seed plants, collected on a daily basis from spring through fall, were generally gathered near base camps. Seeds represented both an expedient and long-term food resource, either consumed immediately or cached for future use.

Roots and greens, another staple, were gathered from early spring to fall and were often cached for winter. In the early fall, when the pinyon crops matured, the Washoe established winter camps near the groves, often caching the cones and nuts in grass lined, rock covered pits (Price 1963b).

The Washoe gathered berries in the summer and fall, and while none were cached, some were dried for future use. There is some disagreement concerning the Washoe use of the acorn: Barrett (1917) claims the Washoe regularly gathered acorns from their own and Miwok territory, whereas Price (1962) and Downs (1966) indicate that the acorn was of little importance.

Hunting was practiced on both an individual and communal basis (Downs 1966). While hunting was primarily concentrated in late summer and fall, game was taken opportunistically throughout the year as circumstances permitted.

Communally organized rabbit drives and antelope drives occurred in the fall, following the pinyon harvest. Antelope drives, under the supervision of a chief, involved locating the herd and driving it into a corral. Once corralled, the herd could be selectively killed over a period of days (Downs 1966:31; Steward 1938:34-35).

Jack rabbit drives were held in the fall. They were a communal effort involving men, women, and children, who drove the rabbits into a semi-circular series of nets. Once caught, the rabbits were dispatched by bow and arrow (Downs 1966:27; Lowie 1939:326-327).

Larger game such as mountain sheep, black bear and deer as well as birds, insects and lizards were hunted (Downs 1966:33-35; Lowie 1939:327). Mountain sheep were hunted individually during the early fall. Black bear, which persist in small numbers in nuclear Washoe territory today, were highly prized and were exploited only for ritual purposes. Deer were hunted individually, usually by a disguised hunter. The disguise enabled the hunter to approach the game, which was dispatched by bow and arrow. As an alternative method, a small hunting party hid behind a series of blinds; as the deer passed the blinds, bowmen shot the game.

The Washoe typically wintered in the lower valleys along the eastern slope of the Sierra (e.g., the Truckee Meadows, Antelope and Eagle Valley, and Carson River Valley), in dispersed villages within sight of each other's camp fire. It is reported that some Washoe groups "wintered-over" at higher elevations, particularly around Lake Tahoe (Freed 1966).

Most Washoe waited until early spring and summer to shift the focus of their activity to the Lake Tahoe area. Fishing was the primary economic focus at Lake Tahoe; cutthroat trout and sucker were taken in quantity during spawning.

Fishing techniques included individually owned fishing blinds, used in conjunction with harpoons (Freed 1966). Weirs, fishing platforms and dams were constructed for fish drives; the Washoe drove the fish toward a dam with branches, and caught the fish with their hands. Alternatively, the Washoe diverted streams, leaving the fish high and dry for easy gathering. Fish were generally cooked; some were eaten and others were dried for winter (Freed 1966).

Washoe social organization was based on the family band with bilateral kinship and friendship ties; frequent movements dominated the bulk of yearly activity. Winter settlements and summer fishing camps constituted the largest social grouping. The winter camps were usually located along the eastern edge of the Sierra, in the lower valleys and in some of the valleys in the Pine Nut Range. Settlements shifted to the lower foothills in the spring to gather early roots, greens and some berries. Younger members of the family initiated the movement to Lake Tahoe, taking advantage of the early fishing season. The remainder of the population followed in the early summer, but it was not uncommon to find the elderly and children spending their summers in the lowlands. Dispersed summer camps in the high country followed the peak of the fishing season, and by late summer they returned to the valleys to harvest tubers and grasses.

Early fall was a time of plenty, with economic focus on fishing, seed and berry gathering, antelope and rabbit hunting, as well as the initial pinyon harvest. By October, the seasonal round was complete and winter camps were once again established.

The Washoe usually lived in settlements which ranged from two to ten semi-circular brush and rock structures except during the winter (Lowie 1939:303). Winter settlements were chosen for proximity to springs and aspect, usually on the sunny face of low hills. The winter house (or gales dangl) was a more permanent structure, which was occasionally reoccupied over the years. The framework consisted of interlocking poles covered with bark, grass and boughs attached by cordage (Price 1962). The houses were usually 10 to 20 feet in diameter, with the doorway facing east (Price 1962), although considerable variation in design has been reported (Barrett 1917; Stewart 1941).

BURIAL PRACTICES. The Washoe interred their dead close to their village and camp sites. House burning and destruction of personal possessions of the deceased were often practiced (Fowler, et al. 1981:19). Disposal of the dead was accomplished by two primary methods: extended burial, head to the west; or cremation (Fowler, et al. 1981:21). Burial locations were typically in rocky outcrops in the mountains and foothills. It is generally agreed that family burial areas were reused (Fowler, et al. 1981:22). There is little evidence of social stratification in the treatment of the dead, but grave goods were usually sex specific (Fowler, et al. 1981:26).

Modern Washoe burial practices seem to have changed slightly from the ethnographic and prehistoric pattern:

Gradually, the Washoe moved from a pre-contact pattern of burying their dead in more or less private, isolated areas, to burying individuals in small group or 'family' oriented cemeteries near where they lived and worked (Fowler, et al. 1981:6).

Few prehistoric Washoe burials have been recovered. Three burials were discovered within Washoe territory, but they date to the Martis period; they

were pit burials, found in tightly flexed positions. The burials contained quartz crystals, bowl mortars, hammerstones, metate fragments, and/or projectile points as grave goods. These Martis period burials resemble Elko burials recovered from Pyramid Lake (Tuohy and Stein 1969), Humboldt Lake Bed (Heizer and Clewlow 1968) and Karlo (Riddell 1960). Flexed pit burials with grave goods probably formed a typical pattern in the western Great Basin during that period which was not restricted to the Washoe area (Fowler, et al. 1981:19).

CONTEMPORARY WASHOE. The pre-contact Washoe lifeway experienced serious disruption in the mid-nineteenth century. White contact directly affected the Washoe through confiscation of their lands. While the Paiute had direct confrontations with emigrants, the settlers first settled in Washoe territory. The Washoe lands were usurped for towns, livestock grazing, commercial fishing, and - most significant - for lumbering operations which were directed at the traditional Washoe pinyon groves. The Paiute confronted the whites directly (see the following section on the Paiute Indian Wars), but the Washoe preferred to watch from a distance, avoiding contact with the settlers whenever possible (Downs 1966:73-74).

The Washoe initially sought land in the Pine Nut Hills and Lake Tahoe area from the government after their land was confiscated by settlers. Their claims were denied; the government gave the Washoe relatively useless lands in the Pine Nuts (Nevers 1976:62). Washoe land claims remained unsettled for 60 years after their ancestral lands were confiscated.

The Carson Indian Colony, near Carson City, was established on 157 acres in 1917. Dresslerville was established in 1917 on a 40 acre parcel purchased by the government from the Dressler family. The Reno-Sparks Colony was also established in 1917; 20 acres were purchased for the Washoe and Northern Paiute families who were living in the area (Nevers 1975:79).

A twelfth grade education was provided for the Washoe at the Carson Indian School until 1980. The Reno Indian Agency was in charge of tribal affairs until 1934, at which time the tribe formed a separate government (Nevers 1976:81). The tribe was issued a corporate charter in 1937. They began acquiring farmlands, including the 800 acre Washoe Ranch which was purchased for individual Washoe ownership of farmland (Nevers 1976:89).

The Indian Claims Commission was formed in 1946 to hear and settle all Indian land claims. The Washoe filed a claim before the Commission in 1951, and that claim remained unsettled until 1970. The Commission reduced the original petition, awarding the Washoe five million dollars. Seventy percent of the award will be invested for the general welfare of the tribe, for educational and other benefits. The remainder will be paid directly to tribal members (Nevers 1976:91).

The colonies are involved with plans to improve community facilities and commercial-industrial development. Several recreational facilities and community centers are planned, as well as several major housing projects (Nevers 1976:92).

Some aspects of the pre-contact Washoe culture have survived, particularly the feelings toward the land, ceremonies, and social structure. The greatest post-contact change has hit their economic base; they have switched from a cooperative economy, to an individual, wage-based economy (Freed 1960:354).

Freed's (1960:355) summary of the present status of Washoe society suggests that changes in Washoe social organization include: a change from polygynous to monogamous marriage; changes in kinship terminology, which are the result of concomitant kinship role changes; the abandonment of the practice of sororate and levirate; and a loss of the previous system of agamous moieties. Certain social elements persist, however, including: Washoe residence rules; patterns of inheritance and descent; and the reliance on the nuclear family.

Although the Washoe lifeway has changed radically from pre-contact days, many aspects of the old culture persist:

"A child is still blessed at birth and given a one-month dinner. The girls' dance still honors a young woman's passage to adulthood. Many traditional foods are still gathered and eaten. The Washo hold rabbit drives, using shotguns instead of nets, clubs, and arrows...Many have renewed interest in their own past" (Nevers 1976:93).

#### NORTHERN PAIUTE

The Northern Paiute are members of the northernmost Uto-Aztecan linguistic stock, one of a triad of Great Basin Numic groups (Fowler 1972:106).

TERRITORY. Johnson (1975:14; see fig. 15) illustrates the boundaries of Northern Paiute territory in relation to the Washoe and Western Shoshone. Stewart (1939:Map 1; see fig. 16) further divides Paiute territory into individual bands. Stewart's internal band designations are controversial (see d'Azevedo 1966; Stewart 1970; Stewart and Wheeler-Voeglin 1974). The bands were fluid rather than fixed, but they were divisions recognized by the Paiute (Stewart 1939:130).

Northern Paiute band names were taken from the names of predominant food groups. The Carson City District was the home of the southern bands of Northern Paiute including: The Tasiget (Between Dwellers) in Winnemucca Valley; the Kuyui (Black Sucker Eaters) of the Pyramid Lake area and south through the Virginia Range; the Toe (Tule Eaters), focused on Stillwater and the Carson Sink; the Agai (Trout Eaters), from Walker Lake to the Desatoyas; the Pakwi (Chub Eaters), from southern Walker Lake (Hawthorne) to the Desatoyas; and the Tovusi (Grass Bulb Eaters), from Ft. Churchill to southern Mineral County, particularly in Smith and Mason valleys (Stewart 1939:138-143; Wheat 1967:5-6; see table 7 for areal and population data).

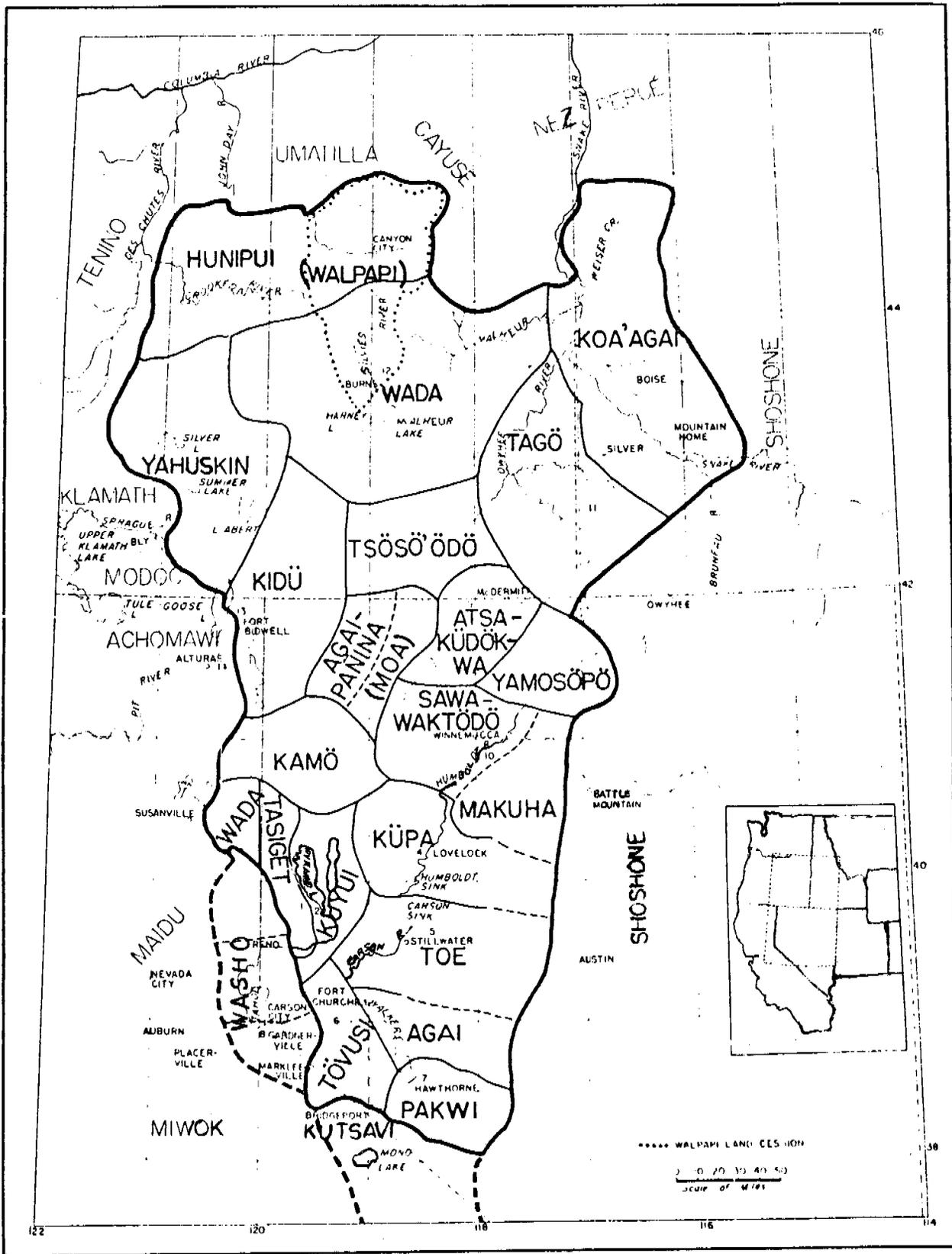


Figure 16. Northern Paiute Bands (from Stewart 1939).

Table 7. Northern Paiute Bands in the Carson City District\*

<u>Aboriginal Band</u>	<u>Principal Region</u>	<u>Area (sq. mi)</u>	<u>Population Year</u>
Tasiget tuviwarai	Winnemucca Valley	1000	580 (1859)
Kuyuidokado	Pyramid Lake	2000	970 (1859) 700 (1866)
Toedokado	Stillwater	6700	541 (1859) 800 (1866)
Aga' idokado	Walker Lake	1750	541 (1859)
Pakwidokado	Hawthorne	2000	100
Tovusidoakdo	Smith and Mason Valleys	2100	820 (1859)

\* Based on Stewart (1939:147).

The southern bands are distinguished ecologically from the northern bands by the presence of lakes and marshes in their territories. These lacustrine resources differentiate the economic focus of the two groups (Heizer 1967).

ABORIGINAL POPULATION. As with the Washoe, population estimates for the Northern Paiute are equivocal. Stewart (1939:138) based on data provided by Indian Agent Dodge (1860), estimated the Tasiget population between 280-300 at contact; according to Dodge, the Kuyui band comprised approximately 1000 Paiute. The Toe gathered between 1000-1500 Paiute for Dodge's visit in 1859 (including groups from Stillwater and Walker River [Stewart 1939:141]). But the Toe population, alone, was estimated at 800 in 1866 (Shimkin and Reid 1970:173). The Pakwi inhabited a mountainous area, and it is unlikely that their population exceeded 100 (Stewart 1939:142), but the Tovusi in Smith Valley, on the other hand, were estimated at 820 (Stewart 1939:143).

The Indian population in Churchill County fell from about 800 in 1866, to 280 in 1890 (Shimkin and Reid 1970:180). The Pyramid and Walker River Reservations which were established in 1874, housed 966 Paiute (Shimkin and Reid 1970:183). 427 Paiute lived in the Walker Reservation in 1902 (Johnson 1975:99). The Stillwater Reservation (for Shoshone and Paiute) began with a population of 262 in 1900, which rose to 449 by 1930 (Shimkin and Reid 1970:184). Some 3000 Paiute currently live on reservations, considerably reduced from the 7000 on reservations in 1873 (Leland 1976:30).

ETHNOGRAPHY. Several sources detail portions of the Northern Paiute ethnographic lifeway. The following sources are suggested: DeQuille (1963); Fowler and Fowler (1971); Gilmore (1953); Heizer (1960, 1970); Park (1934, 1937a, 1937b, 1938a, 1938b); Powers (1877b, 1970); Steward (1937, 1938, 1939a, 1939b, 1940, 1970); Steward and Wheeler-Voeglin (1974); Stewart (1937, 1938,

1939, 1941, 1944); Wheat (1967); Whiting (1950). Fowler (1970) contains the most complete bibliography on the Northern Paiute to date. Johnson (1975) has written an excellent tribal history for the Walker River group; and a more general summary of Northern Paiute tribal history can be found in the Inter-Tribal Council (1976) publication. Unfortunately, the data available for the lacustrine adapted groups are sketchy.

SUBSISTENCE-SETTLEMENT PATTERN. It has been suggested that the pre-contact Paiute lifeway may have revolved around a semi-sedentary lacustrine oriented existence, primarily focused on the resources of the Humboldt and Carson Sinks (Heizer 1967). Recently, however, this model has been challenged by Kelly (1980, n.d.) based on a reexamination of the nutritional value of Great Basin marsh and lacustrine resources. Ranere (1970) suggests that Great Basin cultures have long exploited a variety of habitats, including desert, lacustrine, grassland and pinyon; and that the differences in settlement patterns are the result of differences in the emphasis by each group on those environments.

The dead of winter (January and February) was the most perilous time for the Paiute, as the bulk of their fresh food supplies had vanished. Although the winter diet consisted mainly of stored food, which was augmented by communally organized hunting and fishing trips (Wheat 1967:8).

With the coming of spring, the Paiute returned to marsh resources and desert plants for food. Men, in tule rafts, searched the marshes for eggs; coordinated surprise attacks were organized to net waterfowl. The women waded the marshes, gathering cattail shoots (Wheat 1967:9).

By late spring, the trout began to spawn, which provided the year's most abundant food source. The trout were caught from platforms using dip nets and spears. Fish weirs were constructed to channel the catch toward the platform (Inter-Tribal Council 1976:12). Major feasts were held during this season, and the largest Paiute social groupings gathered to share the catch. By early summer, the first desert seeds (mustard and nut grass) could be gathered in finely woven winnowing baskets. Information on the locations of other ripening resources was generally shared among the groups. Each resource was exploited in turn, often requiring travel over considerable distances (Wheat 1967:10).

Duck hunts were planned to coincide with their molting season - late summer. Hunters on rafts drove the ducks to shore, where they were caught by waiting hunters. Rice grass and cattail pollen were gathered in late summer and processed into cakes. Later in the season, berries were gathered (Wheat 1967:11), and the upland meadows were exploited for late-ripening grass seeds (Shimkin and Reid 1970:174).

Fall offered opportunities for social gatherings with the coming pine nut harvest and rabbit drives. Pine nut prayer-dances and hand games were held in the foothills near the groves. If the harvest was abundant, group size could reach that of the spring fishing feasts (Wheat 1967:12-13).

The young adults left the hills early for the communal rabbit drives. The elderly and children stayed somewhat longer in the mountains, returning to the valleys and marshes just before the snows began. The annual mud-hen drive was held in late fall; it was similar in composition and strategy to the late summer duck drives (Inter-Tribal Council 1976:14).

The Paiute subsistence pattern emphasized a duality of organization: independent groups, consisting of extended families or kin cliques (Fowler 1966; Shimkin and Reid 1970; Wheat 1967); and large loosely organized band settlements, composed of a number of families from diverse areas (Stewart 1939). The largest settlements were organized for spring fishing, the late summer duck drives, and the fall mud-hen and rabbit drives and pinyon festivals. Hunting was practiced on an individual and communal basis (the reader is referred to Gilmore 1953 and Muir 1961 for specific data on Paiute hunting techniques). Settlement locations were chosen for their proximity to the critical resources of food, water, fuel, and shelter, and (particularly in the Carson Sink) away from mosquitos on high sandy ground (Shimkin and Reid 1970:173).

The Paiute lived in brush shelters, or conical domed pole structures (Stewart 1941; Wheat 1967). Pole frame houses were constructed of willow or young pine poles about 15-20 feet long. The poles were lashed together, spread in a circle about 10-12 feet in diameter, and sunk into the ground. Horizontal willows were lashed around the house at heights of 4 and 8 feet. The two main poles were placed close together to form the door. The frame and door were covered with 3 by 4 foot tule mats; rye grass or cattail mats covered the floor. The Paiute also built cloth houses, bark houses, and circular sagebrush windbreaks (Whiting 1950:93-94).

The selection of habitation sites varied, according to Powers (1877b), between California and Nevada groups:

...the most radical difference between the California and the Paiute or Nevada Indians is that the latter build their lodges more or less on hilltops, while the former build theirs near watercourses (Powers 1877b:15).

The Paiute, like the Washoe, made extensive use of basketry as storage containers, winnowing trays, seed beaters, water bottles, burden baskets, clothing and matting. The bulk of basketry was of an expedient nature, manufactured on the spot (e.g., tule bags), but cordage was prepared during the winter and stored for future use (Wheat 1967:9).

Clothing was minimal. The rabbit skin blanket, which was the main item of clothing, also functioned as a sleeping garment. Leggings, primarily sagebrush, and grass skirts were occasionally worn.

The Paiute manufactured no pottery (Stewart 1941). Tule balsa boats were produced from tule bundles lashed into rafts. The rafts were used in conjunction with decoys, nets, and spears for duck hunting and fishing. Nets, arrows, and sinew-backed bows were used during rabbit drives.

Group Activities. The sociopolitical institutions which served to regulate Paiute group size were based on bilateral extended kin groups, as well as more or less temporary large operating groups and a group of leaders or shamans, who exercised authority by informal consent (Shimkin and Reid 1970:176).

Group activity in January and February included jack rabbit hunts and fishing during the winter trout spawn. Willow weirs were constructed for the fishing, with men alternating position between the weir and the fire. A self-imposed limit of five trout per man was generally followed (Wheat 1967:8).

In February, men and boys hunted ground squirrels. All of the burrow entrances, save one, were closed and the hunters, positioned at the remaining entrance, waited for the quarry to emerge (Wheat 1967:9).

The largest social gathering revolved around the trout spawn, mud hen, and duck drives, but the catch was exploited by independent families. The fall pine nut harvest offered further opportunities for social community, but each family gathered its own pine nut crop.

The largest communal hunt, the November rabbit drive, was initiated by the rabbit-hunt captain who chose the community campsite for the first drive. He built a fire, indicating the location of the gathering. Following their return from the pinyon groves, each family set a net -- stringing them together across large portions of the valley. Young men drove the game while older men, positioned at the nets, killed the rabbits (Wheat 1967:14-15).

BURIAL PRACTICES. The Paiute practiced interment and cremation. Extended, flexed, and cairn burials are reported (Curtis 1926; Stewart 1941). Customarily, personal property, including the house, were burned with the deceased inside (Wheat 1967); a practice which served the dual function of disposal of the dead and limitation on the accumulation of property (Shimkin and Reid 1970:176).

Unfortunately, few burials have been recovered in archaeological contexts which can be assigned to the Paiute; however, recent unpublished data suggest that pre-contact Paiute burials in the Carson Sink were located on high ground, generally on the upwind end of sand dunes, often buried in semi-flexed positions with sex specific and ornamental grave goods.

Hattori's (1975) ethnohistorical study of the Northern Paiute in the Virginia City area should be consulted for an archaeological perspective on Paiute lifeways in the 1870s.

CONTEMPORARY PAIUTE. The pre-contact Paiute lifeway was seriously disrupted with the advent of Anglo-American exploration in the mid-nineteenth century (the reader is referred to Forbes 1967, for various Indian accounts of white impact on native groups). The disruptions were particularly severe for those Paiute living along the Carson, Walker, and Humboldt rivers (Ranere 1970:53).

Shimkin and Reid (1970:178-179) divide the post-contact period into five phases: initial white settlement and native acculturation, 1843-1861; demographic and cultural shock, 1861-1902; partial recuperation and consolidation, 1902-1934; renewed experimentation and adjustment, 1934-1950; and population growth and urbanization, since about 1951.

Although the Paiute were the first group in the District to contact the explorer-emigrants, they received less prolonged impact from white settlement than did the Washoe. In 1833 the Walker party massacred 30 or 40 Paiute, and the following year he murdered 14, injuring "a great many more", by Walker's account (in Ewers 1959:131).

Hostilities continued as exploration and emigrant parties pushed forward. Government officials, sent to investigate the "Indian hostilities", concluded that the Paiute were provoked to retaliation by the actions of the white settlers (Inter-Tribal Council 1976:21-23).

Indian Agent Frederick Dodge was sent to establish an agency at Genoa in 1859. Initially recommending the establishment of reservations for the Washoe and Paiute in the Truckee Meadows, he later revised this recommendation suggesting two reservations for the strict use of the Paiute, at Pyramid Lake and Walker Lake. But, before any action was taken toward their establishment, the gold rush of 1859 brought the two cultures into abrupt contact.

By 1860 the Paiute retaliated in force for the confiscation of their land. Tribal leaders assembled at Pyramid Lake to hear Indian grievances. During the conference, two Paiute women were captured and held at Williams Station on the Carson River. The Paiute located and released the women, burning the station and killing the Williams. This event precipitated war (Inter-Tribal Council 1976:27-29). For further details on the Pyramid Lake Indian War and the history of this period, the reader is referred to the historic sections of this report.

The government decided that the Indian reservations would serve to lessen tensions and would also leave the bulk of land open for white settlement. The initial reservation lands were set aside in the nineteenth century.

In the early twentieth century, many Paiute were forced to leave the reservation and seek employment. The breakup of families precipitated further upheavals in the traditional Paiute lifeway. Several Indian colonies were formed during this period. Various tribal groups organized self-governments under the provisions of the Indian Reorganization Act of 1934.

Yerington. Yerington Colony was established in 1917 on 9,455 acres purchased from the Bovard family to provide homes for the Paiute in the Mason and Smith Valley areas (Inter-Tribal Council 1976:59). The Campbell Ranch and irrigation rights (1,108 acres) were purchased in 1936, and alfalfa, wheat and barley are raised there (Inter-Tribal Council 1976:60-61).

Reno-Sparks. Twenty acres were purchased from the Lewis family in 1917 to establish the Reno colony, and another nine acres were added in 1926. The Colony organized a six-member governing council in 1936, with responsibilities for settling disputes and acquiring land (Inter-Tribal Council 1976:74-79).

Stillwater-Fallon. The Fallon Reservation was established in 1906, following some 20 years of government wrangling in which the original allotment of 31,360 acres, without irrigable water, was reduced to 4,640 acres with water rights (Inter-Tribal Council 1976:81-86). The Paiute were given an additional 840 acres of irrigable farmland in 1917.

The Fallon Indian Colony was established on 40 acres of land, and another 20 acres were added in 1958 (Inter-Tribal Council 1976:87); the Fallon Business Council, its governing body, was formed in 1964 to oversee economic development.

Walker River. Following the recommendation of Indian Agent Dodge, the Walker River Reservation was legally set aside in 1859, but was not formally established until 1874 (Johnson 1975:28). Subsequently, trespassing emigrants caused the deaths of several reservation Paiute. When hostilities increased in 1865 following the death of two miners, over one hundred reservation Indians were removed to Fort Churchill.

Land conflicts arose with several of the farmers in the area, but the most organized attempt at confiscation of Walker Reservation lands came from the Carson and Colorado Railroad. A Congressional bill was introduced at the instigation of the railroad in an attempt to negate previous agreements between the reservation and the railroad. The bill called for closure of the reservation and eventual displacement of its inhabitants to Pyramid Lake. This option was strongly opposed by the Paiute (Inter-Tribal Council 1976:95-98). Ultimately, the reservation was reduced to 85,760 acres, and the Paiute relinquished their title to Walker Lake and much of the surrounding terrain. The reservation was subsequently increased to 323,000 acres in 1936, somewhat larger than the original allotment (Inter-Tribal Council 1976:99-100).

The Bureau of Indian Affairs began an educational program in the 1870s. The Paiute were taught a traditional Nevada curriculum, but they viewed this imposition of white culture as no more than a systematic scheme to obliterate traditional Paiute values (Johnson 1975:85).

The Paiute have attempted to retain some of their traditional structure through the fandangoes which are held in the fall and spring. These social events were discouraged by the Superintendent of the Reservation, Hailman; he was shot in 1914, bringing the conflict to a climax (Johnson 1975:117).

Hailman was a tyrannical superintendant, initiating a pass system for Indians who wanted to leave the reservation. Paiute who failed to comply with the pass rules were subject to arrest (Johnson 1975:121).

Various other conflicts developed over traditional lifeways, restrictive supervision, and water rights. All in all, it is fair to say that relations between the Walker River Paiute and the Federal government remained somewhat strained (see Johnson 1975 for detailed accounts of the problems).

It became obvious that the best governing body for the tribe should come from within the reservation. A constitution was adopted by overwhelming vote in 1937, giving the tribe authority to: employ legal counsel; control tribal land; negotiate with American Federal, State, and County governments; determine tribal membership; manage economic affairs, including taxes and license fees; establish laws and employ police and courts to enforce them (Johnson 1975:143).

The population of the reservation was 500 in 1974. The Tribal Council has instituted revenue sharing programs which include a motel, cafe, and gas station complex (Johnson 1975:156). The Council sponsors several ceremonies during the year including Fourth of July and Pine Nut celebrations which feature barbeques and hand game tournaments.

While the aboriginal lifeways no longer exist, certain aspects of the pre-contact Paiute social structure do persist. Shimkin and Reid (1970:192-194) suggest that this persistence (particularly among the Paiute in the Carson Sink) is due to several factors including: the location of the Carson River basin in a relatively backwater area; an intimate relationship between the Paiute and the land, and continued psychic association with spots of emotional significance (e.g., Job's Peak and Sand Mountain); a sufficiently large population with adequate genetic variability for a surviving population; effective leadership, including a variety of messianic leaders with the ability to galvanize native aspirations; a highly flexible kinship system which encouraged alternatives for social cooperation; a capacity for economic organization which was compatible with white society; and, finally, the ability to reorient cultural customs to new functions (e.g., the traditional rabbit drive now functions to keep rabbit populations in check, and thus prevents the destruction of alfalfa fields). Shimkin and Reid conclude that the prognosis for social identity among the Paiute is encouraging.

## PREVIOUS ARCHAEOLOGICAL RESEARCH

This report on the prehistory of the Carson City District constitutes the first such effort. The 1.6 million acres within the Reno ES and the 5.6 million acres within the Lahontan and Walker ESs have been divided arbitrarily into manageable geographical units which usually follow drainage basins. Prehistoric Great Basin groups often used natural drainage basins as cultural boundaries (Steward 1938), and therefore, the archaeological materials within those units may have substantive integrity.

This synthesis is not designed as an exhaustive inventory of published material, but rather as a presentation of the highlights of decades of archaeological research. Further information on specific prehistoric sites is found in Tables 1 and 3.

### CARSON RIVER DRAINAGE

The Carson River, with headwaters in the Sierra, runs through Washoe and Northern Paiute territory. The drainage begins in Alpine County, California, running north along the eastern flank of the Carson Range, eventually draining into the Lahontan Reservoir.

Many contemporary town sites along the southern part of the river were pre-contact Washoe settlements (d'Azevedo n.d.:20-42). Gardnerville is currently the home of the Washoe tribal colony. D'Azevedo's informants recorded nearby streams, springs, and flats, each with a long oral history of occupation. During the early contact period Sheridan, Genoa, Mountain House, Fredericksburg, and especially Gardnerville were the centers of the Washoe world. The southern Carson Valley may have been equally important prehistorically. Green (1976) proposed that the Carson Valley had long been the focus of the Washoe ceremonial world. In contrast, Downs (1966) stressed the importance of Lake Tahoe to the ethnographic Washoe. D'Azevedo records several sites in both areas, but the density of sites in the Carson Valley and the Pine Nut Mountains may support Green's hypothesis.

Maule (1938) notes the Washoe mainly occupied the Carson River basin. His account of several early government surveys (from 1855) includes illustrations of Indian trails which led from drainage to drainage, paralleling the Sierra. Maule thought it curious that the trails were located along low ridges rather than in the valleys and canyons. He suggested that these locations gave the Washoe vantage over the surrounding terrain (Maule 1938:10). The government surveys recorded several high altitude rock hunting blinds, and several low altitude wooden drift fences (Maule 1938:11).

Maule reprinted an article from an 1869 issue of the Silver Mountain Chronicle which told the tale of "Captain Jim (Washoe Chief)". The paper relates the trouble between Captain Jim and (forest) Superintendent W.A. Johnson over Jim's use of a cave near Hangman's Bridge. This cave (Alp-7) was recorded by Maule, and by Heizer and Elsasser (1953:8) based on Elsasser's 1942 survey records.

Archaeological interpretation throughout the Reno ES is heavily influenced by the Heizer and Elsasser (1953) synthesis in which they defined Martis and Kings Beach as temporally and geographically exclusive complexes in central Sierra and western Nevada prehistory. Elsasser (1960:1) reviewed more than 1800 Martis sites, but did not substantially alter the original definitions of these complexes.

Martis Complex. Earlier than Kings Beach; preference for basalt over chert or obsidian; large, variable form projectile points; mano and metate for seed grinding; cylindrical pestle and bowl-mortar; atlatls; economic emphasis on hunting and seed-using; finger-held, expanding-base drills.

Kings Beach. Later than Martis; preference for obsidian and chert; bedrock mortars for seed-grinding; small, light, side-notched projectile points; economic emphasis on fishing and seed-using; bow and arrow; scrapers rare; drills absent (Heizer and Elsasser 1953:19-20).

The Martis/Kings Beach sequence has been modified somewhat by subsequent work in the area, notably by Elston, as discussed elsewhere in this chapter.

SOUTHERN CARSON RIVER VALLEY. The southern portion of the Carson River valley was popular with the ethnographic Washoe. The Washoe name for the East Fork of the Carson River is p'aw gu wa't'a. The forks of the River are called dabayosuwe ("running together"), and the Carson River is p'aw wat'a (d'Azevedo No. 83, n.d.:31-32). The West Fork of the Carson River is dawbadayas beyumewe'gu wa't'a from Woodfords to the forks in the valley and taneleldewbeyu'us p'aw wat'a from Woodfords to the point where it reaches the valley (d'Azevedo No. 84, n.d.:32). While several other sites are mentioned by d'Azevedo, few have been formally recorded. The exceptions include Alp-56 and Alp-63 between Markleeville and Woodfords. Both numbers are assigned to a large site behind the Hawkins Ranch which contained a number of bedrock mortars, artifacts, and an associated historic Washoe burial ground (d'Azevedo No. 42, n.d.:15-16). There is some confusion as to the exact location of these sites.

Alp-15 is known as deyugeli' k' la hat t'anali' ("color of pinenut soup--house there"), a year-round camp near a stream. About a mile away another campsite (Alp-16) was called pasa' pawdi danali ("pack rat fell over--house there"). It was named for a large rat which stole pine nuts and stored them in holes in the rocks. Washoe retrieved nuts from such rat holes (d'Azevedo Nos. 55 & 56, n.d.:22). Alp-64 is a small spring and associated settlement called dewgumemi' near Fredericksburg (d'Azevedo No. 58, n.d.:23).

Following Maule's (1938) initial explorations, archaeological research continued with the Heizer and Elsasser (1953) survey. The Heizer and Elsasser survey resulted in recording several ethnographic Washoe and Kings Beach sites within the southern Carson Valley (Alp-6 through Alp-9).

Surveys for the Watasheamu Reservoir project on the east fork of the Carson River found most of the recorded sites. Initial reconnaissance by Albert Elsasser and Paul Schumacher of the University of California (Elsasser 1957) located six sites (Alp-17 through Alp-22). These Kings Beach sites were located in the pinyon-juniper zone. Noting that the favorite camping spots during pinyon gathering were those near springs, Elsasser felt that the survey had confirmed his predicted Kings Beach pattern; all of the sites with the exception of Alp-18 were located adjacent to small streams. Alp-18 was located on a low terrace close to the Carson River (Elsasser 1957:4).

Elsasser recommended excavation of Alp-22 (Elsasser 1957:5). James T. Davis (University of California) excavated the sites in 1957 for the National Park Service (Davis 1958). The bulk of diagnostics were Desert Side-notched and Rosegate series points, with a tentative Martis component. Davis concluded that the site was the remains of a Kings Beach temporary fishing and gathering camp which had been sporadically reoccupied (Davis 1958:25).

The Watasheamu area was subsequently reevaluated by Rusco (1977) for the proposed reservoir expansion. Rusco felt it was impossible to predict the location of the remaining cultural resources in the area to be flooded solely on the basis of the previous reports, which had covered a small unsystematic sample of the area. Rusco recommended that further construction be postponed until the area was systematically surveyed.

Dunbar (1976e) located a small lithic scatter (Alp-111) on a tributary of the Carson, downriver from the Elsasser and Schumacher survey area. The previous surveys had also found that small tributary streams were favored site locales.

In 1974, Jerald Johnson and Wayne Wiant (California State University, Sacramento) surveyed a proposed realignment route for Highway 89 between Woodfords and Markleeville. One site (Alp-105) was located, and it was subsequently excavated by Roger Cook of CALTRANS (Cook 1976). Cook's excavation uncovered Martis, Humboldt, Elko and Pinto series points in addition to various other chipped and ground stone artifacts to a depth of 40 cm. The site may date to early Martis times, with a possible Spooner component; it was abandoned by A.D. 1. Cook recommended that the site be avoided and preserved. Alp-147, a bedrock mortar and lithic scatter, was located nearby by the Forest Service.

Two other sites have been found along Highway 89: Alp-112 was located during an archaeological reconnaissance for Turtle Rock Park, and contained several bedrock mortars and associated milling stones (True 1976). Alp-113 was a small lithic scatter found during a joint BLM-USFS survey.

Ann Peak and Associates conducted a survey along Highway 89 for the South Lake Tahoe Public Utilities District Wastewater Disposal Facility, locating three historic sites and two prehistoric "chipping stations" (Alp-120-Alp-124; Peak 1978).

Patricia Stearns (1979b) recorded 13 sites (TD 1-5-79/1-13) during a Forest Service survey of Scossa Canyon near the Carson River. In addition to a number of historic isolated finds, several pinyon gathering sticks were recovered.

The Nevada State Museum has compiled several literature searches in the area for various federal projects (see Dansie 1975a).

The southern Carson River valley is near Washoe borderlands with the Miwok to the west, the Maidu to the northwest, and the Paiute to the south and east; one rich avenue of future research would be the analysis of exchange systems among these groups.

Green (1976) views the Carson River valley the center of the Washoe world, while others (d'Azevedo 1963; Downs 1966) believe Lake Tahoe was the focus of Washoe existence. Either position could perhaps be tested through comparisons of late site density between the two areas. Though the Carson Valley was initially surveyed in 1942, we still know relatively little about the prehistory of the area.

HOBO HOT SPRINGS. The Hobo Hot Springs site (26Dol2) was located during a survey of the Carson Valley by the University of California. The site was recorded by d'Azevedo (malit k' ilet'i' 'itlo'om) as a spot where Washoe met for ritual bathing (d'Azevedo No. 91, n.d.:38). Part of the site is now covered by a reservoir on Jacks Creek.

Hobo Hot Springs was excavated in 1956 by Elsasser (1960). Thirty-five test pits were excavated over a large area, and 365 identifiable projectile points were recovered (including some from private collections). Most were Martis points, although a few Humboldt and one Desert Side-notched were found as well. Hobo Hot Springs is one of the Martis type sites (Elston 1971; Hagerly 1970b:38; Hindes 1962:23; O'Connell 1967; Price 1963c). In addition to the points, Elsasser excavated a crescent, mortars and pestles, various other ground stone objects including a perforated discoidal, and several bone tools. One loosely flexed burial associated with two unidentified projectile point bases was uncovered 17 inches below the surface (Elsasser 1960:59). Elsasser suggests that the materials from the Hobo Hot Springs are related to the Yosemite area; that the Sierra is a distinct culture area (also see Hindes 1962).

Harrigan (1977) surveyed the area around Hobo Hot Springs for a transmission line project. One site was located, but it may be part of the Hobo Hot Springs site.

SPOONER LAKE AND DAPHNE CREEK. Wilbur Davis surveyed in the Carson and Washoe valleys in 1965, covering approximately 400 sq. miles from the Pine Nut and Virginia Ranges to the Sierra. The survey was designed to test the Washoe ethnographic model with archaeological data to determine if "the earliest extensive occupation of Washo territory was by Hokan-speakers who produced the Martis Complex and whose descendants are the historic Washo" (Davis, 1966a:ii).

Davis covered one-tenth of the area "thoroughly", and one-half of the area "received...but scant attention" (Davis 1966a:1). Sites were selected for excavation and survey based on their distance to centers of Anglo-American occupation. The survey culminated in the excavation of three relatively undisturbed sites: Spooner Lake (26Do38); Daphne Creek/Jacks Valley (26Do37); and the Nine Hill Complex (26Wa700) (see Washoe Valley).

Davis (1966a) and Elston (1971) have summarized the excavations, with no obvious disagreements. Elston names the first phase of occupation "the Spooner Complex" (Elston 1971:92). Radiocarbon dates suggest that occupation at Spooner Lake began 5000 to 7000 years ago with the Spooner Complex. Diagnostic artifacts include Pinto and Humboldt points, lithic manufacturing paraphernalia, and a weathered bedrock metate. Elston's Spooner Complex correlates with Davis' "Hypothetical Occupations I and II", or "Spooner I and II" (Davis 1966a:34).

The second phase of occupation is "the Martis Complex" (Elston 1971:92), also called "Spooner III" or "Jacks Valley I" by Davis (1966a:34). Artifacts are more highly concentrated and diverse than for the Spooner phase. Diagnostic artifacts include Elko Eared and Sierra Stemmed Triangular points. The Martis Complex lasts from 3000 years ago, until around A.D. 1 (Davis 1966a:34; Elston 1971:93).

Late Martis lasted from about A.D. 1 to A.D. 500 (Elston 1971:93), or perhaps as late as A.D. 1385 (Davis 1966a:35). Rosegate series points predominate during Late Martis, but some Elko and Martis points are found in Late Martis sites. Domestic artifacts such as drills and manos began to appear in quantity in early Martis, but by Late Martis the assemblage was characterized by pestles and small flake scrapers; manos seem to be on the decline (Elston 1971:92-93).

Davis felt that late Martis sites were probably the remains of sporadic occupations. Elston notes that these mixed late Martis assemblages indicated that the change from atlatl to bow and arrow was slow over a number of years. According to Elston, Desert Side-notched points occur in the deposits, and may have been used earlier in the northern Sierra than in the rest of the Great Basin (Elston 1971:102).

Kings Beach components were absent from Spooner Lake. Davis defines the late component as Spooner V, Jacks Valley II, and Nine Hill. The earliest date for the component is A.D. 1385 with peak intensity around A.D. 1500 to 1700. Characteristic Kings Beach associations include Desert series points, the metate and mano, and cylindrical pestles (Davis 1966a:35).

The final phase at Spooner Lake is historic Washoe (Davis' Spooner VI). The assemblage is similar to Kings Beach with the addition of post-contact items such as trade beads (Davis 1966a:36; Elston 1971:102-103).

Daphne Creek (Jacks Valley) may have been occupied as early as Spooner Lake, but the evidence was limited to a single, rather undiagnostic Humboldt

series point (Elston 1971:125). The site was used sporadically from perhaps 5000 years ago until recently. Points were the most frequent artifact recovered in the excavations. On the basis of these data, Elston concluded that the site was an occasional hunting camp during early and late Martis times. The main concentration of material was Kings Beach, dated between 360 and 460 years old (Elston 1971:125).

Spooner Lake and Daphne Creek are particularly significant sites for several reasons: Davis' hypothesis of cultural continuity between Martis and Kings Beach is supported by late Martis (transitional) materials recovered from these sites (Elston 1971:146). Radiocarbon data from the Spooner Complex suggests that the area was used during the Altithermal; a time of presumed abandonment of much of the Great Basin (Davis 1966a:36; Elston 1971:135-136).

Recently, Elston (1979a) has questioned late Martis as a transitional phase between Martis and Kings Beach. He further questions the relationship between the Spooner Complex and the Altithermal. Initially, Spooner was thought to represent Great Basin groups fleeing the hot, dry Altithermal interior for the relative haven of the Sierra. Elston now believes that there is little evidence for Altithermal abandonment of any part of the Basin.

Spooner Lake has been studied in several subsequent investigations. Rusco and Tuohy checked the area prior to some planned construction, concluding that the site would receive no impact (Rusco 1970a). Davis, Duffé, and Sayer (1977) tested part of the west shore of Spooner Lake, recovering three artifacts. They recommended further study, although no adverse impacts were foreseen.

Jensen and Rusco (1980) investigated potential impacts to the sites at Spooner Lake resulting from the repair of Spooner Lake Dam. They surveyed around the lake, testing three sites (26Do28, 311, and 322). It was found that the proposed construction would have adverse effects on 26Do38 and 311. The mitigation they proposed consisted of further excavations and a report. They concluded that 26Do38 (Spooner Lake) was eligible for the National Register, based on its age alone.

HOT SPRINGS MOUNTAIN. Hot Springs Mountain lies due south of Prison Hill, with the Carson Valley to the west. The mountain was known as mast' iyel to the Washoe, and it is mentioned in several of their myths (d'Azevedo No. 86, n.d.:33). Washoe informants said the hot spring, also known as Dangberg or Saratoga Hot Springs and the Buckbrush Gun Club (26Dol), was a place where people went to die, and "one can find their bones there yet". The ground near the hot spring was littered with artifacts. According to the Washoe, the hot springs were full of diseases. Nevertheless, the hot springs are remembered as a favored locale because they were warm, had a great variety of vegetation, and were on a game trail. In fact, one informant describes the remnants of a large antelope drive enclosure made of sagebrush located near the springs. He remembers making arrows there which were later used in antelope drives. Parts of that fence were still visible in the 1950s (d'Azevedo n.d.:33-35).

Several reports cover the area around Hot Springs Mountain (Elston 1970, 1979b; Hagerty 1970b; Hester, Mildner and Spencer 1974; Peak 1979; Price 1963c; York 1973a).

York (1973a) surveyed south of Hot Springs Mountain on the east side of Carson Valley at the base of the Pine Nut Mountains, locating one possible pine nut gathering camp (26Do224).

The bulk of the archaeological reports deal specifically with the Dangberg Hot Spring site (26Do1). S.M. Wheeler first investigated the site in 1939 on a survey for the Nevada State Park Commission. Apparently, Wheeler excavated a portion of the site, but no report was filed. The site was recorded next by d'Azevedo in 1955 (see above). Elston (1970, 1979b) has been working on the archaeology of this site since the early 1970s, and much of the following discussion is based on his latest report.

Test excavations by Richard Shutler (Nevada State Museum) concentrated on the southern bank of the hot creek. Shutler, not realizing the site had been previously recorded as 26Do1, renumbered it 26Do4 or 26Do40a. These numbers have since been dropped because they were subsequently assigned to other sites. Shutler concluded that the site was not stratified and did not report any further on his findings.

Donald Tuohy (Nevada State Museum) decided that portions of the site still held research potential, so he and Elston conducted further tests. A trench was cut into the north portion revealing site stratification to a depth of 5 ft. The heaviest concentrations of cultural material were in the upper 3 ft. They received a radiocarbon date of  $3720 \pm 100$  B.P. (GAK-3358) on charcoal from a buried hearth. Elston (1970) initially believed that the site contained no subsurface structural remains, but has since revised that opinion (Elston 1979b:5).

Hester, Mildner, and Spencer (1974:fig. 11) illustrate an atlatl weight from Dangberg Hot Springs. Diagnostic projectile points include Pinto to Rosegate series, with Martis/Elko period points predominating. Desert Side-notched and Cottonwood points were extremely rare, surprising in light of d'Azevedo's information on historic Washoe use of the site. D'Azevedo related a tale that the site was abandoned because there was disease in the area. The data from the excavations seem to support this conclusion.

Peak (1979) conducted a survey and evaluation at the site for the Incline Village G.I.D. Wetland Enhancement project. After a field check in the winter of 1978, Peak concluded the site held little of its original integrity. Elston (1979b) disagreed with the conclusions in the Peak report which he felt were based on insufficient data. According to Elston, the site still contains sufficient undisturbed deposit to warrant nomination to the National Register.

EAGLE VALLEY. Carson City is located in Eagle Valley which lies south of Washoe Valley. Several reports on the archaeology of Eagle Valley are now available in response to local development (Dansie 1976c, n.d.; d'Azevedo 1978; Dunbar and Buder 1976; Hattori 1978; Seelinger 1977b; Turner 1980a).

Dunbar and Buder conducted an archaeological reconnaissance for a proposed mineral material sale. They surveyed a small area, locating one site (260r127) just outside the project area.

Dansie (1976c) surveyed an area south of Clear Creek for a Museum land acquisition, locating four sites (26Do228-230 and 260r128). Two were isolated finds, but 26Do228 may be a combination of several small task sites utilizing a game outlook.

D'Azevedo (n.d., 1978) recorded several sites in Eagle Valley: dawmaladaubana' is the Washoe name for the low hills sloping down west to Stewart, dividing the Carson and Eagle valleys; balna't'san wa't'a was the main settlement in Eagle Valley where the Washoe held rabbit drives; and usewi wa'ta was the Washoe name for Clear Creek in Eagle Valley (d'Azevedo n.d.:39-40).

Seelinger (1977b) surveyed an area near the Nevada State Maximum Security Prison for a sewage treatment plant, locating two small sites (260r129-130), and a large site (260r131) with possible depth.

Dansie's (n.d.) reconnaissance of an alternative right-of-way for a proposed sewer interceptor in the Carson City area located three sites: (260r119) a small lithic scatter; (260r120) a small historic site; and (260r121) an extensive historic site which was thought to be the site of "Old Camp", a Washoe settlement near the Stewart Indian School. Dansie recommended that test excavations be conducted at "Old Camp" to determine its significance. Subsequently the site was inspected in more detail (Rusco and Dansie n.d.) to determine if it was indeed "Old Camp". Test excavations consisted of three test pits in one of the historic concentrations. They concluded the site was a contact period Washoe settlement associated with the Stewart Indian Agency, but were not sure it was the site of "Old Camp".

The Nevada State Museum sent another crew into the field for 10 days of additional investigation, because the site was in imminent danger (Hattori 1978:15). Hattori led an interdisciplinary team of scholars (see d'Azevedo 1978; Johnson 1978) who determined the site was not "Old Camp". Apparently, it was the site of a historic dump for the Stewart Indian School and had probably been used for rabbit drives and refuse disposal before the school was built. The site had been used from 1890 to around 1930. Thus, Hattori's investigations touched on a relatively unknown period in Nevada history.

Turner's (1980a) report on a ring road to bypass Carson City is in preparation. The Nevada Highway Department has located or relocated 31 sites (260r1-30) in the Carson and Eagle Valleys, nine of which were tested.

PRISON HILL AND DAYTON VALLEY. Prison Hill forms the eastern boundary of Eagle Valley. The Carson River flows north along the eastern flank of Prison Hill.

A report by Turner (1980a) on the area is pending. A survey by Hatoff (1977e) covered some 2500 acres on Prison Hill, but located only two sites (26Or132-133). Hatoff recommended further exploration prior to any additional development, because the remaining unsurveyed portions of the hill might contain cultural remains. A survey by Dunbar and Gilbert (1975) covered 15 acres for a mineral lease, and located one site (26Or123).

The recorded sites generally consist of small lithic scatters containing Pinto, Humboldt, Elko, Martis, Rosegate, and one Desert series point, and several ground stone fragments. One burial was reported from a site (26Or1) which was later tested by Turner (1980a). Another burial associated with a basalt Side-notched point and a mortar was reported from Miller Ranch in Dayton Valley by Tuohy (1970b:5-10).

Hagerty (1970b:105-106) recorded a small site (26Ly209) downriver from Dayton and another, more extensive site (26Ly208) at the mouth of Sixmile Canyon. Steinberg and Thompson (1976) conducted an archaeological reconnaissance of 160 acres southeast of Dayton, locating 10 prehistoric sites (26Ly224-233) and one historic site (26Ly234). The prehistoric sites consisted of isolated lithic scatters.

Elston (1978) examined the Dayton State Park area, locating 15 prehistoric and historic sites in addition to 14 isolated finds (26Ly3, 11, 19, 112-126). The area around the park is a borderland between the ethnographic Washoe and Paiute and both groups used the area for similar winter exploitations. The majority of Elston's sites consisted of small lithic scatters, historic debris and one historic stamp mill ruin (26Ly121). Sites 26Ly121 and the nineteenth century dump (26Ly112) were judged eligible for nomination to the National Register (SHPO correspondence, 1978). Elston noted that the multiple use planned for the State Park would undoubtedly cause negative impacts to all of the prehistoric and historic remains if they were to remain unprotected. He suggested that protection or salvage of each site was critical to the preservation of their scientific value (Elston 1978:6). He strongly recommended that the park include an interpretative center to house the material recovered from the project.

A review of the SHPO correspondence file for the park leaves the impression that the issue of preservation remains unresolved (the correspondence file terminates with a 1978 entry). Any further impact to the area should consider its proximity to the Comstock District in Virginia City (see Hardesty and Firby 1980 for management recommendations for the Comstock).

FLOWERY RANGE AND CARSON PLAINS. In 1951, the University of California Archaeological Survey located several sites in this area, but Heizer and Baumhoff (1962) prepared the first formal report.

Davis and Rusco (1974) surveyed 300 acres north of U.S. Highway 50 east of Dayton, locating six sites (26Ly104-109). Primarily lithic scatters, the sites contained one Elko and one Rosegate series point. The team collected the majority of the sites, testing 26Ly106. Diagnostic artifacts suggested prehistoric use of the area from 3500 to 600 years ago.

Dansie's (1975b) archival search of the area mentions 26Ly8, a prehistoric lithic scatter located during the 1951 Berkeley survey. The site, located in the Flowery Range north of Dayton, consists of "remarkably large points, blades and a high concentration of metates". The site should be rechecked.

Several rock art sites have been recorded further south near Susans Bluff (26Ly5, 7 and 82). Prayer Cave (NSM: 26Ly5; UCAS: 26-Ly-3) contains red and white pictographs, in addition to three small (prayer?) sticks. The sticks were wedged into a crack in the wall of the cave (Heizer and Baumhoff 1962:47).

Steward (1929) and Mallery (1893:93) record a rock art site with abstract motifs on the Carson River. Based on an account by R.L. Fulton, Reno, the site (NSM: 26Ly7; UCAS: 26-Ly-5; Steward No. 209) was a single 4 foot high basalt rock art boulder which was located about 8 miles below old Ft. Churchill, at the Lahontan Reservoir across from the boat ramp.

Two additional rock art sites (26Ly82 and 26Ly26) were located by a University of California survey team in 1974. Site 26Ly82, located near Prayer Cave on the northern face of a steep walled canyon, is situated in an ideal hunting location. The motifs, which were associated with projectile points, include anthropomorphs, curvilinear representational and abstract elements. While no formal report is available for this site, Nissen notes it may be in the process of destruction by vandals. This site certainly warrants a recheck, and appropriate protective measures.

The other rock art site (26Ly26) is located near old Ft. Churchill (26Ly12) on a boulder covered slope; two of the boulders are incised with curvilinear abstract motifs. Two additional sites (26Ly253 and 254), located nearby, contain several projectile point fragments. For a full discussion of the Ft. Churchill site, the reader is referred to table 4 (Lyon County).

LAHONTAN RESERVOIR: A major portion of the Carson drainage was dammed in 1914 for the Newlands Reclamation Project, forming the Lahontan Reservoir. Several archaeological sites, which were situated on the banks of the Carson River, were relocated when the water in the reservoir was low (Gianella 1960).

The most dramatic feature of the archaeology in this area is the abundance of rock art sites along the former river channel. Like those on the Truckee River, several of these sites (26Ly27, 68, and 241) are located at low elevations on the river terrace. Other rock art sites (26Ly250 and CrNV-03-67) are located at extremely high elevations, providing excellent overlooks of the river channel.

Tuohy (1973) reports a pit-and-groove petroglyph site (26Ly250) composed of two rock art boulders with motifs on the top and sides high in the Dead Camel Mountains (approximately 4800'). He notes that the site, while commanding an impressive view of the surrounding terrain, was in a less than ideal spot for hunting; nevertheless, Tuohy postulates the site could have functioned in antelope hunts.

A similar site (CrNV-03-67), recorded by Brian Hatoff, is at an elevation of 4500' overlooking the former river channel. This curious site consists of several pit-and-groove rock art boulders associated with several stone circles.

Site 26Ly68 is located along an intermittent drainage east of CrNV-03-67. Discovered by the University of California Archaeological Survey Team in 1974, this site consists of faceted rock art located on the east side of a narrow draw. No artifacts were found in association with any of the above sites, although the extreme weathering and smooth rounded surfaces suggest great antiquity.

Further south, site 26Ly241 on the western terrace of the reservoir, consists of several tufa boulders with pecked glyphs in curvilinear abstract and representational styles. A fish motif on one panel is unique in the area. A possible pecking or grooving stone lay adjacent to the outcrop (Seelinger 1976:4).

Directly across the river channel from 26Ly241 is site 26Ly27, a series of rock art boulders on a basalt covered slope. The glyphs are curvilinear abstract and heavily patinated pit-and-groove; they have been subjected to severe vandalism.

It is curious that 80 percent of the recorded rock art sites in the Lahontan reservoir area are of the pit-and-groove or faceted styles, presumably the most ancient of the Great Basin rock art traditions.

Several early sites occur in the general vicinity of the Lahontan Reservoir (e.g., Sadmat, Hathaway Beach, and 26Ly43), the only recorded "Clovis" point in the area. Peak (1977) discusses (though she does not record) a possible Paleo-Indian site on the northeastern margin of the Lahontan Reservoir. These sites and the early rock art offer interesting possibilities for research on the early occupaton of the Carson City District.

Seelinger (1976) conducted an archaeological reconnaissance of the Lahontan Reservoir for a recreational development project. The intensive survey located sites 26Ly238-246 on the western shore and 26Ch371-377 on the eastern shore, as well as relocating 26Ly27, 29, 43 and 26Ch132. Twelve sites were collected and four others were recorded with no collections made. Further survey was recommended by Seelinger, in addition to mitigation of 26Ch376 and 377. Testing was recommended for site 26Ly246. The rock art site (26Ly241) was judged eligible for National Register nomination because of its unique fish motif. Site 26Ch376, 377 and 26Ly246 were also deemed eligible on the basis of their potential data yield.

## HALLELUJAH JUNCTION

The Hallelujah Junction section includes adjoining portions of the Long Valley and Pyramid Planning Units which encompass portions of Washoe County, Nevada, and Sierra, Lassen, and Plumas Counties, California. Most of this area was occupied by the ethnographic Washoe, although the placement of the boundary between the Washoe, and Northern Paiute who lived to the north, is controversial (d'Azevedo 1963, 1966; Downs 1966; Elston 1979a; Riddell 1978; Stewart 1939, 1941, 1966). Prevailing opinion suggests that Doyle, somewhat north of the District boundary, was the cut-off of the north-south boundary between the Northern Paiute and the Washoe.

Serious archaeological research in the area began with a survey of Lassen County by a team of archaeologists from the University of California under the direction of F.A. Riddell (Riddell 1956a). Three archaeological sites were excavated in conjunction with this survey: Tommy Tucker Cave (Las-1) and Amedee Cave (Las-90) are late component sites (Fenenga and Riddell 1949; Riddell 1956b); the Karlo site (Las-7) is a multicomponent surface site with a well-defined early component (Riddell 1960).

Another "excavation" in the area was a burial uncovered by a backhoe (Riddell 1978). Similar to the Pyramid Lake Shaman burial (Tuohy and Stein 1969), it was associated with Elko Series points, and was radiocarbon dated to  $1850 \pm 100$  B.P. (UCR-123/UCLA-1797, Riddell 1978:10-20). Other excavations within the general area include the Chilcoot Rockshelter (Payen and Boloyan 1961).

The bulk of the University of California research was just north of the Long Valley Planning Unit; research within the District boundaries has been restricted to cultural resource management projects, thus far. The archaeology is fairly straightforward, with typical Washoe, Kings Beach, and Martis Period sites. With few exceptions, early finds are scarce. A few rock-shelters are recorded in the area, and several open stratified sites, as well.

The archaeological site records for this area pose several problems. Most work was completed under federally funded contracts which overlap state boundaries; thus, the responsibility for site records was divided between several institutions. The upshot of this situation was confusion and inevitable recording errors. Initially, the University of California, Berkeley, was in charge of assigning site numbers. Berkeley subsequently issued a block of numbers, using hypens, to the Nevada State Museum in order to record those California sites which were part of Nevada archaeological projects. In 1967, when the Nevada Archeological Survey, under the direction of Robert Stephenson, was formed, all hyphenated Berkeley numbers were converted to Smithsonian designators which dropped the hypens, and in some cases, new numbers were issued. Berkeley has not issued California trinomials since 1965. The Society of California Archaeology has given the responsibility for number assignments to several District Clearing Houses: California State University, Chico is responsible for Lassen and Plumas Counties; and California State University,

Sacramento administers the records for Sierra County. The problems which arose from this system are discussed below, but the greatest difficulty arises from a lack of communication inherent in the nature of the expanding bureaucratic structure. Once the SCA assumed responsibility for keeping site records it was incumbent on the Society to see that the previous records were in order. While the several clearing houses continue to unravel the confusion in the old system, problems persist.

Cultural resource management projects in the Hallelujah Junction area were initiated by the BLM. The Nevada State Museum was contracted to undertake an emergency site identification program within an area partially destroyed by fire.

The Museum project, under the field direction of Robert York, involved a survey of 1,000 acres in Lassen and Washoe Counties, which was designed to identify and flag archaeological sites located in a proposed reseeding project. Although field time was short and the project was underfunded, York located some 55 sites (York 1973b, 1974a). York collected portions of three sites (field numbers: Las-7, 8, and 9), but 52 sites were not formally recorded. York mapped the locations of these 52 sites, but time restrictions and contract specifications precluded further analysis.

Apparently the BLM and York disagreed about the terms of the contract. As a result of York's criticism, the BLM hired Richard Fike to reevaluate the area (Fike 1974). Fike relocated and renumbered York's sites, replotting three (Fike Nos. 21, 22, and 23). Fike numbered and mapped all sites, but again filed no site forms. One of Fike's main criticisms of York had been his insufficient site records, but Fike did nothing to rectify the problem.

Fike concluded that 10 of the 55 sites relocated were damaged, and seven were completely destroyed by the reseeding efforts (Fike 1974:2). Fike collected one of the sites (Fike No. 29), but the artifacts have been lost (Stearns 1980).

Recently, Steven Stearns, under contract to the BLM to survey the Evans Land Exchange area (Stearns 1980), surveyed portions of the Hallelujah Junction area. Portions of the Evans Land Exchange overlap the the York and Fike survey areas. Stearns relocated 10 of the York/Fike sites in addition to 15 new sites. His survey technique combined a systematic transect survey with an intuitive controlled survey based on ethnographic and existing archaeological data (Stearns 1980:12). He examined approximately 35 percent of the total 3500 acres and presented updated evaluations on the preservation of the York/Fike sites. Unfortunately, he found many of the sites were adversely affected and suggested that the proposed land exchange would further damage the archaeology in the area. His findings are particularly significant since many of the sites are eligible for nomination to the National Register. Stearns recommended the avoidance of all sites, if possible.

The Federal Department of Transportation, the Nevada Highway Department, and the California Department of Transportation funded an interstate

archaeological reconnaissance for the realignment of Highway 395. In 1974 the NHD contracted the Nevada Archeological Survey for a preliminary literature search and reconnaissance on the Nevada half of the project (Townsend 1974b). Meanwhile, CALTRANS contacted California State University, Chico to survey and evaluate the California lands (Boynton 1975).

Problems with interstate control began with the site records. All archaeological sites were recorded, but for example, the California group did not record isolated finds as separate sites, whereas the Nevada group recorded isolated finds as sites (Elston 1979a:49-50). In all, 15 isolated finds were discovered in Nevada, and seven were found in California (Elston 1979a:50).

The problems were compounded further when Riddell (California Division of Parks and Recreation) issued site numbers "4LAS317, 319-321" to several California sites. Several of those sites (4LAS319-321, Elston 1979a) are not in Lassen County; they are really located in Sierra County. The California trinomial in Elston (1979a) had been previously assigned to other sites. The Chico District Clearing House has recently reassigned official trinomial to the Hallelujah Junction sites: LAS-317=LAS-551; LAS-318=SIE-81; LAS-319=SIE-79; LAS-320=SIE-80; LAS-321=26Wal676. All Washoe County sites in the report are correct.

Boynton, who initially surveyed the California sites, recommended surface collections and subsurface tests (Boynton 1975). Sites LAS-551 and SIE-80 were tested by CSU, Chico (Bass 1975). Site SIE-80 had no depth, but artifacts were found to a depth of 60 cm. at LAS-551. Bass made no recommendations for further investigation at this site. Nevertheless, the site was subsequently tested by the NAS (Elston 1975a, 1975b, 1979a).

The NAS located several sites in Nevada (26Wal675-1682, 1685-1693) (Elston 1975a; Elston and Townsend 1974c; Townsend 1974b). Several other sites (26Wa2141-2143, 2152) were located in an ancillary project at two highway barrow sources (Phillips 1975a, 1975b). Sites 26Wal676, 1685-1687 and 2688 were collected and tested (Elston and Townsend 1974b). Site 26Wa2138, located adjacent to the right-of-way, was collected but awaits analysis (Elston 1979a: 54).

An intensive evaluation of site 26Wal676 (Bordertown site) (Elston and Townsend 1975; Townsend and Elston 1975a) revealed three areas of specialized activity, which were occupied sporadically during Martis and Kings Beach times. The site probably functioned as a winter occupation. The remains of at least one elongated housepit, a flexed pit burial covered with three metates--found within the housepit, a high proportion of artiodactyl bone, a variety of chipped and ground stone, as well as several other features were found.

The Bordertown site is extremely important. It contained a Western Pluvial Lakes component, three different kinds of house remains, and a burial. Elston suggests there is evidence for a dietary shift from artiodactyls to rabbits between Martis and Kings Beach times.

Site 4-LAS-551, which appears to be a winter habitation site, contained round to oval housepits and round, saucer-shaped small house floors; the latter has been described ethnographically (Elston 1979a:332-333).

Elston proposed a possible range of activity within the area based on the Washoe ethnographic model. He suggests less intensive utilization of the area during the summer, because the Washoe were known to summer in the Sierra. Intensive occupation would occur, instead, during the late summer and early fall when the valley resources ripened. He further suggests exploitation of the diverse resources of the fall season would require mobility, and structures would be limited to simple transient dwellings. Winter dwellings were semi-permanent structures, occupied while the Washoe relied on stored food (Elston 1979a:60). Based on this model, Elston generated a set of predicted site locations.

Land forms, plant communities, and faunal resources were plotted to clarify the relationship between topographic features and the distribution of resources. He examined the range of intra-site activity through a combination of functional lithic analysis and ethnographic analogy (Elston 1979a:63).

The relationships between culture change and environmental variation were tested against models of carrying capacity. The analysis of the two large stratified winter sites suggested to Elston that group size, on both the household and band level, was larger during Martis times. He predicted that increased population would result in an elaboration of social structure. It would also mean that winter villages were both more regularly occupied and more nucleated in heavily populated Martis times than they were during Kings Beach times. Based on these predictions, Elston expected to find clusters of large, elaborate reoccupied Martis houses, and small, sparse, single component Kings Beach houses (Elston 1979a:64).

Elston concluded that his predictions were generally successful:

Big game hunting sites were found in Anderson Pass where the terrain and the presence of a deer migration route made them most likely to occur. Winter and summer seed gathering camps were located on valley margins in terrain of moderate relief within 800 meters of permanent water. Without exception, these sites were located on southwest facing slopes adjacent to intermittent drainages. Isolated finds of projectile points and small lithic scatters were found on the margins of...the valleys and are considered to be hunting task sites located as predicted (Elston 1979a:328).

Winter sites were found in two locales: in catchments with diverse resources, and in catchments with specialized resources (Elston 1979a:328).

The ethnographic record was sufficient to predict the location and function of prehistoric sites, according to Elston. He suggests that site location may be independent of time, more dependent on the exigencies of making a living than on cultural input (e.g., social structure or group size). For a summary of radiocarbon data from Hallelujah Junction, see Davis (1977b) and Elston (1979a).

The Hallelujah Junction area is significant because, compared with other areas within the District, a relatively high percentage of the sites have been excavated (Elston 1979a; Riddell 1956b, 1960). The resulting chronology is thus established, yet settlement and land use patterns are virtually unknown.

Elston attempted flotation analysis on the Hallelujah Junction sites (Dansie 1979), but nothing was recovered. No microconstituent data were available from Karlo and Tommy Tucker either.

While much of the area has been surveyed, (Elston 1979a; Fike 1974; Riddell 1956a; Stearns 1980; York 1973b) only the Stearns survey employed a systematic sample. The other surveys were either purely intuitive, or preselected following the boundaries of various CRM projects. Elston contends that these non-probabilistic data can eventually be used systematically to evaluate the resources of an area, providing the data to test hypotheses drawn from predictive models of site location and density. No such tests have been published to date.

#### TULE PEAK AND ENVIRONS

Tule Peak, within the Virginia Range in Washoe County, has been nominated to the National Register of Historic Places as an archaeological district. The area surrounding this district and extending south to Dry Valley has been the focus of several archaeological surveys and cultural resource inventories (Botti 1976; Dunbar 1976b; Hatoff 1977f; Matley and Turner 1967; Seelinger, Brown, and Rusco 1979; York 1974b, 1975a).

John Matley and David Turner located eight rock-walled enclosures, some lithic scatters, and a petroglyph site (26Wal026 to 26Wal033) around Tule Peak. They conclude the sites represent hunting blinds and seasonal occupations in an area rich in faunal resources (Matley and Turner 1967:4-5).

Seelinger, Brown, and Rusco's (1979) summary of archaeological resources was part of a Class I Overview for several proposed wilderness areas. They recorded 53 prehistoric sites including several isolated finds, and six possibly semi-permanent base camps (26Wal166, 1036, 1037, and 2132-2134). Most of the camps in the Tule Peak vicinity are located near springs. Few time sensitive artifacts were discovered. Fourteen of the sites were thought to be task sites and/or temporary camps (26Wal162-164, 1026, 1027, 1032, 1035, 2417, 2459, 2602-2605, and 2648) (Seelinger, Brown, and Rusco 1979:240). Twenty-three isolated finds were recorded, in addition to a quarry, a burial site, and a number of historic sites. Cultural activity is believed to be related to the Pyramid Lake complex (Seelinger, Brown, and Rusco 1979).

Rock structure on Tule Peak (those reported by Matley and Turner, 26Wal028-1030 and 1034) were located adjacent to game trails. Two rock art sites were recorded (26Wal033 and 26Wa2381). Site 26Wal033 is a boulder with cross-hatch marks. Located in a small cave, site 26Wa2381 (the Red Snake Cave Pictograph site) is a snake pictograph applied with red pigment.

Based on meager time sensitive artifacts, Seelinger concludes that the area may have been used between 3000 and 1500 years ago and again during the past 400 to 500 years. The report suggested several options for future research in the area including a stratified random sample, an assessment of site significance, an evaluation of possible archaeological impacts from the proposed wilderness status, and an evaluation of mitigation measures, if the sites are directly impacted. Avoidance was recommended as the primary method of mitigation.

Two cooperative soils surveys located several other sites in the area. Botti (1976) recorded 36 isolated finds and lithic scatters (26Wa2417-26Wa2453) in the Dry Valley/Bird Springs area. Hatoff (1977f), on a similar survey, located another six sites (26Wa2603-26Wa2609), and York (1974b) located several sites around Valley View Springs in the Dry Creek area.

A spectacular series of rock alignments was discovered on a recent BLM survey: the Fort Sage Drift Fence site 26Wa3030 at the foot of the Fort Sage Mountains in Dry Valley. The site consists of 5 main rock alignments, from 1 to 3 feet (.3-.9 m.) high, and several lithic scatters. The entire area covers approximately 1125 linear meters (3690 ft.). Determination of the function of the drift fence awaits further investigation (Pendleton n.d.)..

The plethora of archaeological sites recorded for the area notwithstanding, only one brief synthesis has been attempted (Tuohy 1979). Apparently, the Tule Peak area was known ethnographically as a favored hunting locale for the Pyramid Lake Paiute who continue to hunt there today.

Tuohy's (1979:237) chronological summary for Pyramid Lake suggests the area has been used for approximately 10,000 years (see Clark 1978; Rendall 1966; Ting 1967, 1968; Tuohy 1968a, 1968b, 1970a; Tuohy and Clark 1979; Tuohy and Stein 1969). McLane (1975) has compiled a bibliography for the Pyramid Lake area. Relatively little attention has been given to the satellite areas used by Pyramid groups.

Tule Peak may hold potential data on the non-lacustrine aspect of the Pyramid Lake Paiute lifeway. Tule Peak could be approached as part of a seasonal round at Pyramid Lake, involving intra- and inter-site comparisons of lacustrine and mountain habitation sites. Comparisons could be made of specific task sites, such as fishing and hunting sites, in both environments. The ethnographic model of Pyramid Lake Paiute (Bath 1978; Fowler n.d.a.; Harner 1974; Hermann 1972) could be tested against the archaeological reality in both areas.

#### SPANISH SPRINGS COMPLEX

Spanish Springs, approximately 5 miles northeast of Sparks, lies within territory historically claimed by both the Paiute and Washoe (Stewart 1966).

While the Spanish Springs Petroglyph Site (26Wa12) has received some mention (Mallery 1893; Steward 1929; Heizer and Baumhoff 1962), intensive

research began in the late 1960s. The Am Arcs, a group of responsible amateur archaeologists, recorded several petroglyph sites at Spanish Springs. When Robert Stephenson, Kent Wilkinson, and Don McCaughey from the Nevada Archeological Survey were invited to tour the Am Arc sites in 1968, they discovered several sites overlooking Spanish Springs Canyon. Site 26Wal603 consists of two distinct loci: 25 to 30 cleared circles in a swale, and eight stone circles on a knoll overlooking the swale. The site may have been a village; both areas were associated with other cultural debris, and two of the stone circles had distinct entrances. On top of the knoll, some 40 ft. above the other sites, another circle (or pit) was discovered. Stephenson (1968) concluded, from its small size and location, that the pit on the crest of the knoll was probably a lookout.

Site 26Wal604, nearby, consists of a rock art area approximately 1 mile long. Three stone circles are associated with one of the rock art panels. The circles were subsequently excavated. Using arbitrary 4 in. levels, the Am Arcs/NAS recovered a mixed projectile point sequence from Elko to Desert series points. Broken grinding stones had been used to build the stone circles. The time diagnostic artifacts and the reuse of the ground stone suggested repeated seasonal exploitation of the area for perhaps 2500 years (Stephenson 1968; Rusco 1980). The Am Arcs/NAS group, in the spring of 1969, excavated two more rock circles and another rock circle/petroglyph site, 26Wal608 (Rusco 1969b).

In the summer and fall of that year, the Nevada Archeological Survey and the Am Arcs, under the supervision of Mary Rusco, conducted further survey and excavations in Spanish Springs (Rusco 1968a). The fieldwork was twofold, designed to test Heizer and Baumhoff's (1962) inference that stone circles associated with rock art are usually hunting blinds. It was also designed to "recover data by controlled excavations which would show the cultural-temporal relationships of the petroglyph makers, and which would pertain to the ecological-economic context of the petroglyphs" (Rusco 1969b:1).

Following an intensive surface survey, several new sites were chosen for testing. On site 26Wal606 the tests consisted of trenching one rock circle, excavating another by natural levels, and testing the midden area. Another site (26Wal612) was tested by arbitrary levels in, and around the 12 stone circles on the site.

Many of the stone circles are associated with rock art, but several are not. Rock art associations, artifact differences, and differences in their geomorphic setting suggest that these sites functioned in different contexts (Rusco 1969a). For example, site 26Wal606 is small (2 rock circles), located at the mouth of a canyon and is not associated with rock art, whereas site 26Wal612 is large (12 well-defined rock circles), on a knoll and associated with numerous artifacts as well as a large number of petroglyphs. It is unlikely that these two sites were used for similar activities.

Rusco (1970b, 1971) has published several short preliminary reports on the area, but no attempt at regional synthesis has been made.

One of the current avenues of research at Spanish Springs has been an analysis of the petrography. Based on earlier studies (see Mallery 1893; Steward 1929; Heizer and Baumhoff 1962) attention was refocused on Spanish Springs rock art in the 1970s.

Mary Rusco's (1973) stylistic analysis of rock art anthropomorphs included an evaluation of 26Wal2, in Spanish Springs Valley. Her analysis was based on the work of Heizer and Baumhoff (1962), offering clarification of their stylistic categories and their chronological/stylistic horizons. Rusco sought co-occurrences between rock art and other cultural data. Her goal was to predict culture change through changes in rock art.

Mayer (1975, 1976) included the Spanish Springs panel (26Wal2) in her analysis of astronomical signs. She, like Rusco, based her analysis on the data presented in Heizer and Baumhoff (1962). Mayer (1976) believes that certain astronomical events are depicted in the glyphs, thereby dating their manufacture. She attempts to correlate these patterns chronologically by noting that many of the panels depict stellar motifs not at present visible at that latitude. She depicts 26Wal2 as the summer solstice of (A.D.?) 1115  $\pm$  10. While an intriguing possibility, Mayer's data remain equivocal.

Mary Rusco (personal communication, July, 1980) has determined that the site known as the Spanish Springs Petroglyph site (26Wal2) is not Steward's (1929) site No. 205, as claimed by Heizer and Baumhoff (1962:62). Spanish Springs area is replete with rock art, leading Rusco to the conclusion that the description recorded by Steward, Mallery, and Heizer and Baumhoff is probably not the site described as 26Wal2.

Robert Elston's (1976c) intensive survey of a section of Spanish Springs Valley located a continuous lithic scatter some 2½ miles long. The scatter, in a hilly area overlooking a marsh, was divided into 38 sites (26Wa2200-2237). Elston (1979d) suggests the Spanish Springs complex is a highly significant area, and should receive major protective efforts.

Additional archaeological reconnaissance in the area includes the Pinzl (1976) survey which located one isolated find (26Wa2412). Harrigan and Pippin's (1980) archive search and 10 percent sample survey located seven new sites (26Wa2689-2694, 2696). Half of the sites were characterized as small lithic scatters, two as small sparse scatters, and the final two sites were large dense scatters of artifacts and chippage. One of the latter two sites (26Wa2689) may have a subsurface component. McLane (1980) located approximately 61 new sites within the survey area, and three new rock art sites adjacent to the survey boundary.

Over one hundred sites are recorded in the Spanish Springs Valley and the Pah Rah Range overlooking the Valley. But more interesting than the sheer number of sites is the fact that many are associated with rock art. The question asked by Rusco over 10 years ago remains current: Does the Heizer and Baumhoff's suggestion that rock alignments are generally hunting blinds hold for Spanish Springs Valley, or is the answer to the association between rock art/rock alignments more complex?

## TRUCKEE RIVER DRAINAGE

VERDI. Verdi is located on the Truckee River 10 miles east of Reno. Hummel (1888:16-17) and Mallery (1893:93-94) devoted several pages to the description of the Verdi Petroglyph Site (26Wa77) which consisted, at the time, of three boulders with pit-and-groove petroglyphs. Hummel's description is quite detailed, though difficult to follow. The glyph is not illustrated, but he mentions it was discovered in 1858 by J.K. "Old Paiute" Lovejoy. He notes the Indians had no legends concerning the use of these glyphs, but that they believed them to be quite old. Dan DeQuille (in Hummel 1888) thought them primitive maps and tells of finding a key to the inscriptions. Mallery's description is more detailed than Hummel's, but once again, the glyphs are not illustrated. He notes that in 1854 the same Mr. Lovejoy mentioned by Hummel bought the ranch on which the glyphs were located.

The site was next described by James (1921:27) and later by Steward (1929:141). Steward's description is taken verbatim from the Mallery text. According to local informants, Verdi was occupied by the Washoe (also see Elston 1976a; Heizer and Baumhoff 1962), but James (1921) was told by a Washoe informant that the boulder glyphs represented a Paiute/Washoe boundary marker. Heizer and Baumhoff (1962:65, fig. 118d) illustrate that boulder and comment on James' interpretation. They believe the story was told to James, but doubt the validity of the information.

In the 1950s, Warren d'Azevedo collected information on a Washoe fishing camp at Verdi located on both river banks. At least three or four camps were at this location, situated mainly on the south side of the river, just north of the highway. The informants estimated six families once lived there and built many fishing blinds (d'Azevedo No. 135, n.d.:58).

Elston (1967a) surveyed the Verdi area for a proposed dam on the Truckee, noting the location was ideal for aboriginal occupation. Elston believed the sparsity of debris was due to historic disturbance. For example, the Verdi Petroglyph Site (26Wa77) was removed from its original location en toto during the construction of a steel plant. The steel company, Viking Metallurgical Corporation, is now guarding the boulder with plans to display it at the company headquarters.

Elston recorded several sites during the Verdi survey (26Wa1406-26Wa1412), but was unable to relocate either site 26Wa105/96/1067 or 26Wa154/134, initially recorded by Gladys Smith (an amateur archaeologist in the Reno area). Site 26Wa1406 is another petroglyph site, located immediately downhill from a midden (26Wa1411). Sites 26Wa1407, 1410, and 1412 are bedrock mortars and metates, and 26Wa1409 may be a rockshelter. Sites 26Wa1410 and 1411 were relatively undisturbed at the time of the survey, and Elston recommended that they be tested before their condition changed.

VERDI TO RENO: Peavine Mountain Watershed. The Peavine Mountain watershed overlooks the Truckee River to the south, and Lemmon and Cold Springs valleys to the north. The majority of archaeological sites on Peavine Mountain are located between 5200 and 6200 ft.; second preference is given to elevations from 6800 to 8000 ft. In the early 1950s Gladys W. Smith collected many sites around Reno, including several on Peavine Mountain. Although her survey technique was not systematic, artifacts she found do provide a data basis for the area. The Smith collection, now housed at the University of Nevada, is valuable because it was collected early. Prior to 1960, the Reno area had a relatively low population density. The archaeological sites in the area were largely undisturbed. Therefore, the case could be made that the Smith collection contains a fairly representative sample of Reno archaeological materials.

C. Melvin Aikens' (1972) description of the Smith sites in southern Washoe County was taken from her original field notes. Applying a standardized typology to the artifacts in the collection, Aikens found time diagnostics ranging from Great Basin Stemmed series through Desert series assemblages, with Martis artifacts constituting the bulk of the collection. Aikens noted incredible inter-site homogeneity within the collection. Based on artifact density, he surmised that occupational intensity was correlated with water availability and altitude (there are more intensive occupations at springs than at rivers). He felt that sites at high elevations were more intensively occupied, but site density was higher at low elevations. Finally, Aikens concluded that site function could rarely be determined (Aikens 1972:14).

G.W. Smith recorded 43 sites around Peavine Mountain. Diagnostic artifacts comprised Elko through Desert series points, as well as quartz crystals, ground stone, glass trade beads, and drills. The sites are primarily lithic scatters; a few contain bedrock mortars and metates. At least one purportedly early (Great Basin Concave Base series) point was discovered (see 26Wa159/1087), and one petroglyph site was found (Mordy and McCaughey 1968:193). The majority of the sites Smith found are in intermittent stream cut or spring fed canyons, but the sample is probably biased.

Shutler (1960) surveyed from the eastern slopes of Peavine Mountain over to the north-west portion of Reno for a National Park Service project. He discovered no trace of aboriginal occupation above or below the project nor along the river courses. He did find a few flakes in the pinyon-juniper zone near springs. Shutler concluded that the lack of sites suggested that the area was uninhabited prehistorically because of insufficient prehistoric resources. But, Shutler's failure to locate sites may have resulted from G.W. Smith's intensive collection strategy.

Townsend (1975) located three new sites, in addition to relocating four previously recorded by Elston (1967b) as part of a survey for the proposed Reno-Verdi Sewer Interceptor. The sites (26Wa2155, 2156, 2157), located along the Truckee River between Reno and Verdi, are a large lithic scatter, several boulder metates and a basalt boulder petroglyph site, respectively. The sites were unaffected by the proposed construction.

Turner (1977a) surveyed this region for the Nevada Highway Department Ring Road Project, locating sites 26Wal675, 1696-1698, and 1700. In addition to the survey, Turner collected the sites and conducted limited excavations. Two features, a rock alignment with associated debitage at site 26Wal700, and a huge pit (160 cm. wide by 190 cm. deep) at site 26Wal698 were located. Turner recommended complete excavation as archaeological mitigation for the proposed road. The excavations were carried out and the report is still in preparation.

Harrigan and Pippin (1978) intensively surveyed approximately 50 acres of Peavine Mountain for a powerline extension. The sites were isolated finds and small camps of the type previously found on the mountain. They concluded that the entire area was used for hunting and gathering by highly mobile groups. They found that the foothill zone had the most intensive use, followed by the riverine and valley zones. The small sites were assumed to be typical Washoe base camps, from which foraging parties were sent.

Sites 26Wal682-1693 on the northeastern drainage of Peavine Mountain were recorded during NAS surveys for the Highway 395 realignment (Elston 1979a). The results are summarized in the Hallelujah Junction section of this report.

Black Springs (26Wal70/1200) is located in the extreme northeast section of Peavine Mountain at an elevation of 5400 ft. It was excavated by Aikens (1967) and a field class from UNR. Aikens' work showed it to be an open occupation site, rich in artifacts but poorly stratified. According to Fowler (1969), Black Springs appears to be a mixed Martis/Kings Beach site, which may date as early as 2500 years B.P. Ground stone was the most frequent artifact recovered during the excavation. Fowler concluded that "the site is representative or part of the seasonal seed gathering round followed by Martis-Kings Beach, Washoe, and Northern Paiute groups" (Fowler 1969:13). The primary resources available were mule's ear (native sunflower) and pine nuts. Harrigan and Pippin have since reported that the site has been destroyed (Harrigan and Pippin 1978:66).

Phillips (1975c) surveyed the area southeast of Black Springs (the town) locating six sites (26Wa2145-2150). One site was a small lithic scatter; the remainder were isolated finds. All six sites were collected.

RENO. Warren d'Azevedo's (n.d.) Washoe informants told him of several sites within the present Reno city limits. The Washoe name for the Truckee River was wa'tia t'iyel or á'waku wá't'a, and as it flowed through Reno, it was called 'at'abi wá't'a' (d'Azevedo No. 134 n.d.:57). Site 26Wal46/156 (d'Azevedo No. 136), an old Washoe settlement occupied soon after Reno was established, was on a sandy hill in the west end of town near the Mountain View graveyard on the north side of Highway 40 (80) (d'Azevedo n.d.:58). Site 26Wal47/158 (d'Azevedo No. 139) was an old Washoe settlement located on a hill south of Steward Street, east of Wells Avenue (d'Azevedo n.d.:59). Site 25Wal45/155 (d'Azevedo No. 140) was located on a high plateau near the municipal garbage dump. Seven or eight camps were located on the plateau along both sides of the Truckee, west of Reno, and the former occupants owned fishing blinds nearby. The camps were established on the high flat because of periodic flooding (d'Azevedo n.d.:59).

A petroglyph site with antrhromorphic design elements was recorded within the city limits by Noble Crew (Rusco 1973).

A large Washoe settlement (26Wa2065, the Paint Rock site) is located east of the Reno colony on Mattley Ranch. In 1976, the NAS located the Paint Rock site during a survey of Glendale Road for the Nevada Highway Department. The site appeared to have depth, and since stratified sites are rare in the Reno area, a test of the site was recommended (Townsend 1976a). The NAS determined that it was d'Azevedo's site No. 138 (d'Azevedo n.d.:58), an historic Washoe occupation area. Testing with seven 1 by 2 m. units revealed cultural material to a depth of 80 cm.

Paint Rock appeared to be the remnant of a much larger site. It was felt that considerable data could be gained from additional excavations, and further tests were recommended. New excavations began in the fall of 1977 (Miller and Elston 1979:3).

An historic Washoe component and a prehistoric component were exposed. The site, covering both banks of the Truckee River, was occupied from 5000 B.C. into the historic period, but most materials date to late Martis (550 B.C. to A.D. 500) and Kings Beach (A.D. 500 to A.D. 1200).

The stratigraphy at the Paint Rock site is mixed. Subsurface features include housepits, post-holes, storage pits, and hearths. Analysis of the deposits included flotation for the recovery of microconstituent data.

The excavations demonstrated the eligibility of the site for the National Register of Historic Places, while mitigating the adverse impacts from the proposed road construction (Miller and Elston 1979).

TRUCKEE RIVER EAST OF RENO. The Court of Antiquity Petroglyph site (26Wa2/35) lies at the foot of the Virginia range on the Truckee River east of Sparks (see the Spanish Springs and Virginia Range sections for other major petroglyph sites in the immediate vicinity).

Although neither Steward nor Mallery mention Court of Antiquity by name, they do refer to several petroglyphs along the Truckee River near Reno (Mallery 1893:94-95; Steward 1929:141). This site was first recorded in 1939 by S.M. Wheeler who referred to it as SPC 16-3 (26Wa2). It was described by Heizer and Baumhoff (1962:63-64), who published it as 26-Wa-35. They claim it is Stewards's No. 204. The site was located at a narrow spot in the Truckee River canyon, bounded by the Virginia Range on the south and a 2 to 6 ft. high rhyolite terrace on the north. Heizer and Baumhoff concluded that the setting functioned as a classic hunting ambush. A recent recheck of the site disclosed several previously unreported grinding slicks; several were positioned with rock art, indicating perhaps that the site function was more complex than a mere hunting ambush. York (1974, site form) also rechecked the site, noting its partial destruction as a result of the widening of Highway 40 (U.S. 80).

Richard Cowan (1967a) found a petroglyph site (26Wa1601) three miles downriver from Court of Antiquity that consists of two rock art boulders associated with chippage. Red pictographs were located in a 5 ft. recess in one of the boulders, and several pecked petroglyphs were found nearby. Pictographs are relatively rare in the Great Basin, although several occur from Pyramid Lake south to Silver City.

Three miles downstream from site 26Wa1601, a survey crew from the University of California found another rock art site. Located on a 15-20 ft. high cliff face running parallel to the Truckee River, this site (26Wa2131) is quite large and contains depictions of mountain sheep, bow and arrow hunters, and abstract designs.

Elizabeth Budy (1979) recorded several sites along the Truckee River (26Wa2677, Wa2679, St27) which were primarily lithic workshops.

The Nevada State Museum conducted an impact survey for a proposed transmission line in eastern Washoe County (Rusco and Seelinger 1974). Most of the sites discovered (26Wa2006-2008, Wa2496-2498) were located on the Pyramid Lake Indian Reservation in the vicinity of the Truckee River.

The Truckee River drainage is one of the more developed areas within the Reno ES and consequently holds less potential for undiscovered archaeological resources than most other areas. Several recent surveys, particularly those along drainage basins, have located new cultural resources, but the information is becoming somewhat redundant. Certain geomorphological settings have been virtually ignored in the past, so it may prove more useful to concentrate future survey efforts at higher altitudes, meadows, and foothills, with the purpose of discovering the range of site types within the area.

Perhaps another useful approach would be an in-depth study of recorded sites from the perspective of a specific research orientation, such as a comparison of riverine with upland resources; or an analysis of the relationships between rock art sites in the general vicinity of the Truckee River. Within a radius of approximately 11 miles are the Spanish Springs Petroglyph site complexes, Court of Antiquity, Lagomarsino, the Silver City Petroglyph site, 26Wa1601, 26Wa2131, 26Wa2155, the Verdi Petroglyph site, and, in addition, a major cluster at Pyramid Lake, and several score of small rock art sites in the Spanish Springs Valley and Reno area. The particularly high density of rock art sites in these areas certainly holds great research potential for the future. While the majority of sites are located on private land, it may still prove informative to orient the research toward public access to the rock art in this area. Perhaps an interpretive center, such as the excellent example at Grimes Point (26Ch1A/33) should be considered. This area, taken as a whole, should receive major research emphasis in forthcoming management plans.

## TRUCKEE MEADOWS

Truckee Meadows, surrounding the southeast portion of Reno, is a large flat valley broken by the Steamboat and Huffaker hills. The meadows were known as welgánuk by the Washoe (d'Azevedo n.d.:58). The area was rich in resources favorable to aboriginal occupation. Whites, Thomas, Jones, Evans, and Steamboat creeks, in addition to the Truckee River itself, assured an abundant supply of riverine resources. The meadows were rich in grasses and game, and there was an ample supply of lithic raw material. The area was favored by the Washoe, particularly by those who focused their yearly activities near the hot springs such as Steamboat.

Intensive local artifact collection probably began with Gladys W. Smith (see the Truckee River Drainage section). Robert Elston and David Turner surveyed the area in 1967. Although their work was more systematic than the Smith survey, their locations were still somewhat selective (Elston and Turner 1968:2). They recorded 31 sites, which were defined with functional terms such as "quarry", "winter village", etc. (Elston and Turner 1968:9). Steamboat Springs and Huffaker Hills had the highest site density. No sites were found in the Virginia Range nor in the lower Truckee Meadows, although the survey sample in these areas was small (Elston and Turner 1968:20).

Steamboat Creek was once the scene of intense occupation and the east bank seems to be one more or less continuous site, although it has been segregated into several discrete sites by Elston and Turner (26Wal416, 1435, 1442-1448). The area is primarily characterized by winter villages, with an extensive chipped stone industry. The other major site type in the area is represented by the Sinter Hill Quarry (26Wal413) (Elston and Turner 1968:20). Elston and Turner located several other sites in the Huffaker Hills on the ridges and canyons surrounding Huffaker Lake. The sites on the southern ridge (26Wal456 and 26Wal495) probably hold the most potential for stratified deposits within the Huffaker Hills area. Elston and Turner characterized these sites as winter villages, but the focus of activity was not specified. Elston and Turner feel that their survey data suggest high aboriginal population density and considerable antiquity for the Steamboat area (Elston and Turner 1968:21).

Investigations at Steamboat continued with a UNR field school during the summers of 1971 and 1972 (Elston and Davis 1972). The Thompson (26Wal435) and the Towne (26Wal416) sites, two of the more important sites located in the Elston and Turner survey, were tested during the summer of 1971. Elston defined the "Steamboat Component" at the Thompson site. Contemporaneous with the Martis series, the Steamboat Component is dated  $3480 \pm 110$  B.P.: 1530 B.C. (TX-1391) (Elston and Davis 1972:12). It may be indistinguishable from the general Martis assemblage, although Elston feels that Steamboat is a separate component within Martis because the Steamboat tool kits are unusually homogeneous. Several different point and scraper types usually characterize a Martis assemblage, whereas the Steamboat Component consists of a "single type within each class" (Elston and Davis 1972:11). Steamboat points are defined in the Elston and Davis report. Perhaps the homogeneity within the Steamboat component is a consequence of the use of uniform raw material (sinter) from a local calcedonic source in the Steamboat Hills.

The Towne site (26Wa1416), 200 yds. south of the Thompson site, contained two components, the oldest of which may date to 8000 years B.P. Most of the artifacts are representative of Martis-Kings Beach period sites.

Excavations continued on these sites in 1972. A house pit was excavated at the Thompson site. In strata above the house other excavations revealed Kings Beach and historic Washoe components. Chipped and ground stone artifacts were rare at the site. The associated features in the historic component were basin shaped hearths and deep conical cache pits. The earlier component appears to have been short term; it was associated with the house pit. Sinter lithic manufacture of Steamboat (lanceolate) projectile points was the main activity of the early phase. The assemblage includes a cache pit containing quarry blanks and a rock lined earth oven (Elston and Lemler 1973).

Frank's (1974) masters thesis on the Steamboat lithic material analyzed the differences between preforms and tools within the assemblage. Elston (1971) thought that most of the distinctive Martis bifaces were preforms, terming the broken fragments "ends". In contrast, Heizer and Elsasser (1953) believed the Martis bifaces to be tools, referring to them as "blades". Based on a study of 372 fragments from the Towne site, Frank supports Elston's hypothesis that the bifaces are, indeed, preforms.

Davis and Elston (1972) feel that paleoenvironmental data from the Thompson and Towne sites suggest that there have been at least two "post-Lahontan, post-Pleistocene cycles of cool moist, warm-dry conditions", during the Holocene (Davis and Elston 1972:50).

Townsend and Elston (1975b) updated Elston and Turner's (1968) Truckee Meadows synthesis. Townsend and Elston surveyed alternate corridors for the realignment of U.S. Highway 395, and all archaeological impacts were evaluated with those alternatives in mind. They conducted six weeks of field reconnaissance, surveying over 70 miles of Washoe County throughout the Truckee Meadows, Steamboat and Huffaker Hills. They found or relocated 85 sites (26Wa1417-1419, 1435, 1436, 1456, 1481, 1491, 1495, 2010-2030, 2033-2036, 2038-2040, 2042-2045, 2048-2051, 2053-2058, 2061-2064, 2074-2076). Of these, only 23 were deemed significant (Townsend and Elston 1975b:1). They devised a site classification scheme which included base camps, task sites and small sites. Small sites were not collected; task sites and base camps were sampled by transects subdivided into collection units. Systematic sampling was arbitrarily applied; it was not used "where the artifact density was extremely high...(or) if previous work provided the information necessary for preliminary evaluations" (Townsend and Elston 1975b:11). In addition to the survey, they subsurface tested eight sites which were representative of each site type. The sites were evaluated for significance based on several criteria: amount of disturbance, research potential, size, and density. Recommendations were based on an evaluation of the anticipated adverse impacts within each corridor.

Archaeological research within the Truckee Meadows has been increasingly guided by the demands of development. Several evaluative reports deal with the

archaeology of individual sites in the Huffaker Hills (Hatoff and Ruhstaller 1977; Ruhstaller 1977); the Truckee Meadows (Turner 1978a; Townsend 1974d); and the Steamboat Springs/Hills locale (Bennett 1977; Dunbar and Bennett 1976; Hatoff 1977g, 1978c; Townsend 1974e). The sites include rock walls, lithic scatters, and one historic race track.

Cazier and Thompsen (1972) reported an historic natural granite gravestone in the hills east of Steamboat Valley. The stone (ca. 10 ft. high) inscribed to Samuel J. Brown, led Cazier and Thompsen to believe it to be the gravestone of a Paiute chief who lived in Virginia City until his death in 1867 (Forbes 1967; DeQuille 1947). They cite some 24 accounts of Brown in various local newspapers between 1865 and 1866. The boulder headstone (probably in Washoe County) has not been formally recorded with Nevada trinomials.

One site of especial significance has not been fully reported. The Whites Creek Site (26Wa2033) was described briefly in several cultural resource reports (Dunbar and Bennett 1976; Dunbar 1976c; and Townsend and Elston 1975b). It consists of a large site located between the Sierra and the mouth of Whites Canyon, 100 yards east of Whites Creek overlooking the Truckee Meadows. Over 90 percent of the lithic debris on the surface consisted of porphyry basalt flakes and cores. This basalt was identified by Hal Bonham, Nevada Bureau of Mines and Geology, as coming from the Lake Range, northeast of Pyramid Lake (Dunbar and Bennett 1976). If the identification is correct, raw material from within Northern Paiute territory has been recovered from a site within Washoe territory. Elston (personal communication 1981) believes the material "comes from the Steamboat Hills which are made of it".

Townsend and Elston excavated 2 sq. m. of deposit at White's Creek but found nothing. The site was checked in 1976 and still had a dense surface scatter. Ruhstaller rechecked the site in 1977 for the BLM, finding an obsidian Elko point, several biface fragments and ground stone fragments.

The recommendations for future research in the Truckee Meadows should start with a systematic survey. Though many sites have been located, the range of site types is unknown. Previous surveys, with the exception of the work by Gladys Smith, have been guided by the demands of development rather than the demands of scientific inquiry, although these need not be mutually exclusive. While the archaeological investigations for the most part have been conscientious, and several summaries have been attempted, no unbiased sampling has been done. Therefore, the data generated thus far may not be representative of the prehistoric subsistence regime within the Truckee Meadows.

#### VIRGINIA RANGE

The Virginia Range, which rises to an altitude of over 7000 ft., is bordered on the west by the Washoe Valley and Truckee Meadows, on the north by the Truckee River, and on the south and east by the Carson River. Situated in an ideal location for aboriginal occupation, the hills were once covered with thick stands of pinyon and are well within the range of mountain sheep and mule deer. In addition to abundant edible resources, the area also contains one of

the wealthiest ore deposits in the State, the Comstock Lode, which continues to provide an incentive for exploitation of the area.

Anthropological research in the Virginia Range began in 1904 when John A. Reid recorded the Lagomarsino Petroglyph site (26St1), sending the information to J.C. Merriam of the University of California (Heizer and Baumhoff 1962:289). The site was subsequently recorded as Steward's "208 Pt. Virginia City, Nevada" (1929:143). Baumhoff, Heizer, and Elsasser (1958) recorded 600 rock art symbols at the site. The pecked glyphs consist of curvilinear (earlier), and rectilinear (later) stylistic elements; both styles fall within the Great Basin geometric pattern. Relative sequencing of design elements is based on their geographic distribution; curvilinear has a wider distribution than rectilinear in the Great Basin, and is presumably older.

The Lagomarsino Petroglyph site is associated with a rock wall and a shallow lithic scatter (26St2) with several leaf-shaped points centered around a spring at the base of the petroglyph cliff. Heizer and Baumhoff (1962:291) suggested that the rock wall may have functioned to divert game from a nearby game trail toward the glyphs, where the game was ambushed. In 1966 Oliver F. Hanson, from Sparks, Nevada, corresponded with Heizer about the age of the wall. Hanson observed fresh moss on the underside of several boulders. He concluded that the wall was historic, based on the position of the moss. Heizer told Hanson that the suggestions in Heizer and Baumhoff (1962) were intended to leave the function of the wall as an open question, rather than to argue for its use as an ancient game drive feature (Heizer correspondence, on file UCLA Rock Art Archives).

The proximity to springs suggests a ritualistic function for the lagomarsino site; shamans used similar locations to acquire supernatural powers (Baumhoff, Heizer, and Elsasser 1958:4-5). In such cases, the purpose of the glyphs lay more in the making of the designs rather than in their symbolism or meaning (Baumhoff, Heizer, and Elsasser 1958:6-7). Lagomarsino, which is on the National Register of Historic Places, was nominated because of its size, diversity of elements, and unique state of preservation.

Research into the historic Virginia City Paiute community was conducted by Eugene Hattori (1975). His excavation revealed a historic Paiute village (26St2009) in the suburb of Virginia City, that was probably occupied between 1881 and 1930. Hattori discovered that the Indians, while relying primarily on domesticated food resources, continued to use game animals and pinyon. Pinyon, in addition to its use as a food resource, was also a cash crop for the Virginia City Paiute. Hattori concluded that while the Paiute adopted many of the customs of white society during this period, they continued to maintain their identity as Native Americans.

Several archaeological projects were initiated in the Virginia Range in 1975. A Sierra Pacific Power Company survey for a 60KV line extension to the Gooseberry Mine (Harrigan and Sullivan 1975) located and collected seven sites (26St18-24) in 37 acres. The sites consist primarily of lithic debris and a few Rosegate series points.

Elston and Rusco's (1975) literature search for the proposed Virginia City Highlands and Sierra Recreation Park developments recorded 20 sites in the 32 sq. mile project area. Six of the sites were eligible for inclusion on the National Register of Historic Places. They felt that destruction of the sites was imminent and recommended procedures to prevent or mitigate any adverse impacts from the proposed development.

Becker and McNeil (1977) conducted a systematic random sample combined with an intuitive sample of a portion of the Virginia Range, locating nine prehistoric and two historic sites (26Wa2656-2666). The sites consist primarily of lithic scatters with Martis and Desert series points. The project was jointly sponsored by the BLM and UNR as part of a graduate research methods course.

Elston (1977b) located two archaeological sites within a 50 m. survey area near Virginia City for a proposed geophysical instrument site. The sites consisted of lithic debris, Rosegate and Pinto series points. Elston recommended clearance for the proposed project.

The Silver City Petroglyph site (26Lyl03) was recorded by the BLM in 1975. The site consists of a basalt cliff covered with petroglyphs and pictographs, some of anthropomorphs and big horn sheep. More recent paintings and glyphs also adorn this cliff and probably date to the early historic period (several Chinese characters were noted). Two caves in the cliff face are adorned with rock art. Davis (personal communication) has recovered a Neotoma midden from one of the caves.

The BLM rechecked the site in 1978, noting the occurrence of a great deal of vandalism, and protective measures were recommended. The site is particularly interesting when viewed in the context of the chain or rock art sites that exist in the immediate vicinity (see the Truckee River section). Furthermore, pictographs are rare; this site is one of but a handful of such sites in Nevada, and as such should be protected. The nature of the site also mandates some formal recognition, such as nomination to the National Register of Historic Places. In any case, the site should be thoroughly recorded before it is destroyed by vandalism.

Management of archaeological research in the Virginia Range began, on a regional level, with the inception of the Comstock Project (Hardesty and Firby 1980). The entire range of archaeological sites is included in the Comstock project: prehistoric, historic aboriginal, and historic developments associated with the Virginia City Historical District (on the National Register).

Hardesty and Firby divide the potential archaeological sites within the project boundaries into four groups: Native American foragers (pre-1850), pre-boomtown placer miners (1850s), boom town miners (1860-1870), and post-boomtown miners (+1870) (Hardesty and Firby 1980:1). They propose a Comstock Model to organize data on settlement and cultural patterns of the diverse groups which have used the Virginia District.

The ethnographic model was based on Washoe subsistence patterns, although the majority of the District was occupied by the Northern Paiute; the exact boundaries are controversial. Hardesty and Firby isolate five site types within the ethnographic model, and they propose the seasons during which these sites were used.

The archaeological model for the Comstock Project was derived from an overlay of the predicted settlement patterns for each cultural group. Twenty-eight archaeological zones were proposed, each with distinctive land use patterns and concomitant archaeological expectations (Hardesty and Firby 1980:32).

Data from excavations nearby (Elston and Davis 1972) were used to formulate a regional outline and identify a set of key problems for the Comstock (Hardesty and Firby 1980:38). The initial problem is to establish an adequate chronology for Comstock prehistory through the excavation of stratified or well-dated single component sites. The next step is to orient research around problems of environmental history and human ecology through the excavation of sites with preserved paleoenvironmental components. The third stage of research involves the identification of cultural patterns and ethnic affiliations, presumably from the excavation of undisturbed late prehistoric sites. The last stage is proposed as a synthesis of historic shifts in land use and other cultural patterns.

The Comstock Model is proposed as a planning tool through which sensitive areas can be defined. The first phase of research involves a field survey, the data from which will be synthesized into a sensitivity map as the basis for detailed planning guidelines (Hardesty and Firby, 1980:41).

The Comstock proposal for progressively synthesized levels of research is appropriate for the area. The sampling design for a field survey (the next stage of research) was not available in the 1980 report. A probabilistic sample would undoubtedly precede completion of the sensitivity map as randomized samples are requisit to prediction. Sensitivity maps define likely areas for sites, and should be used with extreme caution.

## WASHOE VALLEY AND ENVIRONS

Washoe Valley is located between Reno and Carson City, bounded on the west by the Sierra Nevada (Carson Range) and on the east by the Virginia Range. It is a well-watered and dramatic spot, an area of varied but stable resources. This setting undoubtedly conditions the unusual amount of early archaeological research focused on the area. Louis Schellbach (1927:400-403) published the first report on the archaeology of Washoe Valley. While touring the eastern margin of Washoe Lake, Schellbach found "an extensive old Washo camp and village-site". He mentioned the abundance of artifacts and skeletal material recovered from the dunes, but he reported only one incised bone implement, the function of which was unclear. He believed the bone belonged to the Washoe because the incising on the bone was replicated in Washoe basketry designs. Schellbach's site is probably 26Wa1B or 26Wa44.

S.M. Wheeler surveyed the lakeshore for the Nevada State Park Commission in the late 1930s. He assigned numbers Wa1A (east shore playas, south end of lake), Wa1B (east shore sand dunes), and Wa1C (east shore sand dunes, northwest shore). Wheeler collected several artifacts (see Nevada State Museum file number SPC 16-1 and 16-2), but published no formal report on his findings. His notes, while detailed, are limited to site record forms. Unfortunately, Wheeler did not distinguish loci within the larger context of the dune and playa sites.

In 1955, Gordon Grosscup, of the University of California, surveyed the south shore of Washoe Lake to relocate and rework Wheeler's sites. Grosscup apparently decided that Wheeler had not clearly defined his areas and suggested a return trip with Wheeler's photographs in hand. Meanwhile, Grosscup and his survey party--A.M. Pilling and Margaret Wheat--recorded sites in the sand dunes on the eastern shore of the lake for the University of California Archaeological Survey (UCAS: 26-Wa-49 to 26-Wa-54; NAS 26Wa58-26Wa63).

Wilbur A. Davis surveyed portions of Washoe Valley in 1958, recording several new sites on the eastern shore of Washoe Lake. The Davis survey was part of extensive research by the Western Speleological Institute in this area of Nevada (see Spooner Lake and Daphne Creek). Davis divided Wheeler's site Wa1B into discrete loci, giving each a letter designation. His survey, and subsequent test excavations of several sites with Robert Elston (1971), was designed to test the relationships, "between certain archaeological complexes found in the Washo territory, and the ethnographic Washo..." (Elston 1969, 1971:1). Among the sites investigated were several at Nine Hill (26Wa700a, 26Wa700b/701), in the Virginia Range overlooking Washoe Valley, and one at Spooner Lake (26Do38) above Washoe Valley to the west in the Sierra. According to Elston, the sites represented sporadic occupations over the past 3900 years. The most intense occupation occurred between 1000 B.C. and A.D. 500, with periodic returns after A.D. 1500. A link between the earlier Martis Culture and the prehistoric/ethnographic Kings Beach complex was established with the Spooner Complex, and the data seem to support Elston's hypothesis of cultural continuity between prehistoric and ethnographic Washoe. Davis (1966a) produced a limited distribution report on their survey.

That same year, George Carter investigated an alluvial slope "leading to the lake in the vicinity of the road fork at BM 5075 on the east side of the lake" (Carter 1958:176). He found weathered metates, manos, and a shaft straightener, and concluded they had considerable antiquity. His Reno investigations led to a synthesis based on soil types, weathering processes, and raw material sources, which concluded that the Washoe Valley artifacts were over 10,000 years old. In a well-reasoned argument, Alan Bryan and Donald Tuohy (1960:506-508) countered, point by point, Carter's arguments for an ancient occupation in Washoe Valley and Reno. Carter (1980) remains unconvinced.

Several isolated finds have been reported from the Washoe Lake area (see Davis and Shutler 1969; Hester and Jameson 1977; Ratay 1973; Strong 1969; Tuohy 1965, 1967, 1977; Warren and Ranere 1968), consisting of flaked stone knives, "clovis" points, and other unusual artifacts. Lacking adequate contextual information, these artifacts are nevertheless interesting, as they indicate considerable antiquity for lacustrine procurement strategies around the Lake. Test excavations were conducted in the 1960s in an area where one of the Clovis points was purportedly found. Richard Shutler, Richard Thompson, and Charles Rozaire, along with students from the College of Southern Utah tested the location, but they recovered little subsurface information (Shutler 1962; Tuohy 1977:2).

Accounts from the early-contact period (cf. Griffin 1974) detail Washoe exploitation of the area. At Franktown Creek, just north of Carson Valley, R. Bentley (in Ratay 1973:9,13) describes a Washoe fishing technique, they "put... a dam in one fork of the creek and turn[ed] the water down the other fork. When the water was drained off, the Indians followed down the dry fork and picked up the stranded fish with their hands". In 1965, W.A. Davis recorded a site on Franktown Creek (26Wal470) with the remnants of just such a dam.

In the early 1970s, several other groups worked in the Washoe Valley area. The Nevada State Museum's Department of Anthropology (1973) evaluated the archaeological resources of the Carson Range between Lakeview and Incline Village for the National Park Service. The Nevada Archeological Survey surveyed the Slide Mountain area, locating four prehistoric sites including a rockshelter, an ambush (hunting) locale and a lithic scatter (Townsend 1974c).

Hardesty and Elston (1979) surveyed the Marlette Lake-Hobart Watershed immediately adjacent to the District in the Carson Range. They recorded 49 sites. Historic sites included Chinese sites, telegraph lines, barrow pits, logging sites, camps, sawmills, dams, and historic structures. Sixteen prehistoric sites were recorded, but 12 were isolated finds. Prehistoric sites were sparse, limited to small task sites and temporary camps, similar to the pattern Hardesty (1973) found in Little Valley to the north of the watershed. Several sites had both prehistoric and historic components. Time depth for the area was estimated to extend back to early Martis, about 3500 to 4000 years ago.

The Am Arcs of Nevada (D.Dansie 1972, 1974; Lalich 1974; Townsend and Elston 1975b) revealed the history of the valley through their excavation of

Old Washoe City (26Wa1436). The remains were dated to 1860-1870. Old Washoe City was thought to have been destroyed by a fire in 1873, but there was no direct evidence for a fire. Lalich proposed that the site was merely abandoned.

In June 1976, Mr. Glen Reynolds reported what he believed was a stratified archaeological site on his property in Washoe Valley. He planned construction on the site and suggested that the Nevada State Museum should investigate the area. Amy Dansie, with a crew from the Nevada Archaeological Association, the Am Arcs and the Nevada Archeological Survey excavated the Reynolds Site (26Wa2487) in 1976. The only diagnostic points from the dig were found on the surface. Several flakes, large stone-lined pit features, and bone fragments were found below surface. Brief preliminary results have been published thus far (Dansie, 1976a). Dansie (personal communication) suggests the high feature density and low artifact yield are indicative of specialized plant processing areas.

In the late 1970s research was refocused on Washoe Lake for the construction of Washoe Lake State Park (EDAW, Inc. 1975). Robert Elston (1976b) and the Nevada Archeological Survey conducted a preliminary archaeological reconnaissance of the Deadman's Creek Area, the site of a proposed recreational facility. Following a thorough review of previous archaeological and ethnographic data pertaining to the lake, Elston surveyed four arbitrarily selected sampling units. Although there was no excavation or collection involved, the survey revealed seven previously unrecorded archaeological sites and two historic features (26Wa2158-2164 and 26Wa2501); sites 26Wa2158, 26Wa2159 and 26Wa2164 appear to be stratified. All sites were going to be affected by the proposed recreation site, so further investigation was recommended.

Elston's recommendations led to Kurt Wallof's (1977a) archaeological assessment of the State Park Group Use Area and leach field to determine the placement of excavation units. Wallof conducted a stratified random sample of the area, tested it for subsurface remains, and surveyed the road area. Based on the survey and test, Wallof suggested that since the low dunes in the western section of the proposed Group Use Area would be subject to direct impacts, they required further testing.

The Nevada Highway Department, under the direction of Hal Turner (Turner and Turner 1979) followed Wallof's recommendations. They relocated Elston's sites (26Wa2158-26Wa2161), mapped them, and made surface collections. They tested 26Wa2159 to "determine the possibility of cultural depth". Warren d'Azevedo's (n.d.) Washoe ethnographic data indicated that the Washoe recognized earlier occupations at Washoe Lake, and have subsequently avoided those areas. Turner concluded that the archaeological record sustained the ethnographic data. Diagnostic artifacts indicate the sites were used from 1500 B.C. to A.D. 1100. This supports Elston's chronology based on his data from nearby Nine Hill (Elston 1971). Turner recommended further testing of 26Wa2158 to determine its National Register potential.

Prehistoric archaeological work on the western shore of Washoe Lake has been haphazard. Bedrock mortars have been noted on the Lightning W Ranch. The construction of an expressway below the ranch partially destroyed a basalt workshop. An amateur archaeologist, interviewed for this overview, confirms that there are archaeological remains on the western shore. The western shore

of the lake is generally covered with water, but artifact concentrations have been uncovered in dry years. Most of the finds consist of isolated basalt points; however, one large area (100' x 150') with chippage and points was noted (Herbert Splatt, personal communication; Donald Tuohy, personal communication).

Warren d'Azevedo mentions that Washoe lived on the west side of the lake, often along the foothills of the Sierra. The flats near the lake were rich with floral and faunal resources, and may have been used for rabbit drives (see d'Azevedo sites Nos. 103-109, n.d.:44-47). Although the Washoe used most of the lake shore, they preferred the west shore because the eastern shore had been settled by people who were "different from us--had long feet and were larger than Washo". The Washoe feared these people and wouldn't make camp near their remains. The Washoe informants believed that the settlements on the eastern shore, "if they existed, must have been a very long time ago" (d'Azevedo n.d.:43). This may support the break in the cultural continuum suggested by Elston, since the Washoe did not, apparently, claim the earlier residents of the east shore as their kin.

Encroaching development in the Valley makes its archaeological potential somewhat limited. While the eastern shore has long been recognized as an area with extensive archaeological remains, historic Washoe remains are sparse. Apparently, the Washoe avoided areas which were occupied by unrecognized groups. Furthermore, there are no Washoe colonies in the area. The Washoe received land to the south, in Douglas County, but they were not permitted to colonize the Washoe Valley.

The Washoe Valley has never been systematically surveyed, and we have no information on the role the lake played in the settlement patterns within the Valley. Perhaps the Lake was relatively unimportant when compared with Lake Tahoe and the streams which fed Washoe Lake (see Downs 1966). It appears that Davis' original proposal remains viable: to test the relationship between ethnographic Washoe and archaeological sites in Washoe territory.

#### PINE NUT MOUNTAINS AND ENVIRONS

The Pine Nut Mountain area covers approximately 700 sq. miles of north-south trending ranges and valleys in Douglas, Ormsby, and Lyon Counties. Elevations vary from 5200 ft. in the southern portion of the range in Antelope Valley, to over 9000 ft. at Bald Mountain, Oreana Peak, and Mt. Como. The range is bordered on the east by Smith Valley and on the west by the Carson River drainage.

This territory was occupied historically by the Washoe, and was part of their peripheral lands. In the late 1800s the Washoe were deeded 64,000 acres in the Pine Nut Hills as a pine nut preserve (Price 1962:11); prior to the deeding these peripheral lands were shared with the Northern Paiute. We do not know if the archaeological record reflects these cultural differences.

The archaeological work in the area has been based, for the most part, on the work of Heizer and Elsasser (1953) and Elsasser (1960), who proposed the initial cultural chronology.

Heizer and Fenenga surveyed in the Pine Nut Mountains in 1939. Their survey was not systematic; it consisted of exploring the area, on evenings and weekends, on their time off from a mining project (Fenenga 1975:205). Their survey has not been published, but one of the sites located by them (26Do10/203) has been described in detail (Fenenga 1975), and some of the pine nut gathering equipment from the site has also been reported (Busby 1974).

Hagerty (1970b) and d'Azevedo (n.d.) have written the most comprehensive reports on this area. Although d'Azevedo's synthesis of Washoe place names remains unpublished, it is the most complete source of Washoe ethnographic and archaeological land use data. Several sites in the Pine Nut Mountains, and in the Doud Springs and Double Springs areas were recorded from d'Azevedo's data. Apparently, Double Springs (t'sime 'dime deteyi or cim a dím a deteyi) (d'Azevedo Nos. 25 and 14, n.d.:7, 11), is now recorded as 26Do2. It was one of the main settlements of the dagadōwe' Washoe group. The focus of Washoe activity at Double Springs centered around the spring flat and the foothills. An area known as wat'iya was located on the northern edge of Double Spring Flat (d'Azevedo No. 26, n.d.:11); games and footraces were held there. The Washoe summered on a hill on the west side of Double Springs Flat, and often wintered there as well. A "flint chipping station" located in the hills to the east of Double Springs Flat (26Do18) is known as p'alódo'ásgu (d'Azevedo No. 23, n.d.:10).

The Washoe exploited several springs around the flat such as t'sá'k'übi 'dime or Mud Springs (d'Azevedo No. 22, n.d.:10), and díp'eh (d'Azevedo No. 18, n.d.:9) a spring in the Pine Nut Hills where the Washoe gathered material to make white face paint.

A rockshelter on the west side of Double Springs named hanawüy wüy'áanal (26Do3, d'Azevedo No. 24, n.d.:11) is connected with a one-legged giant who is featured in a Washoe creation myth. A medicine demge and several mortars were found in the rockshelter, indicating that it may have been used for ritualistic purposes. Located in the southeast portion of Double Springs Flat, along the highway, is site 26Do25 (d'Azevedo No. 21, n.d.:10). Called daguñna 'mo'mo (three sisters) or degumna 'mó'mo (woman with two daughters), the site was apparently a "pay station" that consisted of three close rocks at which passersby would drop offerings such as beads, pine nuts, and leaves. The rocks, which were destroyed by the highway, were full of little holes and star marks. One of d'Azevedo's informants referred to it as "make pictures" (d'Azevedo n.d.:10), but it is unclear whether or not they were referring to the cupule rock art on the rocks.

Doud Springs, which lies to the west of Double Springs, is called dime' da'galá la (warm water) by the Washoe (d'Azevedo No. 27, n.d.:12). Sites 26Do17, 20, and 108 are recorded in this area. Several Washoe families lived at Doud Springs and along the hillside to the southwest of the spring. The area was known for both quail and vegetables (d'Azevedo n.d.:12). Humboldt, Martis, and Cottonwood points were recovered at 26Do20, and Humboldt points were found at 26Do108 (Price 1963a:85; Rusco and Dansie 1977:8). Several sites (26Do236-242) were recorded in the Double Springs and Doud Springs vicinity in conjunction with a Nevada Highway Department right-of-way clearance (Turner 1977b).

In the Pine Nut Range proper, d'Azevedo's informants mention Bald Mountain ('ól dalá' ak) as the site where the souls of the dead pause on the way east (d'Azevedo No. 39, n.d.:15). The Washoe claim they avoid the area. Dry Gully (mak'óbi wa'ta'aś or mak'ó'hobi (d'Azevedo No. 16, n.d.:8) is a pine nutting place used by the Washoe in Minnehaha Canyon. Démleñ (d'Azevedo No. 38, n.d.:14) translates to "heart shaped mountain"; it is located west of Bald Mountain and figures in a Washoe creation myth.

Hagerty (1969, 1970a, 1970b) conducted a systematic survey of the Pine Nut Mountains in the late 1960s. Based on his hypothesis that archaeological remains should reflect biotic community differences, Hagerty stratified his sampling design in two different ways: first by elevation, to reflect botanical differences, and second by biotic units. He implemented a program of small mammal trapping to establish the present range of species (for a discussion of the importance of this strategy to archaeological interpretation see Grayson 1978). Once Hagerty's ecologic units were established, areas within each zone were numbered and one was randomly selected within each unit. Each subunit was intensively surveyed. Hagerty does not discuss his survey method.

The three subareas chosen for Hagerty's study included Mineral Peak and Mineral Valley, Pine Nut Creek, and Bodie Flat. Mineral Peak and Mineral Valley subarea was the most productive (26Ly201-207, 210, 211, Or105, Do204, 207, 208, 218, 219). Sites 26Ly201, 202, and 26Do204 contained Rosegate and Desert series points. Hagerty dates these sites between A.D. 500 and A.D. 1900. Twelve of the 15 sites he located are in the pinyon-juniper zone, one is in the pinyon-juniper/sagebrush interface, and two are in the sagebrush zone. Eleven of the 15 sites are on ridges, the area where pinyon-juniper is most concentrated. Curiously, he found no sites on the large sagebrush flats, nor near stream edges or springs. He interpreted the house rings as Washoe winter dwellings, or gales dangl. Hagerty suggests the Mineral area was used during the fall and winter.

Hagerty found sites 26Do209-217 and 220-223 in the Pine Nut Creek subarea. Sites 26Do214, 216, 222 and 223 all contained Martis, Elko, and Rosegate series points, which Hagerty dated between 1500 B.C. and A.D. 600. The archaeology of these sites suggested a summer occupation, according to Hagerty. Six sq. miles were intensively surveyed; only one small area appears to have been used. Twelve of the 13 sites he located were on a ridge separating Mill and Blossom canyons and ridge slopes to the west in the pinyon-juniper zone. Approximately the same percentage of sites were found in the pinyon-juniper zone in the Pine Nut Creek as in the Mineral Peak area, but they occurred on ridge slopes in the latter and ridge tops in the former. Ten of the 13 sites in the Pine Nut creek subarea were temporary camps with no house rings. The sites were located at higher elevations (7000 to 8000 ft.) in this area than in Mineral Peak (6000 to 7000 ft.). Winter occupations are unlikely in Pine Nut Creek.

Most of the sites in Pine Nut Creek were close to streams and springs, emphasizing water access during the dry summer months. This differs from the pattern noted for Mineral Peak.

The high elevations and large points in Pine Nut Creek suggest procurement of big game (probably mountain sheep) during the summer. Hagerty subscribes to Elsasser's conclusions on Martis settlement patterns: "...the lower altitude sites with midden deposits probably represent winter residences, while the higher sites with scatterings of artifacts on their surfaces only represent summer camp sites" (Elsasser 1960:72-73).

The archaeology in Hagerty's third survey area, Bodie Flat, was sparse; he found only two sites (26Do205, 206) and thought it curious that there were no hunting blinds or petroglyphs, and only a few diagnostic artifacts on Bodie Flat. It does seem curious, in view of the fact that several other sites were recorded on the flat prior to Hagerty's survey (26Do101, 102, and 103 recorded by G.W. Smith in 1967).

Site 26Do103 overlooks Bodie Flat; it contained bedrock mortars, and stemmed, tanged, and corner-notched points. 26Do101 and 102 contained ground stone, chippage, and Pinto points.

In 1977 five sites were recorded on the Flat (26Do249-251 and 26Do261-262) during several Nevada Highway Department surveys (see Wallof 1977b and Turner 1977b).

Hagerty predicted "ephemeral or transitory utilization" of the Flat, based on his ecological inventory. The sites located by Hagerty do appear to reflect "a meager or specialized use of this area" (Hagerty 1970b:102).

Hagerty concludes that the settlement patterns observed in the Pine Nut Mountains may have been more influenced by the availability of resources than by their abundance. He also suggests that the Martis occupation in the Pine Nuts may represent an "adaptive radiation" from its "core area" in the Carson Valley (Hagerty 1970b:118).

Hagerty (1969, 1970b) found several sites in the Carson River drainage peripheral to his area of research. Sites 26Ly208 and 209 are located along the Carson River. These are extensive sites, the former consisting of a series of loci in the sand dunes extending for three miles. 26Do201 is located on a bench above the Carson River; Hagerty feels that this site may be a village because it was associated with a petroglyph, bed rock mortar, and stone house ring. Desert series points from the site suggest a late occupation. He also found 26Do202 and 26Do10/203, which are historic campsites located on Pine Nut Creek. The former was occupied between 1850 and 1900. Although 26Do10/203 contained no diagnostic points, pine nut gathering equipment such as baskets and hooked sticks, in addition to tin cans, cardboard, and other historic artifacts were found. Fenenga (1975) believes the site had been occupied only a matter of years before his survey of the area with Heizer in 1939.

## CARSON SINK

Until the late 1960s, most of the archaeological research in the Humboldt and Carson Sinks was done by University of California archaeologists. Bard, Busby, and Findlay (1981) recently completed an overview of that research for the Navy. The following summary partially relies on that overview.

Archaeology in the Humboldt and Carson Sinks received passing interest from several early explorers. Simpson (1876:87) recorded "heiroglyphics" in the pass between Carson Lake and the Walker River (NSM: 26Ly9; UCAS: 26-Ly-7) (Heizer and Bamhoff 1962:48). Angel (1881:19-20) records petroglyphs in the Lahontan Reservoir area. Mallery (1886, 1893) describes several rock art sites in the Fallon area, e.g. the western slope of Lone Butte (1886:24), or Rattlesnake Hill (NSM: 26Ch87; UCAS: 26-Ch-58) which was previously recorded by Russell (1885). Steward (1929, No. 210) recorded the site, and Heizer and Baumhoff (1962:25) note that the glyphs, and a cave nearby (NSM: 26Ch114; UCAS: 26-Ch-87) were destroyed by blasting activities.

The first report pertaining solely to the archaeology of the area was Loud and Harrington's (1929) synthesis of the Lovelock Cave excavations and survey of the Humboldt and Carson Sinks. Loud's excavations, initiated by Berkeley in 1912, were completed by Harrington, of the Heye Foundation, in 1924. A trial definition of the Lovelock Culture was presented. Ocala Cave, excavated in 1924, remains unpublished.

Julian Steward's (1929) report on the rock art of California and adjoining states mentions the Grimes Point Petroglyph site (UCAS: 26-Ch-3; NSM: 26Ch1A/33). Steward classified rock art data by region and motif, suggesting that design distributions were linked to style areas.

In 1937, the University of California conducted an intermittent survey of the Humboldt and Carson Sinks. The Granite Point Shelter site (UCAS: 26-Pe-41) was excavated, and the Humboldt Lakebed site (UCAS: 26-Ch-15, NSM: 26Ch8/45) was collected in conjunction with the survey. Humboldt Cave (UCAS: 26-Ch-35; NSM: 26Ch9), which was located by the 1912 Loud survey (Loud No. 15), was not excavated until 1936. The site, with primary occupation during Rosegate times, contained perishables and caches reminiscent of Lovelock Cave (Heizer and Krieger 1956).

S.M. Wheeler began his research in the Sinks in 1939 for the Nevada State Park Commission. He conducted an extensive survey of the Carson Sink/Grimes Point area locating some 40 sites, including caves, rock art, and open lithic scatters. Wheeler excavated several of the caves, including Hidden, Spirit, and Fish (NSM: 26Ch46, 26Ch52, and 26Ch1E; UCAS: 26-Ch-16, 26-Ch-21, and 26-Ch-19) (Wheeler 1940a, 1940b; Wheeler and Wheeler 1969).

Leonard Rockshelter (UCAS: 26-Pe-14) was first excavated in the 1930s (Heizer 1938:68-71). Heizer revisited the site in 1949, conducting further tests (Heizer 1951; 1967b:49-52). Palynological data from the site were reported by Byrne, Busby, and Heizer (1980).

The University of California sponsored another major survey of the Carson Sink in the 1950s under the direction of Gordon Grosscup and N. L. Roust. Several sites were excavated during this period, including: Cache Cave (UCAS: 26-Pe-8) (Baumhoff 1958b); Granite Point Cave (UCAS: 26-Pe-12) (Roust 1966); and Hidden Cave (UCAS: 26-Ch-16; NSM: 26Ch46) reexcavated as a joint project with Roger Morrison of the U.S. Geological Survey (Morrison 1961, 1964; Roust and Grosscup n.d.).

The 1951 field season also included further analysis at Lovelock Cave, the results of which precipitated Berkeley's revision of Jennings's Desert Culture hypothesis of Altithermal abandonment of the Basin. An alternative (Heizer's "limnosedimentary" model) was proposed to explain the effects of climatic change on the human populations of the Sinks (Heizer 1967).

Heizer's (1956) major chronological synthesis for the Humboldt Sink was based on his data from Humboldt Cave and Leonard Rockshelter. Grosscup (1956, 1974) proposed a similar synthesis for the Carson Sink. Other significant summaries produced during this period include: Grosscup's (1957) bibliography of Nevada archaeology, and his (1958) summary of radiocarbon dates; cross-dating of shell beads (Bennyhoff and Heizer 1958), a similar summary for basketry (Baumhoff and Heizer 1958), ethnography (Baumhoff 1958a), and a general summary of chronology (Bennyhoff 1958) (also see tables 8-10).

Grosscup's (1960) culture history of Lovelock Cave amounted to a revision of the chronology for the Lovelock Culture. Subsequently, Berkeley research shifted from the Sinks to other areas and topics in the Great Basin, including the search for early man, and a renewed interest in rock art (Heizer and Baumhoff 1959, 1962, 1970).

During the 1960s, excavations refocused on lacustrine adaptations through an analysis of coprolites from various caves (Napton and Heizer 1970). Lovelock Cave was excavated once again (Heizer and Napton 1970), as was 26-Pe-67 (Cowan and Clewlow 1968). Attention turned once more to the 26-Ch-15 (Humboldt Lakebed site) materials (Heizer and Clewlow 1968). Tuohy (1969d) tested Hanging Rock Cave during this period. The discovery of lakeside settlements of a semi-permanent nature precipitated revisions of previous ideas about lacustrine subsistence patterns.

Additional research at the Grimes Point Caves was initiated by Phil Orr and Wilbur Davis in the 1960s. While no publications resulted from this work, Davis (1965) presented a paper on the preliminary results of their research.

Cultural Resource Management reports constituted the bulk of research in the Sinks in the 1970s. In addition, Napton (1971a, 1971b) spent the summer of 1971 excavating several sites in the Carson Sink including another reexcavation of Hidden Cave. Napton focused his research on caves, finding little evidence of occupation. Hester (1973:93) suggested that open sites, rather than caves, would be more logical sites at which to search for occupational debris, and was therefore not surprised at Napton's findings.

Eetza Cave (UCAS: 26-Ch-54a; NSM: 26Ch83) was excavated by Berkeley in the 1970s (Busby, Kobori, and Nissen 1975). Additional research included a major rock art survey (Nissen 1971), and another two years reexcavation of Hidden

Postglacial Stages and Dates (after Antevs, 1948, p 9)		Culture	Radiocarbon Dates	Leonard Rockshelter (26-Pe-14)	Lovelock Cave (26-Ch-18)
	Present 1950	Recent Northern Paiute Tribal Bands		Dust, rockfall, no culture	Bat guano, no culture
MEDITHERMAL	1000 A.D.	LOVELOCK CULTURE		Lovelock culture occupation refuse deposits	
	B.C./A.D.				
	1000 B.C.				
	2000 B.C.				
ALTITHERMAL	3000 B.C.	LEONARD CULTURE	2500 B.C.(277)	Aeolian dust, rockfall with Leonard culture artifacts	Hiatus (no deposition in closed cave)
	4000 B.C.		3786 B.C.(554) 4054 B.C.(278)		
	5000 B.C.		5088 B.C.(298)		
ANATHERMAL	6000 B.C.	GRANITE POINT AND HUMBOLDT CULTURES	6710 B.C.(281)	Bat guano with Humboldt culture artifacts	Bat guano no cultural evidence
	7000 B.C.			Lahontan gravels	Lahontan sediments

Long Drought"

Table 8. Heizer's (1951) Culture Chronology : Humboldt Sink.



Geological Period	Schematic Stratigraphic Section in Hidden Cave
Medithermal	Surface
	Silt
	Top Midden (Lovelock Phase)
	Silts
	32" Midden (Lovelock Phase)
Altithermal	Silts (Carson Phase) <u>Volcanic Ash</u>
Anathermal and Upsal?	Mud flow, bat guano, etc. (Hidden Cave Phase)
Lahontan III	Lake Gravel
	Lime
	Sand
	Clay
	Sand and mud flow
Lahontan II	Clay
Lahontan I	Bedrock (Cemented gravels)

Table 10. Grosscup's (1956) Correlation of Geological Periods and Stratigraphy at Hidden Cave.

Cave by David Hurst Thomas of the American Museum of Natural History. In conjunction with the Hidden Cave excavation, Robert L. Kelly (1981a, 1981b) spent the summers of 1980 and 1981 walking transect surveys of the Carson Sink. Kelly hoped to gather data on the regional settlement-subsistence patterns in the Carson Sink-Stillwater Mountain area. Kelly's (n.d.) model proposes intermittent use of Great Basin lacustrine resources by aboriginal populations. His model takes exception with the limnosedimentary concept, proposing instead that the resources of the Carson Sink were used only during times of dire need, as a backup, because they are ephemeral and have a low nutritional value (Kelly 1980, n.d.).

ARCHAEOLOGICAL SITES. Because a summary of individual sites within the Carson Sink would be a monumental task, this discussion is limited to the major sites. The area was subdivided into several sections, including Salt Wells Basin, Grimes Point area, Hazen vicinity, and the White Throne Mountains. The archaeology of the Carson Sink is also discussed in the Lahontan Reservoir summary (see the Carson River Drainage).

Salt Wells Basin. The Salt Wells Basin consists of Turupah, Eightmile, and Fourmile Flats, alkali depressions southeast of the Lahontan Mountains (Grimes Point). It is bordered on the southwest by the Bunejug and Cocoon mountains which are bisected by Simpson Pass.

Botti (1977), York (1976), Hattori (1979), and Hattori and McLane (1980) provide excellent summaries of the area, and this section relies heavily on those sources.

Wheeler (1939) initially surveyed the Salt Wells Basin for the Nevada State Park Commission, and the Salt Wells archaeological site (NSM: 26Ch18) was one of the sites he located. The site was rerecorded by the University of California Archaeological Survey team in 1951 and was renumbered 26-Ch-60 (also, NSM: 26Ch89). The site was again recorded by Robert York (1976) of the BLM and reassigned a third Nevada trinomial (NSM: 26Ch185).

The site contained protohistoric and historic aboriginal artifacts such as glass trade beads, late point types, and ground stone fragments (York 1976:9). Grosscup notes the site was located at the 3950 ft. (Medithermal) level of Lake Lahontan (data from site form).

The 1951 Berkeley survey, under the direction of Roust and Grosscup (Grosscup n.d.), located several other sites (UCAS: 26-Ch-92 and 93; NSM: 26Ch119 and 120), including a quarry (?) on a gravel bar that divides Turupah and Eightmile Flat, and a small campsite--contents unknown.

Hardesty (1977) conducted extensive excavations at the Sand Springs Pony Express Station; the site is now open to the public.

The York (1976) survey found several large sites in the basin, including 26Ch479-481. In addition, he recorded several sites in the Simpson Pass-Rock Springs area, in the southern part of Salt Wells Basin (26Ch482-483). An open site (26Ch479) contained an unusual cache of Pinto or Elko points. York suggests that the site functioned as a relatively permanent, task specific wetlands hunting and gathering camp (York 1976:8).

Site 26Ch480 is made up of several loci, consisting of historic borax works ruins, all of which operated from 1869 to 1872 (see table 4 for information on each locus).

Site 26Ch481 consists of several loci of ground stone, lithic debris and a side-notched point, which were found in the sand dunes on the southeast margin of Turupah Flat (York 1976:8-9). Site 26Ch482 is a similar set of loci in the dunes west of Rock Springs.

York recorded 26Ch483 further into Simpson Pass. The site consists of a series of circular rock alignments which are located on a low bluff. The circles were associated with ground stone and interpreted as wickiup house features (York 1976:10).

York's survey extended into Bass Flat on the western side of Simpson Pass, locating sites 26Ch484 and 485. Both sites were rock structures and one, considered "ancient", was associated with a chopper.

York's survey was quite limited in scope, and he could not offer any specific conclusions about the archaeological resources in the Salt Wells Basin. He recommended further reconnaissance and suggested several protective measures for the historic sites in the area, as they were being destroyed by off-road traffic. The Ft. Churchill-Sand Springs Road (26Ch598) was particularly vulnerable, and he felt it warranted strong protective measures.

Botti's (1977) Class II and Class III evaluations of the Salt Wells Basin consisted of curvilinear transects bisecting each quarter section of the surveyed area. The survey was further stratified to include representative samples of various biotic and geomorphological zones, including mountain peaks and crests, cliff faces and talus slopes, bajadas, basin and bajada margins, playas, valley floors and basins, marshlands, and miscellaneous situations.

No sites were located along mountain peaks and crests. Four ground stone and lithic scatters (26Ch536, 537, 554 and 568) plus two others (26Ch23 and 24) previously recorded by the UCAS were located on cliff faces and talus slopes. One quarry was found.

Eight isolated flakes, points, and bifaces were recorded in the bajada (26Ch542, 555-557, 559, 563 and 565). The basin and bajada margins contained historic properties (among which is Salt Wells) and 15 prehistoric sites (26Ch539, 26Ch540, 543-548, 550-552 and 560), which consisted of small lithic scatters and isolated flakes.

The playas contained several historic sites, including the Fallon-Rawhide Freight Roadbed and an historic "grave". Three prehistoric sites were found on the playa, including two isolated finds and York's open site (26Ch479).

The valley floor and basin contained four archaeological sites (26Ch564, 570-572) including a large lithic scatter. One isolated flake was found in the marshlands (26Ch568), and four similar sites (26Ch538, 558, 562 and 566) were located in miscellaneous geomorphic situations.

Salt Wells Basin was used extensively over the past 7000 years, primarily along the basin margins and shores of extinct lakes and marshes. Botti suggests that the entire dune area surrounding the basin was once covered with temporary camps. She notes that the extensive amateur collections from the Carson Sink probably account for the current scarcity of diagnostic artifacts. She suggests that all archaeological sites in her survey area qualify for National Register status as components of a Salt Wells Basin Archaeological District. She recommends protection from further development for the sites.

Eugene Hattori (1979) conducted a Class I and Class II inventory and survey of the Simpson Pass area between Salt Wells Basin and Bass Flat for proposed geothermal leasing. The survey sample was stratified by four physiographic features: playa margin dunes and terraces (20%), canyons (18%), mountains (41%), and passes (20%). Approximately 12% of the Simpson Pass area has now been surveyed (Hattori 1979:4; York 1976).

The Hattori survey located eight prehistoric sites (26Ch587-591, 594, 596 and 597) and four historic sites (26Ch592, 593, 595 and 598). The historic sites include a well (dug within the last 50 years) and part of a wagon. Two highly significant sites from the survey include Burton's (1862) 1861 overlook, and the Ft. Churchill-Sand Springs Toll Road. Burton's 1861 overlook (26Ch595) is an historic and aboriginal trail which was illustrated in Burton's account of the Pony Express Route through the Carson Sink (Hattori 1979:10). The Ft. Churchill-Sand Springs Toll Road (26Ch598) was surveyed through Simpson Pass in 1864 (Hattori 1979:11).

Lithic scatters, rock clusters, and isolated finds constitute the bulk of the prehistoric material located by Hattori.

Hattori recorded one rock cairn with a pit-and-groove petroglyph (26Ch596) (Hattori 1979:15). Heizer and Baumhoff (1962:47-48) discuss a rock art site (UCAS: 26-Ly-7; NSM: 26Ly9) similar to 26Ch596, and they refer to it as Simpson Pass. Their map plot, on the Weber Reservoir 15' Quad, is a good distance to the southeast of Simpson Pass. The Heizer and Baumhoff map plot undoubtedly refers to another rock art site, but we believe the site referred to by Simpson (1876:87) is, indeed, 26Ch596.

Hattori recommended 26Ch595 and 598 for nomination to the National Register; preservation was recommended for the other sites (Hattori 1979:16-17).

Hattori and McLane's (1980) Class III survey found several new sites (26Ch678-687) in Simpson Pass. Rock Springs (26Ch681) may be a multicomponent prehistoric and historic site. An historic structure (26Ch678), which probably dates to the 1860s, was found along the Ft. Churchill-Sand Springs Turnpike, and may be eligible for the National Register (Hattori and McLane 1980:20-21).

The Salt Wells Basin had abundant prehistoric and historic sites. Early exploration accounts (Simpson 1876) suggest the area was once a lush marshland with abundant aquatic resources which were exploited by the ethnographic Northern Paiute (toidika?a, or cattail eaters) (Wheat 1967), and presumably by the prehistoric inhabitants as well. Heizer (1967) suggests these prehistoric groups followed a "limnosedentary" lifeway, a model which was tested with some success through the analysis of coprolites from nearby caves (Napton 1969; Roust 1967).

Grimes Point. Located in an outlier of the Stillwater Mountains, east of Fallon, the Grimes Point area contains several dozen caves, rockshelters and rock art sites. Wheeler, who recorded the bulk of the sites in the area, excavated several in 1939. The majority of his excavations have subsequently been reexamined.

Grimes Point Petroglyph site. This National Register rock art site, located at the southernmost extension of Grimes Point, was once associated with several extensive lithic scatters. The scatters were intensively collected. A rock wall that ran along the ridge above the site may have functioned with the rock art as a game ambush. Heizer and Baumhoff (1962:20) suggest that pit-and-groove petroglyphs at Grimes Point predate other rock art styles because pit-and-groove glyphs are heavily pattered. Their hypothesis was subsequently tested with some success by neutron activation (Bard, Asaro, and Heizer 1978), and X-ray fluorescence analyses (Bard 1976, 1979). Nissen (1971) suggests Grimes Point is the largest rock art site in the Great Basin, containing over 900 basalt boulders with over 3000 designs. Nissen (1975b, 1981) recorded nine other rock art sites along the northern and western edge of this same area, including the Stillwater Faceted site (26Ch602) north of Fish Cave, the Picnic Cave Petroglyph site (26Ch603), and a rock art site associated with Hidden Cave.

Hanging Rock Cave. Hanging Rock Cave (26Ch162) was partially excavated by S.M. Wheeler in 1939, and subsequently by several collectors. The site was more thoroughly investigated by Donald Tuohy from the Nevada State Museum (Tuohy 1969d). Tuohy's excavations recovered materials to a depth of over 60 in. The excavation was undertaken to increase knowledge of native art styles in western North America, after collectors discovered a painted wooden effigy in the cave. Pinto, Humboldt, Elko, and Rosegate series points were recovered from the excavations, along with perishable artifacts indicative of the late Lovelock Culture. A radiocarbon date of 1700  $\pm$  100 B.P. (A.D. 250  $\pm$  100) was obtained for perishables associated with the effigy (Tuohy 1969d:46). Tuohy suggests the cave was sporadically occupied over several millennia by cultures with possible relationships to the Southwest.

Fish and Spirit Caves. S.M. and Georgia Wheeler (1969) reported on their excavation of burials in Fish and Spirit caves. They recovered two burials, a cremation, a metate and several perishable artifacts from Spirit Cave, suggesting that the cave functioned as a storage and burial site. Clark Larsen (Southeastern Massachusetts University) recently examined these burials, and the results will appear in the forthcoming Hidden Cave report by the American Museum of Natural History (Thomas n.d.b.).

Hidden Cave. Hidden Cave, initially excavated in the 1940s by the Wheelers, was reexcavated by Berkeley in the 1950s (Roust and Grosscup n.d.). Napton (1971a) unsuccessfully tried to reexcavate Hidden Cave, but gave up when his equipment failed. David Hurst Thomas (n.d.b.) reexcavated the cave in 1979 and 1980.

Roust and Grosscup's excavations defined four natural strata which were believed to be culturally distinct. The lowest, the mud flow gravels, purportedly contained four large leaf-shaped blades from the "Hidden Cave Culture". Superimposed on the mud flow gravels, the aeolian silts contained remnants of the "Carson Culture" which consisted of corner- and basal-notched points similar to those from the Lovelock Culture. The "32 Inch Midden" overlying the aeolian silts also contained points which were equated with the Lovelock Culture, including tanged, eared, and straight shouldered specimens, as well as contracting stem and unshouldered concave base points. The surface midden, which was equated with the late Lovelock Culture, "accounts for the bulk (92.5%) of all artifacts recovered...from the cave" (Roust and Grosscup n.d.:58). The points in the surface midden were indistinguishable from those in underlying strata. The Berkeley excavations recovered quantities of perishables including foreshafts, basketry, matting, cordage, pendants, beads, and numerous bone tools.

Subsequent excavations by Thomas revealed several new findings. Perhaps the most significant was the discovery of the limited use of the site. Hidden Cave was used primarily as a cache, an interpretation supported by high frequencies of unbroken artifacts, low frequencies of manufacturing biproducts (e.g. chippage), and by the virtual absence of evidence of habitation (e.g. fire hearths or food bones).

The site was limited in function, and it was also limited temporally. Use of the site was restricted to the Devils Gate Phase (4000 B.C. to 1600 B.C.; Thomas 1979:232), although there may have been extremely limited use through the Underdown Phase (A.D. 500 to A.D. 1300; Thomas 1979:232). This interpretation is supported by radiocarbon dates ranging from  $5365 \pm 90$  radiocarbon years (WSU-2452) to  $810 \pm 80$  radiocarbon years (WSU-2457), and correlations with Gatecliff artifact types (Thomas n.d.a.). The artifacts were subjected to obsidian sourcing and hydration analyses, the results of which are still pending. Furthermore, AMNH excavations indicate that there was virtually no pre-Mazama use of the cave. In other words, the "Hidden Cave Culture" did not exist.

We now have evidence, from pollen, coprolite and plant macrofossil analysis, that Hidden Cave was only used during relatively high stands of the lake when marshlike vegetation predominated (Mehring, personal communication, 1981). Evidence now indicates that the primary depositional mode was fluvial rather than aeolian, in contrast to Morrison's interpretation (Morrison 1964:105). There is further evidence that Hidden Cave contains three tephra layers. Thus far, Jonathan Davis (1978, personal communication) has identified two layers of Mazama ash (formerly misidentified as Mono ash by Howell Williams [Grosscup 1956]), and one episode of Mono ash (not formerly recognized).

Several analyses of the Hidden Cave materials are still pending, including faunal analysis by Donald K. Grayson, an analysis of obsidian sources, and a reanalysis of the artifact inventories recovered from the Wheeler and Roust and Grosscup excavations (Thomas n.d.b.).

Hazen. The Sadmat site (26Ch163) is the westernmost site in the Sadmat locality, a 20 to 30 mile area located between Hazen and Parran, Nevada (Tuohy 1981:4).

Two avocational archaeologists (Y. Saddler and E.M. Mateucci) discovered the site in 1965, collecting over 3000 artifacts (see Tuohy 1981 for a detailed discussion of publications pertaining to the site).

The site contains several curious features, among which are rock cairns, rock alignments, and rows of pebble mounds. In addition, the site contains quantities of Great Basin Stemmed series points, similar to those found at Hathaway Beach in the southern portion of the Sink (Tuohy 1968a, 1969a). Other artifacts include several types of scrapers, graters, and drills. Sadmat forms part of Warren and Ranere's (1968) Hascomat complex.

Pebble mounds, like those associated with Sadmat, are the focus of several recent projects. Amy Dansie and Donald Tuohy located a site, at the same elevation as Sadmat (4000 ft.), containing even larger pebble mounds (26Ch190) (Rusco and Tuohy 1975). John Roney (BLM, Winnemucca) found 39 more pebble mounds about 20 miles north of Sadmat at the same contour elevation (Roney 1977). Tuohy reports similar sites from the Black Rock Desert at an elevation of 3940 ft. (Tuohy 1981:6).

Tuohy believes that the pebble mounds will probably prove to be historic, although the other rock alignments and cairns associated with the Sadmat site are related to an early occupation of the Lahontan basin (Tuohy 1981:8).

Dansie (1981) discusses several hypotheses for the function of the pebble mounds; she concludes that there are no compelling data to support any particular hypothesis, thus far. Davis (1981) believes that the mounds may be prehistoric, but that they are much younger than the last recession of Lake Lahontan.

White Throne Mountains. Busby, Kobori and Nissen (1975) conducted a test excavation of Eetza Cave (UCAS: NV-Ch-54a), one of a series of small caves at the northern edge of the White Throne Mountains overlooking the old Carson Lake, as part of their research into lacustrine adaptations in the area. "A (Lovelock Culture) firehearth was recovered, as well as fragments of digging sticks and cordage, thought to be part of a fish net. Faunal remains included fish bones..." (Bard, Busby, and Findlay 1981:130).

Busby and Bard (n.d.) also excavated nearby Burnt Cave (not to be confused with the Burnt Cave which is part of the Grimes Point complex), finding perishables, firehearths, shell beads and unidentified projectile points, along with the remains of bighorn sheep (Bard, Busby, and Findlay 1981:130).

SUGGESTED MANAGEMENT OPTIONS. We propose that further research in the Carson Sink include a systematic regional sample, as suggested by Kelly (1981a). The current data base may not be representative of the full prehistoric picture.

The future research potential of this area is overwhelming. It could be directed toward any of several different questions. The differences between the limnosedimentary and limnomobile models could be tested. We suggest that aspects of both models may serve to explain the archaeological record from the Carson Sink.

Analysis of extensive private collections may prove productive. Several collectors have expressed their willingness to cooperate with the analysis of their samples. It would seem that this vast data store has been virtually untapped. Kelly (personal communication) plans detailed analyses of several collections; and Tuohy (personal communication) has spent time working on the effigies in the Luke collection.

It may also prove interesting to compare exploitation strategies between the sink and the uplands. Refinements are sorely needed in our analytic methods for surface site data. The application of orthophoto overlays, more sophisticated lithic analyses, and the application of sound mid-range theory will help in gleaning new data from old materials.

Monies should be directed toward unscrambling the site data from the Grimes Point area through on-the-ground rechecks of the Wheeler and Berkeley survey sites.

We suggest that a comparison of upland and sink archaeological materials would serve to refine the analysis of past lifeways in the Carson Sink. At present, research has focused on the sink, virtually ignoring one entire portion of the ethnographic Paiute ecosystem. Future research would be well-focused on the upland habitats.

We also suggest refinement in the analytic techniques used to interpret surface archaeology in the Carson Sink. In the past, dating techniques on surface sites were limited to recovery of chronologically sensitive artifacts (e.g., projectile points and beads). Recent advances in orthophotography may result in more accurate site plotting. Data may emerge to correlate specific sites and shorelines. Once these correlations are made, we would be in a better position to understand the relative temporal position of sites in the Carson Sink area. It would behoove the BLM to consider sponsoring such research.

The manifold mapping problems in the Grimes Point area must be rectified. Of the 50 or so archaeological sites mapped near Grimes Point, we feel that only about 20 are accurately relocated. Furthermore, about another 50 sites, which were located during the Wheeler and Roust and Grosscup surveys, are not mapped or well recorded (see Table 1, Churchill County Pro sites). We attempted to

correlate Wheeler's original 1939 survey map with the Carson Lake USGS 15' Quad, but it was fruitless. When we compared the locations of two well-known sites for example, it was found that a 3000 ft. discrepancy exists between the two maps. The problems are further compounded when one attempts to use the Berkeley maps to plot the Roust and Grosscup survey sites. This situation must be corrected. We suggest an on-the-ground relocation of each site is mandatory.

Finally, we suggest that a research design be developed to explain the location, function, and chronology of the plethora of rock art in the Grimes Point area. The Grimes Point Rock Art site is currently on the National Register. Future research could focus on the relationship between this site and several score of similar sites in the area. Specifically, are there relationships between the elevations of these sites? What are their directional orientations? What is their geographical positioning in relation to caves, canyons, passes, etc.? How do they correlate stylistically? Recent research on rock art chronology (see Bard 1976, 1979; Bard, Asaro, and Heizer 1978; Heizer and Nissen 1978; and Thomas and Thomas 1972 for various techniques) is particularly pertinent to the rock art of Grimes Point, and should be applied to the Carson Sink.

#### DIXIE VALLEY

Dixie Valley, the lowest elevation in the Carson District, is a broad basin, bordered on the west by the Stillwater Range, on the east by the Clan Alpine Mountains and on the south by Pirouette Mountain. The basin once contained a Pleistocene lake (Lake Dixie) which is now an alkali playa. Several hot springs which surface along the alluvial fan on the west side of Dixie Valley account for most of the recent interest in geothermal exploration.

Several areas in the valley held religious and traditional significance for aboriginal populations, which they retain today (Shimkin and Reid 1970:193). For example, Job Peak (CrNV-03-1843), which is recorded as a historic site (the highest point in the Stillwaters; see Table 4), also served as the mythological center of creation in the Northern Paiute universe. This site should be recognized as an ethnographic/religious resource. Its special status requires strong protective measures by the management authority.

Several unrecorded sites in Dixie Valley, that functioned in Northern Paiute mythology, were noted by Loud and Harrington (1929:183, Pl. 68): Su-pā-A ("vulva-water") is a spring at the head of Hare Canyon on the west side of the valley. A hot spring where people were killed by Wolf, a figure in Northern Paiute mythology, and turned to stone has not yet been located; a cave called isa-kani 'wolf house' on the east side of the Humboldt Salt Marsh, in the Clan Alpine Range; and a natural bridge, idza '-posake 'coyote bridge', near wolf house (Botti 1981a).

Botti (1981a) summarized the archaeological reports associated with geothermal exploration in Dixie Valley, and much of the following review is based on that report.

The historic exploitation of Dixie Valley began with the mining of the Humboldt Salt Marsh in the 1860s. This area produced quantities of salt for the nearby mining districts of Humboldt, Reese River, and Comstock (Botti, 1981a; also see Table 4).

Precious metals were mined in the Stillwater and Clan Alpine Mountains including the finds at Silver Hill in 1860, a town which was sporadically active until 1907. Bolivia, another mining camp from the 1870s, produced copper, gold, and silver until the 1890s. Bernice, the silver mining and milling town, was active from 1882 to 1895. The towns of Dixie, Wonder, Hercules, and Victor were active in the area between 1906 and 1920.

Most (70%) archaeological investigations in Dixie Valley, particularly in the northwest, were contracted for proposed geothermal explorations. Several archaeological sites were located as the result of this exploration, including 26Ch500, an isolated core (Hatoff 1977c), and CrNV-03-1237, an isolated (Pinto?) projectile point. Three other lithic scatters associated with ground stone were located by DeChambre (CR 3-448P)<sup>1/</sup>.

Site CrNV-03-1247 is a large lithic scatter covering the playa margin in the northern part of Dixie Valley at the eastern base of the Stillwaters, southeast of the BAR A-3 Ranch. In 1980 the BLM collected and tested the site, recovering Rosegate series points, bifaces, drills, flakes, and a graver (CR 3-444P). Site 26Ch370, located in Anderson Pass in the Stillwaters, consisted of a few flakes (CR 3-85P). Another lithic scatter (26Ch577) was recorded near Dixie Hot Springs (Hatoff 1978a). Two lithic scatters and an historic corral (26Ch197-199) were located along U.S. Highway 50 (M. Rusco 1975) in the southern part of the valley. Gordon Grosscup, of the University of California, located two sites in 1966 (UCAS: 26-Ch-109 and 110; NSM: 26Ch136 and 137) near Mud Springs. Site 26Ch136 (Mud Springs Cave), on a hill south of Mud Springs, contained a roll of prepared willow and some prepared rabbit brush sticks. Site 26Ch137 is the Mud Springs lithic scatter.

The Nevada Archeological Survey located sites 26Ch600, 601 and CrNV-03-1231, 1234-1236 in the north-central portion of Dixie Valley. The sites consisted of isolated flakes and lithic scatters. The Elston and Cupples (1979) survey located an isolated find, which was not assigned a Nevada trinomial. For further information on Dixie Valley reports, see Botti (1981a).

Callaway, of Intermountain Research, proposed an intensive survey of from four to sixteen sections near the Lamb Ranch in northern Dixie Valley. The area may contain the highest density of archaeological sites yet discovered in this

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<sup>1/</sup> Reports cited by CR (BLM) number, or Report (NSM) number in the text and tables are not cited in the annotated bibliography.

region (CR3-461P). Toll (1980) located 26Ch694-697 in northern Dixie Valley. These sites consist of lithic scatters with ground stone, hearths, and Desert series points.

A two year project by the American Museum of Natural History (Kelly 1981a, 1981b) included a survey of the Stillwater Range and Carson Sink. Thus far, Kelly has recorded 66 sites (26Ch705-765), seven of which (26Ch743-752) are in the Stillwaters overlooking Dixie Valley. The sites consist of rock alignments associated with biface fragments, other lithics, and ground stone. Humboldt and Elko series points were found at 26Ch749.

According to Botti (1981a), a total of 4461 acres (excluding the Callaway and Kelly projects) have been surveyed in Dixie Valley, but 98.8% of the surveyed land has yielded negative results. Apparently, site density in Dixie Valley is very low. The northern parts of the valley were more extensively sampled than the southern portion. Botti stratified the recorded sites by elevation, concluding that density appears greatest on the playa margins and in the mountains, primarily at elevations from 3400 to 3600 ft.

Based on the above sample, the archaeological potential in Dixie Valley appears somewhat limited.

#### DESATOYA MOUNTAINS

EASTGATE CANYON divides the Desatoya and Buffalo mountains. Buffalo Creek, with headwaters near Buffalo Summit, forms the canyon that flows into Eastgate Wash; it extends to the southern end of Edwards Creek Valley, and disappears in the Carson Sink.

Historically, Eastgate Canyon was the site of an old stage station, an abandoned ranch house, and bar. Three major prehistoric sites have been excavated there: Eastgate Shelter (NSM: 26Ch67; UCAS: 26-Ch-36), Wagon Jack Shelter (NSM: 26Ch145; UCAS: 26-Ch-119), and Marjoe Shelter (no trinomials assigned). Two smaller shelters, the Lookout site (NSM: 26Ch150; UCAS: 26-Ch-124) and Eastgate Rockshelter (NSM: 26Ch68; UCAS: 26-Ch-37) are located in the same formation as Eastgate and Wagon Jack. Neither site has been excavated.

Eastgate Cave and Wagon Jack Shelter were excavated in 1958 by the UCAS; Wagon Jack is the type site for the Eastgate Point. Eastgate points, which tend to intergrade temporally and morphologically with Rose Springs points, were recently combined into the Rosegate series, which dates from about A.D. 700 to A.D. 1300 (Thomas 1981).

Wagon Jack Shelter. Wagon Jack is situated on the south side of Eastgate Canyon at the base of a cliff. The midden at Wagon Jack once covered some 60 sq. ft. in front of the shelter, but only 10 sq. ft. of deposit were left to excavate by 1958 (Heizer and Baumhoff 1961:121).

The site was excavated in arbitrary 10 in. levels, with recovery through 1/4 in. screen. The midden was approximately 2 to 3 ft. deep, with four natural strata. The site was radiocarbon dated on wood from the lowest level at 2930 ± 200 (LJ-203) radiocarbon years (980 B.C.) (Clewlow, Heizer, and Berger 1970:20).

The deposit contained 117 projectile points, over 90% of which were chert (see Tables 11-12). All but one of the Rosegate and Desert series points were recovered in the top 20 in., while the Humboldt and Elko series points were restricted to the 20 to 40 in. levels (Heizer and Baumhoff 1961:129). Over 160 unhafted "knives" were excavated from the lower stratum of the site (Heizer and Baumhoff 1961:131). The "knives" appear to be fine percussion biface blanks; the four corner-notched blades in the same stratum are probably broken preforms for Elko corner-notched points. The blanks and preforms suggest that a biface production sequence for corner-notched points was present at Wagon Jack; however, this suggestion is purely speculative.

Drills, scrapers, ground stone, and bone tools were also recovered in the excavations. A rock structure, which was uncovered at a depth of 21 in., consists of a crescent-shaped wall of boulders. Since Wagon Jack "Shelter" lacks a significant overhang and offers very little real shelter, it seems probable that these stones were used as a windbreak. Elko points were recovered from within the fill of this structure (Heizer and Baumhoff 1961:137).

Faunal remains from Wagon Jack include coyote, marmot, ground squirrel, jack rabbit, cottontail rabbit, mule deer, antelope, mountain sheep, and bird. Mountain sheep and other unidentified artiodactyls were evenly deposited between the early and late levels, as were the jack rabbit. Cottontail, mule deer, and pronghorn antelope, on the other hand, seem more abundant in the late levels (Heizer and Baumhoff 1961:134-135).

Eastgate Cave. Eastgate Cave, in the same cliff formation as Wagon Jack, lies some 200 yds. southwest of the shelter and about 100 ft. above the valley floor. This site, unlike Wagon Jack, affords excellent shelter, with a low roof and extensive overhang. Unfortunately, the roof is too low to provide much living space. That, and the nature of the cultural remains led Elsasser and Prince (1961) to suggest the site functioned as a cache area, perhaps for the people who occupied Wagon Jack.

Cultural material was confined to the back half of the cave, to a maximum depth of 30 in. Perishable artifacts survived in the deposit because the cave was dry. Faunal remains were predominantly deer and mice. Unfortunately, the fauna were subjected to only cursory analysis because "they do not appear to be connected with any of the activities of man in the cave" (Elsasser and Prince 1961:139).

The main cache was a "Shamans bundle" which consisted of a twined bag containing pine pitch, a bobcat kitten skin filled with red-tailed hawk feathers tied with rawhide, scraps of soft hide with sewing marks, a scrap of beaver pelt, a scrap of rawhide, tied grass and hair bundles, two moccasin fragments and a partially burned greasewood stick. The cached goods were thought to be similar to caches from Humboldt Cave (Elsasser and Prince 1961:141; Heizer and Krieger 1956).

Table 11. Projectile point frequencies from Wagon Jack Shelter

<u>Type</u>	<u>Number</u>
Elko Contracting-stem	3
Elko Corner-notched	8
Elko Eared	20
Humboldt Series	1
Rose Spring Contracting-stem	1
Rose Spring Corner-notched	7
Eastgate Expanding-stem	14
Eastgate Split-stem	4
Desert Side-notched	8
Cottonwood Triangular	5
Miscellaneous	6
Untypable Fragments	<u>40</u>
Total	117

Table 12. Projectile point series frequencies from Wagon Jack Shelter

<u>Series</u>	<u>Number</u>
Gatecliff/Pinto series	3
Elko series	28
Humboldt series	1
Rosegate series	26
Desert series	13

A second cache held U-shaped Lovelock type hinged stick snares, coiled basketry fragments, a small deer skin moccasin and the base of an antler (Elsasser and Prince 1961:142). According to the authors, the basketry was similar to Lovelock and Humboldt Cave types, but the moccasin was identical to Fremont River types. A Rosegate (?) point, mano, blade, Haliotis pendant, and three flakes were found in Eastgate. The site function remains unclear.

Eastgate Rockshelter. Eastgate Rockshelter, a small shelter some 100 ft. from Eastgate Cave, contained one cut "spirit stick". The site was given an unusually high CRES rating (S1), which should, undoubtedly, be reviewed.

Lookout Site. In 1958 the UCAS located this shelter which contained a small lithic scatter. The shelter is approximately 250 ft. above Eastgate Cave.

Marjoe Shelter. There is no mention of Marjoe Shelter in the 1958 survey records, although it is unlikely that it would have been overlooked, situated directly across the canyon from Wagon Jack.

The site was excavated in the summer of 1974 by a crew from California State College, Stanislaus, under the direction of L.K. Napton (California State College, Stanislaus 1975).

Napton suggests that Marjoe was first occupied about 4000 years ago, based on one radiocarbon date of 905 B.C. (no lab numbers given) (California State College, Stanislaus 1975:3).

Marjoe was occupied three times. The Pinto Phase, as the name implies, is marked by large atlatl (Pinto) points. It was suggested that the Pinto occupation functioned seasonally; the bulk of activity was geared toward hunting (California State College, Stanislaus 1975:5).

The second phase (Transitional) is marked by a change from Pinto to Elko and Rosegate series points, and the appearance of seed processing equipment. Faunal remains suggest the exploitation of smaller game than during the Pinto phase. Bone awls appear for the first time, suggesting perhaps the use of basketry. This phase presumably lasted from 500 B.C. to A.D. 1300.

During the final (late) period, the occupation remained seasonal. The phase is marked by Desert series points and quantities of ground stone.

The material cultures of Marjoe and Wagon Jack are quite distinct, despite their proximity to each other. Eastgate Split-stem points predominate at Wagon Jack, whereas Marjoe was limited to Eastgate Expanding-stem points. While these types tend to intergrade, it is nevertheless interesting to speculate about the source of the difference: is it idiosyncratic, or perhaps diachronic?

Another interesting difference between the sites was the quantity, and consequent variety, of ground stone. At least six times as many pieces of ground stone were recovered at Marjoe. Might this reflect seasonal differences? Could it be that the site on the north side of the canyon (Marjoe) was in a more comfortable position during the late summer (when the seeds ripened), than Wagon

Jack on the south side? Or, could the sites reflect a sexual division of activities? A reexamination of the ecofactual material from both sites (if it still exists) may shed some light on these issues.

Several small lithic scatters in the vicinity of Eastgate Canyon include 26Ch312, 361-363. Site 26Ch363, of particular importance, consists of a 1/4 mile lithic scatter near Buffalo Summit.

The 1958 survey also located sites 26Ch146, 151, 154, and 155 some 3.5 miles west of Eastgate at Rock Springs. These sites consist of unidentified projectile points, ground stone and lithic debris, and the Rock Mill ruins (Half-Eagle Mill site), a gold ore mill operated by the Monarch Gold Ledge Mining Company from 1934 to 1939.

BASQUE SUMMIT. Somewhat to the northeast of Eastgate Canyon in the Basque Summit area, L.K. Napton and a crew from Berkeley relocated Topai [sic] Canyon Cave (UCAS: 26-Ch-150; NSM: 26Ch364), a large cave in Topia Canyon. The cave overlooks Edwards Creek Valley from an elevation of 6800 ft.; it was the only one of several caves in the cliff with any deposit (Napton 1971a:32).

The interior of Topai Canyon Cave is about 20 by 70 ft., with red, black, and white pictographs covering the west rear wall. The bulk of deposit was found in the eastern half of the cave, in a naturally separate chamber. The cave had been severely potted prior to Napton's excavation. A lithic scatter was found several hundred yards downstream; it was not recorded separately because of its presumed association with the cave. Excavations revealed artifacts to a depth of 42 in., and the assemblage included Desert, Rosegate, Humboldt, and Elko series points.

This cave, some 12 air miles from Eastgate, is one of a handful of upland cave sites in west central Nevada, and the only one discovered, thus far, in the Desatoyas. This site complex certainly warrants further investigation. The comparison of Topai with other upland cave sites associated with rock art (e.g., Gatecliff Shelter and Toquima Cave in nearby Monitor Valley) may prove valuable. All three of these sites are located in the pinyon-juniper zone. But, Gatecliff and Toquima are fully within Shoshone territory, while Topai Canyon is in the Desatoyas, the traditional boundary between the Shoshone and Northern Paiute. All three sites have late prehistoric materials. It may be interesting to see whether the ethnographic boundaries are reflected archaeologically (Steward 1938).

EDWARDS CREEK VALLEY. The Nevada State Museum (Tuohy 1974b) surveyed a portion of Edwards Creek Valley for a Sierra Pacific Power Company project. L.K. Napton subsequently conducted another survey of the valley, locating four sites (26Ch493-496). The Napton survey covered a 9 mile corridor, following the route of the old Overland Road (Napton and Greathouse 1976:19). Several isolated flakes were found, and a considerable quantity of lithic debitage was noted at Starr Canyon (Napton and Greathouse 1976:20). This survey provides the first evidence of occupation in lower Edwards Creek Valley, an occupation which "seems to be linked very closely to flowing surface water and to the pinyon-covered flanks of the mountains" (Napton and Greathouse 1976:58).

COLD SPRINGS. The Cold Springs area is best known for its historic sites. California State College, Stanislaus, under the direction of L.K. Napton, initially mapped the Cold Springs Pony Express Station (26Ch310). It was subsequently proposed for excavation (York 1975b) by a crew from the University of Nevada under the direction of Donald Hardesty (see Dunbar 1976d for a summary of early excavations, and Hardesty 1979 for a complete summary of historical research in the area).

Grosscup located a small lithic and ground stone scatter (26Ch147) near the mouth of Cold Springs Canyon during the UCAS survey in 1958.

Dunbar (1976d) surveyed approximately 720 acres of BLM land in Cold Springs, locating 49 sites (26Ch378-427). Four historic and nine prehistoric sites were located in addition to many isolated finds. The larger aboriginal sites were in the Desatoya foothills near the mouths of Pony and Cold Springs canyons. Dunbar believes these sites are the remains of Indian campfires from the 1860 Paiute conflict at Cold Springs (1976d:6).

The Cold Springs Pony Express Station (26Ch310) (Hardesty 1979) and the Rock Creek Telegraph and Stage Station ruins (26Ch302) (Hardesty 1978b) are both National Register properties, excavated by UNR.

GABBS VALLEY. Gabbs Valley, due south of the Desatoyas, has received little attention from the archaeological community. We will rely primarily on Botti's (1981b) summary for the area.

Gabbs Valley consists of alkali flats bordered on the west by a series of low sand dunes. The floor of the valley, once Pleistocene Lake Gabbs, contains a hot spring, which has been the focus of recent geothermal exploration.

Stewart (1939) suggests the area was mainly used by the Walker Lake Paiute. Stewart (1938:100) places the boundary between the Shoshone and Paiute in the Desatoya Mountains bordering Smith Creek Valley.

Most of the known archaeology in Gabbs Valley was recorded during geothermal projects (see Botti 1981b for a complete summary of archaeological reports related to geothermal exploration).

Dansie surveyed 16 well locations. Several sites were recorded, including 26Ny537, a lithic scatter located near the hot spring. Bennett (1976) surveyed 4 acres in Gabbs Valley, locating one small lithic scatter (26Mn152). Rusco's (1979) survey found three more lithic scatters (26Mn92, 93, and 26Ny2012).

No reports were filed for sites 26Mn89, a lithic scatter associated with rock rings and biface fragments, and CrNV-03-70, an open site with Elko and Desert series points.

Heizer and Baumhoff (1962:56) recorded the Redrock Canyon petroglyph site about 15 miles southwest of Gabbs. The site consisted of red and white pictographs painted on the wall of a narrow canyon, but, unfortunately, the

exact location for this site remains a mystery. It was suggested that the location provided excellent cover and served as an ambush spot for game transiting the area. The site needs to be ground checked.

#### THE FLATS

Beginning in the south, "The Flats" include: Huntoon Valley, Little Huntoon Valley, Teels Marsh, Rhodes Salt Marsh, Little Whisky Flat, Whisky Flat, Rattlesnake Flat, and Garfield Flat. The flats, and the lower reaches of the Wassuk and Excelsior Mountains which surround them, contain numerous rock art sites, which are often associated with rock alignments. In fact, the entire southern half of the District contains significant quantities of rock art/rock alignment associations. These provide a basis for the development of research designs geared toward hunting strategies. Detailed investigations of these sites may generate comparative data on Washoe and Paiute hunting strategies. Another mode of inquiry could seek associations between rock art/rock alignment types and different types of game.

The Paleo-Indian data on the flats may prove important. Several Paleo-Indian points have been recovered near Teels Marsh. Teels Marsh is fairly close to the Big Smokey Valley and Mud Lake which were used extensively by Paleo-Indian groups (Campbell 1949; Campbell and Campbell 1940; Kelly 1978; Pendleton 1979; Tuohy 1968a, 1969a, 1969b, 1970c, 1974a). The Big Smokey Valley survey (Kelly 1978) was systematic, generating probabilistic data on the location of Paleo-Indian activity areas (typically around marshes and deltas). The Teels Marsh may fit into the regional exploitation patterns by pre-Mazama groups in south-central Nevada.

HUNTOON VALLEY. Two sites (26Mnl03, 26Mi22) are recorded from Huntoon Valley. A burial associated with an open site (26Mnl03) was recorded by Julia Crow, an avocational archaeologist, on one of her intensive surveys through the area. The site contained unidentified projectile points, drills, and hearths. To the south of the Crow site, Heizer and Baumhoff (1962:57) recorded petroglyphs near Huntoon Spring (26Mi22). It was located on a known game trail between Huntoon Valley and Teels Marsh (Heizer and Baumhoff 1962:49).

LITTLE HUNTOON VALLEY. Seelinger (1978b) recorded some small lithic scatters (26Mi40-42, 48) in Little Huntoon Valley and the Excelsior Mountains to the west.

JACKS SPRING. Several sites were recorded (26Mnl06, 109-112, 115, 121, and 124) to the south of Little Huntoon Valley, near the mouth of Jacks Spring Canyon as it opens to Teels Marsh. Site 26Mnl23 was recorded in the mountains between Little Huntoon Valley and Teels Marsh.

The Crow survey recorded site 26Mnl04, an extensive Paleo-Indian and Pinto series site, which also contained burials, Olivella beads, mortars, and an unidentified type of rock alignment. This site should be rechecked to determine its present status.

Several other Paleo-Indian sites in this area include: 26Mn110, 124, and 125. But most of the sites in the Jacks Spring area consist of small lithic scatters with unidentified points, hearths, and beads.

TEELS MARSH. While problem-oriented, systematic surveys of the Teels Marsh area do exist, detailed data are not available at present (Matt Hall, personal communication, 1981). Toni Snyder and Matt Hall, from the University of California, Riverside, are currently working in this area. Hall has surveyed the area for the past three years, locating some 500 sites on BLM and Forest Service land. His survey area runs from the northern rim of Queen Valley in the south, north to the southern shore of Teels Marsh, and from Highway 360 (10) in the east, west on a north-south line from the middle of Huntoon Valley. The survey consists of a random sample, stratified into upper sage, pinyon-juniper and desert scrub/grassland zones. Each zone is further divided into wet and dry sub-zones.

Snyder is researching the history of the area. She notes the deteriorating condition of the borax works at Teels Marsh (CrNV-03-2175), which have been subjected to extreme vandalism over the past three years. Snyder has planned a preliminary mapping project at this site for the early fall of 1981.

RHODES SALT MARSH. The Nevada Highway Department (Moore, Matranga, Davis, and Steinberg 1981) surveyed a 400 ft. corridor along 36 miles of right-of-way for U.S. Highway 95. The survey transected Rhodes Salt Marsh, Soda Spring Valley, and the Candelaria Hills. Sparse remains were expected because the water supply is limited and unpotable (Moore, et al. 1981:9).

The party relocated sites 26Mi151 and 26Mi003, recommending both for National Register nomination. Nineteen new sites were recorded on the survey, including a quarry (field number MI(H)20(PM5)), which may have National Register potential.

Site 26Mi151 covers some 160 acres. It was first recorded by the Nevada Archeological Survey in 1976. The lithic scatter is associated with rock alignments; it was tested to a depth of 40 cm. revealing distinct hearths and workshops (Moore, et al. 1981:10).

Site 26Mi003 is a series of prehistoric campsites and lithic workshops and also has an historic component (Tonopah Junction: 1881-1910, and the Rhodes Townsite: 1862-1910). The Rhodes Townsite was previously recorded as 26Mn139. Tonopah Junction has been recorded as CrNV-03-2178 (see Table 4).

The prehistoric components of 26Mi003 and 26Mi151 were tested by the Highway Department (Moore, et al. 1981:10). Results revealed differences in lithic assemblages between the two sites. Obsidian was favored at 26Mi151, whereas locally available gold chert was used at 26Mi003.

The NHD survey collected flakes, utilized and otherwise, as well as ground stone, bifaces, and unidentified point fragments. Diagnostic artifacts included glass trade beads and several probable Elko and Rosegate series point fragments (Moore, et al. 1981:11).

LITTLE WHISKY FLAT. The Whisky Flat Petroglyph site (Heizer and Baumhoff 1962) actually overlooks Little Whisky Flat. The site is situated in a steep-walled draw in the Excelsior Mountains, adjacent to a deer trail through Powell Canyon.

Whisky Flat is a complex site. The walls of the canyon at the site are covered with petroglyphs and pictographs. The rock art is associated with 10 rock rings, a rock wall, bone tools, and Desert series points. Three of the rock rings are located on a bluff to the east of the rock art. Each ring (12 ft. in diameter and 2 ft. high) once contained midden, but they were vandalized sometime prior to 1958 (Heizer and Baumhoff 1962:52-53).

More stone rings were found on a bluff on the west side of the canyon. These rings also contained deep middens which were similarly vandalized (Heizer and Baumhoff 1962:54). Desert side-notched points and Shoshone pottery were observed at the site, suggesting its use during the late prehistoric period. Ten more rock rings were discovered on a low hill west of the canyon, but no occupational debris was found.

Heizer and Baumhoff (1962:56) suggest that there was a distinct sequencing of rock art elements at the Whisky Flat site. A thick wavy line was pecked into the rock and was then covered by a ground vertical line. Thereafter, diagonal lines were scratched into the rock. A series of horizontal lines cover the diagonal scratches, and red paint was rubbed into the horizontal lines. Finally, red paint was applied to the thick wavy line, the vertical line, and thin diagonal lines. Although the amount of time separating the marking events is unknown, it is apparent that they were episodic. This could suggest repeated reuse of this site; or conversely, the rock art may have resulted from the purposeful obliteration of earlier rock art by subsequent groups (Bettinger and Baumhoff n.d.).

A two foot high rock wall was built on the hill to the west of the rock art; it runs for at least  $\frac{1}{2}$  mile over the hill. Similar rock walls have been recorded at Borealis (26Mn214 and 217), and at the Ft. Sage Drift Fence site in Washoe County (26Wa3030). Nissen recorded a similar feature at 26Ly72, and it is associated with a rock art site (26Ly71) and several other rock alignments (26Ly69 and 70); see the Walker River sections for further discussion of these features. Rock alignments, in one form or another, are common in the District (n = 55), and many are associated with rock art.

A fascinating site with standing structures was recently located by the Forest Service. The unrecorded site is located west of Little Whisky Flat and east of Anchorite Pass at an elevation of 7600 ft. The cone shaped structures are formed by a circle of tilted juniper (?) poles; they resemble those described by Tuohy (1969c) at Masonic, California, nearby. The Forest Service plans further research at the site.

WHISKY FLAT. A number of sites are recorded on Whisky Flat. Site ArNV-03-42 is a low stone mound associated with an Elko lithic scatter. The Whisky Spring (Whisky Flat Dune) site is a lithic scatter associated with

ground stone and a burial. An intaglio was observed on the flat, but no site form was filed.

RATTLESNAKE FLAT. Rattlesnake Flat is bordered by the Excelsior Mountains and Garfield Hills. The Rattlesnake Flat Petroglyph site (26M114) in the Garfield Hills is situated on a game trail from Whisky Flat. The site includes three basalt boulders which are covered with pecked motifs in the representational and abstract curvilinear styles (Heizer and Baumhoff 1962:56).

The Rattlesnake Wells site (26Mn140), near the rock art site, was a small lithic scatter of dubious antiquity. The site is now destroyed. Site 26Mn131 was recorded in the middle of the Flat, but data are unavailable.

Within the Excelsior Mountains, southwest of Rattlesnake Flat, Seelinger (1978b) recorded several lithic scatters (26Mn34-79) near Summit Spring. They yielded bifaces, drills, ground stone, bedrock mortars, and Elko and Rosegate series points.

GARFIELD FLAT. Heizer and Baumhoff (1962:49-52) claim that the Garfield Flat Petroglyph site (NSM: 26M11; UCAS: 26-Mi-4) is the clearest example of an association between game trails and rock art in Nevada. A deer herd, which summers along the California border near Bodie, migrates eastward in the winter across the Wassuk Range, through Powell Canyon, into Whisky Flat. The deer move in small groups, driven from the higher elevations by snow. The migration continues eastward from Whisky Flat, proceeding either north through Rattlesnake Wells Canyon (passing site 26M114), or south through a narrow canyon at the southern end of Whisky Flat passing 26M15. The herd travels over the Excelsior Mountains, reaching Huntoon Valley via 26Mi22 (Heizer and Baumhoff 1962:49).

The northern route through Rattlesnake Canyon leads the deer to the Garfield Flat site, considered the finest ambush spot along the trail between Whisky and Garfield Flats (Heizer and Baumhoff 1962:50). In the narrowest portion of the canyon, the site is situated on an 8 ft. bench which is littered with rock art boulders (Heizer and Baumhoff 1962:51). The glyphs are done in Great Basin Abstract and Representational styles; several have overlapping motifs. Mayer (1975) suggests one glyph depicts an astronomical alignment, but she elaborates no further.

Other features at the site include bedrock metates and portable ground stone. Hammerstones, which were found at the site, may have been used to manufacture the glyphs (Heizer and Baumhoff 1962:52).

Several other sites surround Garfield Flat, including 26Mn127, 128, 132, 154 and 155. Site 26Mn132, a rock art site associated with an open lithic scatter, is located near Pepper Spring. The site yielded ground stone, steatite beads, hearths, and an abalone shell pendant (Hatoff and Bybee 1977).

The sand dunes surrounding the Garfield Flat playa contain several lithic scatters. Site 26Mn128, recorded by Julia Crow, consists of chipped lithics, ground stone, Olivella beads, pottery and historic debris.

## MONTGOMERY PASS

Montgomery Pass lies east of Queen Valley near the California-Nevada border, with Truman Meadows and McBride Flat to the southwest. Emma Lou Davis (1964) surveyed a portion of Mineral County near Montgomery Pass as part of her Mono Lakes study. The reported survey area was in Township 2 North, Range 33 East, in Sections 9, 10 and 16. It appears, however, that the survey actually took place in Township 1 North, Range 33 East, in Sections 5, 7, and 8. It is suggested that this area (Benton 15' Quad) is close to the description in the text.

Twenty-one sites were found on the Davis survey, but since none of the forms were received by the Nevada State Museum, the sites are unrecorded. A follow-up call to UCLA also proved unproductive, so the disposition of the site records remains a mystery. It is suggested that the BLM recheck these sites.

The Davis survey covered a pinyon forest south of U.S. Highway 6 that runs through Queen Valley and Montgomery Pass. Fifteen rock circles were located, some reaching 5 m. in diameter. The smaller circles, some 2 m. in diameter, were thought to be pinyon caches; the larger ones, house rings. One bedrock millingstone was located. At least eight rock circle sites, nine open chipping stations, two cave chipping stations, and two chalcedony quarries were located on the survey. The artifacts at the quarry consisted of heavy bifacial quarry blanks, characterized as "generalized choppers, chopping tools, thick knives and massive scrapers which have seen heavy use as all-purpose implements" (Davis 1964:282).

The survey crew located quantities of obsidian, thought to have been brought into the area from the Mono Lakes region (although a closer obsidian source can be found in nearby Truman Meadows). The survey yielded Pinto, Elko, and Humboldt series points, pottery, groundstone, and a full range of lithic artifacts including a "shoe-last" scraper and "proto-hand-axe". Davis felt the culture complexes in this area were distinct from the materials of the "Sierra Piedmont" in Mono Lake Valley (Davis 1964:283-284).

QUEEN VALLEY. In the summer of 1978 the Desert Research Institute (McNeil 1978) conducted a survey in Queen Valley, to the southwest of Montgomery Pass, locating six sites (26Mn83-88). The survey yielded 3200 flakes, some with bifacial retouch, others utilized, and a few cores. Four untypable projectile points were recovered. Ninety-nine percent of the material was obsidian, probably from the source nearby. The main focus of activity appeared to be biface manufacture and core reduction. An analysis of the biface technology at the sites suggested a three stage reduction process, which lacked the final stages. The area may have been a quarry zone. It was used mainly for primary flake and biface production from the nearby Queen Valley and Glass Mountain sources.

TRUMAN MEADOWS. This narrow valley is somewhat northwest of Queen Valley. Twelve lithic scatters (26Mn18, 26Mn23-26, 94-98) are recorded in the meadows and low hills surrounding the valley and several are associated with rock rings

and rock art. The arrangement of the artifacts in Truman Meadows suggests, perhaps, the debris of a single family band. The Washoe, for example, arranged their "village" so that the families were "within sight of each other's smoke". In other words, the house rings of a family band would probably be spread over the valley rather than clustered. They would be situated within view of, but not close to each other, if they followed the ethnographic pattern. The rock rings in Truman Meadows suggest a similar arrangement.

The diagnostic artifacts recovered from the Truman Meadows sites include Humboldt, Pinto, and Desert series points. Rock rings, rock walls, house pits, and scratched and pecked curvilinear and rectilinear rock art are the primary archaeological features in the valley. Many obsidian nodules have been found, suggesting that this area, along with Queen Valley, was a primary obsidian source.

Sites 26Mn27 and 26Mn29 are lithic scatters with rock rings in the hills to the northwest of Truman Meadows.

#### WALKER RIVER DRAINAGE

The West Walker River flows into Nevada through Antelope Valley. It skirts the Singatse, Pine Grove, and Wellington hills, meeting the East Walker River in Mason Valley. The East Walker River takes a circuitous route through California, running between the Aurora and Wassuk mountains; it flows north near the Cambridge Hills where it meets the West Walker River. The combined Walker River then flows north through Mason Valley, curves east around Wabuska, eventually emptying into Walker Lake.

These river valleys overlap the ethnographic boundary between the Washoe and Paiute. There is some evidence that these groups interacted within this region. The archaeological record within the Walker River basin may reflect cultural boundaries.

The Walker River drainage is bordered by several high altitude mountain ranges which are virtually unexplored. Previous archaeological surveys have focused on riverine valleys, systematically ignoring the higher elevations, but these remote areas are becoming increasingly attractive. Probabilistic surveys of these unknown areas may become a major research interest in the 1980s for several reasons. First, they are virtually unknown. Second, they are relatively free from vandalism. Third, they offer an entirely unrecorded adaptive strategy. These areas may not remain pristine. Recent publications (Hart 1981) are directing people to these last vestiges of untouched archaeology. We suggest that the responsible agencies sponsor probabilistic surveys of these high altitude locales before they are destroyed.

EAST WALKER RIVER. The East Walker River enters Nevada near Sweetwater on the Lyon-Mineral County border. In 1973 Karen Nissen led members of the University of California Archaeological Survey along the course of the river between CA-Mno-8 and the East Walker River Petroglyph site (26Lyl). Following known game trails, the survey located approximately 10 rock art sites and rock alignments (26Ly69-81), many of which were associated with lithic scatters and projectile points. Diagnostic artifacts from the survey included Elko and Rosegate series, as well as several Humboldt series "points".

The area near the East Walker River site proved particularly rich in rock alignments and "stone dummies". Nissen suggests that these stone dummy features represent hunting activities, having been used to simulate extra hunters. They were strategically placed to assist aboriginal game drives, giving the appearance of crowds of hunters (Nissen 1975a).

John Muir (1961:244-245) has described the use of stone dummies for the purpose of driving game:

Great numbers of Indians were of course required, more, indeed, than they could usually muster, counting in squaws, children and all; they were compelled, therefore, to build rows of dummy hunters out of stones, along the ridge-tops which they wished to prevent the sheep from crossing. And, without discrediting the sagacity of the game, these dummies were found effective; for, with a few live Indians moving about excitedly among them, they could hardly be distinguished at a little distance from men, by any one not in the secret. The whole ridge-top then seemed to be alive with hunters.

The East Walker River site (26Lyl) was recorded by Mallery (1886, 1893), Steward (1929), and Heizer and Baumhoff (1962), among others. The site consists of a basalt ridge and saddle located above a major bend in the river. From the river, a floodplain runs east to a petroglyph covered basalt ridge. Rock art is also found on the boulders within the saddle below the ridge. The east side of the saddle is bordered by the lower hills of the Wassuk Range. Access to the saddle is limited by the steep river cut on the southern end, by the ridge on the west, and by a narrow draw (75-100 ft.) at the northern end (Nissen 1974:53). The northern part of the saddle contains rock art on boulder faces visible from a single direction. Several bedrock mortars were recorded in the northwest section of the site, across the river from the rock art.

Most of the rock art was drawn on the ridge and in the saddle to the east, but some is found on the hillsides at the northeast and southeast ends of the saddle. Six circular stone rock alignments with interior facing rock art panels are situated along the crest of the ridge. The height of the ridge may have been artificially increased with boulders from the talus slope. Nissen recorded over 800 rock art boulders at the site which had Great Basin Abstract Curvilinear, Rectilinear, Representational, and Scratched styles. Some of the rectilinear scratched elements were found superimposed over pecked motifs (Nissen 1974:54).

The depiction of bighorn sheep in a V-like or converging line may be unique to 26Lyl. This arrangement was found in 13 of the 30 examples of bighorn sheep drawings from the site (Nissen 1974:55).

Nissen suggests the V-shaped lines of bighorn sheep may relate to several ethnographic accounts of hunting techniques. Muir (1961:244-245) describes high walled corrals with long guiding wings used for hunting sheep along trails in the Wassuk Range near Mt. Grant. Similar hunting techniques were described by Stewart (1941), Gilmore (1953), and Stewart (1941). While no corral was found by Nissen at East Walker River, one was reported in earlier times (Nissen 1974:59). The use of guiding wings would force the game to travel in a V-formation.

Nissen suggests that hunters drove the animals into the saddle at East Walker River. The game was prevented from fleeing via the talus slope at the southwest by hunters hidden behind the walls and in the rings; hunters hid in the saddle and hills to the east (Nissen 1974:57).

The site probably functioned for communal hunting of large herds of game. Communal hunts are assumed from the energy required to use and maintain such a complex site. If the large game herds were significantly reduced, communal hunts would cease. Individual opportunistic hunts do not require sites like East Walker River. Nissen (1974:59-60) suggests that the switch from communal to individual hunting probably explains the denial of rock art by ethnographic groups.

Many of the 26Lyl rock art panels face in one direction, implying a purposeful rather than random placement of motifs. The orientation of the motifs and the placement of rock art in the saddle seem to support a functional interpretation as suggested by Trudy Thomas (1976). Selectively incised rock art at the Northumberland Canyon Rock Art site (26Ny304) was restricted to those panels that would have been seen by animals as they passed through. The rock art may well have functioned to distract the game, thereby giving the hunters an advantage. Only those rockfaces in the most strategic position for ambush were decorated; other boulders in less strategic positions were ignored (T. Thomas 1976:73). At East Walker River several panels of rock art, situated in a constricted area of the site follow this placement strategy.

The rock art on the floor of the saddle may offer further clues to the use of the site. The topography would force the game through the saddle, causing direct contact between the game and the rock art (Heizer and Baumhoff 1962:44). The Indians may have felt that such contact gave extra power to the hunters (Thomas, personal communication, 1981).

The East Walker River site is on the National Register of Historic Places, but adjacent sites were not nominated. The BLM manages most of the land on which these sites are located, and should consider nominating the entire area to the National Register as an Archaeological District (see district recommendations outlined on the Mt. Grant and Pine Grove Hills USGS 15' Quads). Nomination as a district would assure each site adequate protection from destruction as well as integration into the total complex. It is further suggested that the sites should be field checked before they are nominated; the

nature of several of these rock alignments was somewhat amorphous. Field checks should include evaluations of site function and detailed mapping. An effort should be made to determine the role of each site within an overall hunting complex.

Nissen (n.d.) has recorded East Walker River and various other sites within the Carson City District in detail. It is suggested that the BLM consult this primary source, when it becomes available, for National Register boundaries at East Walker River.

Seelinger's (1978b) survey of four large areas of the Toiyabe National Forest was mainly in Mono County, California, but covered parts of the District near the Lyon-Mineral-Mono County borders along the East Walker River, and further north within Sweetwater Flat. Seelinger designed a stratified random cluster survey of over 11,000 acres, using linear transects (Seelinger 1978b: 12-14). Within the East Walker River area she recorded sites 4-Mno-693 to 705 which included circular stone walls, lithic scatters, Pinto, Elko, and Rosegate series points, hearths and bifaces. Sites 26Ly53 and 54 were recorded within the District boundaries. They consist of a lithic scatter and three stone circles respectively (Seelinger 1978b:15-16).

Tuohy (1969c) reported two conical wood houses supported by stone substructures near Masonic, California, adjacent to the study area.

WEST WALKER RIVER. The West Walker River begins in Nevada in Antelope Valley, just to the east of Topaz Lake. D'Azevedo (n.d.:1-13) mentions several spots along this stretch of the river which were once occupied by the Washoe and Paiute. Apparently, the Washoe used the area as a source for many of their raw materials, particularly for the soft sandstone that was used to make pipes. It was also a source for salt and chert.

Antelope Valley. Antelope Valley was an overlapping boundary between the two ethnographic groups who interacted with varying degrees of hostility. Several camps were recorded along the west side of the Walker River between Topaz Lake and Coleville, in which many Paiute "half-breeds" lived. The slopes of the western mountains and the river banks were the most favored locations. According to one informant, the Washoe and Paiute both came to the area for years, but maintained their distance. In later years, however, the Washoe and Paiute intermarried. Washoe men married Paiute women, but objected to Washoe women marrying Paiute men, according to Washoe informants (d'Azevedo n.d.:2-3). The Walker River may have been an informal division between the two groups; the Washoe lived on the west side, and the Paiute lived on the east side. There seems to be contradictory evidence as to which group held Antelope Valley.

Seelinger's (1978b) survey covered the north end of the Sweetwater Mountains, southwest of the Wellington Hills on the eastern margin of Antelope Valley overlooking the West Walker River. Twelve lithic scatters (Ca-Mno-706 to 717) were found adjacent to the study area, yielding a few projectile point and

biface fragments and one ground stone fragment. Seelinger concludes that these sites are probably temporary seasonal use areas (Seelinger 1978b:23).

In the southeast section of the Pine Nut Mountains overlooking the West Walker River, Hatoff and Delaney's (1979) survey found eight artifacts (26Do303-310) including isolated lithics and ground stone.

Smith Valley. Hatoff and Botti (1980) surveyed a section of Smith Valley immediately adjacent to the West Walker River, locating 44 "sites" in a three acre area (CrNV-03-2094-2137). The sites, many of which lie immediately adjacent to site 26Ly111, generally consist of isolated flakes, projectile point tips, ground stone fragments and historic debris. One side-notched and one Rosegate series points were located.

Site 26Ly111, recorded by Jonathan Davis in 1976, covered 1,000 sq. m. Although the site was not tested, a maximum depth of 3 m. was indicated in the sides of several quarry cuts (Davis, personal communication, 1981). The site yielded many projectile points, ground stone, bone fragments, preforms, and other bifaces. The materials from Ly111 appear similar to those from several of Botti's sites located nearby. The area should be reexamined to determine the boundaries of Ly111.

One of the small sites in the Botti survey, 26Ly89, consists of a cache of 37 whole obsidian bifaces, in various stages of production, which were associated with ground stone. Richard Hanes, State Archaeologist, Bureau of Land Management, Reno, is preparing a report on this unusual find.

A site similar to Ly111 was located due south on the opposite bank of the West Walker River. Site 26Ly2, located by Calhoun and Orr in 1953, consists of an extensive lithic scatter with projectile points, shell and bone tools, and ground stone fragments. Site depth was reported as 18 ft. The site should be rechecked and given protective measures.

Several miles east of the Smith Valley biface cache, McNeil and Turner (1979) surveyed an area along the West Walker River which yielded three lithic scatters (26Ly63-65). Several of the sites had historic components, located along the river terraces. The sites contained Desert Side-notched and Rosegate points, ground stone fragments, and two fire hearths.

Mason Valley. The east and west forks of the Walker River meet in Mason Valley. The Jack Wilson House (26Ly252) is located nearby.

Toward the northern end of Mason Valley, near Wabuska Hot Springs, the Nevada State Museum recorded 10 lithic scatters (26Ly30-40). Several contained mortars and may have had hearths. A Rosegate series point was found at 26Ly32 (Rusco and Tuohy 1975), and several similar sites have been recorded nearby (26Ly222 and CrNv-03-1265).

A fairly unusual site (recorded from the NSM Lyon County ledger) is located along the Walker River near Parker Butte in the northeast end of Mason Valley. The site (26Ly251) yielded several baked clay beads. Baked clay objects of any kind are unusual in the area, and therefore noteworthy.

#### WALKER RIVER

Weber Reservoir. Several sites are recorded below the dam at Weber Reservoir. The McGee Point site (26Mi7/82) is well-known, but its exact location remains problematical. The University of California mapped the site from McGee's description, placing it north of Weber Dam. Recently, Jonathan Davis and Margaret Wheat attempted to relocate the site. Using McGee's description, they mapped the site south of Weber Dam. Davis, while confident in his field procedure, suggests an on-the-ground recheck of the Berkeley map plot (Davis, personal communication, 1981).

McGee's article - considered to be a classic example of the scientific method - reports his 1882 find of an obsidian biface extruding from strata some "5 feet above the base and 25 feet below the summit" of a small butte to the east of Vermilion Cliff (McGee 1955:32). McGee concluded that the biface was deposited in Pleistocene strata. The import of the article rests not with the isolated object itself, but rather with McGee's thoughtful approach.

Schurz. Several extensive projects centered within the Walker Indian Reservation boundaries revealed some small lithic scatters, ground stone fragments, and hammerstones. Callaway, Duffe, Sayer, and Seelinger (1977) relocated 26Mi2 (previously recorded by Shutler), as well as 26Mi32 and 26Mi145-149. Sites 26Mi158-188 were found during a Nevada State Museum project (NSM Report 11-34).

Walker Lake. The foothills of the Wassuks, on the west shore of Walker Lake, hold several rock art sites, all the more interesting because of their proximity to several of Nissen's East Walker River sites (26Ly74-80 and 26Ly1). The East Walker River Complex is due west of Walker Lake, only some 8 air miles away.

Sites 26Mi4 (UCAS 26-Mi-2), 26Mi6 (UCAS 26-Mi-3), and 26Mi17 are all rock art sites, as is 26Ly102, nearby. Site 26Mi11 is a cave site on the western shore of Walker Lake. It may have dry stratified deposits. The site was reported by Julia Craw, an avocational archaeologist; it should be rechecked.

Site 26Mi6, the furthest north of the rock art sites, consists of Great Basin Representational red pictographs and pecked glyphs on one face of a large boulder (Heizer and Baumhoff 1962:49). Site 26Mi4, the Cottonwood Canyon site, is located on the southwest shore of the Lake and consists of pecked glyphs and a rock wall (Heizer and Baumhoff 1962:48-49). Site 26Mi17, the Dutch Creek site, is a Great Basin Representational style glyph (Heizer and Baumhoff 1962:56).

### THE WASSUK RANGE

Mt. Grant. Site 26Ly102, the Pistone Site, was reported by Jerrems (1971). Great Basin Curvilinear abstract glyphs are found in association with a lithic and ground stone scatter and rock lined depressions.

Nissen (1975a) suggests that site 26Mn190, located southeast of Walker Lake in the Wassuk Range near the summit of Mt. Grant, may be the stone dummy site described by Muir (1961:244-245). Nissen observed trails connecting several rock walls on the rimrock. Most walls were generally straight; two were manufactured with right angle curves. This site afforded a clear view to several sites nearby, including the East Walker River petroglyph site.

Aldrich Grade. Several sites are located in the western part of the Wassuks, near Aldrich grade. 26Mn12 is a lithic scatter which Grosscup (UCAS) located during his 1954 survey. The site yielded projectile points, hearths, and flakes. Just to the south, Dunbar and Nelson (1976) found four sites (26Mn141-144); three were isolated flakes and one was a side-notched point.

Borealis. In 1979, as part of their proposal to mine the Borealis gold deposits in the Wassuk Range, northeast of Aurora in Mineral County, Houston International Minerals Corporation contacted Lonnie Pippin (Desert Research Institute) for advice on the impact from their proposed development.

Lonnie Pippin (1980b) conducted a field reconnaissance of the 6 sq. miles of U.S. Forest Service land at Borealis. Pippin's research focused on the history of pinyon-juniper woodland exploitation, a popular subject with Great Basin prehistorians (Bettinger 1976, 1977; Madsen and Berry 1975; Thomas 1971a, 1971b, 1973; Thomas and Bettinger 1976; Williams, Thomas, and Bettinger 1973).

Pippin adapted Binford's (1980) functional site categories to the archaeology at Borealis, cautiously assigning five site types: the residential base, the field camp, the location, the station, and the cache (Pippin 1980b:14).

Field reconnaissance was designed for 100% coverage by a four to five person crew walking systematically placed zig-zag transects (Pippin 1980b:16). Initially, sites were plotted, their area and content determined, but not collected.

Fifteen historic sites, including three house foundations, and 138 prehistoric sites were located. Twenty prehistoric sites were residential bases, which were located in restricted pinyon-juniper locales between 7,130 and 7,640 ft. elevation clustered around Rock Springs. Seventy percent of the base camps were found on saddles and ridgetops with southern exposures. Alluvial terraces, which accounted for only 25% of residential bases, were more intensively occupied than the saddles and ridgetops (Pippin 1980b:33). Diagnostic artifacts included historic pinyon hooks, a wickiup, and Desert through Pinto series projectile points, suggesting the area had been used for the past 4,000 years (Pippin 1980b:33).

Twenty-one sites (52% of the total) were classified as temporary field camps. The field camps were found in the sagebrush and lower pinyon-juniper zones on shallow slopes with southern exposures (48%) and on saddles (22%). These camps consist of small chipping stations with hearths and biface reduction debris (Pippin 1980b: 34-35). Diagnostic artifacts include Desert, Rosegate, and Elko series projectile points.

"Localities" included at least 10 quarries, four linear rock alignments, and over 60 isolated finds. Two of the rock alignments were on a major drainage of the Wassuk Range. They were built to channel game in a northwest or southeast direction. The rock alignments were adjacent to game trails. The largest concentration of knapping stations and isolated artifacts were found directly southeast of the game drives (Pippin 1980b:38).

Pippin evaluated the significance of the sites both as discrete entities and as an archaeological district, concluding that none of the historic remains qualified for the National Register of Historic Places.

Potential chronological data from Borealis may come from 13 prehistoric sites which appear to be stratified (26Mn177, 195, 200, 226, 237, 238, 242, 255, 314, 335, 336, 343, 345). A hearth at 26Mn195 is in direct association with the lowest of three volcanic ash layers. Four sites (26Mn221, 238, 247, 338) are situated directly atop an ash layer that can be dated.

At least three resource procurement strategies were defined for Borealis. Residential bases were used while exploiting the pinyon crops. Communal game exploitation took place at game drives. Raw materials were gathered at the chert quarries (Pippin 1980b:47-48).

Pippin recommended that a non-random sample stratified by site type, archaeological potential, and theoretical orientations, would mitigate the adverse impacts created by the proposed mining operation (Pippin 1980b:51).

Several other projects recorded sites near Borealis. Hatoff (1978f) surveyed an area adjacent to the Borealis Project locating an isolated projectile point tip (26Mn90) and a flake (26Mn348). Directly south of Borealis, in the vicinity of Powell Mountain, site 26Mi9 was recorded by Grosscup in the 1951 UCAS survey. The site consists of several projectile points (Elko and Rosegate?) and trade beads (Grosscup 1974; Rusco and Dansie 1977; Seelinger 1978b). Sites 26Mi19 and 91 are small lithic scatters, and site 26Mn153 is a chert quarry source; its extent is unknown (Buder 1978; Rusco and Dansie 1977).

PINE GROVE HILLS AND SWEETWATER MOUNTAINS. Situated between the east and west forks of the Walker River lie the Pine Grove Hills and the Sweetwater Mountains. Unfortunately, neither has been systematically surveyed. They are, however, known to contain extensive archaeological resources (Arnie Turner, personal communication, 1981). The property is controlled by the U.S. Forest Service, which plans future research in the area.

Among the sites recorded thus far in the Pine Grove Hills are Ly-Pro-5 and Pro-6; 26Ly42, 51 and 52, 55, 56 and 247-249. Ly-Pro-5 and 6 consist of Pinto series points associated with a lithic and ground stone scatter, and several stone circles, respectively. The sites were recorded by avocationalists, and should be rechecked. Lyon-Pro-5 is in the Nye Canyon drainage, and Lyon-Pro-6 is near Lobdell Summit in the northern part of the hills. Site 26Ly42, near Dalzell Canyon, is a lithic scatter with drills and bone tools (Rusco and Dansie 1977:10). Sites 26Ly51 and 52, recorded by Evy Seelinger, are fairly large lithic scatters on Forest Service land in Sweetwater Flat (Seelinger 1978b).

Sites 26Ly55, 56 and 247-249 are at the northeastern end of the Pine Grove Hills overlooking Pine Grove Flat, due south of Mason Valley and the confluence of the East and West Walker Rivers. Sites 26Ly55 and 56 were lithic scatters found by Hauck (1976) during a reconnaissance for drilling sites. Sites 26Ly247-249 were located by the Nevada State Museum in 1976 in conjunction with another drilling project. The sites yielded lithic debris and one Elko series point (Rusco 1976b).

Sites recorded in the Sweetwater Mountains to the west of the Pine Grove Hills include 26Ly23, an extensive site found in 1963 by Charles Rozaire for the Nevada State Museum. Rozaire believed the site was a pinyon gathering camp which consisted of Pinto, Humboldt, Elko, and Desert series points. He found a rock circle some 10 to 12 ft. wide, with an entryway.

According to d'Azevedo (n.d.:91), the Sweetwater Mountains were known as gosiw dala' ak ("water crystal") to the Washoe. The area southeast of Antelope Valley was referred to as "White Mountain" because white quartz crystals were found in abundance in these hills. According to one of the informants, the Washoe obtained a stone they called bankus de'ek, used for making pipes, and they also gathered chert (p'atsaga) from a locale just past a mountain on the north side of the range (Sweetwaters?) at the south end of Antelope Valley.

Desert Creek Peak, to the north of 26Ly23, appears to be the focus of abundant prehistoric activity. Unfortunately, the area has not been systematically surveyed; however, several sites suggest the area has great archaeological potential.

Site 26Ly4 (UCAS: 26-Ly-2), the Desert Creek Peak (or Smith Valley) Petroglyph site, was recorded by Julian Steward (1929:144) and by Heizer and Baumhoff (1962:45-47). Painting was applied to the pecked glyphs; some is still visible. The remainder of the site consists of a lithic scatter, ground stone, bone tools, a bedrock mortar and several rock alignments.

Heizer and Baumhoff note several examples of pit-and-groove petrography at the site, in addition to a deer hoof motif. The deer hoofs (or split horseshoe) appear as pairs of tracks arranged into a trail running up one side (Heizer and Baumhoff 1962:45-46). Grinding slicks were found near the rock art. Heizer and Baumhoff suggest that the slicks functioned as paint grinding surfaces. Remnants of paint were found packed into tiny depressions in the grinding surface. The slicks were not associated with middens, as are most grinding surfaces, and their surfaces are at too steep an angle for seed grinding. Heizer and Baumhoff do not comment on whether the angle was too steep for paint grinding.

The site was located on a game trail between Antelope Valley and Mount Grant. It was, therefore, suggested that it functioned as a hunting ambush (Heizer and Baumhoff 1962:46).

Just to the north of the Desert Creek Peak Petroglyph site several avocational archaeologists recorded another lithic and ground stone scatter with projectile points, which may be part of the rock art site. Both sites should be rechecked.

Another rock art site has been reported in the southern end of Smith Valley. In addition to the rock art, the site is reported to contain four stone dummies similar to those described by Muir. Unfortunately, no further data are available for this site (Hatoff, personal communication, 1981).

Neither the Pine Grove Hills nor the Sweetwater Range have been systematically surveyed, but the apparent paucity of data in no way reflects the archaeological potential of the area. Recent interest in wilderness exploration in the Great Basin (Hart 1981), in addition to the systematic bias against archaeological research in these areas, mandates an intensive problem oriented survey to determine the research potential of this significant area.

MANAGEMENT RECOMMENDATIONS - WALKER DRAINAGE. The Walker drainage as a whole suffers from a lack of systematic sampling. Entire mountain ranges, and large sections of the major river drainages, remain unsurveyed.

The potential for regional rock art analysis has been noted along the East Walker River and the west shore of Walker Lake. Research in these areas should also focus on the relationships between Walker River and Walker Lake resources and the upland resources of Mt. Grant, which is situated between the two.

Borealis, with its regional approach to prehistoric research, is an example of the efficacy of problem-oriented research. Unfortunately, the exigencies of cultural resource management studies often preclude a regional approach, imposing the "single site" concept on scientific inquiry. It is, therefore, imperative that management agencies call for regional research designs addressing the major problems of our discipline.

Specifically, one of the first management goals should be to acquire a set of research designs geared toward the specific problems in each area. Once research designs and methodologies for their implementation are firmly in hand, additional fieldwork can be directed toward those ends. This step-by-step procedure would serve to eliminate some of the inefficiency inherent in collecting data for the sole purpose of "adding to the general knowledge of the area".

Goal number one is to acquire competent research designs and put them into effect. This would in no way preclude data collection for individual research interests.

Several specific research questions come immediately to mind. There is the question of cultural affiliation and its possible archaeological correlates. The Walker drainage is one of several boundary areas between the Washoe and Northern Paiute. What data are needed to deal with this complex problem?

Another problem is the systematic bias against high altitude environments in the archaeological record. Have we excluded an entire part of the seasonal round by ignoring these areas? We have no comparable survey data with which to evaluate upland and riverine exploitation, for example. We may have limited our observations to one small aspect of a much larger system.

Another research topic, generally ignored, is the functional analysis of rock art. What types of sites are associated with rock art? Are there consistent relationships between motifs and locations? Between motifs and aspect? Any number of research questions could be generated along these lines.

The Walker drainage is blanketed by several Late Holocene tephra layers. It provides a unique opportunity for stratigraphic and chronologic sites studies which, without the tephra, would be impossible to date. These and similar geomorphic studies should not be ignored.

CURRENT PREHISTORIC RESEARCH AND SUGGESTED MANAGEMENT OPTIONS

CURRENT PREHISTORIC RESEARCH

OBJECTIVE I: CHRONOLOGY. The nature of scientific inquiry is cumulative; new ideas build on the foundation of previous research. Contemporary archaeological research can be said to involve three main goals: construction of cultural chronologies, reconstruction of past lifeways, and the study of cultural processes (Binford 1968; Deetz 1970; Thomas 1979; Willey and Sabloff 1974). The objectives encompass both the development of archaeological theory and also the analytic models which guide contemporary research. The rank order of these goals not only represents the growth of archaeology as a science, but it also indicates their relative role in archaeological explanation (Thomas 1979:138).

Prior to the 1960s archaeologists were mainly concerned with the reconstruction of culture chronology. Research focused on the temporal ordering of cultural events, as indicated by the sequence or relative stratigraphic position of artifacts. The questions which would be asked of these data were, of necessity, limited to "when?" and "how long?". The construction of an adequate chronology is an initial goal, which must be considered before moving on to further research objectives. That is, archaeologists must have a method of dividing their data into manageable temporal segments on which to base more sophisticated comparisons of cultural information. Sequential ordering of cultural events is thus the first step in all archaeological inquiry.

The archaeological research within the Reno ES began with this primary goal. Heizer and Elsasser (1953) focused on establishing a culture chronology for the north-central Sierra and resulted in a relative cultural development from the Martis Complex into the Kings Beach Complex. They believed that these complexes were discrete, separated in both time and space: they also suggested differences in subsistence and settlement patterns. Once this initial sequence was devised, it was then tested against the archaeology of a larger area (Elsasser 1960). Elsasser's research refined the proposed chronology, adding information from 1800 sites to the initial Heizer and Elsasser survey data. Elsasser also extended the boundaries of the Martis/Kings Beach sequence by comparing the Sierran sites to those in the Great Basin and interior California. This basic chronology was further refined by Davis (1966a), Elston (1971, 1979a), Elston and Davis (1972), Elston, et al. (1977).

The chronological sequence within the Reno area is now fairly well understood, with the possible exception of the early occupation. Although few Paleo-Indian sites have been found within the Reno ES, several artifacts are suggestive of early incursions into the area (Elston 1979a; Elston and Turner 1968; Pendleton 1979; Tuohy 1968a, 1969b, 1977). The earliest phase, locally designated the Tahoe Reach Phase, is radiocarbon dated to 8130  $\pm$  130 B.P. [TX-2548] (Elston 1979a:44). Projectile points from this early phase are suggestive of the Great Basin Stemmed series (Tuohy and Layton 1977). The second period in the area, the Spooner Phase, is associated with a date of 7100  $\pm$  140 [I-2001] at Spooner Lake (Elston 1971; Davis 1966a). The Martis Phase follows, and is dated by several radiocarbon determinations ranging from 2000 to 4000 years ago (Elston 1979a). The Kings Beach Phase (proto-historic Washoe)

follows Martis, beginning about 2000 years ago and lasting through the historic Washoe occupation of the area. Although the prehistoric sequence in the Reno ES is now rather well understood, we should point out that radiocarbon dates have been obtained from only seven sites within those 1.6 million acres, and so the absolute dates which bracket each phase remain somewhat hazy (Elston 1971, 1979a; Hester 1973).

Archaeological research within the Walker and Lahontan ESs likewise began with one initial goal of constructing culture chronology. Subsequent to Loud and Harrington's (1929) synthesis, Heizer (1956) and Grosscup (1956) proposed refinements in the chronological sequence in the Humboldt and Carson Sinks. Grosscup's (1960) reanalysis of the culture history of Lovelock Cave suggested further revisions.

Briefly, Grosscup's summary of the chronology of the Carson Sink (based on data derived from his excavation of Hidden Cave) begins with the Fallon Phase, a Western Pluvial Lakes Tradition component found at several surface sites in the Carson Sink (e.g., Hesterlee, Sadmat). Grosscup (1956) suggests the next phase (the Hidden Phase) is represented in the initial occupation of Hidden Cave. This presumed Anathermal occupation was based on a meager recovery of Humboldt series points, and a suggested associated fauna. The subsequent occupation, termed the Carson Phase, was attributed to the Altithermal period, based on the recovery of two Pinto points. Grosscup suggested that the next phase (Lovelock Phase) correlated with the "32 Inch Midden" at Hidden Cave, and contained a wide variety of perishables and Pinto, Elko and Gypsum type points. The top midden was assigned to the late Lovelock Phase which contained a similar projectile point assemblage. The final phase in the Carson Sink was not represented at Hidden Cave. Termed the Dune Springs Phase, it was linked to prehistoric and historic Paiute occupation of surface sites in the Sink. This phase was characterized by Desert series points.

Recently, data pertaining to the chronology of the Carson Sink was augmented by the American Museum of Natural History re-excavation of Hidden Cave. A reanalysis of the previously excavated Hidden Cave materials, in conjunction with a new suite of radiocarbon dates, revealed that Hidden Cave was virtually a single component site, utilized from 4000 B.C. to 1600 B.C., with the bulk of the deposit dated between 2500 B.C. and 1600 B.C. (Thomas n.d.b.). This new information calls into question Grosscup's analysis. No evidence was found to support the early use of the cave, proposed by earlier investigators. Thomas' preliminary analyses appear to lend support to Baumhoff and Heizer's (1965:699-702) contention of an Altithermal depopulation of the Sinks.

OBJECTIVE II: LIFEWAYS. Archaeology's second objective is the reconstruction of past lifeways. This objective necessitates a shift in research design and field techniques to answer new questions being asked of the data. Chronological questions require stratified sites to establish a relative sequence of chronologically sensitive artifacts. Once the relative position of artifacts is well established, one can turn to the question of exact dates, often with recourse to radiocarbon dating.

Given this background, one can then turn to more sophisticated analysis and new questions. Was a given site used for the same economic activities throughout its history occupation? What social groups were represented at the various sites? To what extent has the environment changed? How do exploitation strategies at one site compare with those of other sites in the area?

These new questions require different research strategies, including mid-range modellings, paleoenvironmental reconstruction, probabilistic sampling of available life zones and attention to intra-site variability. Now that the sequence of cultural activities in the Reno area is known in broad outline, it becomes possible to explore the meaning of this chronology. To what extent has this goal been realized for the Reno study area?

Davis (1966a) was the first to test the Washoe ethnographic model against the archaeological record of the Carson/Washoe Valley. While Heizer and Elsasser (1953) felt that the obvious archaeological problem was to determine whether the archaeological manifestation of Washoe culture could be identified, they also note that their "problem was not clearly defined before we went into the field..." (Heizer and Elsasser 1953:1). They were not, apparently, specifically testing the Washoe model, though they did make use of the direct historical method to interpret their data (Elsasser 1960:6).

Davis' "test" was designed to define differences in prehistoric and ethnographic patterns of exploitation looking in particular for breaks in the prehistoric record. Although he found no data which conflicted with the ethnographic model, the lack of systematic regional sampling leaves many questions unanswered.

The Washoe lifeway involved semi-transhumance, apparently focused on the Lake Tahoe area in the summer and lower valley areas in the winter. This settlement pattern was somewhat flexible, in that some groups (or subgroups) would summer in the valleys or lower mountain ranges nearby. In addition, some groups were known to winter in the lower mountainous regions during particularly mild years. To examine this model against prehistoric archaeological data requires a systematic sample of each environmental zone to assure an unbiased view of the settlement patterns. Once a representative sample is available, information can be generated about the seasonal exploitation of each zone. In other words, two types of data are needed: information regarding environmental change, and archaeological indicators of seasonality. Because of a lack of systematic sampling, the regional data may well be incomplete, rendering tests of the ethnographic model incomplete.

Subsequent discussions of this model have more satisfactorily addressed the second criterion, reconstruction of past environments (see Elston 1971, 1979a; Elston and Davis 1972; Elston, et al. 1977; Davis and Elston 1972; Davis, Elston, and Townsend 1974). At this point, paleoenvironmental reconstructions are becoming more reliable. The archaeological record within individual sites has been related to these changes, resulting in limited correlations between cultural changes and environmental change. But this alone tells us relatively little about actual prehistoric activities in that we still cannot account for most of the change in prehistoric site components. A site, for example, may

appear to be abandoned during the Altithermal, but because of the lack of systematic samples in the area, one cannot tell if site abandonment was widespread, or if sites were merely shifted to more favorable locations nearby.

Data are likewise scarce regarding the exact nature of prehistoric exploitation at most sites. Few sites have been subjected to flotation analysis, resulting in a dearth of information about subsistence or seasonality (samples from all excavated sites in the U.S. 395 project were floated, with negative results [see Elston 1979a; Appendix H]). Although faunal analysis has become a standard procedure in larger cultural resource management projects (Elston 1979a; Miller and Elston 1979), to date few comprehensive studies are available.

Unfortunately, the exigencies of cultural resource management have generally precluded these options. The majority of the archaeological research within the Reno area has resulted from "archaeology on demand"; research was guided by the requirements of development, rather than the rigors of scientific inquiry, though these need not be mutually exclusive (King, Hickman, and Berg 1977; Schiffer and Gummerman 1977; Goodyear 1977). Because of this, there are few probabilistic surveys within the study area; one exception is Hagerty's (1970b) research in the Pine Nut Mountains. Hagerty employed a stratified random sample of several environmental zones, generating useful data for the study of settlement patterns within the Pine Nut Mountains. Unfortunately, he gathered little information on specific resource exploitation, and no microenvironmental analysis accompanied the survey. As a result, he could determine neither the resources exploited, nor the season of occupation.

Another exception is the work of Robert Elston. Since 1966 Elston has worked with an explicit regional research design similar to that proposed by Davis (1966a), (Elston 1967a, 1967b, 1969, 1970, 1971, 1979a, 1979b; Elston, et al. 1977; Townsend and Elston 1975b; Elston and Turner 1968). Although Elston's work has been supported largely by contract archaeology, he has proposed a research design based on the Washoe ethnographic model. In most cases, the limitations imposed on Elston's work were due to the fact that he could not select his survey. He attempted to mitigate this sampling bias by examining each of the environmental zones within a given project. In this way, "intersite variability was studied by comparing environmental and technofunctional variables" (Elston 1979a:59). Elston also considered the fact that each environmental zone may not be equally represented within a sample area (although he believes that some zones will be well represented). So long as the nonrandom characteristics of the sample area are realized, the biases can be partially countered. Over the years, Elston has compiled considerable data on correlations between site types and environmental situations. These data can in turn be combined with the ethnographic information to predict which site types will occur in particular environmental zones.

Elston has considered a number of specific research questions at the sites encountered during his surveys:

1. Using the ethnographic record as a model, what types of sites should one expect to find in this particular survey, and what kinds of artifacts and features should be present in each type? (Elston 1979a:60). In order to deal with this problem, Elston developed ethnographic and environmental models, which in turn predict site and environmental data. Where, for example, would fishing sites be located? What artifact associations should one find at fishing sites? Where would early spring plants be collected? What artifact associations characterize those activities?
2. How do the sites within the study area related to microtopographic features and the distribution of resources? (Elston 1979a:62-63). To answer this question, Elston attempts to formally describe and map extant land forms, plant communities and faunal resources near the study area. These data are combined with the relevant ethnographic information to predict locations of specific site types. For example, "base camps will be located primarily with regard to a particular subsistence resource or limited set of resources, the location of winter camps probably had more to do with the presence of maintenance resources and facilities" (Elston 1979a:63).
3. What is the range of activity represented at each site for each time period, and how is this to be inferred from the various types of artifacts and features present in each site? (Elston 1979a:63). Elston has attempted to determine tool function from morphological and edge damage analysis, and feature types have been inferred from ethnographic analogy and artifact associations.
4. What is the relationship between cultural change and environmental variation? (Elston 1979a:63). To answer this question Elston, et al. (1977) have proposed a model that prehistoric culture change is linked to fluctuations in the regional human carrying capacity caused by climatic variation. For example, Martis sites seem to have higher concentrations of artifacts than do Kings Beach sites. Elston believes this is due, primarily, to a more abundant resource base during Martis times. If the environment during the Kings Beach Period produced more dispersed or less predictable resources than Martis, then the settlement pattern would change of necessity. Sites may not be reoccupied year after year, or if they were reoccupied, it would be by sparser populations than during times with stable resources.
5. Finally, what is the cultural chronology for the specific research area, and how can this be compared to the chronology from other parts of the Great Basin and Sierra Nevada? (Elston 1979:64). Elston feels that the basic chronological sequence is now fairly well known, although details are still hazy.

Although these research questions have guided Elston's work, his fieldwork was dependent on which sites were threatened and the money available for analysis. But it is important to stress that Elston has tried to develop a regional research model, aspects of which he examines with each contract accepted.

Because of the limitations imposed, Elstons regional synthesis of the area is incomplete. The availability of cultural resource management funds may not allow a sample of each environmental zone. Gaps in the data base are inevitable in CRM archaeology. But those gaps define areas for future research, and highlight the direction for upcoming work in the District.

The second imperative, the reconstruction of past lifeways, is also directly relevant to archaeological research in the Walker and Lahontan areas. Antevs (1948) proposed a climatic model which suggested that warm-dry conditions led to an abandonment of the Basin during the Altithermal. Taking exception with Antevs' model, Jennings (1953), based on his excavation of Danger Cave and on Steward (1938), suggested that a relatively stable transhumant lifeway of desert adaptation prevailed throughout the Altithermal, and that the Basin was never abandoned. Heizer (1956) supported Antevs' model. Based on his excavation of Lovelock Cave and other excavations in the Humboldt and Carson Sinks, Heizer proposed that Altithermal occupation in the Sinks was extremely sparse at best, and may have ceased altogether. Heizer believed that a lacustrine, rather than desert adaptation was the focus of activity in the Sinks, and that the Jennings' Desert Culture model did not account for the lifeways in the entire Basin (Heizer and Krieger 1956; Heizer and Baumhoff 1965). Heizer (1967) further suggested that such lacustrine adaptations verged on sedentism, terming them "limnosedentary adaptation(s)". Jennings (1964) later revised his model to include a lacustrine adaptation as an alternative lifeway to the desert model, but continued to reject Antevs' model of Altithermal drought and abandonment.

Ultimately, we are left with several permutations of two basic models: the limnosedentary model, and the limnomobile Desert model of seasonal transhumance (Thomas n.d.b.). Much of the recent research in the Walker and Lahontan ES areas has focused on these issues (e.g., Napton 1969; Thomas, n.d.b.; Kelly, n.d.; Hall, personal communication, 1981).

In addition to clarifying the chronological situation, Thomas' reexcavation of Hidden Cave is also relevant to the lifeways issue. Preliminary data indicate that the cave was used as a cache, an interpretation supported by high frequencies of unbroken artifacts, low frequencies of manufacturing biproducts, and the absence of any evidence of habitation.

Realizing that a cache cave doth not an explanation of lifeways make, Thomas argued that a probabilistic survey of the Carson Sink would be necessary to tie the Hidden Cave excavations into the full aboriginal lifeway of the area. Robert L. Kelly (1981a, 1981b) proposed a research design which would test the two ethnographic models proposed by Jennings and Heizer.

Kelly (1980, n.d.) suggests that the limnosedentary model is open to question--that the lacustrine environments in the Basin were not stable; that in fact they were quite unstable. Great Basin lacustrine resources, Kelly argued, are ephemeral; their instability limited their exploitation to the realm of back-up strategies. Prehistoric use of Great Basin marsh and lacustrine resources was, according to Kelly, restricted to times of dire need; i.e., only exploited when more stable resources failed.

Kelly has recently completed the fieldwork for his project (summer of 1981), and the results will not be available for some time. He plans to add to his data base through an in-depth analysis of several private collections from the area. Kelly's research takes the study of the prehistoric lifeways of the Carson Sink in a whole new direction.

Matt Hall (University of California, Riverside) is currently focusing on research in southern Mineral County, specifically the Queen Valley, Huntoon Valley, and Teels Marsh areas. Hall's research design includes a locational strategy analysis of archaeological sites in relation to critical environmental variables. His sample is oriented toward the pinyon-juniper and upper sagebrush zones, with minimal attention to the desert scrub zone. Hall's research, the first of its kind in this area, will attempt a land use study which will incorporate obsidian hydration analysis in an attempt to correlate aboriginal activities and their temporal context.

Karen Nissen's (University of California, Berkeley) dissertation research (completed in 1982) involves a regional rock art analysis in the Carson City District. She has spent 10 years (Nissen 1971, 1974, 1975a, 1975b, 1977, 1981) systematically recording rock art along the East Walker River and in the Carson Sink.

Nissen focused on new methodology and regional analysis. Part of her research involved devising sophisticated recording methods (e.g., the exact locations of designs, directional orientation of design elements, and detailed photography of the sites). Nissen also intensively surveyed both areas and attempted to place the rock art data into a regional archaeological framework for future analysis (Nissen 1981:209).

Several other current research designs which focus on the archaeology within the study area include Dansie (1981) and Tuohy's (1981) analysis of pebble mound complexes in the Carson Sink; and Pendleton's (n.d.) regional analysis of rock alignments and their associated hunting techniques.

The reconstruction of past lifeways remains incomplete. The archaeological record is continuously plagued by insufficient data on inter-site or intra-site patterning, seasonality, and the relationships between prehistoric cultural change and paleoenvironmental change. Our knowledge of the prehistory of the area remains minimal: we know relatively little about the range of activities within individual sites, and even less about either differences in activity patterns between sites, or how those patterns compare during subsequent periods. Finally, we have minimal data on the extent of contemporaneous changes.

### SUGGESTED MANAGEMENT OPTIONS

We have developed a priority list of general management options for prehistoric research in the Carson City District. In addition, it is helpful to summarize here the specific recommendations presented throughout the text.

#### GENERAL RESEARCH OBJECTIVES.

1. The development of specific regional research designs geared towards addressing current anthropological interests.
2. A comprehensive probabilistic regional sampling strategy should be implemented to acquire representative data. This is a necessary prerequisite to the formulation of cultural predictions applying to specific microenvironments.
3. A strengthening of the requirements for archaeological permits to include detailed analyses of ecofacts, with special emphasis on the recovery and analysis of floral and faunal data.
4. If funding precludes the above analyses, the permit should require that the archaeological remains must be collected to meet SOPA standards.
5. Increased attention must be devoted to those environments from which current survey data are inadequate, and decreased attention to those areas where survey data are becoming redundant.

Primary emphasis must, of course, center on areas of imminent impact to preclude total loss of that information. But, the research at those sites must include the recovery of prehistoric lifeway data. For example, many sites have been located along major rivers (e.g., the Carson, Truckee, and Walker), these valley sites cannot be related to an overall seasonal round. Research in these valley sites should be redirected toward questions of subsistence, and relationships between valley and upland environments.

#### SPECIFIC MANAGEMENT OPTIONS.

1. Map and analyze the Ft. Sage Drift Fence.
2. Compile a list of eligible National Register sites, and begin assigning two per year (minimum) to the Register.
3. Monitor and protect the Trailer Park site.
4. Patrol the Tule Ridge complex at least twice a year.
5. Further protect the Grimes Point complex (Grimes Point Rock Art site to Fish Cave).
6. Relocate and remap the Wheeler survey sites in the Grimes area.

7. Analyze avocational archaeologists' collections in the District.
8. Compare upland and valley sites.
9. Correlate Carson Sink rock art; expand Grimes Point interpretive center to include one or more cave sites in the area.
10. Analyze and create possible interpretive centers for the rock art complexes in Spanish Springs, Truckee River, Walker River, the Flats, and Lahontan Reservoir areas.
11. Reanalyze the Whites Creek site.
12. Systematically survey unsurveyed portions of the District, particularly the Wassuk Range, Pine Nut Mountains, Virginia Range, Stillwaters, Desatoyas, Carson Range and other high altitude areas.
13. Relocate d'Azevedo's historic Washoe sites.
14. Create a research design to test the conflict over the "center" of the Washoe world, e.g. Southern Carson River Valley vs. Lake Tahoe.
15. Create a research design to test the differences, if any, between the archaeological remains in the Washoe and Northern Paiute nuclear territories.
16. Reexcavate and/or analyze Topai Canyon Cave with an eye toward filling in the gaps in the chronology of the Desatoyas.
17. Relocate and record the Emma Lou Davis survey sites in Montgomery Pass.
18. Map and arrange protective measures for the Teels Marsh Borax works.
19. Assign special status recognition for Job Peak and Sand Mountain. The historic component of these sites is recorded, but they continue to hold emotional significance for the Paiute and should be so recognized.

OVERVIEW OF HISTORIC SITES RESEARCH  
IN THE CARSON CITY DISTRICT

Donald L. Hardesty

Historic sites in the Carson City District originate in the human activities summarized in the "historic themes" sections of this overview. What kind of sites occur and where they are most likely to be found are patterned by a few key activities. Mining/milling and ranching/farming are the dominant activities in the District, but archaeological sites are also expected to originate from military activities, transportation, exploration, burial and ritual, and urban and ethnic group activities. Each of these is discussed below. Key predictors are identified whenever possible, in a general sense, but to facilitate proper management in the future it is recommended that predictive models of each activity be developed to more precisely pinpoint site patterns in the District. In addition, the following discussion outlines some of the key historical and scientific research questions about the activities that can be used to help assess site significance.

MINING AND MILLING ACTIVITIES. Perhaps the greatest variety of historic sites in the Carson City District is in some way related to the extractive industries, especially gold and silver mining. The sites that are left by these activities are predictable from the technological patterns used to recover gold and silver. Table 15 is a preliminary classification of such sites devised by Hardesty and Firby (1980) for the Comstock mining district, and by Edaburn (1981). Where mining and milling sites are most likely to be found is ultimately controlled by geology and hydrology. The distribution of placer deposits within the Carson City District is mapped and discussed by Vanderburg (1936: Pl. 1), along with the rest of the state of Nevada. And lode mining sites are expected to be distributed along mineralized faults, such as the famous Comstock fault and the Silver City fault in the Comstock mining district (Hardesty and Firby 1980:10-16; Bonham 1969; Gianella 1936). Historically documented mining districts are perhaps the best key to where mining and milling sites are likely to be found (Edaburn 1981). Schilling (1976) gives the names and locations of all documented mining districts in the state of Nevada, and Vanderburg (1936) gives the locations and names of placer mining districts.

What about key research questions? Table 16 lists some of the general questions suggested by Teague (1980), Teague and Shenk (1977), Hardesty (1981a) and Edaburn (1981) for mining sites elsewhere in the state and in the western United States. More specific historical questions should be developed for the District to supplement these for purposes of evaluating site significance.

RANCHING AND FARMING ACTIVITIES. The impacts of ranching and farming probably affected the largest geographical area within the District, but for the most part, are not as visible archaeologically as mining activities. In the absence of prior archaeological work on such sites in Nevada, Hardesty (1981b) has attempted to identify the kinds of sites expected from ranching/farming activities, where they are most likely to be located, and some of the key research questions surrounding their significance. Tables 17-19 are reproduced from that source and provide a general model for the Carson City District.

Table 13. Classification of Mining and Milling Sites.

I. EXTRACTIVE OR RECOVERY SITES

1. Placer Mining Sites - panning, sluicing, hydraulicking, and dredging sites
2. Lode Mining Sites - shafts, adits, hoist houses, timbering, pumps, waste rock dumps, ventilation equipment, open pit excavation machinery such as draglines, scrapers, and power shovels, prospects, and the like
3. Secondary Mining Sites - associated with the removal of mill tailings and waste rock dumps for reprocessing

II. PROCESSING SITES

1. Mexican Milling Sites - arrastras and patio milling sites
2. Stamp and Amalgamation Sites - Washoe Pan milling sites
3. Cyanide Milling Sites
4. Flotation Milling Sites
5. Roasting and Retorting Sites
6. Other

Table 14. Key Scientific Questions for Mining and Milling Sites.

## I. TECHNOLOGICAL QUESTIONS

1. Study of industrialization versus "appropriate technology" as explanations of variability in technology among milling and mining sites.
2. Study of "real" technologies versus "ideal" technologies as expressed in mining journals and other scientific communications.

## II. QUESTIONS ABOUT MINING/MILLING SETTLEMENTS

1. Can the settlements be explained by the classic western mining camp model? That is, are the camps made up of adult males with about the same social status and behaving in a highly idiosyncratic manner?
2. Are the settlements occupied seasonally or year round?
3. Are the settlements "company towns" or not?
4. Demographic patterns
5. Are the settlements adapting to local physical and social environments or to "imported" environments from elsewhere?
6. What constraints or processes explain community patterns and settlement patterns of mining/milling camps?
7. Are mining/milling camps in the District best understood as part of a frontier process or as "satellites" or urban, industrial centers of American civilization?
8. Patterns of ethnicity and ethnic relations.

Table 15. Classifications of Farming/Ranching Sites.

- I. MANAGEMENT SITES - Archaeological sites originating in the human activities used to create and maintain farming/ranching ecosystems
  1. Water Management Sites - irrigation canals, reservoirs, dams, and other works related to control and distribution of water to farming/ranching ecosystems.
  2. Animal Husbandry Sites - barns, corrals, branding stations, fences, and other sites directly related to the management of cattle, sheep, horses, and other domestic animals
  3. Managed Habitats - cultivated fields and other archaeologically visible effects of farming/ranching activities
  
- II. MANUFACTURING SITES - Archaeological sites originating in the human activities used to supply materials and energy to farming/ranching operations
  1. Blacksmithing sites
  2. Kilns - brick, lime, and other kiln sites used in the manufacturing of construction or fertilizer materials
  3. Other
  
- III. ENVIRONMENTAL IMPACT SITES - Archaeological sites originating in environmental responses to farming/ranching operations.
  1. Erosion Sites - gullies and other erosion features directly related to farming/ranching activities
  2. Salt Deposits - areas of salt buildup in soils caused by irrigation with poor drainage
  3. Habitats with Vegetation Shifts - areas where native vegetation has changed due to farming/ranching activities
  4. Other

Table 15 (continued)

- IV. DOMESTIC SITES - Archaeological sites originating in domestic activities
  - 1. Permanent Habitation Sites - household dwellings, fruit cellars, out-houses, and other archaeologically visible evidence of yearround domestic activities
  - 2. Temporary Habitation Sites - camp sites associated with cattle drives, sheep herding, and other temporary farming/ranching activity
  
- V. TRANSPORTATION SITES - Archaeological sites originating in human activities used for importing and exporting materials, energy, and information
  - 1. Transportation Corridors - railroads, overland trails, waterways, and other routes used to transport goods and services
  - 2. Shipping Stations - stockyards, grain elevators, and other sites on transportation corridors used to receive and ship ranching and farming products; also includes telegraph stations as points to receive and send information
  - 3. Maintenance Sites - railroad yards, toll stations, and other sites used to maintain transportation routes
  - 4. Other
  
- VI. URBAN SITES - Archaeological sites originating in urbanism
  - 1. Residential Sites - household dwellings in urban areas
  - 2. Commercial Sites - stores, hotels, bars, and other business-related sites.
  - 3. Institutional Sites - courthouses, churches, schools, and other government, religious, or educational sites
  - 4. Industrial Sites - factories and other manufacturing sites

Table 15 (continued)

- VII. ETHNIC SITES - Archaeological sites originating in the activities of distinctive ethnic groups
1. Native American Sites - reservation or ranch/farm-affiliated sites of Native Americans
  2. Chinese Sites - urban and rural settlements of migrant Chinese
  3. Basque Sites - sheepherding camps, tree carving sites, etc.
  4. Italian Sites - migrant Italian farming sites mostly dating to turn-of-the-century times
  5. Other
- VIII. MILITARY SITES - Archaeological sites originating in military activities

Table 16. Farming/Ranching Zones With Distinctive Archaeological Expectations.

- I. RESERVATIONS - The establishment of reservations for Native Americans by the U.S. Government at Pyramid Lake, Fallon, Walker River, and elsewhere created unique conditions for the formation of archaeological sites in the Farming/Ranching Study Unit; key research questions and expected site types are distinctive.
- II. URBAN - Cow towns and farm towns are distinctive not only for nucleation and large populations, but also for ethnic diversity and greater diversity of site types.
- III. TRANSPORTATION CORRIDORS - Railroads and other transportation routes are associated with towns, shipping stations, maintenance stations, and a variety of other distinctive sites.
- IV. MORMON FARMING SETTLEMENTS - Mormon expansion into parts of southern and western Nevada brought with it farm-villages and other distinctive farming patterns.
- V. IRRIGATED VALLEYS - The use of irrigation technology for farming and ranching not only creates unique archaeological sites, but also distinctive habitats.
- VI. DRY FARMING ZONES - Some marginal areas were farmed without the use of irrigation technology; these areas are defined by microclimatic variables controlling length of growing season, soils types, slope, rainfall distribution, and the like.
- VII. SUMMER GRAZING ZONES - High altitude meadows are associated with temporary habitation sites, animal husbandry sites, and some Basque ethnic sites.
- VIII. WINTER GRAZING ZONES - Low altitude meadows are associated with permanent habitation sites, animal husbandry sites, etc.

Table 17. Key Scientific Research Questions for Farming/Ranching Sites.

## I. BUILDING AND TESTING MODELS OF CHANGE IN AGRICULTURAL SOCIETIES

1. Operationalizing and testing competing models of change with documentary and archaeological data from Nevada and the Great Basin are top priority goals; a variety of population pressure, least cost, evolutionary, ecological, social, and technological models have already been proposed and are the center of a key scientific controversy (see Abruzzi 1981, Green 1980 for reviews).
2. "Appropriate technology" versus industrialization as explanations for variability and change in agricultural technology.
3. The role of irrigation technology in bringing about social change in agricultural societies.
4. Testing models of regional development, such as Abruzzi's (1981) succession model.

## II. FRONTIER STUDIES

1. Can distinctive patterns of variability and change be identified for farming, ranching, and mining frontiers: Archaeological data from the farming/ranching study unit can be used to build and test competing models of the frontier, such as those proposed by Lewis (1977 and various), Ostrogorsky (1980), and Hardesty (1980a).
2. Testing and modifying general ecological models of colonization in patchy habitats.

## III. ENVIRONMENTAL STUDIES

1. Environmental responses to "managed" ecosystems in the Great Basin using both documentary and archaeological data, including direct environmental impacts and ecological consequences of those impacts.
2. Farming/ranching "management" solutions to environmental responses.

## IV. ETHNICITY AND ETHNIC RELATIONS

1. Native American responses to farming/ranching operations (see Thomas 1971b; Clewlow, et al. 1978; Clewlow and Rusco 1972).
2. Other patterns of ethnicity and ethnic relations: Basque, Chinese, Italian, and other ethnic groups.

TRANSPORTATION ACTIVITIES. Historic sites originating in transportation activities are directly related to both mining/milling and ranching/farming patterns; nevertheless, they are best treated separately for archaeological purposes because of distinctive expectations for site types and locations. The evaluation of their significance is, however, based upon the key research questions for the activities responsible for their origin.

Transportation sites within the District can be classified generally as: railroads, trails and overland roads, and water. Railroad sites are expected to include section houses, grades, tracks, tunnels, trestles, and the like; trail and overland road sites are expected to include pavement, toll houses, bridges, culverts, stage stations, and the like; and water sites are expected to include ferry landings and associated buildings, along with sites related to the water transportation of logs and supplies. Railroad routes, overland roads, and waterways are transportation corridors within which most transportation sites occur. The distribution of such corridors is only partially controlled by terrain and other observable features of the physical environment; historical documents are essential to their location. It should be noted that transportation corridors are sampling strata for historic sites originating in transportation activities, in the same way that mineralized faults or mining districts are sampling strata for mining sites.

EXPLORATION AND MILITARY ACTIVITIES. Despite the importance of early exploration activities to the history of the Carson City District, their archaeological visibility is expected to be poor. Why? The activities are rather randomly dispersed in time and space, the cultural baggage of the explorers was light, and the total number of explorers was small. Military activities are put into the same category for many of the same reasons. General patterns of exploration and military activities are unlikely to be identified; rather, specific historical details are demanded to predict site types and locations. Furthermore, the significance of historic sites associated with these activities is likely to depend upon research questions tied to specific historical events.

BURIAL AND RITUAL ACTIVITIES. Hardesty and Firby (1980:27) point to the importance of eschatological and other ritual activities as a source of some historic sites in the Comstock National Landmark; several sites in the District are expected to originate in the same activities. Site types, locations, and methods of evaluating the significance of these sites are, however, poorly known. Cemeteries, churches, hot springs, shamanistic localities, and places where raw materials used for ritual purposes can be obtained are a few of the site types that can be identified. Cemeteries and churches are especially common sites in and around historic settlements, an association that can be used to predict site locations. Models that are capable of predicting more specific locations have yet to be developed.

What about the significance of burial and ritual sites? Hardesty and Firby (1980:27-28) make the following suggestion for cemeteries on the Comstock:

These unique archaeological sites are important as more than symbols of the past: They are also repositories of important demographic information that is for the most part unavailable in written documents. Eliot Lord (1883), for example, gives some demographic data on the Comstock miners around 1880, but nothing earlier than that. The Virginia City fire of 1875 destroyed many of the written records about the boom town populations. The cemeteries in Virginia City--Mount St. Mary's, the Masonic Cemetery, the Fireman's Cemetery, the Jewish Cemetery, and others--record demographic information not only in the remains of the dead themselves, but also on the headstones. Unlike headstones elsewhere, those on the Comstock often give nationality or place of birth.

Likewise treating cemeteries in the District as repositories of demographic data leads to a variety of research questions that can be used to evaluate the significance of burial sites. Other research questions will have to be identified for ritual sites. A recent study by Fowler, et al. (1981) melds ethnohistoric and ethnoarchaeological data from a Washoe Cemetery into a significant study of this type.

URBANISM. For the purposes of this study, urbanism is considered to be a distinctive set of activities with predictable expectations for the archaeological record. Urban places in the Carson City District are not numerous: Reno, Carson City, the urban corridor from Virginia City to Dayton in the 1860s and 1870s, and Fallon in the twentieth century are the principal centers. Within each of these centers are archaeological sites originating in residential, commercial, industrial, and institutional activities. The HCRS/NAER Comstock Project (Hardesty and Firby 1980) developed a series of location maps for these urban activities in the Virginia City-Dayton corridor during the 1860 to 1880 period. Each of the urban "nuclei" in the corridor - Virginia City, Gold Hill, Silver City, and Dayton - had somewhat different spatial patterns. The implication is that specific predictive models will have to be developed for each of the urban places within the District, rather than a single generalized model. Research questions that can be used to evaluate the significance of urban archaeological sites are twofold. Historical questions having to do with urban growth and development should be identified for each town. But in addition there are scientific research questions about urbanism in the District that can be asked and used to evaluate site significance. Various sociological models of urban growth and development are appropriate (see Hawley 1981 for a review), as are the competing models of frontier urbanism proposed by Lewis (1977, and various) on the one hand and by Ostrogorsky (1980) on the other. Lewis' model portrays towns as evolving on the frontier in response to increased regional demand for goods and services and to population growth, as a response to regional cultural development and national economic and political integration. By contrast, Ostrogorsky's model sees towns on the western frontier as explosive population centers with cultural baggage imported virtually overnight from the cultural centers of American Civilization. Rather than being a response to regional cultural development, western towns are the stimulus - the cause - of regional cultural development.

ETHNIC GROUPS ACTIVITIES. Numerous ethnic groups occupied the Carson City District during the historic period and left behind tangible remains that can be used for historical interpretation and to answer a variety of scientific questions about ethnicity and ethnic relations. Urban ethnic groups are better known. The Comstock Project, for example, was able to identify site types and locations of Overseas Chinese, Portugese, Italian, Irish, English, Mexican, and Black settlements in the Gold Canyon Corridor (Hardesty and Firby 1980:22-27); see also the historical accounts of Shepperson (1970), E. Rusco (1975), and Lord (1883). In addition, Hattori (1975, 1980) has identified six Paiute settlements on the eastern outskirts of Virginia City that can be dated between 1859 and the 1930s. Historic Native American settlements have also been documented elsewhere, such as seven Paiute households, including that of Harry Sampson, at Empire (Catherine Fowler, personal communication). Models from which site types and expected locations can be derived should be developed for each ethnic group known to have occupied the District. Key research questions for evaluating significance must also be identified. One set of questions should undoubtedly be historical and aimed at more completely interpreting the histories of poorly documented ethnic groups. Another set of questions should be more scientific and designed to understand the cultural processes of maintaining ethnic identities, on the one hand, and of acculturation and other "compromise" adaptations, on the other.

RENO ES HISTORIC SYNTHESIS

## HISTORIC RESOURCE INVESTIGATION AND RESEARCH BACKGROUND: RENO ES

The following historical survey is believed to be the most comprehensive to date, although several previous projects have added substantially to the knowledge of historic resources within the District. The publications of the Nevada Bureau of Mines have been particularly helpful for information related to mining. Paher's (1970) Nevada Ghost Towns and Mining Camps is useful, especially for historic photographs. Popular magazine articles, Chamber of Commerce brochures and other pamphlets also provide a wealth of information.

Myrick's (1962b, 1963) Railroads of Nevada and Eastern California is comprehensive, but time consuming for efficient data retrieval. Nevada Place Names by Helen S. Carlson (1974) provides precise, compact data. The Nevada Postal History (Harris 1973) provides supplemental information for several communities. Regional histories on Washoe Valley (Ratay 1973) and Carson Valley (Dangberg 1972) are useful. A state-wide survey of Nevada historical sites was prepared in 1968 by Mordy and McCaughey, part of which has been quoted in the present paper.

Unpublished historic site inventories for Ormsby (Carson City) and Washoe counties are on file at Nevada Historical Society. Eric N. Moody and Alvin R. McLane have compiled a file card listing of historic sites in Washoe County. Mary S. Ansari and Alvin R. McLane (1977-1980) are working on a comprehensive place names inventory (file cards) of Carson City, and Lyon, Douglas and Storey counties. The Comstock project, under the direction of Dr. Donald L. Hardesty, of the University of Nevada-Reno, is an inventory of cultural resources surrounding Virginia City (Hardesty and Firby 1980). In addition, the Research and Educational Planning Center (College of Education), University of Nevada, conducted an experimental project plotting historical sites in Carson City and Douglas County on topographic maps (David Thompson, personal communication, 1980). Texas Tech University (1980) has an ongoing project researching Nevada historic engineering sites.

## HISTORIC THEMES: RENO ES

THE TRAIL BLAZERS. Jedediah Strong Smith (1799-1831) was the first American explorer to approach the Reno ES. Brooks (1977) indicates that Smith and companions, Silas Gobel and Robert Evans, after leaving the main trapping party camped on the Stanislaus River east of present Modesto, California, crossed Ebbets Pass in late May 1827. The trio wandered down Silver Creek and crossed into Nevada near Monitor Pass south of present-day Topaz Lake. They continued eastward crossing the Wassuk Range, passing south of Walker Lake. Their route skirted the northern edge of the Bagley Valley section of the BLM Markleeville Planning Unit.

John C. Frémont broke a trail south into the Lake Lahontan region during January of 1844. After journeying south into Bridgeport Valley, the party cut back north along much of present U.S. Highway 395 to East Walker River. Here, again, Fremont changed direction. On February 2, he headed southwest along Indian Creek into Diamond Valley and then camped on East Walker River, again near Markleeville Creek. On the next day the groups moved past present-day Markleeville and camped at Grover Hot Springs. Some of the men and animals were forced to stay there for two weeks before they were able to proceed to the Sierra crest near Carson Pass (Frémont 1845).

THE EMIGRANTS. Subsequent incursions into the study region were made by emigrants bound for California. The first of these groups was the Stevens party of 1844. They began at Council Bluffs, Iowa, with a party bound for Oregon. Southwest of Fort Hall, the California group turned off, heading westward on a route that became known as the Humboldt River (or Fort Hall) Trail. Part of this route was previously established by the Bidwell-Bartleson Party in 1841 and clarified by Joseph B. Chiles returning east in 1842, and by Joseph Walker leading a party to California in 1843.

Elisha Stevens, a 40 year old commander of a wagon train of 46 people, made a momentous decision at the Humboldt Sink. Instead of following the circuitous routes to the south found by Bidwell-Bartleson and Joseph Walker, Stevens' well-disciplined party decided to travel a direct route west to Sutters Fort. They found a friendly Indian who led a scouting party to a river at the present town of Wadsworth. The party (narrowly missing a fight with the Paiutes at the Humboldt Sink) hastily moved to the river and recuperated there for two days. The emigrants named the river Truckee for their Indian guide and it has since so been known (though John C. Fremont had named it Salmon Trout River a year earlier).

The wagons moved across the Truckee Meadows during October and followed the Truckee River gorge on into California. The party had disbanded east of Donner Pass. Some of the wagons were left behind and 18 year old Moses Schallenger survived the winter alone at Donner Lake. The party safely arrived at Sutters Fort, with the addition of two new members born on the trail. This was the

first emigrant party to get wagons to California; even those left behind were hauled in the following year.

Several publications describe the emigrant route to California. A most enlightening account is that by George R. Stewart (1962), The California Trail. Frank O'Bryan's (1978) listing of 191 emigrant diaries in western Nevada libraries should be consulted by those interested in an in-depth study of the trail.

In 1845, Fremont passed along Truckee River on the emigrant trail on his way to California. Nothing new was added to this part of Nevada's geography as this route was well-known by then.

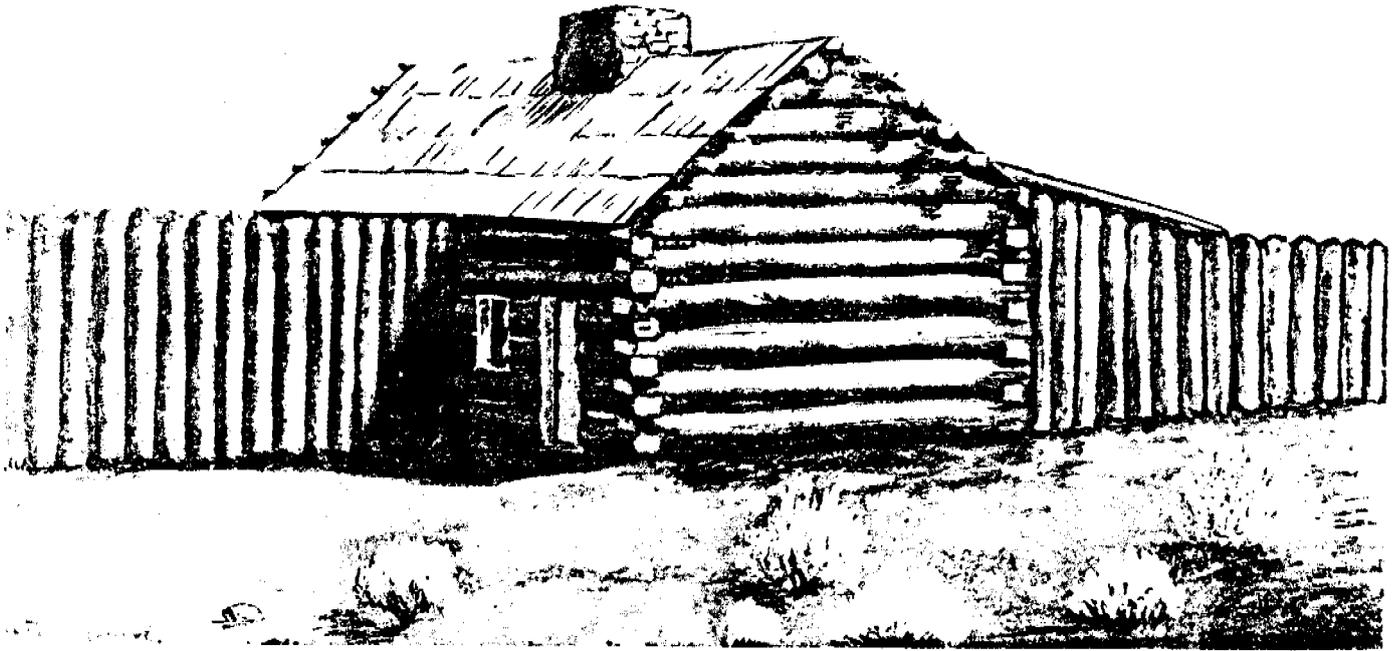
One of the most stirring and tragic events in western history occurred in 1846. After struggling up the Truckee River, the Donner-Reed emigrant party recuperated several days in the Truckee Meadows' luxuriant grass. In late October, part of the wagon train finally attempted passage of Donner Summit, but found the way blocked by snow. The party assembled at the cabin by Donner Lake where Schallenberger had wintered two years earlier. Their ensuing hardships have been detailed numerous times (see Stewart 1962). To summarize, 40 died and 47 survived in the most famous of the emigrant parties.

Gold was discovered near Sutters Fort in 1848 and this started mass emigration to California. Two popular routes were used in the Reno ES. One trail followed the Truckee River and the other was along the Carson River (Nevada Emigrant Trail Marking Committee, Inc. 1978).

From Wadsworth, the Truckee River Route followed the river, crossing it several times. Upon entering the Truckee Meadows, where Jamisons Trading Post was built in 1852, the trail turned south to Huffaker Hills to avoid the sloughs and marshes along the river. Short and Peckman Lanes are now on the original trail. The route extended from the site of Junction House on U.S. Highway 395 near the Reno Coliseum, through the present county golf course, and crossed the Truckee River at Mayberry Bridge. The route continued, approaching the present town of Verdi where the trail left the river and took a less hazardous route through the mountains to Donner Lake.

EARLY SETTLEMENT AND POLITICS. During the next three decades (1850-1880) several important events occurred in Nevada. Emigrants discovered gold in Gold Canyon as early as 1848 and the Territory of Utah was created which included the present state of Nevada. Nevada's first house was built that year in Carson Valley on June 5 by Joseph DeMond and Hampton S. Beatie. The two men depended on emigrant traffic for their trading post business and, therefore, sold out to a Mr. Moore before it came to a standstill in winter.

John Reese entered the scene the following year in July and acquired the Moore cabin. He immediately erected a more substantial structure a short distance south at Reese Station (which later became Genoa; fig. 17 and see Hardesty 1976).



*A Likeness of the Original Genoa Fort and Stockade in Western Nevada, as Reproduced from an Old Photograph.*

Figure 17 . Painting of the original Genoa Fort (from Nevada Highways and Parks, April 1948).

Eagle Station, the first building in Carson City (fig. 18) was built in early November, 1851. Also in this year, black mountain man James P. Beckwourth discovered Beckwourth Pass, the lowest crossing in the Sierra Nevada.

During the next two years, Nevada's pace slowed down a bit. In 1852, an enterprising gentleman by the name of Jamison built a trading post (Jamisons Station) along the emigrant trail on the east side of Truckee Meadows. An act of January 17, 1854, created Carson County (Utah Territory) and Orson Hyde was appointed probate judge. Several Mormon families and miners from California settled in Washoe, Eagle, and Carson valleys; Carson County and local squatter governments represented legal authority for these isolated people, whose numbers grew yearly.

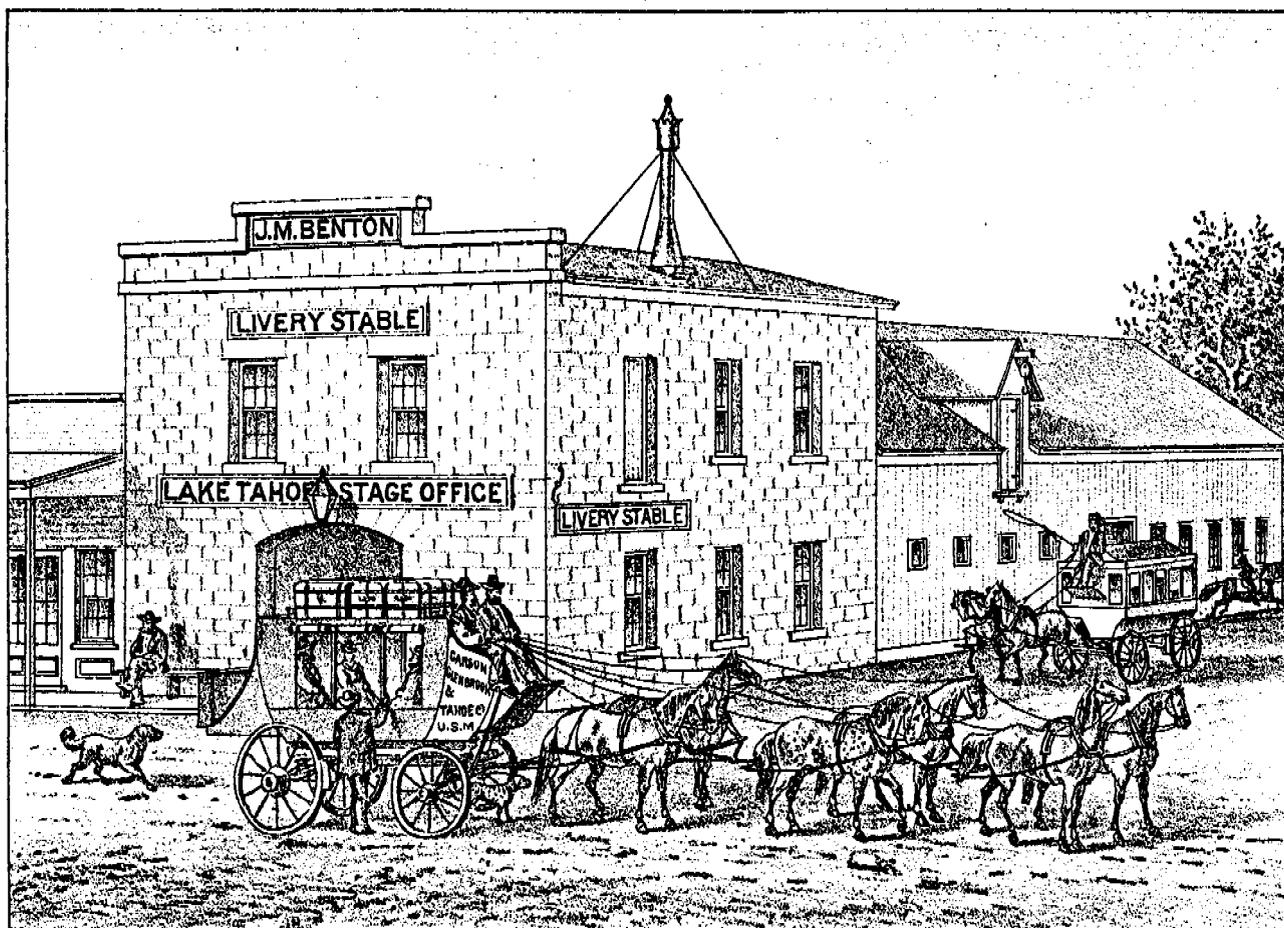
Three years later (in 1857) the Mormons were recalled to Salt Lake City due to pending trouble with the United States. Also in 1857, John F. Stone and Charles C. Gates established a trading post (Stone and Gates Crossing) in Truckee Meadows at the present site of Glendale.

The following year, despite the Mormon recall, enough people remained in western Utah to warrant publishing Nevada's first newspaper, the Territorial Enterprise. Initially published in Genoa and then Carson City, the paper was moved to Virginia City in 1860.

GOLD AND SILVER BOOM. The year 1859 was perhaps Nevada's most momentous year. Gold was discovered at Gold Hill on January 28, and more was found near the head of Sixmile Canyon on June 11 (fig. 19). These two strikes heralded the tremendous "rush to Washoe" the following year. The gold at the head of Sixmile Canyon was mixed with blue clay which clogged the gold rockers. However, when this blue clay was later analyzed, it was found to be rich in silver. The vein of silver became known as the Comstock Lode. During the next 60 years, nearly \$400 million in mineral production poured from the mines around Virginia City. Mining techniques developed here were later used in other regions where extreme heat and tremendous pressures were a problem. Square-set timber for stope support was developed here to hold the loose ground. Details of the development of the Comstock Lode may be found in publications by Eliot Lord (1883) and Dan DeQuille (1876).

Virginia City was named in 1859. This same year, C.W. Fuller established a station and bridge across the Truckee River at the present site of Reno. Captain James H. Simpson, of the U.S. Topographical Engineers, arrived in Genoa on June 12, 1859. He was greeted at 9:00 a.m. with a 13-gun salute. Western Utah citizens had reason to be excited because Simpson's trail across the Great Basin from Camp Floyd had cut 283 miles off the Humboldt River Route. This new route provided added incentive for travel to western Utah.

The 1860s saw the rapid development of Nevada. The Comstock mineral wealth attracted several thousand people. The mining industry and the people it brought needed supplies; supply roads fanned out in all directions. The subsidiary activities and industries spawned by the Comstock have not been



LIVERY STABLE AND LAKE TAHOE STAGE OFFICE OF J.M. BENTON.  
THIRD & CARSON STREETS, CARSON.

Figure 18. An early Carson City livery stable (from Angel 1881: facing 104).



COMSTOCK DISCOVERING SILVER.

Figure 19 . Discovery of gold in the Comstock region (from DeQuille 1876:50).

studied in detail, such as the fluming and logging industry in the Carson Range, the development of the quartz mills on the Carson River, the wood choppers' activities in the Pine Nut Mountains and the limekiln industry, just to name a few.

In 1860, quartz mill construction began on the Carson River, the Pony Express was established on April 3, and the Territorial Enterprise was moved to Virginia City.

President Buchanan signed the Organic Act on March 2, 1861, creating the Territory of Nevada. The counties within the Reno ES were created at this time. James W. Nye of New York was named Territorial Governor on March 22. Fullers Bridge was bought by Myron C. Lake in June. Edward Creighton completed the Pacific Telegraph on October 24, and the Pony Express stopped operation four days later, just one and a half years after it's inception.

President Lincoln signed Nevada as a state into the Union on October 31, 1864. During this time, silver was discovered and mined in Alpine County, California and the town of Markleville was established by the California legislature in 1864. Jacob J. Marklee settled there in 1861, and he was killed in a quarrel over the land where the town was built. The site of Marklee's cabin is Historical Landmark 240 (Gudde 1969:193).

RAILROAD ERA. The railroad era for the Reno ES commenced in 1868 with the Central Pacific's arrival in Reno (from California) on May 9. The era culminated with the Reno Branch of the Western Pacific which began service on February 1, 1918. Highlights of the railroad era are summarized as follows:

- 1868 Central Pacific RR completed to Reno on May 9.
- 1869 Ground broken for Virginia and Truckee RR at Virginia City in February.
- 1870 V & T completed Carson City to Virginia City, January 21.
- 1872 V & T completed Reno to Carson City, August 24.
- 1880 Nevada-California-Oregon Railway ground broken in Reno on December 22. Construction of Carson and Colorado RR begins at Mound House.
- 1882 NCO RW operates to Long Valley on October 2.
- 1906 V & T RR completed Carson City to Minden on August 1.
- 1909 Western Pacific RR completed through Honey Lake and Long valleys.
- 1918 Demise of NCO RW the last day of January and Reno Branch of WP RR begins service on February 1.

With the advent of the railroad came the train robbers. One of the first (and most famous) train robberies in the west occurred near Verdi on November 5, 1870. A coded telegraph message was sent from San Francisco about a gold shipment. The train was stopped, and the safe was easily opened. A perfect robbery - except that all the robbers were caught, convicted and served prison

terms. The station, named Chat, on the Nevada-California-Oregon Railway in Long Valley was named for Chat Roberts who was an accomplice in the train robbery. David F. Myrick's (1962b, 1963) Railroads of Nevada and Eastern California is indispensable for details about Nevada railroads.

PEAK YEARS ON THE COMSTOCK. The 1870s was another important decade in the history of the Comstock (fig. 20). Virginia City's first inverted pipeline was completed in August 1873. This great feat of engineering was world renowned; carrying water from the Carson Range, it drops 2,000 ft., then pushes the water up another 1,600 ft. Two years later, on October 26, 1875, a disastrous fire leveled most of Virginia City's business district. The city quickly rebuilt as the Comstock was at the height of its boom, with peak population (for Virginia City and Gold Hill) about 20,000.

After the great fire, a second pipeline, which was better able to deal with such emergencies, was built to replace the original one, but by then the activity on the Comstock was on the decline. Sutro's 4 mile tunnel was completed on July 8, 1878, as a dewatering and haulage adit, but after eight years of tremendous energy even this significant event came to naught as the mineral production declined. By 1880 the Comstock population had dropped to about 11,000, and to only 2700 by 1900.

#### SUMMARY OF HISTORIC RESEARCH: RENO ES

The Reno Environmental Statement covers an area of 1,612,000 acres, extending from Honey Lake Valley in the north, to Double Springs in the south, and includes the heavily populated areas of Reno, Carson City, Virginia City and the Carson Valley. The Reno ES also extends into California, and includes Long and Bagley valleys, and the Woodfords and Markleeville regions.

To date, 476 historic places have been identified and described in the Reno ES, using historic maps, BLM township plats and published literature (see table 4).

A variety of site types have been recorded relating to mining/milling activities. Way stations and roads leading to several of these places have also been recorded, along with early ranches and historic towns. Other sites include early explorer's routes, emigrant trails, and railroad routes and stations.

The historic period began with the explorations of Jedediah Smith in May 1827. John C. Frémont traversed the region during the winter of 1844, and the Stevens emigrant party passed through the Truckee Meadows in October of the same year. In 1846 the Donner-Reed party was caught by early winter snow at Donner Lake after staying too long in the Truckee Meadows area. Three years later, the news of gold discovery in the Sierran foothills flooded the Reno ES with emigrants travelling along both the Truckee and Carson River routes.



VIEW OF THE MAIN STREET IN VIRGINIA CITY.

Figure 20. Virginia City lithograph (from Frank Leslie's Illustrated Newspaper, March 2, 1878).

In 1850, gold was discovered in Gold Canyon, and the Territory of Utah was created, which included all of the lands now within the State of Nevada. Several trading posts were rapidly established in the area, and Carson County was created on January 17, 1854. Three years later, the Mormon settlers in Nevada were recalled to Salt Lake City to help bolster the Mormon cause against the United States government. The first newspaper in Nevada, the Territorial Enterprise, was started in Genoa in 1858, and Virginia City was so designated the following year.

In 1860, the "rush to Washoe" began, bringing hundreds, then thousands of settlers seeking their fortunes in gold and silver operations on the Comstock. The Territory of Nevada was created in 1861, with James W. Nye of New York named as Territorial Governor. The Pony Express ran briefly during this period.

The state of Nevada was admitted into the Union in October of 1864, and the Central Pacific Railroad was completed to the newly-formed town of Reno in 1868. The Comstock towns continued their boom, reaching a peak population of about 17,500; but the end was heralded by a fire that leveled most of Virginia City's business district in October 1875. The town was quickly rebuilt, but the pace slowed as the mines of the Comstock gradually played out. By 1880, the Comstock population sagged to 11,000, reaching a low of 2700 in 1900.

After the decline of the Comstock, Reno, Sparks, and Carson City became the local population centers. The University of Nevada, originally established in Elko, was moved to Reno in 1885. During the late 19th and early 20th centuries, several major sporting events took place in the Reno area, and the local economy was gradually bolstered by prospering divorce and gambling industries.

Table 18. Chronological Listing of Historic Events: Reno ES

<u>Year</u>	<u>Event</u>
1827	Jedediah Smith crossed east near Monitor Pass in May.
1844	Fremont traverses region in January and passes by present Markleeville on February 3.  Stevens emigrant party traverses Truckee Meadows in October.
1845	Fremont passes through Truckee Meadows in October.
1846	Donner-Reed party caught by early winter snow at Donner Lake after tarrying in Truckee Meadows.
1849	Mass emigration to California gold fields by both Truckee and Carson River routes.
1850	Gold found in Gold Canyon by emigrants.  Creation of Territory of Utah which included present Nevada.  Trading post built near future site of Genoa on June 5 by Joseph DeMont and Hampton S. Beatie. They sold out before winter to a Mr. Moore.
1851	John Reese bought the cabin from Moore and established a stronger building at Reese Station (Genoa) in July.  Eagle Station, first building in Carson City, built in early November.  Beckwourth Pass discovered by black mountain man James Beckwourth.
1852	Jamison built his station on the east side of Truckee Meadows.
1854	An act of January 17, 1854 created Carson County; Orson Hyde appointed probate judge.
1857	Stone and Gates Crossing established at present Glendale.  Normons who settled in Nevada were recalled to Salt Lake City due to pending trouble with United States.
1858	<u>Territorial Enterprise</u> started in Genoa.
1859	C.W. Fuller established a station on Truckee River at present Reno.  On January 28 gold discovered at Gold Hill and also found at head of Sixmile Canyon on June 11.

Table 18 (continued)

<u>Year</u>	<u>Event</u>
1859	Virginia City so designated during November.  James H. Simpson arrives in Genoa on June 12 from Camp Floyd, Utah, thereby creating a shortcut of 283 miles off the Humboldt River Route across the Great Basin.
1860	The "rush to Washoe" commences.  Quartz mills were built on the Carson River during the spring.  Establishment of Pony Express on April 3.  <u>Territorial Enterprise</u> moved to Virginia City.  On August 12, a 24-stamp mill began operation in Gold Canyon.
1861	President Buchanan signed Organic Act on March 2, 1861, creating Territory of Nevada; the counties in Reno ES were also created. James W. Nye of New York is named Territorial Governor on March 22.  Myron C. Lake bought Fullers Bridge in Reno in June.  Edward Creighton completed the Pacific Telegraph on October 24.  Abandonment of Pony Express October 28.
1862	Mark Twain (Samuel Clemens) began work on <u>Territorial Enterprise</u> .
1864	President Lincoln signed a proclamation to include Nevada as a state of the Union on October 31.  Markleeville in Alpine County established.
1866	Gold Hill Miners Union, first successful miners union west of the Mississippi, formed on December 8.
1867	Julia Bulette murdered on January 20 in Virginia City.
1868	Central Pacific Railroad completed to Reno and the town was officially designated on May 9.
1869	Ground broken for Virginia and Truckee Railroad at Virginia City in February.  Sutro Tunnel commenced on October 19.

Table 18 (continued)

<u>Year</u>	<u>Event</u>
1870	Virginia and Truckee Railroad completed to Carson River in January and also during same month, U.S. Mint opened in Carson City.  One of the first train robberies in West occurred near Verdi on November 5.
1872	Virginia and Truckee Railroad completed to Reno.
1873	Virginia City Pipeline completed in August; the inverted siphon hailed as one of the great engineering works of the world.
1875	Disastrous fire on October 26 levels most of Virginia City's business district.
1876	Dan DeQuille's <u>History of the Big Bonanza</u> published.
1878	Four-mile long Sutro Tunnel completed on July 8, after eight years of tremendous labor.
1880	Nevada-California-Oregon Railway ground broken in Reno on December 22.  Construction of Carson and Colorado Railroad began at Mound House.
1882	Nevada-California-Oregon Railway finally operates to Long Valley on October 2, twenty-one months after ground was broken in Reno.
1885	University of Nevada transferred to Reno from Elko; Morrill Hall cornerstone dedicated on September 12.
1897	Corbett-Fitzsimmons championship fight in Carson City on March 16.
1904	Barney Oldfield arrives in Reno on November 15 for Reno automobile race.  A trolley line officially opens in Reno on November 24.
1906	Mrs. William Elles Corey, wife of a United States Steel Company president, divorced in Reno which started Nevada's divorce "industry".  Virginia and Truckee Railroad completed to Minden; service begins on August 1.
1909	Western Pacific Railroad completed through Honey Lake and Long Valleys.
1910	First Nevada flight made by Ivy Baldwin in Carson City on June 23.  Jeffries-Johnson championship fight in Reno on July 4.

Table 18 (continued)

<u>Year</u>	<u>Event</u>
1918	Demise of Nevada-California-Oregon Railway, purchased by Western Pacific.  Reno Branch of Western Pacific Railroad began service on February 1.
1919	First trans-Sierra flight culminates in Carson City and Reno on March 22.
1920	First scheduled U.S. air mail plane lands in Reno.
1927	Lincoln Highway (U.S. 40) completed through Reno. First transcontinental highway.
1931	Governor Fred Balzar signs state legislature bill legalizing gambling.
1949	Nevada's first freeport housing law passed.
1959	Desert Research Institute opened to promote research objectives.
1969	Ormsby County and Carson City consolidated into one municipal government.

References: Elliot (1973)  
Myrick (1962b)  
Nevada Magazine, 1980 Calendar

## SUGGESTED MANAGEMENT OPTIONS AND RESEARCH DIRECTIONS: RENO ES

The Reno ES has overwhelming potential for both management and research relating to historic cultural resources. So rich is the historical record that we have been unable to even tabulate all the available sites; were more time available for this study, it would be possible to inventory literally dozens (or perhaps hundreds) of additional sites. In addition, further research on sources such as old commercial maps, newspapers, periodicals, courthouse records, cadastral surveys and personal inventories would turn up many additional historic sites. Despite these inevitable shortcomings, the annotated bibliography discusses a substantial portion of the available literature; yet even this bibliography does not pretend to be exhaustive.

Given the seemingly endless number of potential "historic" sites in this region, we strongly urge the BLM to develop priorities for future studies. Should, for example, the miles of existing and abandoned irrigation ditches, the scores of wagon roads, the thousands of section corner monuments, the mountain top cairns built by early surveyors, the U.S. Coast and Geodetic Survey and the Geological Survey, a pile of rusted cans and broken glass, corrals, fences and prospect pits be inventoried? Ideally, the answer is yes: any man-made imprint before today is historic. But with limited time and/or funds available, there must be a priority guideline.

There are a number of research options in the area. The ranching operations have hardly been analyzed. Even the small holdings such as Pete Anderson's, Bill Johnston's, and Tim Smith's in the Pine Nut Mountains have a place in time and history.

In addition, there is no scholarly discussion, whatsoever, of the millions of cords of pinyon and juniper wood harvested to satisfy the huge appetite of the Comstock. The northern Pine Nut Mountains seem to be a good place to initiate such a study. Many wood and rock ruins and abandoned roads noted here in the 1960s appeared to be related to wood cutting.

The ore mills on the Carson River have been mentioned several times, probably because of the wonderful photographic record made of them by noted photographer Carleton E. Watkins in 1876. But other mills in the region have largely been overlooked. In the Comstock District itself, there is seldom a word about the Atlanta Mill, Humphreys Mill, Henchs, Express, Parkes, Lands, or the Omega. Other themes in need of research, to name a few, are: early transportation routes, fluming industry, recreation sites and lime kiln industry.

In general, the BLM should develop specific historical questions for the District for the purpose of evaluating site significance (see tables 13-17). Furthermore, specific ethnic questions should be addressed, including historical evaluations of poorly documented ethnic groups, and scientific evaluations of the cultural processes involved in retaining ethnic identities, or in acculturation.

WALKER AND LAHONTAN ES HISTORIC SYNTHESIS

## HISTORIC RESOURCE INVESTIGATION AND RESEARCH BACKGROUND: WALKER AND LAHONTAN ES

The Lahontan and Walker Environment Statements have been largely overlooked by historians, although certain regional studies have focused on the project area. Hardesty (1977, 1978b, 1979) should be consulted for archaeological data on the Pony Express. John M. Townley (1977) discussed the Newlands Project near Fallon. Hugh Shamberger's studies of Rawhide (1970), Fairview (1973) and Wonder (1974) are examples of patient research. Shamberger (1978) incorporates research on Candelaria, Columbus, Metallic City, Bellville, Marietta, Sodaville, and Coaldale into a synthesis dealing with water development, borax, the soda and salt industries and early transportation development within the District. Hardesty (1978a) reviews the Ft. Churchill excavations.

The Nevada Bureau of Mines Bulletins and Regional Reports include a wealth of mining history. The U.S. Geological Survey Professional Papers, Bulletins and open-file reports often provide historical data and photographs unavailable elsewhere. Stanley Paher's (1970) Nevada Ghost Towns and Mining Camps is a summary of Nevada's mining industry, illustrated with some 700 photographs.

Further data for this summary were assembled from early cadastral surveys, maps commercially printed prior to the turn of the century, and maps from various other books and documents.

Brooke D. Mordy and Donald L. McCaughey's (1968) Nevada Historical Sites was a useful source of information for several of the sites listed in the present inventory, as well as Texas Tech University's (1980) History of Engineering Program. This program resulted in a computer printout of Nevada historic engineering sites.

Currently, Phase II of the Nevada historic engineering sites inventory is being compiled by the Nevada Historical Society. Mr. Robert A. Nylén is updating the Texas Tech University project for a publication covering most of the study area. The Churchill County Museum and Archive is compiling information about local salt, soda, and borax industries as well as toll roads, bridges, mines, and other historic sites in Churchill County. The Nevada Department of Highways has an ongoing cultural resources project for 1980-1981 at Tonopah Junction near the Rhodes Salt Marsh. The Borealis Mine in Mineral County is the subject of an archaeological project by the Desert Research Institute, with historic overview by Alvin McLane.

## HISTORIC THEMES: WALKER AND LAHONTAN ES

THE TRAIL BLAZERS. Jedediah Strong Smith, born in New York in 1799, became an indomitable mountain man before he fell to an Apache lance near the Cimarron River in 1831. His 32 years had been filled with narrow escapes from grizzly bears, Indians, and a series of incredible journeys. None of his exploits was more dramatic than his crossing of the Great Basin in 1827.

Smith left the trappers' rendezvous on the Bear River northeast of Salt Lake in August of 1826 with a party of 15 men. He entered San Bernardino Valley by way of the Colorado River and Mojave Desert (McLane 1978:15). He was detained in central California for several months, but finally, after leaving the main trapping party which was camped on the Stanislaus River, Smith and his companions, Robert Evans and Silas Gobel, crossed the Sierra Nevada via Ebbetts Pass, entering Nevada at the West Walker River south of Alkali Lake (now Topaz Lake) in May of 1827.

Smith's route through the Carson City District was traced by George R. Brooks (1977). The route continued easterly through the gap at Wellington and another camp was made on the East Walker River near Rafter Seven Ranch. On June 1 the party crossed the Wassuk Range near Wheeler Pass and descended to Walker Lake along Cottonwood Creek. Members of the Smith party were the first Americans to see Walker Lake and that evening made their camp on its southern shore.

About 10 o'clock that night the explorers were awakened by the sound of running horses. Before long, two Indians came into camp and declined an offering of tobacco. They left, but shortly returned with 20 or 30 Indians, quickly surrounding the trapper's camp. The Paiutes, who were initially unruly, became somewhat peaceable, so the party built a fire and stayed the night. Smith recorded, "It will be readily conjectured that I kept a very close watch during the remainder of the night" (Brooks 1977:175).

The next morning the Indians assured Smith that water lay ahead, but the explorers, who subsequently traveled 20 miles east to Soda Spring Valley, made camp without water.

June 3, the following day, the trio wandered eastward some 28 miles from their camp, which was about 5 miles northwest of Luning; crossing Calavada and Petrified Summits on Nevada Route 361, the group left the Carson City District. Eventually, they attended the trapper's rendezvous at Bear Lake, Utah, by July 3. Their "arrival caused a considerable bustle in camp", for the southwest expedition of Jedediah Smith had been given up for lost.

Peter Skene Ogden, chief trader of the Hudson's Bay Company, may have been the next explorer to penetrate the region, reaching the Humboldt Sink in late 1829. He found the waters frozen and the local Indians uncommunicative about the country (Scaglione 1949). Ogden's 1829-1830 route to near the Gulf of

California is contested by various scholars. Cline (1974) and Maloney (1940) trace the route south past Walker Lake. However, Scaglione (1949:121, 123) places Ogden's trail eastward into Utah, south of the Great Salt Lake Desert.

Joseph Reddeford Walker crossed the Great Basin in 1833 by a route from Green River, Wyoming to southern California (McLane 1978:15) as part of the Capt. Benjamin L.E. Bonneville party. Walker's party followed the Humboldt River reaching the Sink in early October. Walker's route beyond the Sink is again open to question. The next indisputable spot beyond the Sink is on the northern brink of Yosemite Valley. "Here we began to encounter...many small streams...(which) after running a short distance...precipitate themselves from one lofty precipice to another, until they are exhausted in the rain below. Some of the precipices appeared...more than a mile high" (Leonard 1934:129). For a more detailed discussion of this section of the route, see Farquhar (1969).

The next spring (1834), Walker headed east from the San Joaquin Valley with his trapping party. He discovered Walker Pass in the southern Sierra and then turned north along Owens Valley. The group wandered northeast of the Sierra but their exact route is unclear. Eventually, they found a route south of Humboldt Sink, and from there followed their old trail east to the rendezvous on Bear River where they arrived on July 12 (Gilbert 1973).

The first overland emigrants to California were led by John Bidwell and "Capt." John Bartleson in 1841. The party consisted of 50 stalwarts, all that remained from the several hundred people who initially expressed interest in the expedition. They left Sapling Grove, near Independence, Missouri, with the vague knowledge that the route lay somewhere to the west.

By a stroke of luck, three Jesuit missionary priests led by Father Pierre Jean De Smet arrived at camp. They were Oregon bound and led by Thomas "Broken Hands" Fitzpatrick, among the most notable of the mountain men. The emigrants joined the De Smet party for the 1,200 mile trip to Soda Spring on the Bear River, northeast of Great Salt Lake. At that point, the missionary group, along with several of the emigrants, struck out for Ft. Hall, Idaho and Oregon.

Thirty-one men, an eighteen year old mother and her infant daughter remained resolute for California. They are distinguished as the first pioneers on the California Trail. The group circled the north end of Great Salt Lake, striking southwest past Pilot Peak, but were forced to abandon their wagons in Independence Valley. Once over the Ruby Mountains, the party followed the Humboldt River to its sink. The party continued southwest to the West Fork of the Walker River which they followed into the Sierra, crossing near the Sonora Pass in October, 1841. The weary group ended their journey at Marsh's Ranch on the Stanislaus River, California, where they disbanded (Stewart 1962).

Many of the pioneers from this expedition went on to become prominent California citizens. One, Joseph Chiles, was so enthusiastic about California that he returned to Missouri in early 1842 to encourage friends and others to make the journey to California. In April, Chiles and a party of 13 traveled south around the Sierra Nevada via the Tejon Pass. The groups, paralleling much

of Walker's 1834 route, then traveled north along the east side of the Sierra and met the old trail along the Humboldt River. Chiles' precise route through the Carson City District is unknown, but probably passed by Walker Lake and on to the Humboldt Sink.

Chiles assembled his party of eight wagons and 30 people, leaving Sapling Grove in late May 1843. John C. Frémont started his second government sponsored western exploration in 1843, and traveled with the emigrants for a while. Chiles was among hunters hired by the California emigrants and the explorers. When Fremont appropriated the hind quarters of a couple of deer and left the front quarters, Chiles terminated this hunting arrangement.

The California-bound group caught up with another train of 100 persons bound for Oregon at the crossing of the Kansas River. Before reaching Ft. Laramie, Wyoming, 16 of the party switched to the Chiles' group. Beyond the Fort, Chiles happened to meet mountain man Joseph Walker who was hired to lead the party for a fee of \$300.00.

A short distance past Ft. Hall, Idaho, Walker took most of the emigrants, by now low on food, southwest toward the Sierra, while Chiles led a fast horseback party to Sutters Fort, circumventing the Sierra barrier on the north. The plan was for one of the party to hurry back over the Sierra with supplies and meet the wagons at the Humboldt Sink. The plan was a failure as the wagons reached the Sink before the horsemen reached Sutters Fort. Unknowingly, the wagons opened a road from Ft. Hall, several hundred miles of which would later become the California Trail.

By about October 30, after an 88 day wait, Walker realized the failure of the original plan and led the wagons south. The Chiles' horse party reached Sutters Fort on November 10, too late to turn east over the mountains as the Sierra passes were closed by snow. The Walker party crossed the Carson River and followed the Walker River downstream to Walker Lake, passing near its east side. Major Welton, part of the 1841 party, was a co-leader from the Sink to Walker Pass. Welton traveled this stretch with Chiles the previous year and once again traveled south through Whisky Flat, over the Excelsior Mountains and broken volcanic hills (Huntoon Mountains) into Owens Valley where they abandoned their wagons. The next year (1844), the first successful wagon train, the Elisha Stevens party, breached the Sierra by Donner Pass and took wagons all the way into California (Stewart 1962).

John C. Frémont also explored and mapped along the trail to Oregon in 1843. His route took him south from the Dalles on the Columbia River, entering Nevada just east of the California border. The party spent New Year's Day northwest of the Black Rock Desert. Frémont discovered Pyramid Lake and, on January 16, 1844, camped on the Truckee River a short distance north of the present town of Wadsworth.

This was Frémont's second trip (first into present Nevada) exploring and mapping the western lands. The party included redoubtable mountain men

Thomas Fitzpatrick and Christopher (Kit) Carson as guides and the excellent German cartographer, Charles Preuss. Ever the Frémont critic, Preuss nevertheless consented to join Frémont on his first, second, and fourth exploring expeditions. The second party included a total of 39 men.

On January 17, the explorers moved south through the Fernley area and then along the approximate alignment of U.S. Alternative Highway 95 to Carson River, about 2.5 miles east of present Silver Springs and the next two days were spent in confused wandering. Menacing clouds hung over the Sierra and Frémont decided to stay in the lowlands for a while. The Carson River was crossed at The Narrows and on the 20th camp was made on the south side of Carson River, 4.5 miles east of Ft. Churchill.

Frémont eventually projected his proper course and on the 21st struck due south 20 miles to the Walker River, about 3.5 miles north of Yerington. Traveling 14 miles south the next day, the men camped at the east end of Wilson Canyon where the West Walker River breaks through the hills. The group camped on the East Walker River the next day, after moving 18 miles south between the Pine Grove and Cambridge Hills. The next morning, the 24th, just before the party departed, an elderly Indian came into camp offering the explorers pine nuts from a skin bag. At this point, Frémont described and defined the pinyon tree (Pinus monophylla); this area, probably in the vicinity of Aldrich Grade, is thus the type locality of the pinyon pine. The group crossed to the east side of East Walker River via a dam made by the Indians to catch fish. That evening, after covering a distance of 15 miles, the men camped on Rough Creek a couple of miles below Ninemile Ranch.

The explorers moved out of the study area the next day. They moved southwest into Bridgeport Valley, then made a loop north, following the approximate route of U.S. Highway 395. The East Fork Carson River was reached on January 31. The group swung southwest again, taking more than two weeks to gain the crest of the snowy Sierra just south of Carson Pass. In early March, the ragged, emaciated group wandered into Sutters Fort, relieved to be free of the hazards of exploring the western mountains and deserts. A journal, map, and sketches of Frémont's wanderings may be found in Frémont (1845); for an alternative view of the expedition, see Preuss (1958).

Frémont started on his third expedition almost immediately. He hurriedly headed west in late 1845 with former companions Walker, Carson, and Alex Godey. Preuss, by now, had decided to settle down and stay at home; in his place came Edward M. Kern, a skilled artist.

They examined the region of Great Salt Lake in October and afterwards traveled past eastern Nevada's famous landmark, Pilot Peak. At a spring that Frémont named Whitton (now Mound Spring in Independence Valley), the party split into two groups. Kern, in charge of the main group with Walker as guide, followed the Humboldt River, planning to meet Frémont at Walker Lake.

Frémont picked 10 men and headed southwest, entering Mineral County through the Cedar Mountains. They crossed Graham Valley and passed the Pilot Mountains via Bettles Well. The party continued westward across Soda Spring Valley past

the site of the future town of Mina. West of Garfield Flat, in the Garfield Hills, the men camped at a spring that Frémont named Sagundai (15 miles southeast of Hawthorne) on November 21.

At Sagundai, Frémont described one of the most poignant aboriginal scenes in western exploration (fig. 21). While the men were lounging by the night campfire, an elderly woman, nearly naked, came into view, attracted by the fire and thinking her people were at camp. She immediately tried to escape upon seeing that the men were not of her own. She was quickly surrounded by the explorers. Cold and hunger dispelled her fright. She gesticulated that she had been left to die because she was very old, could gather no seeds, and was no longer good for anything. The Indian was given one quarter of an antelope that had been recently killed and she immediately darted off into the dark with it. In the morning she was left a small supply of food and a fire which Frémont figured "would probably prolong her life even after the snows came" (Frémont 1887:437).

On the 24th, camp was made on the southeast shore of Walker Lake near the present railroad siding of Thorne. As they moved north along the east side of Walker Lake, Fremont noted that "the scattered Indians of the neighborhood were gathering to fish" (Frémont 1887:437). On November 26 they reached their rendezvous point on the Walker River approximately 3/4 mile southeast of the present town of Schurz. The Kern-Walker contingent came in three days later.

Frémont, after leaving instructions for the main group to continue south to Owens Lake and around the south end of the Sierra, took a group of 15 men northwest over the Sierra. They followed the Walker River to its most northern bend and then struck northwesterly, bisecting the Carson River at his earlier crossing. He met the Truckee River just west of Wadsworth on December 1. Now on the emigrant road, the party followed this route to Donner Pass, which was reached by December 4. They then descended to the California lowlands without incident (Frémont 1887).

The Kern-Walker contingent followed the Humboldt River, arriving at its sink on November 23. The next evening they camped among sand dunes east of the Hot Springs Mountains. The next day Kern noted finding the skulls of Indians that Walker's party killed some 12 years earlier. That same day, after 25 miles of travel across the Carson Desert, they made camp on the northeast side of Carson Lake. On November 26 they traveled 9 miles along the east border of Carson Lake, which Kern described as "a very pretty sheet of water" with "various kinds of fowl in abundance" (Kern 1876:479). They traveled only 8 miles the next day, camping at Stinking Springs. Kern called the water "Indian wells of bad water, thoroughly impregnated with sulphur". On the 28th they met Frémont's group on the Walker River.

The group stayed at this camp a week as their animals were exhausted. Edward Kern visited some Indian huts near the mouth of the Walker River, where he saw some "very pretty decoy-ducks, made from the skin of those birds, neatly stretched over a bulrush float" (Kern 1876:480). Kern's description of the Indians at Walker Lake and elsewhere in the Lahontan basin constitute important early ethnographic data.



OLD DIGGER WOMAN ABANDONED BY HER PEOPLE.

Figure 21. Frémont's 1845 lithograph at Sagundai in the Garfield Hills (from Frémont 1887: facing 436).

On December 8 the group moved south about 15 miles, camping by the lake near Wildhorse Canyon. They traveled some 14 miles the next day and camped near the present town of Thorne, below Ryan Canyon. From Schurz to Thorne, the Kern Route approximates the line of the present Southern Pacific Railroad. A 16 mile trail, slightly east of south, was made to Whiskey Spring on December 10.

The next three days of the Kern-Walker route is not particularly clear, but we can surmise that the men went into the gap between the Excelsior Mountains and the Garfield Hills. The wells which had been dug by Indians were dry (the present site of Rattlesnake Well), and an aboriginal game fence was noted at this spot. On December 11 they made camp below the crest on the north side of the Excelsior Mountains where the groups had a fine view of the Sierra chain and the Great Basin mountains to the south and east. The party descended into Huntoon Valley, traveling only 7 to 8 miles, and camped in a sandy area. Kern recorded that the sand had been "leveled very smooth and some willow hoops lying about, with fresh signs to convince us that the place had not long been vacated by the Indians" (Kerns 1876:481).

The explorers left Nevada on December 13 and descended into Adobe Valley. After breaking camp that morning, Kern wrote that they were "still among the burnt rock hills, interspersed with grassy valleys" (Kern 1876:481), which seems to be a description of the Huntoon Hills south of Huntoon Valley. Kern and Walker eventually met Frémont in California, completing a successful expedition (Kern 1876). Meri Hansen (1979) traced Kern's route south of the rendezvous on the Walker River and her analysis generally corresponds with that presented here.

#### OPENING THE CALIFORNIA TRAIL ACROSS THE LAHONTAN BASIN: 1845-1849

Frémont's 1845 venture into central and western Nevada brought the trail blazing period to an end. Most of the present state of Nevada was explored by that time, except for the areas of the Nevada Test Site and northwest Nevada. Emigrant and trade travel were now fairly common along the Spanish Trail and Humboldt River routes. The California Trail over Donner Pass was successfully completed by the Stevens Party in 1844.

Old "squaw man" Caleb Greenwood, on advice from John Sutter, decided to head east from Sutters Fort in 1845 to hire himself out as a guide, collecting \$2.50 from each wagon. He worked out a route in California through Dog Valley, thus avoiding the tortuous Truckee River canyon between Verdi and Truckee. This route was so effective that it was used for the next 80 years (Stewart 1962:85). Between Greenwood's enthusiasm for California and Lansford W. Hastings' (1845) The Emigrants' Guide to Oregon and California, many Oregon-bound emigrants took the Humboldt River trail and thus firmly established the California Trail. After the 1848 discovery of gold in California, westward wagon traffic flourished. By 1849 the Donner Pass route and a route across the Forty-Mile Desert and along the Carson River were established.

Henry W. Bigler and members of the old Mormon Battalion opened the road over Carson Pass in 1848 (Gudde 1962:112-123; Stewart 1962:197-201). Bigler,

a Mormon chronicler who lived in California since 1846, recorded the date of the discovery of gold near Sutters Fort (Monday, January 24, 1848). Bigler wrote in his pocket diary: "this day some kind of mettle was found in the tail race that looks like goald" (Gudde 1962:89).

Bigler was one of the Mormon Battalion of 500 that traveled through Santa Fe to California to fight in the Mexican War. Arriving too late to get into the action, the members were there disbanded. They took whatever work they could find; several with John Sutter. In early July 1848, a group of the Mormons met near Placerville and decided to head east to Salt Lake City.

The group of forty-five men and a woman from Sutters Fort elected Samuel Thompson captain. They traveled with 17 wagons and a band of 300 cattle and horses. After hearing horrifying stories of previous Truckee River crossings, this group decided upon a new route, ascending a ridge south of the American River, to "shun Crossing the Truckee river 27 times" (Stewart 1962:198). On July 29 they crossed Carson Pass and soon descended to the West Fork of the Carson River (which the Mormons called Pilot River). Although boulders made the Carson Canyon route a difficult one, only three river crossings were needed. The party felled trees for bridges for these crossings.

The group moved into Carson Valley on August 5. The next day they passed Carson Hot Springs, camping on the big bend of the Carson River near Empire. That night they noted about one hundred Washoe Indian fires in the mountains. Four days later, when 10 men went out to locate their missing stock, they overtook a band of Indians. One of the Mormons received an arrowpoint in the chest, "but it did not prove fatal".

On August 11 the group camped on the bend of the Carson River where Fremont made his 1844 camp. On the 12th the Bigler groups swung northwesterly to the Truckee River (probably a reversal of Frémont's 1844 trail) where they encountered the old emigrant road. The Mormons then passed by the hot springs at Bradys and made their way past the Humboldt Sink, reaching Salt Lake City by the end of September 1848 (Gudde 1962).

That same month, the Bigler group met Joseph Chiles on the Humboldt River as he was leading 48 wagons west. Chiles had traveled west with the Bidwell-Bartleson Party of 1841. Chiles learned of the new Mormon road and decided to vary his own route, which would later become the standard route. Chiles was somewhat familiar with the desert south of the Humboldt Dike because he had traveled that same ground in 1841 and on his return trip in 1842. Chiles took his party south and southeast across the alkali flats and sand dunes to the Carson River via the 33 mile section which became known as the Forty Mile Desert (The old road from the Dike to the Truckee River was also known as the Forty Mile Desert, which tends to confuse the nomenclature in the region). The spot they reached on the Carson River became known as Ragtown. Chiles' train forged another 15 miles of trail west to the spot where the Mormon Party had turned north to the old trail. Thus, with the Mormon and Chiles' sections, the new trail became known as the Carson Route.

George R. Stewart (1962:231) estimates 22,500 people took the California Trail in 1849, an increase of 50 times over the traffic of the previous year.

UTAH TERRITORY TO STATEHOOD: 1850-1864. The legislative history of Nevada begins with the creation of Utah Territory in 1850. The huge tract of land comprising California, Utah and New Mexico territories was acquired from Mexico in 1848 by the Treaty of Guadalupe Hidalgo (Mottaz 1978:27). The first counties established in the present State of Nevada were created in 1852. The counties of Tooele, Juab, Millard, and Iron included the land covered in the Lahontan and Walker ES's, but the boundaries of these units carried no political weight in Nevada. Neither the Walker nor Lahontan ES areas contained settlements in 1852.

Nevada legislative history continues with Carson County which was established on January 17, 1854. This early county encompassed most of the Carson City District. Boundary changes made during the next few years affected this area very little. Once the Territory of Nevada was established by Congress on March 2, 1861, significant changes occurred. Late that year, Churchill and Esmeralda counties were created, with seats at Buckland and Aurora, respectively. The smaller counties within the study area which were created at that time include Lyon, with Dayton as the county seat, and Douglas with Genoa as the seat.

President Lincoln signed a proclamation making Nevada a State of the Union on October 31, 1864. Boundary changes made in the project area at that time were generally insignificant, with the exception of the eastern boundary of Lyon County, which was shifted several miles east into Churchill County (Mottaz 1978).

In 1852, the establishment of the Sonora Road brought about significant changes to the California Trail. Various accounts (e.g., Mitchell 1955) suggest that the road was opened in 1853, but George R. Stewart (1962:306) found information to the contrary. Apparently, the citizens of Sonora, California eager to acquire the emigrant traffic, sent a party out to the Carson and Humboldt River routes to divert traffic over the new pass. They promised the settlers a better road, good grass and a route that was not so mountainous. The wagons which followed the Sonora Road approximated the route of the 1841 Bidwell-Bartleson Party along the West Walker River. The first wagons broke their own trail and their travel over the Sierra was particularly rough. Traffic over the Emigrant Pass section of the Sierra declined after a few years. The route was used into the 1860s until the building of the Sonora-Mono wagon road, now California Route 108 (Mitchell 1955:217).

The Sonora Road may be traced through Nevada: near present Silver Springs on the Carson River route, the road turned south to Bucklands; it continued along the east side of the Singatse Range to Wilson Canyon which was bypassed a few miles to the south. Once over the hills, the route followed the West Walker River through Antelope Valley and on into California (Hunt and Adams 1974:map 21; Mitchell 1955:209).

The following year, 1853, an obscure expedition commanded by John Ebbetts with Lt. Tredwell Moore and George H. Goddard along as engineers, followed the Sonora Road into Nevada in search of a route for the Pacific Railroad (Mitchell 1955). The group left the Sonora Road south of Wilson Canyon and struck east to the north end of Walker Lake, traveled to the south end of the lake, and on to Coaldale Junction, approximating the route of present U.S. Highway 95. The groups wandered south to near Sarcobatus Flat where they ended their journey and returned to Walker Lake, basically via their southern route. They continued north along the east side of the lake to the Carson River on a route similar to Frémont's of 1845. The survey party followed the Carson River Road to Genoa, returning to California via Kingsbury Grade and "Johnston's Cut Off", now U.S. Highway 50.

H.H. Bancroft summarized the trip as an auxiliary expedition that "crossed the Sierra Nevada, entering between the north and south forks of the Stanislaus. They reached an elevation of 10,000 feet, passing by the south of Walker Lake, with the object of discovering a railroad route, but found this utterly impractical" (Mitchell 1955:209). Though Ebbetts, Moore, and Goddard failed in their primary purpose, they did add to the geographic knowledge of a portion of the West which was still obscure in 1853.

In 1853-1854 several expeditions were dispatched to discover a route between Salt Lake City and Mormon (Reese) Station at the request of Lt. Col. E.J. Steptoe who was hoping to find a more expeditious route than along the Humboldt River. The first trip through the Carson Desert was probably in late 1853 by Oliver and Clark Huntington, John Reese, Stephen Kinsey, and two other men who took the emigrant road from Mormon Station to Ragtown on the Carson River. A.L. Kenyon probably built the first structure in the Carson Desert at Ragtown, August 1, 1854. After disposing of his stock, which was driven from Missouri, Kenyon built a trading post at Ragtown to gather business from the emigrant traffic. The post consisted of a log structure that he used for a store and house (Angel 1881:369).

The Huntington party reached Salt Lake City November 26, 1853, reporting first to Brigham Young, and then to Steptoe. The next spring, based on the reported wet and miry conditions of the Great Salt Lake Desert country, Steptoe confined his "exploring" to the Humboldt River route. Capt. Rufus Ingalls, who accompanied Steptoe along the river but left him to take the Applegate Trail to Ft. Lane, Oregon, made a report on his exploration which included a map showing "Co. Steptoe's proposed route" (Ingalls 1855).

The first useful route through the desert was finally accomplished by Capt. James H. Simpson in 1859 (Morgan 1943:232-233). Prior to Simpson's entry into the Great Basin, he had an established reputation as an outstanding officer and a successful engineer in the U.S. Corps of Topographical Engineers. Simpson's 64 man expedition left Camp Floyd, Utah on May 2, 1859. He entered the Carson City District over the Desatoya Mountains via Eastgate in early June, naming Middlegate on June 3, and into Alkali Valley (now Eightmile and Fourmile Flats) on June 4, camping near Sand Springs. The men dug several wells and found alkaline water 3 ft. below the surface. Vinegar improved the taste of the water considerably!

Simpson had been aiming for the northernmost bend of the Walker River, but John Reese, who had covered the region in 1853, assured Simpson that the party was too far south and must vary their course to the northwest to intersect Walker Lake. As a result, the party camped on the north shore of Carson Lake the next evening, and were not on line for Walker Lake as Reese believed.

The camp on Carson Lake was in the vicinity of the Kern-Walker 1845 camp. Simpson's journal is invaluable for detailed descriptions of Indians and natural history. H.V.A. von Breckh was along as documentary artist, and his renderings (finished in water color by J.J. Young) are among the first known for western Nevada. The scenes depict wildfowl at Carson Lake, the Carson River at Pleasant Grove (Millers or Reeds Station), Genoa, and Lake Bigler (Lake Tahoe).

From the north end of Carson Lake, Simpson made a retrograde to the south. He moved along the east side of the Lake, passing the calcareous deposits at Lee Hot Springs and tasted the nauseous water at Stinking Springs. The animals, greatly fatigued from the sand over the divide between the desert and Terrill Mountains, had no chance to water until the party hit the Walker River (at the present site of Weber Reservoir) about midnight on June 6. The party decided against pushing the animals due to their poor condition, and as a result, covered less than 16 miles in the next two days, ending their journey near the present Parker Ranch.

Reese was sent ahead to build rafts at the Carson River so that the party could cross to the emigrant road. As Simpson left camp on June 9, a letter arrived from Reese stating that Mr. Miller at Pleasant Grove would construct the rafts. A few miles from camp, Simpson recorded the temperature at Wabuska Hot Spring at 165° Fahrenheit, the hottest that he had seen thus far except near Salt Lake City. About 3.5 miles from the springs, the party came upon the Sonora Pass Road and followed it toward the Carson River.

It was now spring and the river was high and swift, so Simpson had to crowd close to the hills across some rough ground. They made camp among the cottonwoods on the river that night about 4.5 miles west of Ft. Churchill and on the next day moved upriver opposite Pleasant Grove. Here, Mr. Miller, an agent for the Overland Mail Company, prepared to raft the the party across the river. All men and baggage made the crossing safely except for one raft which capsized. Simpson recorded the event: "It was amusing to see the cook, Storer, throw away the coffee-pot he was bringing over on the raft, when it capsized, and plunged for his life into the stream" (Simpson 1876:89).

A 13 gun salute and the raising of the American flag heralded the party's arrival in Genoa on June 13. Simpson's party had traveled 565 miles in 42 days from Camp Floyd to Genoa. While his men stayed in Genoa to rest and prepare for their return trip, Simpson continued on to San Francisco. The telegraph was recently completed over the Sierra with a proposed extension to Salt Lake City. On his way to San Francisco, Simpson stopped in Placerville to talk to Col. Frederick A. Bee, president of the Placerville and Saint Joseph's Telegraph, who was anxious to talk to Simpson about his new route.

After finishing his business in San Francisco, Simpson returned to Genoa on June 23. Two days later, the party forded the Carson River to the south side near Chinatown (now Dayton) and continued along the river to a camp nearly opposite Pleasant Grove. The next day the men retraced their route along the Carson River and saved about 4 miles beyond Churchill Canyon. The party journeyed east 25.5 miles the following day and camped near Carson Lake at the future site of Sink Station on the Pony Express Trail. On the 28th, the surveyors moved along the south end of Carson Lake and located their old route, camping between Carson Lake and the north end of the Bunejug Mountains. Leaving their old route the next day, the group struck east, then traveled along the southern fringe of Eightmile Flat (Simpson's Alkaline Valley). The hot spring east of the Bunejug Mountains was duly noted, as was the sulphurous water at Rock Springs. The men continued east across Fourmile Flat and connected with their old route near Sand Spring. During the night they forced a march that was pleasantly cool. Once in a while, Simpson would find himself dozing. At daybreak, one of the men passed Captain Simpson at a gallop, and a short distance beyond he was found fast asleep, holding the reins of his mule. They reached Middlegate at 7:00 a.m., traveling some 39 miles from Carson Lake.

Several Paiute families were encamped at Middlegate. Simpson describes how they prepared several varieties of grass seeds by rubbing them between stones, and then winnowing and grinding them with milling stones. The men left their outward trail and traveled 10 more miles northeast, camping at a welcome mountain stream that Simpson called Cold Spring (which became another Pony Express Station).

On July 1 the group traveled another 11 miles to the north and camped on Edwards Creek (still so named). Two more camps were made while ascending the creek. On July 4 the train crested the Sedaye or Lookout Mountains (now called the Desatoyas), thus leaving the Carson City District.

Simpson and his men reached Camp Floyd in early August 1859. Commander of the Department of Utah, General Albert S. Johnston, was so impressed with Simpson's report that he immediately dispatched soldiers to improve the Simpson road and to develop the springs along the route. While Capt. James H. Simpson rested at Camp Floyd, he had reason to be proud of his achievement. The next year emigrants, miners on their way to Washoe, and the Pony Express used Simpson's route. (This section of the overview was developed from Simpson's 1876 journal. Also helpful were articles by James Hulse 1964 and Barbara Beeton 1978).

The Pony Express overland mail service was an enterprising venture by the firm of W.H. Russell, Alexander Majors, and William B. Waddell which ran from St. Joseph, Missouri to Sacramento, California from April 3, 1860 to October 28, 1861 (see Hardesty 1979). The first mail was taken east from Sacramento on April 4, and was delivered to New York City in just 14 days, a magnificent achievement. The most memorable Pony Express trip carried President Lincoln's inaugural message (Morgan 1943:273-278). The Pony Express essentially followed Simpson's eastward route through the district. The Pony Express period has been

described numerous times, therefore no detailed discussion is presented here. Instead, presented below are the Pony Express stations in the District (after Mason 1976), listed from west to east:

Genoa	Bucklands
Carson City	Hooten Wells
Dayton	Carson Sink
Millers (Reeds)	Sand Springs
Ft. Churchill	Cold Springs

The Pony Express was the culmination of nearly a decade of struggle to bring overland mail to California. George Chorpensing's heroic efforts as a Great Basin mail carrier overshadowed the better known Pony Express. In April 1851, Chorpensing and Absalom Woodward were awarded the government contract to carry monthly mail between California and Salt Lake City. On their first trip, they had to pack the snow over the Sierra with mauls to provide a path for their mules. The first "Jackass mail" probably entered Nevada via Luther Pass and Carson Canyon on the Johnson Cut Off (Sanborn 1974:232). A mail station was erected at the present site of Genoa (see Hardesty 1976). The route continued along the Carson River emigrant trail and along the Humboldt River route.

The snow delayed the carriers in the Goose Creek Mountains and Chorpensing's mail suffered disaster in the first year of operation. His partner, Woodward, and four other men carrying the November mail were ambushed and killed by Indians on the Humboldt River.

The central mail route was abandoned in 1854. Chorpensing was re-awarded the mail contract in 1858 after denunciation of the circuitous Butterfield route through Texas and New Mexico. At first Chorpensing used part of the Humboldt River route, but later switched to the Simpson road. In May 1860, his contract was annulled. Shortly thereafter the Pony Express started carrying the mail. (Information on Chorpensing's mail routes may be found in Bradley 1977; Chorpensing 1874; and Morgan 1943:269-272).

A month after the Pony Express commenced its famous operation, an incident occurred on the Big Bend of the Carson River that shocked the Washoe region. Several white men abducted two Paiute women during James Williams' absence from his station. The day of reckoning had arrived. Whites were encroaching upon the Indian's territory by killing game or driving it away. The pinyon forests with their essential store of pine nuts were being cut for timber and fuel, and Indian women were being molested.

As the temperature was dropping under the lowering sun on May 7, 1860, 30 mounted warriors rode down on Williams Station. In a ferocious onslaught, five white men there were murdered. The burning station lit up the sky that night.

News of the killings was carried by the Pony Express riders to the Carson River settlements. Four companies of about 105 men rode out to Williams Station on May 9 and buried the slain. The volunteer army decided to go on to Pyramid Lake to track the enemy. The Paiutes waited in ambush along the Truckee River

and the Indians fired upon the soldiers before they reached Pyramid Lake. It is estimated that 46 white men, including Major William Ormsby from Carson City, died in the battle.

Survivors straggled back to Bucklands Ranch on the morning of May 18 as fear swept through the Washoe country. Citizens barricaded themselves while telegraph messages were sent across the Sierra for help. Genoa's Indian agent, Warren Wasson, raced north through Indian territory to Honey Lake Valley to summon troops there. More than 800 men assembled at the bend of the Truckee River on the last day of May. The second Pyramid Lake battle was fought on June 2. Both sides sustained losses after a sharp skirmish. The Indians fled north while the soldiers erected a hasty fortification (Ft. Haven) that was manned until the middle of July.

Organized warfare ended with the second battle, but the Indians were still in a high state of agitation. Pony Express stations were burned and the tenders killed, wagon trains were attacked. Times were not safe for a lone white man. (Ferol Egan 1972 writes the story of the Pyramid Lake wars. Also see Morgan 1943:257-277. See Vincent P. Gianella 1960 for the location of the Williams Station site).

The Indian actions of 1860 precipitated the establishment of a military post. Captain Joseph Stewart with an artillery command vacated Ft. Haven on July 15 and marched to the future site of Ft. Churchill. Infantry components left two days later. The Ft. Churchill military reservation was established on August 7, 1860. Captain Stewart suggested naming it Fort Churchill in honor of Inspector General Sylvester Churchill (see fig. 22).

The military reservation as surveyed by George M. Wheeler in 1868 covered an area of 1,384,257 acres. According to George Ruhlen, "Fort Churchill was the first, largest, and most important military establishment to be located in Nevada. It was one of the type of military stations intended to be a permanent post, having adobe buildings erected on stone foundations, placed in the form of a square facing a central parade ground" (Ruhlen 1964:18).

Ft. Churchill was located on the north side of the Carson River (see Hardesty 1978a). Other camps or "forts", often only a fortified store or house, were built in 1860 after the Indian uprising, including Carson City, Ft. Haven, Camp Ormsby and Ft. Storey in Washoe County, Camp Hays and Silver City in Lyon County, and Ft. Riley in Storey County (Ruhlen 1964). Camp Aurora, just west of Aurora, was also a military camp in the Carson City District. However, this "post" (a tent camp) was established in 1862 and only lasted for a few weeks.

Once peace was achieved with the Indians, miners began to spread from Virginia City into the surrounding districts, and Aurora and Silver Hill (in the Stillwater Range) were established in 1861. Dan DeQuille (1963) wrote an enlightening account of this region during the gold rush era. Also in 1861, President Buchanan signed the Organic Act, creating the Territory of Nevada. The Pacific Telegraph was completed along the old Pony Express Trail on October 24, 1861; the Pony Express, itself, was dissolved four days later. The

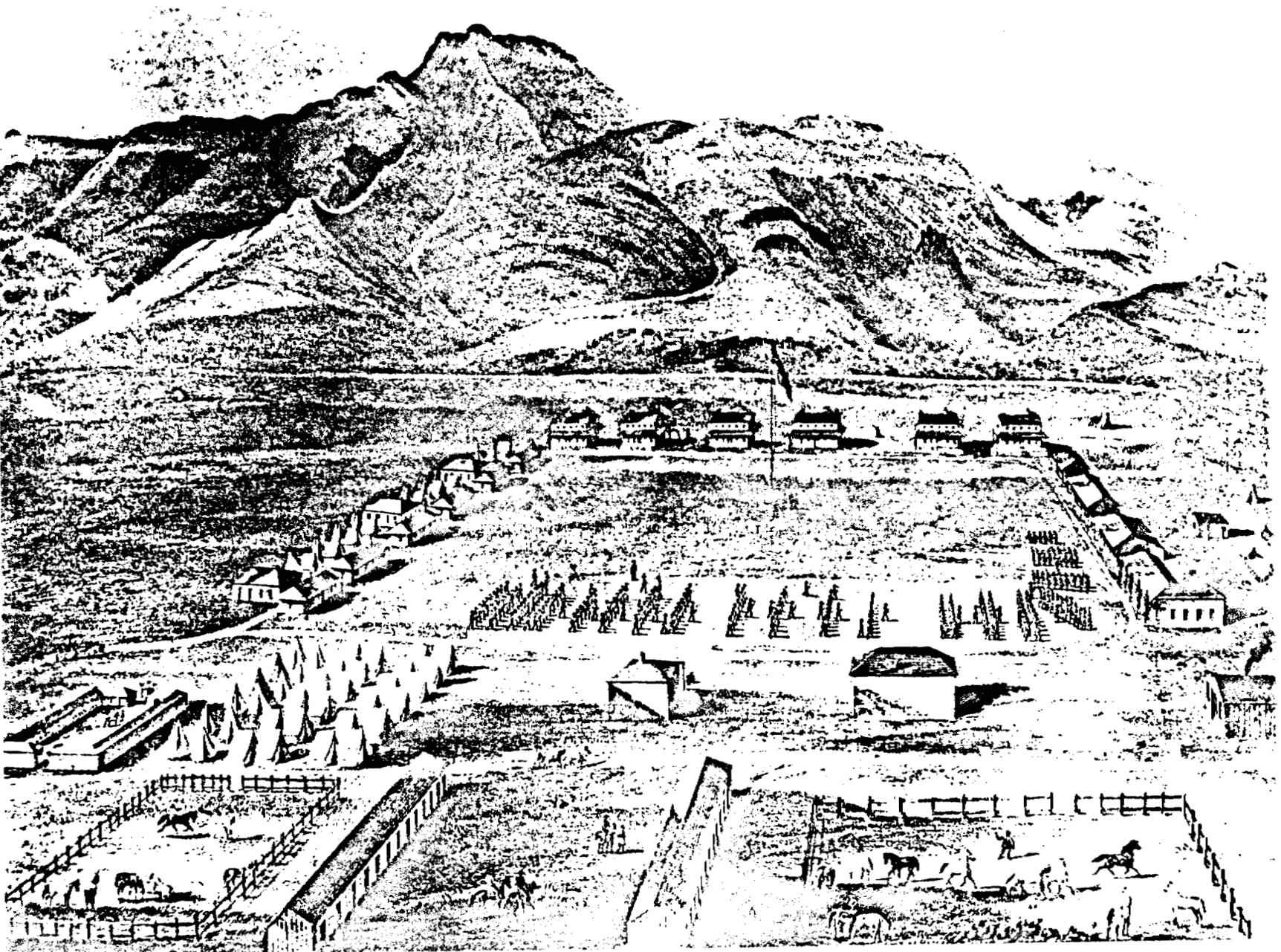


Figure 22. Brown's Lithograph of Ft. Churchill in 1862  
(Courtesy of the Special Collections Library,  
University of Nevada, Reno).

Esmeralda Toll Road was established in 1861 from Carson City to Fletcher Station near Aurora (Shamberger 1978:map 10). The impressive \$250,000 Real Del Monte Mill was built in 1863 on Bodie Creek, near Aurora.

Finally, on October 31, 1864, President Abraham Lincoln signed the proclamation making Nevada a State of the Union. (See Bowers 1964 for printed historical documents pertaining to Nevada's statehood). La Plata in the Stillwater Mountains became the county seat of Churchill County in 1864 (Townley 1977:8).

EARLY MINING AND FREIGHTING: 1861-1887. After the establishment of Virginia City in 1859, prospectors swept over other likely mineral regions. As a result, gold and silver ores were found at Aurora in 1860, and the town was started the next year. Also, in 1861, gold, cobalt, and nickel were discovered near Bolivia, and gold and silver at Silver Hill. Both of these abandoned camps are in the Stillwater Range.

A few miles south of Silver Hill, silver was discovered at La Plata in 1862. In Nye County, tungsten was found at Lodi and Ellsworth in 1863. That same year, salt was hauled from the Sand Springs Marsh to Virginia City. Silver and gold discoveries gave birth to Candelaria in 1864. Other minerals there include lead, antimony, zinc, and copper. The mines at Candelaria, quiet for close to 100 years, are now being reopened.

Large copper deposits at Yerington and Ludwig were located in 1865. Salt was extracted at Teels Marsh, in southern Mineral County, in 1867. The next year, significant amounts of soda were mined at Little Soda Lake west of Fallon. Lodi, north of Gabbs, was developed in 1874. In 1878, Downeyville, also north of Gabbs, sprang into existence after silver and lead were discovered. Mineral deposits were discovered in the Pilot Mountains in 1879 when the Bell (Simon) District mined lead, gold and silver, and the Santa Fe District near Luning produced copper. In 1882, Egleville, east of Rawhide, produced gold and silver.

After this 16 year flurry of activity in the project area, the mining hiatus hit and other mineral sources were not discovered again until after the turn of the century. The mining record is well documented in popular and technical articles, including non-technical information in Paher (1970). The geology and mineral reports of Nevada Bureau of Mines and Geology give reliable data on mining history and production figures. Mineral County is covered by Ross (1961), Churchill County by Willden and Speed (1974), and Lyon, Douglas, and Ormsby Counties by Moore (1969). A Nevada Bureau of Mines brochure by Rollin (1966) is also useful.

A network of roads extending to the various mining centers was established with the development of mining east and south of the Comstock Lode. As early as 1860, a road from Wellington east to central Nevada (Reese River country) was explored by John Reese (Maule 1938:22). This road was used primarily after 1862 when the discovery of silver precipitated the founding of Austin. Several miles of this road are still visible today. The road went over, the north end of the

Pine Grove Hills, across the Cambridge Hills, then over the Wassuk Range via Reese River Canyon. The road continued past Schurz, Double Spring, Dead Horse Well and through Gabbs Valley.

The Esmeralda Toll Road was the most active route. Built in 1861, the road went south of Carson City to Mountain House, thence via Rissue Bridge, Hoyer Station, Wellington, Desert Creek Station, Dalzal Station, Elbow Station and to Aurora. An alternate to this route, the Jack Wright Grade, went from Mountain House to Wrights Bridge and Wellington.

The Ft. Churchill-Sand Springs Toll Road was established in 1865. The usefulness of this road remains equivocal, but sections are well-preserved over Simpson Pass and into Salt Wells Basin (Hattori and McLane 1980:14, 19).

One of the longest roads in the region, the Wadsworth-Columbus Freighting Route, was established in 1863. It operated up to 1882 when the construction of the Carson and Colorado Railroad made the route obsolete. The freighting route extended east of Wadsworth past Hazen, St. Clair, Salt Wells, Rock Springs, Deadhorse Well, Sargent, Deep Well (Luning), and Soda Springs to Columbus.

In 1878, the Aurora-Manhattan Toll Road was routed across the Wassuk Range and Excelsior Mountains. The route proceeded past Fletcher, Mud Spring, Whiskey Spring, Summit Spring, Marietta, Candelaria and Columbus.

The Hawthorne and Bodie Toll Road was established by 1881 over Lucky Boy Pass in the Wassuk Range. The first Carson and Colorado Railroad train arrived in Hawthorne in the spring of that year. Hawthorne was a convenient departure point for traffic to Bodie and environs. (This overview of the staging and freighting routes was compiled from Maule 1938 and Shamberger 1978).

EARLY RANCHING AND AGRICULTURE: 1859-1900. Ranching and agriculture in the region began in 1859 when cattle herds were brought to Mason and Smith Valleys. In 1854 N.H.A. Mason and two brothers drove cattle through the area on the way to California and their herd stampeded in Mason Valley. Mr. Mason, "Hoc" as he was commonly known, learned the grazing value of the valley while rounding up the cattle (Angel 1881:406-407). Under the direction of Henry Miller, of the Miller and Lux cattle empire in California, Mason returned and settled in the valley in the fall of 1859, bringing with him the Seven S (S) brand (Treadwell 1950:97-98). Mason built the first house in the valley in 1860, a 16 x 24 ft. affair. Acting under Miller and Lux, Hoc Mason extended their cattle ranges to the Black Rock Desert country.

Other early 1860 settlers in Mason Valley along the Walker River included Angus McLeod, Charles Snyder, John R. Bradley, William, George, and Richard Alcorn, and Jesse Woodcock (Angel 1881:407).

Timothy B. Smith, R.B. Smith, Cyrus Smith, Chandler Stratton, Simon Baldwin, John A. Rodgers, Bill Patterson, and others from California drove a herd of cattle in to Smith Valley in August of 1859. The previous winter was

dry, leaving the range along the San Joaquin River in a poor state. Emigrants told ranchers of the abundant grass in Smith Valley, and upon seeing same the drovers decided to settle there (Smith 1913:224-225).

The first ranchers to settle on the Carson Desert were J.J. Cushman and David Wightman about 1860, settling on the south branch of the Carson River. James and Nancy Sanford were early residents who came to Ragtown in 1861 to help the Kenyons at their station. Other early settlers were Lemuel and Sarah Allen who built the Wildcat Station and James W. Richards who established himself on the Old River, a branch of the Carson, in 1863 (Townley 1977:4-5). The town of Fallon was established July 24, 1896 when Michael Fallon's place was designated a U.S. Post Office (Carlson 1974:111).

STAGING, MINING, AND AGRICULTURE DEVELOPMENTS AFTER 1900. After Nevada's 20 year depression period from 1880 to 1900, mineral discoveries in central Nevada started the twentieth century with a bang. The silver and gold discovery at Tonopah in May 1900 sparked the state's economic revival. Nevada's twentieth century mining boom has been covered by Glasscock (1932) and Russell R. Elliot (1965).

The history of the Carson City District was affected by the activity in central Nevada. The Sodaville-Tonopah Stage and Freighting Route was established in 1901. The line commenced in Sodaville and ran past Summit Spring and on to Tonopah via Crow Springs (Shamberger 1978:map 10). The line lasted until the Tonopah Railroad was built in 1904.

Excitement in Tonopah and Goldfield spurred mining interest in other sections of Nevada. In the Lahontan and Walker ES areas the towns of Fairview, Nevada Hills, Wonder, Buckskin, Dutch Creek, and Rawhide were established, based on mineral discoveries in 1906.

The National Reclamation Act of 1902, championed by Nevada representative Francis G. Newlands (U.S. Senator, 1903-1907), authorized construction of irrigation projects in the 17 western states. The Newlands Project was authorized in 1903 and construction began that year. The project consisted of Lahontan Dam and Reservoir, three diversion dams, two hydroelectric plants, a dam at Lake Tahoe and some 900 miles of canals, laterals and drains. Construction began on Derby Dam and Truckee Canal in 1903. The canal, from Truckee River to Carson River, was completed February 2, 1905.

The U.S. Reclamation Service opened its first land, centered around Fallon, between 1904 and 1911. In 1905, the first season, 108 ranches were settled. The Newlands Project received an additional boost in June 1915, after completion of the four-year Lahontan Dam construction project, when the Fallon area was reopened to land entry. Construction of the Lahontan Reservoir coincided with the outbreak of the First World War which accelerated prices of farm produce. Hundreds of new settlers applied for thousands of acres of unclaimed land. After weathering the lean early years, the Newlands Project (privately acquired by the Truckee-Carson Irrigation District on December 31, 1926) has had

continued success, as evidenced by the prosperous city of Fallon. (This section on the Newlands Project has been compiled from information in Townley 1977 and Katzer 1971.)

Coincident with the Newlands Project, the Rawhide Western Railroad Company cut a grade from Walker Lake to Rawhide in 1903, but never laid the rails (Myrick 1962b). That same year, silver was discovered at Lucky Boy, with a production from 1907-1911 amounting to \$1,000,000 (Ross 1961:Table 6.3). In Tonopah, men like Tasker Oddie put money into Lucky Boy, but lost much of their fortunes there (Paher 1970:465).

In 1911, "Jud" Terrell discovered lead, gold and silver in the Terrill Mountains. About \$40,000 in shipping ore was mined here in the early years (Willden and Speed 1974:74). Two years later, in the eastern part of the area, the camp of Broken Hills boomed when silver and lead were discovered (Arthur 1958). Operations there ended in the 1920s, but production amounted to \$90,000 (Ross 1961:Table 6.1).

In 1916, an unusual type of community developed 4 miles east of Fallon. A Socialist colony named Nevada City grew from an experiment near Los Angeles, California. About 200 people gathered at the site and cooperative farming was the economic mainstay. It fell apart after three years because of high debts, and the town was quickly deserted (Mordy and McCaughey 1968:14-15).

Silver and lead were discovered at Quartz Mountain in 1920, where the excitement lasted until 1927. Several miles west, near Rawhide, Nevada Scheelite Camp has produced tungsten since 1930 (Rollin 1966).

Topaz Lake was formed in 1920 when water was diverted to Alkali Lake from West Walker River (Rush and Hill 1972). In 1934, Weber Dam was constructed. The reservoir is operated by the U.S. Bureau of Indian Affairs to provide summer irrigation to the Walker River Indian Reservation (Katzer and Harmsen 1973).

Magnesite was discovered above Gabbs in the 1920s. During World War II, the deposit supplied the largest metal magnesium plant (at Henderson) in the world (Kral 1951:103-108). Another important mine in the District is the Minnesota iron mine in the Buckskin Range. It was developed in 1943, and from 1944 to 1966 the production amounted to a value of \$16,736,000, becoming one of the largest producers in Lyon (formerly Douglas) County (Moore 1969:29).

Anaconda began production at the abandoned copper pit at Weed Heights in 1953 and became the second largest production mine in Nevada. Through 1965, 803,224,674 pounds of copper were produced with a market value of \$255,154,400 (Moore 1969:28). A pilot plant at the site is under construction which will process zeolites from Death Valley (Hal Bonham, personal communication, 1980).

One of the latest significant developments in the District was the arrival of the U.S. Navy. The U.S. Naval Ammunition Depot near Hawthorne is one of the larger ammunition storage facilities in the world. The depot was moved from Lake Denmark, Maine after an explosion there in 1926 caused much destruction and

loss of life (Mordy and McCaughy 1968:132). Southeast of Fallon, the Fallon Naval Air Station (Van Voorhis Field) was commissioned on June 10, 1944. The base became a full air station on January 1, 1972 (Townley 1977:129-130). The Navy uses nearby parcels of land to practice its air maneuvers (see Bard, Busby, and Findlay 1981 for an overview of the area).

#### SUMMARY OF HISTORIC RESEARCH: WALKER AND LAHONTAN ES.

Early exploration of the District began in 1827 with mountain man Jedediah Smith, followed by Peter Skene Ogden in 1829. The next group, Joseph Reddeford Walker and his party in 1833, were the first to kill Indians in western Nevada when their rifle fire felled some 30 Paiutes near Carson Sink. In 1841, the Bidwell-Bartleson party were the first overland emigrants to California. John C. Fremont passed south through the region in 1844, and his topographer, Charles Preuss, was the first to produce a detailed map of portions of the area. The Stevens emigrant party worked out the Truckee River Route on the California Trail by 1844 and for the first time, white Americans left an indelible mark in the region.

In 1849, following the discovery of gold near Sutters Fort, emigrant travel crossed the District in great volumes. Eventually, a trail was found through the Forty Mile Desert and along the Carson River. Another branch of the trail cut south across Mason Valley and continued along the West Walker River into California.

The first settlement was at Ragtown on the Carson River when Asa Kenyon and wife established an emigrant trading post there in 1854. Ranching operations became established in 1859 when N.H.A. Mason settled Mason Valley and Timothy B. Smith and others came into Smith Valley, bringing cattle herds from California. Capt. James H. Simpson made a triumphant crossing of the Great Basin in 1859. His new wagon route cut 283 miles off the Humboldt River route across the Great Basin. The road was ultimately used by emigrants and miners, and was adopted by the Pony Express in 1860 and the Pacific Telegraph in 1861.

The 1860 Pyramid Lake Indian War had a profound effect on western Nevada. Several Pony Express stations were burned and the station keepers killed, and emigrants on the Humboldt River road were attacked. Several military posts were established as a result of these conflicts. The first and largest of these was Ft. Churchill, now a National Register site. Located on the Carson River, Ft. Churchill is now a part of the Nevada State Parks system.

Nevada Territory was created in March 1861. Nevada received territorial status due to the fabulous silver-gold discoveries at Virginia City in 1859. The excitement in the Washoe area precipitated mineral exploration over a large portion of Nevada and as a result mineral discoveries were made at Aurora, Silver Hill, Bolivia and La Plata in the early 1860s. In 1863, salt was produced near Sand Springs for use in Virginia City's ore reduction system.

Statehood was expedited because the Comstock silver was used to help finance the Union cause during the Civil War. The Territory of Nevada became a State of the Union on October 31, 1864, by proclamation signed by President Lincoln, judiciously timed prior to the November elections. Virginia City was booming during this period, but in the remainder of the study area things were not so lively.

Teels Marsh produced salt that was used at Aurora in 1867. The following year, soda was recovered from Little Soda Lake, marking the first important production in the west. Over 300 tons of soda were produced from Big and Little Soda Lakes by 1893 when operations ceased. Two of the last important mineral discoveries before Nevada's depression period of 1880-1900 were the silver-lead deposits at Downeyville in 1877 and the lead deposits at Simon in 1879.

Stage and freighting routes were established during the mineral booms period, some of which include:

- 1861 Esmeralda Toll Road
- 1865 Sand Springs-Ft. Churchill Toll Road
- 1873 Wadsworth-Columbus Freighting Route
- 1875 Aurora-Belleville Stage Route

The construction of the Carson and Colorado Railroad from 1880-1882 was the paramount project of the Nevada depression era. The line extended to Hawthorne by 1881 and, in fact, precipitated its founding. In addition, the Eagleville gold and silver camp was founded in 1882.

Nevada greeted the twentieth century with a bang. Silver-gold deposits were discovered at Tonopah. This new discovery generated renewed interest in mineral explorations elsewhere. The following communities were founded in 1906 within the study area as a result of these discoveries: Fairview, Nevada Hills, Wonder, Buckskin, Dutch Creek, and Rawhide.

Coincident with renewed mining interest in Nevada, the National Reclamation Act of 1902 brought major changes to the Carson Desert. The Newlands Project, the first U.S. Government reclamation program, was authorized in 1903. Construction of the Truckee Canal, originating at Derby Dam, commenced that year and was activated by June 1905. The U.S. Reclamation Service first opened its land parcels around Fallon between 1904 and 1911 with 108 ranches settled by 1905. The Lahontan Dam, completed in 1915, prompted the opening of additional land entry parcels. The prosperous city of Fallon attests to the success of the Newlands Project.

A few other small mining communities were established in the early twentieth century such as Camp Terrill in 1911 and Broken Hills in 1913. Nevada City was a unique town that developed in 1916, 4 miles east of Fallon. This Socialist colony was patterned after an experiment near Los Angeles, California. About 200 people gathered at the colony and their mainstay was cooperative farming. After incurring high debts, the community dissolved in 1919.

Other highlights of the early twentieth century include the founding of Quartz Mountain in 1920, a small silver-lead camp that boomed until 1927; Topaz Lake which was formed in 1921 for agricultural purposes from water diverted from West Walker River; Nevada Scheelite Camp near Rawhide which began producing tungsten in 1930; Weber Dam which was completed in 1934 for summer irrigation use on the Walker River Indian Reservation; and the discovery of magnesite near Gabbs during World War II which supplied the largest metal magnesium plant in the world at Henderson (Clark County).

The Minnesota Mine was developed in 1943 and became the largest iron producer in the region. The Weed Heights copper deposits were developed in 1953 by Anaconda Company, and the mine became the second largest producer in Nevada.

The Navy came to Churchill County during mid-century. Fallon Naval Air Station was commissioned on June 10, 1944 with the military maneuvers extending to three nearby areas in Churchill County.

Presently, mineral exploration in Nevada is at a high pitch and many early historic districts are again under examination. For instance, the mines on Candelaria Mountain produced nearly \$21 million in silver and gold through 1957 (Shamberger 1978:127), and are presently reactivated. The Borealis Mines in Mineral County were recently reactivated by Houston Minerals, Inc. with an expected yield of \$200 million (for a detailed report on Borealis prehistory, see Pippin 1980b).

TABLE 19. CHRONOLOGICAL LISTING OF HISTORIC EVENTS: WALKER AND LAHONTAN ES

<u>Year</u>	<u>Event</u>
1827	Jedediah Smith crossed east, south of Walker Lake, in May and June.
1833	Joseph R. Walker led a group of fur trappers south of Carson Sink.
1834	Walker retraces his route north to the Humboldt River.
1841	John Bidwell-John Bartleson party are the first overland emigrants to California via Humboldt Sink and Walker Lake.
1842	Joseph B. Chiles (with the 1841 Bidwell-Bartleson party) returns east, traveling north through the Carson City District.
1843	Walker leads a party to California by way of Chiles' eastward route.
1844	John C. Frémont passes south through Lahontan and Mason Valleys in January.
1845	Frémont travels westward to Walker Lake to rendezvous with Walker and Edward Kern. Walker and Kern continue south while Frémont goes north to the Truckee River and into California.
1849	Mass emigration to California gold fields by both Truckee and Carson River routes.
1850	Creation of Territory of Utah which includes present Nevada.
1853	John Ebbetts and Tredwell Moore search for a Pacific Railroad route in western Nevada.
1854	A station is erected at Ragtown, a stopping place on the California trail.
1859	Capt. James H. Simpson crosses Carson Desert to Genoa in June.
1860	Establishment of Pony Express on April 3. Richard Burton travels the route in October and makes a sketch of Carson Lake from Simpson Pass.
	Williams Station burned by Indians in May which touches off the Pyramid Lake Indian War.
	Nevada's first military post, Ft. Churchill, is built.
1861	Aurora established after ore was discovered the previous year.

TABLE 19 (continued).

<u>Year</u>	<u>Event</u>
1861	President Buchanan signs Organic Act on March 2, 1861 creating Territory of Nevada.  Ores discovered at Silver Hill, object of a Dan DeQuille prospecting trip.  The Pacific Telegraph, along much of the Pony Express Trail, completed on October 24.  Pony Express abandoned October 28.  Esmeralda Toll Road established.
1863	Salt from Sand Springs Marsh shipped to Virginia City.  Stately Real Del Monte Mill constructed near Aurora.
1864	President Lincoln signs proclamation making Nevada a State of the Union on October 31.  La Plata become county seat of Churchill County.
1867	Salt produced at Teels Marsh and used at Aurora.
1868	Soda produced from Little Soda Lake; first important production in the west.
1873	Wadsworth-Columbus Freighting Route established.
1874	Camp of Lodi located.
1875	Aurora-Belleville Stage Route established.
1878	U.S. Coast and Geodetic Survey occupies a triangulation station on Job Peak.  Downeyville camp located.
1879	Lead discovered at Simon.
1880	Carson and Colorado Railroad construction begins at Mound House.
1881	Hawthorne, a new rail stop for Carson and Colorado Railroad, townsite auction off.
1882	Eagleville camp established.

TABLE 19 (continued).

<u>Year</u>	<u>Event</u>
1901	Sodaville-Tonopah Stage Route established.
1902	Passage of U.S. Reclamation Act. Central Pacific Railroad routed through Forty Mile Desert.
1906	Fairview, Nevada Hills, Wonder, Buckskin, Dutch Creek, Rawhide located.
1907	Central Pacific branch line constructed from Hazen to Fallon.
1908	Lucky Boy Camp started. Rawhide Western Railroad grade cut to Rawhide, rails never laid.
1911	Camp Terrill (Terrell) established.
1913	Broken Hills boom camp commenced.
1916	Nevada City, a Socialist colony east of Fallon, established and lasts until 1919.
1920	Camp of Quartz Mountain booms until 1927.
1921	Topaz Lake formed when water is diverted from West Walker River to Alkali Lake.
1930	Tungsten discovered near Nevada Scheelite Camp.
1934	Completion of Weber Dam.
1942	Gabbs (called Toiyabe) post office established. The magnesite deposits above town supply the largest metal magnesium plant (at Henderson) in the world during World War II.
1943	Minnesota iron mine developed, one of the most important mines in Lyon County.
1944	Fallon Naval Air Station commissioned on June 10.

Sources: From tables compiled for this report and Nevada Magazine's 1980 calendar.

## SUGGESTED HISTORIC MANAGEMENT OPTIONS: WALKER AND LAHONTAN ES

The Lahontan and Walker ESs contain a rich and varied storehouse of history. The present inventory has identified 274 sites (see table 4). Many more could be located through a literature search and field investigations. The historic features range from the ephemeral tracks of Jedediah Smith, the transitory wanderings of the early emigrants, to the huge indelible mark of the open copper pit at Weed Heights.

Some of these features would be difficult to manage, or need no management at all. How does one manage the nonexistent trails of the early fur trappers and John C. Fremont? Perhaps a few signs patterned after the Pony Express Trail marking program, or after the State's historic highway signs would be sufficient. Already, the Bureau of Land Management has done an admirable job of delineating the Pony Express route and interpreting it for the public. There is still room for more research here, though. Only two of the stations have had their historical archaeology interpreted. One of the few places where the original 120 year old trail is unaltered is at Simpson Pass and this is at present totally unprotected.

Several playas in the region have had salt extracted from them, but have received scant attention. These sites, where the historic features are isolated and far from immediate caretaker protection, would pose a management problem. It is possible, even probable, that if these sites were sign interpreted, they would be destroyed or vandalized. Perhaps the best management option would simply be total field recordation.

The Nevada Emigrant Trail Marking Committee has done a reasonable job of signing the better known segments of the California Trail. However, the Sonora Pass route has had scant attention, and the location of the route needs to be preserved.

An alignment of numerous stage and freighting routes strikes across the region and no management plans have been attempted for the routes. Certain sections of the original Esmeralda Toll Road between Elbow Station and Five Mile House are intact and need to be preserved. Station ruins on the Wadsworth-Columbus Freighting Route, especially between Deadhorse Well and Luning, are plainly visible. These need to be protected from the elements and vandalism.

Possibly one way to protect the wonderfully preserved segment of Sand Springs and Ft. Churchill Toll Road in Simpson Pass is to nominate it to the National Register of Historic Places. Several acres in Simpson Pass should be withdrawn for public retention. As noted earlier, part of the Pony Express Trail is preserved here. Also, an Indian trail went over the pass, the first continental telegraph went this way, and in 1860 Richard F. Burton made a sketch from the summit. Simpson Pass is certainly one of the most historical spots in the study area. The pass is named for James H. Simpson, a well-known figure with the U.S. Corps of Topographical Engineers, who passed nearby in 1859.

Numerous aspects of the region's history need to be better understood. An intensive study of Zenas Leonard's Narrative of Joseph R. Walker's 1833-1844 trip would help locate the latter's tangled itinerary through the region. The Bureau of Land Management would perform a public service by directing research into various aspects such as early transportation routes, charcoal production by both the platform and oven method, the economic impact of razing the pinyon-juniper forest, early homesteading, dry farming, and ranching.

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- 1934 Supplementary Notes on Pleistocene Glaciation in the Great Basin. Washington Academy of Science Journal 24:5:217-222.
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 1965 Brief Resume of the Pre-Quaternary Geology of the Lake Lahontan Area. In INQUA 7th Congress Guidebook for Field Conference 1. Northern Great Basin and California, pp. 14-18.

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1969 Geology and Mineral Deposits of Washoe and Storey Counties, Nevada. Nevada Bureau of Mines Bulletin 70.
- Born, S. M.  
1972 Late Quaternary History, Deltaic Sedimentation, and Mudlump Formation at Pyramid Lake, Nevada. Reno: Desert Research Institute Center for Water Resources.
- Botti, Nancy  
1976 Cultural Resources Report: Cooperative Soil Survey in the Southern Part of Washoe County. BLM Carson City Report CR3-79P.  
Archaeological survey revealed 37 sites (26Wa2417-2454) near Tule Peak.
- 1977 Cultural Resources Survey for the Salt Wells Basin. BLM Carson City Report CR3-154P.
- Survey of 21,120 acres in the Salt Wells Basin revealed 41+ archaeological sites. The area qualifies as a National Register District, and several areas were recommended for withdrawal from geothermal leasing.
- 1980 Cultural Resources Report, Pine Nut Valley Timber Sale. BLM Carson City Report CR3-455P.
- 1981a Draft Report: Dixie Valley Summary Report. BLM Carson City Report (manuscript).
- Review of all reports to date in Dixie Valley.
- 1981b Draft Report: Gabbs Valley Summary Report. BLM Carson City Report (manuscript).
- Review of all reports to date in Gabbs Valley.
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- Reproduction of historical documents pertaining to Nevada's statehood.
- Boynton, Michael J.  
1975 Final Report on Archaeological Resources Located on the Proposed Hallelujah Junction Highway Project, 02-Las, Sie-395, 70; 02206-058911, Lassen and Sierra Counties, California. Society for California Archaeology District 2.
- Intensive reconnaissance of the California portion of the Highway 395 corridor.

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1977 For Services Rendered. Nevada Historical Society  
Quarterly 20:3:184-192.
- Discussion of George Chorpennig's mail route between  
Sacramento and Salt Lake City.
- Bray, Florence L.  
1913 The Significance of the Nomenclature on Lyon County.  
Nevada Historical Society, 3rd Biennial Report 1911-  
1912, pp. 205-220.
- Brodie, F. M. (ed.)  
1963 The City of the Saints, and Across the Rocky Mountains  
to California, by Sir Richard F. Burton. New York:  
Alfred A. Knopf.
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1957 Evidence for Major Climatic Change about 11,000 Years  
B.P. Geological Society of America Bulletin 68:1703-  
1704.
- Broeker, W. S. and A. Kaufman  
1965 Radiocarbon Chronology of Lake Lahontan and Lake  
Bonneville II. Geological Society of America Bulletin  
76:537-566.
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126:1324-1334.
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1958 Radiocarbon Chronology of Lake Lahontan and Lake  
Bonneville. Geological Society of America Bulletin  
69:1009-1032.
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1977 The Southwest Expedition of Jedediah S. Smith (His  
Personal Account of the Journey to California, 1826-1827).  
Glendale, California: The Arthur F. Clark Co.

Here, published for the first time, is Smith's own account  
of his journey from Soda Springs (southeast Idaho) to Los  
Angeles, and his return via Walker Lake across the Great Basin  
to Bear Lake, northeast of Great Salt Lake. George Brooks  
and associates have done an admirable job in retracing Smith's  
route, as well as that of Silas Gobel and Robert Evans.

- Bruner, Firmin  
1974 Some Remembered...Some Forgot. Carson City: Nevada  
State Park National History Association.

Reminiscences of central Nevada mining camps.

Bryan, Alan and Ruth Gruhn

- 1964 Problems relating to the Neothermal Climatic Sequence. American Antiquity 29:3:307-315.

This paper develops the common-sense notion that climate varies from region to region, and overarching archaeological interpretations should take account of this.

Bryan, Alan and Donald R. Tuohy

- 1960 A Basalt Quarry in Northeast Oregon. Proceedings of the American Philosophical Society 104:5:485-510.

A consideration of the Stockhoff Quarry, with special attention to the problem of thinking that "crude is always early"; also contains a thorough critique of Carter's work at Washoe Lake, especially pointing out the tautological nature of Carter's argument.

Buder, Ronald K.

- 1978 Cultural Resources Report for the Phillips Petroleum Company Shallow Temperature Gradient Holes, Mineral County, Nevada. BLM Carson City Report CR3-242P.

Archaeological reconnaissance of 11 drill sites located 26Mn91.

- 1979 Cultural Resources Report of Clearance and Inventory for Temperature Gradient Holes, east of Aurora Peak, Mineral County, Nevada. BLM Carson City Report CR 3-326.

Archaeological survey of four sections of Mineral County; located four sites, two of which recorded in NSM system (Mn191, 192).

Budy, Elizabeth

- 1979 Cultural Resources Survey of the Proposed Reno-Sparks Sewage Effluent Study. BLM Carson City Report CR3-577P; NSM 18-94.

Survey of several proposed routes, covering sites in Lyon, Storey, Churchill and Washoe Counties.

Burton, Richard F.

- 1963 The City of the Saints and Across the Rocky Mountains to California. F. M. Brodie, ed. (first published 1862, New York: Harper). New York: Alfred A. Knopf.

Contains first-rate descriptions of conditions of Pony Express trail during October, 1860.

## Busby, Colin

- 1974 Pinyon Nut Gathering Equipment from the Vicinity of Gardnerville, Douglas County, Nevada. Contributions of the University of California Archaeological Research Facility 21:51-63.

Descriptions of various baskets and harvesting hooks from D010/203, collected by Heizer and Fenenga, now deposited in the Lowie Museum.

- 1976 Archaeological Investigations at Burnt Cave, 1976. BLM Carson City Report CR3-114P; CR3-17P.

Brief report on excavations at Eetza Cave (aka Burnt), to the southeast of Fallon. About 65% of site excavated, with moderately interesting results; also reports several new survey sites (Ch476-481).

## Busby, Colin and James Bard

- 1979 A Class III Cultural Resource Inventory of the Sierra Pacific Power Company's Transmission Line Corridor: Valmy (Humboldt County) to Mira Loma (Washoe County), Nevada. BLM Carson City Report CR3-342P.

n.d. The Archaeology of Burnt Cave (NV-Ch-54), Churchill County, Nevada. Ms. in preparation.

## Busby, Colin, J. M. Findlay and James C. Bard

- 1979 A Culture Resource Overview of the Bureau of Land Management Coleville, Bodie, Benton and Owens Valley Planning Units, California. BLM Bakersfield Report.

Includes good summary of Washoe and Northern Paiute ethnographic data, as well as discussion of archaeology of the area.

## Busby, Colin, R. Fleming, R. Hayes and K. Nissen

- 1978 The Manufacture of Petroglyphs: Additional Replicative Experiments from the Western Great Basin. In Four Rock Art Studies, C. W. Clewlow, ed. Ballena Press Publications in North American Rock Art 1:89-108.

## Busby, Colin, L. S. Kobori, and K. M. Nissen

- 1975 Eetza Cave: Report of Test Excavations. BLM Carson City Report CR 3-114P.

## Butler, B. Robert

- 1972 The Holocene in the Desert West and its Cultural Significance. In Great Basin Cultural Ecology: A Symposium, Don Fowler, ed. Desert Research Institute Publications in the Social Sciences 8:5-12.

Byrne, R., C. Busby, and R. F. Heizer

1980 The Altithermal Revisited: Two Pollen Diagrams from Leonard Rockshelter. *Journal of California and Great Basin Anthropology* 1:2:280-294.

Report on pollen samples from Leonard Rockshelter in 1950; generally interpreted to be consistent with Antevs model, but overlooks a number of problems with pollen origin and influx.

Calhoun, Thelma and Noreen Humphreys

1960s Carson City Historical Tour. Carson City Chamber of Commerce.

Drawings and historic notes on 27 Carson City historic structures.

California State College, Stanislaus

1975 Ecoarcheological Investigations in the Sonora Biome of Western Nevada. BLM Carson City Report CR 3-543P.

Student project describing excavations at Marjoe Rockshelter, located across the road from Wagon Jack Shelter.

Call, R. E.

1884 On the Quaternary and Recent Mollusca of the Great Basin. *Bulletin of the U. S. Geological Survey* 11:1-66.

Callaghan, Eugene

1933 Brucite Deposit, Paradise Range, Nevada. Nevada Bureau of Mines Bulletin 19.

History of the discovery of minerals (tungsten, magnesite and brucite) near Gabbs.

Callaway, C., D. Duffé, B. Sayer and E. Seelinger

1977 Archaeological Resources Short Report: Walker River Indian Housing Authority Project, Mineral County, Nevada. Nevada State Museum Report 11-8.

Archaeological reconnaissance of 75 acres, locating seven sites; investigators recommended that the project be moved.

Campbell, E. W. C.

1949 Two Ancient Archaeological Sites in the Great Basin. *Science* 109:340.

Describes the Little Lake and Tonopah localities.

Campbell, E. W. C. and W. H. Campbell

1940 A Folsom Complex in the Great Basin. Masterkey 14:7-11

A vague report on their work in Tonopah ("somewhere west of the Rockies").

Campbell, E. W. C., W. H. Campbell, E. Antevs, C. A. Amsden, J. A. Barbieri and F. D. Bode

1937 The Archaeology of Pleistocene Lake Mohave. Southwest Museum Papers 11.

Early descriptive account of the Lake Mohave artifacts and similar materials in California.

Carlson, Helen S.

1974 Nevada Place Names. Reno: University of Nevada Press.

Historical information on sites in Nevada.

Carson City Chamber of Commerce

1980 Carson City, Nevada.

Discussion of Carson City and description of historic places.

Carson Valley Historical Society

1971 Settlements Along the Carson River Route.

Map issued by the Society from a survey made in 1861 by Butler Ives for the U.S. Surveyor Generals Office. Locates several ranches in the western portion of the Valley.

Carter, George F.

1958 Archaeology in the Reno Area in Relation to the Age of Man and Culture Sequence in America. Proceedings of the American Philosophical Society 102:2:174-192.

Carter attempts to assign an early Wisconsin age to surface assemblages in the Reno area by correlating alleged lake levels from Washoe Lake shorelines. Refuted by Bryan and Tuohy (1960).

1980 Earlier Than You Think. College Station: Texas A & M University Press.

Carter sticks to his 1958 guns.

Cazier, Kris A. and Dennis Thompsen

1972 Historic Paiute Site Near Geiger Grade. Nevada Archeological Survey Reporter 6:2:9-11.

Located headstone of Samuel Brown, Paiute Chief, who died in 1867.

Cheney, Louise

1965 Snowshoe Thompson's Mountain Mail Run. Real West 41:27, 71-73.

Fairly decent information on John Thompson.

Chorpenning, George

- 1874 The Case of George Chorpenning vs. the United States. A Brief History of the Facts by the Claimant, with Arguments of Counsel. Washington: M'Gill and Witherow.

Information relative to the pioneer overland mail across Nevada.

Clark, David T.

- 1978 The Archaeology and Paleoecology of One Owl House and Three Moon's Eagle: Two Multicomponent Open Habitation Sites at Marble Bluff, Pyramid Lake, Nevada. Ph.D. dissertation, Department of Anthropology, University of Pittsburgh.

These two sites at the confluence of the Truckee River and Pyramid Lake were occupied for at least 3000 years. Author suggests seasonal exploitation of lowland biotic communities of the Lower Truckee: fishing and plant collecting, supplemented by small game hunting. The archaeological investigations and analysis represent the first detailed study of open habitation sites in the lower Truckee/Pyramid Lake region.

Cleator, Cora M.

- 1913 The Significance of the Nomenclature in Douglas, Ormsby, and Storey Counties. Nevada Historical Society 3rd Biennial Report 1911-1912, pp. 185-205.

Clelow, C. William, Jr.

- 1967 Time and Space Relations of Some Great Basin Projectile Point Types. University of California Archaeological Survey Report 70:141-149.

1968a Surface Archaeology in the Black Rock Desert, Nevada. University of California Archaeological Survey Report 73:1-93.

1968b Projectile Points from Lovelock Cave. University of California Archaeological Survey Report 71:89-101.

Clelow, C. W., R. F. Heizer, and R. Berger

- 1970 An Assessment of Radiocarbon Dates for the Rose Spring Site (CA-INY-372), Inyo County, California. Contributions of the University of California Archaeological Research Facility 7:19-25.

Clelow, C. W. and Mary Rusco (eds.)

- 1973 The Grass Valley Archaeological Project: Collected Papers. Nevada Archaeological Survey Research Paper 3.

- Clewlow, C. W., Jr., H. F. Wells, and R. D. Ambro  
 1978 History and Prehistory at Grass Valley, Nevada. University of California, Los Angeles, Institute of Archaeology, Monograph 7.
- Cline, Gloria G.  
 1974 Peter Skene Ogden and the Hudson's Bay Company. Norman: University of Oklahoma Press.
- Cohen, P. and O. J. Loeltz  
 1964 Evaluation of Hydrogeology and Hydrochemistry of the Truckee Meadows Area, Washoe County, Nevada. U.S. Geological Survey Water Supply Paper 1779-S.
- Cook, Roger  
 1976 Final Report: Phase II Archaeological Investigation at 4-Alp-105 on Highway 89 Between Woodfords and Markleeville, California. Ms. on file CALTRANS, Sacramento.
- Report on excavation of Alp-105; site was 5000 sq. m., with an occupational depth of 40cm. Dated to early Martis.
- Cowan, Richard A.  
 1967a A New Rock Art Site from the Truckee Canyon. Washoe County, Nevada. Nevada Archeological Survey Reporter 10:10-14.
- Site (26Wal601), downriver from Court of Antiquity, consists of two rock art boulders containing petroglyphs and pictographs.
- 1967b Lake Margin Ecological Exploitation in the Great Basin as Demonstrated by an Analysis of Coprolites from Lovelock Cave, Nevada. University of California Archaeological Survey Report 70:21-35.
- 1972 The Archaeology of Barrel Springs Site (NV-Pe-104), Pershing County, Nevada, with Analysis of Faunal Remains by David Hurst Thomas. Special Publication of the University of California Archaeological Research Facility, Berkeley.
- Cowan, Richard A. and C. William Clewlow, Jr.  
 1968 The Archaeology of Site NV-Pe-67. University of California Archaeological Survey Report 73:195-236.
- Cressman, Luthur  
 1977 Prehistory of the Far West: Homes of Vanished Peoples. Salt Lake City: University of Utah Press.
- Cronquist, A., A.H. Holmgren, N.H. Holmgren and J.L. Reveal  
 1972 Intermountain Flora: Vascular Plants of the Intermountain West, U.S.A., Vol. 1. New York: New York Botanical Garden.
- Background to identification, plant communities and floristic zones in the Great Basin.

Cronquist, A., A. Holmgren, N. Holmgren, J. L. Reveal, and  
P. K. Holmgren

1977 Intermountain Flora. Vascular Plants of the Intermountain  
West, U.S.A., Vol. 6. New York: New York Botanical  
Society.

The Monocotyledons.

Curry, Robert R.

1969 Holocene Climatic and Glacial History of the Central  
Sierra Nevada. In United States Contributions to  
Quaternary Research. S. A. Schum and W. C. Bradley,  
eds. Geological Society of America Special  
Paper 123:1-47.

A model for Holocene climatic fluctuation through a synthesis  
of snowfall records, glacial geology, radiometric data and  
historical information. Suggests glacial climates were produced  
by increased upper atmosphere circulation, more frequent  
frontal storms, and more southerly storm tracks.

Curtis, Edward S.

1926 The North American Indian, Vol. 15. Norwood,  
Massachusetts: The Plimpton Press.

Ethnographic summaries of the Washoe and Paviotso.

Dangberg, Grace

1927 Washo Texts. University of California Publications  
in American Archaeology and Ethnology 22:391-443.

Washoetales recorded in 1919 and 1920 in Minden, Nevada.  
Dealing with Washoemythology, the tales were recorded in the  
Washoelanguage and subsequently translated.

1968 Washo Tales. Occasional Papers of the Nevada State  
Museum.

Similar to the 1927 study with the addition of an introduction  
on the prehistory and anthropology of the Washoe.

1972 Carson Valley. Minden: Carson Valley Historical Society.

Short historical sketches of places and events.

1975 Conflict on the Carson. Genoa: Carson Valley Historical  
Society.

Photograph and discussion of some of the ore mills on the  
Carson River.

Dansie, Amy

1974a An Eagle Watches Over Her. Nevada Archaeologist 2:2:10-13.

Excavation of a female teen-age burial in Carson River Basin (Do33).

1974b A Report on a Burial at 26Do33. Nevada State Museum Report 3-1.

1975a Alpine Planning Unit Archives Search, Douglas County, Nevada. Nevada State Museum Report 3-3.

1975b Downey Oil and Gas Lease, No. 79-C, Lyon County, Nevada. Nevada State Museum Report 10-2.

Archives search north-west of Churchill Butte located 26Ly8, 26Ly107-109 (prehistoric) and 26Ly17 (historic). No recommendations.

1976a Excavation in Washoe Valley. The Reynolds Site (26Wa2487). Nevada Archeological Survey Reporter 9:3:7-10.

Excavation on private land by Am Arcs and NAS revealed a hearth and wind break, several flakes, and some points.

1976b A Report of Preliminary Archaeological Reconnaissance for the Dayton Sewer Project, Lyon County, Nevada. Nevada State Museum Report 10-3.

Survey of 8.73 acres east of Dayton revealed two sites (26Ly44, 45). The sites were collected; historic sites located were not recorded.

1976c Cultural Resources Short Report: Proposed Museum Land Acquisitions, Douglas County, Nevada. Nevada State Museum Report 3-8; BLM CR 3-106P.

Survey of 305 acres south of Clear Creek in the Carson Valley located a small lithic scatter (Do228), and an isolated find (Do229). Both areas were tested, and 26Do230 and 26Do265 were collected. Recommended further excavation.

1979 Analysis of Faunal Material from Sites 4Las317 and 26Wal676. In The Archeology of U.S. 395 Right-of-Way Between Stead, Nevada and Hallelujah Junction, California. R. Elston, ed., pp. 373-402. Nevada Highway Dept. Report.

1981 Pebble Mound Complexes in Northwestern Nevada. Nevada Archaeologist 3:1:16-28.

n.d. Preliminary Archaeological Reconnaissance along ca. 6 Miles of Proposed Right-of-Way for two Alternative Sewer Interceptors Extending from the Medium Security Prison to the Existing Treatment Plant. Nevada State Museum Report 13-2.

Survey located 3 sites (Or119-121). One site, "Old Camp" was a Washoe settlement near the Stewart Indian School. Recommended further tests. Excavations eventually completed by Hattori (1978).

## Dansie, Dorothy

1972 Washoe City Project. Preliminary Report on Am-Arcs' Site 26Wal436. Nevada Archaeologist 1:6-15.

1974 Historical Archaeology of Washoe City, Nevada. Paper presented at the 14th Great Basin Anthropological Conference, Carson City, Nevada.

Project initiated as a prehistoric excavation revealed the remains of old Washoe City (1860-1870).

## Datin, Richard C.

1977 The Alvaro Evans Home. Washoe Rambler 1:3:43-44.

Short biography of Alvaro Evans and his home in Reno.

1978 A Remnant of Reno's Past: The Masonic Hall. Washoe Rambler 2:1:18-22.

History and construction detail of the building.

1979 A Hundred Years for Reno's Trinity Church. Washoe Rambler 3:2:33-35.

The present Trinity Church was constructed in 1929.

## Davis, Emma Lou

1963 The Desert Culture of the Western Great Basin: A Lifeway of Seasonal Transhumance. American Antiquity 29:2:202-212.

Seminal article translating Steward's (1938) ethnographic model into archaeological terms. Contrasts the Desert Culture (upland hunters) with Paleoindian (valley grassland hunters).

1964 An Archaeological Survey of the Mono Lake Basin and Excavations of Two Rockshelters, Mono County, California. University of California Archaeological Survey Annual Report for 1963-1964, pp. 255-353.

Survey of approximately three square miles near Montgomery Pass in Mineral County revealed 21 sites. None of the site forms are on file at the Nevada State Museum, and the locations presented in the text are equivocal. Sites include rock rings, quarries, caves, and lithic scatters.

1967 Man and Water at Pleistocene Lake Mohave. American Antiquity 32:345-353.

A discussion of the Lake Mohave material within an ecological framework.

## Davis, Emma Lou, C.W. Brott, and D.L. Weide

1969 The Western Lithic Co-Tradition. San Diego Museum of Man Papers 6.

Attempted synthesis of several suggested early lithic complexes into a comparable set of traditions.

Davis, Emma Lou and Richard Shutler, Jr.

1969 Recent Discoveries of Fluted Points in California and Nevada. Nevada State Museum Anthropological Papers 14:154-179.

A brief review of some fluted points in the west with comparisons to similar lithic complexes elsewhere. Mentions Washoe Lake.

Davis, James T.

1958 The Archaeology of Three Central Sierran Sites. Ms on file Region IV, National Park Service, U.S. Department of the Interior.

Excavation in conjunction with the Watasheamu Reservoir project. Site 4-Alp-22 believed to represent Kings Beach Component.

Davis, Jonathan O.

1975 Archeological Reconnaissance along Proposed Sanitary Sewer Alignments, Stateline to Incline Village. Ms. on file Nevada Archeological Survey, Reno.

Surveyed an area in the Crystal Bay portion of Lake Tahoe, locating one new site (26Wa2137). Noted the existence of others (26Wa38 & 39) nearby.

1976 Late Quaternary Volcanic Ash Chronology in the Lake Lahontan Area. Paper presented to the 15th Great Basin Anthropological Conference, Las Vegas, Nevada.

Several volcanic ash markers of less than 30,000 years of age occur in the Lake Lahontan area. Late Holocene (Fallon) ash is present in the deposits of Hidden Cave. 7,000 year old layers are present throughout northwestern Nevada and are found in stratigraphic context in Hidden and Last Supper caves.

1977a Report of Test Excavation of 26Wal697 (Cr-NV-03-855). Nevada Highway Department Contract RS-SU-821(5)EA#70473. BLM Carson City Report CR 3-150P.

Summary of fieldwork of an Elko/Rosegate component site with rock-lined hearth features. Suggests its a basecamp with variety of activities. Recomend nomination to the National Register and complete excavation.

1977b Nevada Radiocarbon Dates. Nevada Archeological Survey Reporter 10:4:8-9.

Radiometric data for sites 4-Las-317 and 26Wal676.

1978 Quaternary Tephrochronology of the Lake Lahontan Area, Nevada and California. Nevada Archeological Survey Research Paper 7.

1979 Geology, Environment and Resources of the Study Area. In The Archeology of U. S. 395 Right-of-Way Between

Stead, Nevada and Halleluhah Junction, California  
R. Elston, ed., pp.7-29. Nevada Highway Department  
Report.

1982 Comments on the Pebble Mound Study. Nevada  
Archaeologist 3:2:5-6.

n.d. Bits and Pieces: The Last 35,000 Years in the  
Lahontan Area. Society for American Archaeology  
Special Publication 2. In Press.

A Review of the geo-climatic data pertaining to the archaeology  
of the western Great Basin. Suggests a moister mid-Holocene  
environment in the Humboldt-Carson Sink that was interrupted  
by the diversion of the Walker River in the late Holocene.

Davis, Jonathan O. Darryl Duffe, and Barbara Sayer  
1977 Cultural Resources Short Report, Spooner Lake Dam  
Engineering Tests Archeological Reconnaissance, Douglas  
County, Nevada. Nevada State Museum Report 3-10.

Excavation on the west shore of Spooner Lake found several  
artifacts. More tests were recommended, although the  
sites were not impacted by the project.

Davis, Jonathan O. and Robert G. Elston  
1972 New Stratigraphic Evidence of Late Quaternary Climatic  
Change in Northwestern Nevada. In Great Basin Cultural  
Ecology: A Symposium. D. Fowler, ed. Desert Research  
Institute Publications in the Social Sciences 8:43-57.

Data from the Towne and Thompson sites at the Steamboat locality.

Davis, Jonathan O., Robert G. Elston, and Gail Townsend  
1974 Preliminary Archeological Reconnaissance of Fallen  
Leaf Lake, Eldorado National Forest, California. Report  
to the U. S. Forest Service, California Region,  
San Francisco.

1976 Coastal Geomorphology of the South Shore of Lake Tahoe.  
In Holocene Environmental Change in the Great Basin.  
R. G. Elston, ed. Nevada Archeological Survey Research  
Paper 6:40-65.

Davis, Jonathan O. and James P. Green  
1976 Tephrochronology and Lithic Technology at Hidden Cave  
(NV-Ch-16), Churchill County, Nevada. Paper presented  
at the 15th Great Basin Anthropological Conference,  
Las Vegas, Nevada.

Data on cultural materials from the Mud Flow Gravels and  
their technological significance. Discusses age of overlying  
volcanic ash and its relationship with the lithic materials.

Davis, Jonathan O. and Mary Rusco

- 1974 Archaeological Reconnaissance of Proposed Sites for a Gas Storage Facility of Southwestern Gas Corporation. Lyon County, Nevada. Nevada State Museum Report 10-1.

Archaeological reconnaissance in the Carson River Basin covered an area of 300 acres east of Dayton. Six sites (26Ly104-109) were located. Several were collected and one was tested with negative results. Diagnostic artifacts suggest the area was occupied from 3500-600 years ago.

Davis, Wilbur A.

- 1965 Computer Analysis of Aboriginal Cordage Data. Paper presented at the 30th Meeting of the Society for American Archaeology, Urbana, Illinois.

Discusses research by Davis and Orr near the Grimes Caves.

- 1966a Washo Archaeology: Final Report to the National Science Foundation.

Presents initial survey data on extensive area in the eastern Sierra and Carson Valley (Truckee Meadows and Washoe Valley). Presents the Washo ethnographic model to generate test implications against the archaeological data in the area.

- 1966b Theoretical Problems in Western Prehistory. In Current Status of Anthropological Research in the Great Basin, 1964. W. d'Azevedo, ed. Desert Research Institute Social Sciences and Humanities Publication 1:147-165.

Focusses on Great Basin-Columbia Plateau cultural relationships. Disagrees with Jennings view of a recent divergence of the Plateau groups, preferring instead the concept of an early, clear-cut divergence between the two.

d'Azevedo, Warren L.

- 1963 The Washo Indians of California and Nevada. University of Utah Anthropological Papers 67.

Major source on Washo research to date. Introduction provides concise overview of research in a historical perspective. Contains a complete annotated bibliography.

- 1966 Comments on Tribal Distribution. In The Current Status Of Anthropological Research in the Great Basin, 1964. W. d'Azevedo, ed. Desert Research Institute Social Sciences and Humanities Publication 1:315-334.

Comments on the reliability and use of ethnographic data; the reliability of informants and their relative usefulness. Also offers personal view of data on tribal boundaries of Washo & Paiute.

d'Azevedo, Warren L.

- 1978 Ethnohistorical Notes on Eagle Valley, Carson City, Nevada. Appendix 2, In The Archaeology of the Stewart Dump Site (26Or121) by Eugene Hattori. Nevada State Museum Report 13-2:69-75.

Data on 10 areas of particular importance to the Washoe in Eagle Valley, based on interviews conducted primarily in 1955 and updated in 1977.

n.d. Washo Place Names. Ms on file, Nevada State Museum.

Major and most complete source on Washoelocational data.

d'Azevedo, Warren L. and James A. Price

- 1963 An Annotated Bibliography of Washo Sources. University of Utah Anthropological Papers 67:153-201.

Excellent Washoebibliography, including unpublished sources.

DeBraga, Marcia

- 1964 Dig No Graves. Sparks: Western Printing and Publishing.

Deetz, James

- 1970 Archeology as a Social Science. Washington, D.C.:  
Bulletins of the American Anthropological Society  
3:115-125.

Presents the tripartite goals of archaeology: chronology; life-ways; culture process.

DeQuille, Dan (William Wright)

- 1876 History of the Big Bonanza. Hartford, Connecticut:  
American Publishing Co.

1947 The Big Bonanza. New York: Knopf.

1963 Washoe Rambles. Los Angeles: Westernlore Press.

An 1861 firsthand account of geography and ethnographic data in the Carson Desert and Stillwater Range.

Dixon, Richard L.

- 1971 The Geology and Ore Deposits of the Red Canyon Mining District, Douglas County, Nevada. Masters Thesis, University of Nevada, Reno.

Description of the Lucky Bill Mine.

Dodge, Frederick

- 1860 Report to the Secretary of the Interior: Indians of the Western Part of the Utah Territory. Pp. 741-745. Senate Executive Document, No. 2, Part 1. 36th Congress, 1st Session. Congressional Serial No. 1023. Washington, D.C.

Downs, James F.

1961 Washo Religion. University of California Anthropological  
Records 16:9.

Examination of Washoereligious beliefs and ritual.

1966 The Two Worlds of the Washo. New York: Holt, Rinehart,  
and Winston.

Summary of Washoe from prehistoric times to the present.

Dunbar, Helene R.

1975 Archaeological Site Report ArNv-030-14 Open Aboriginal  
Camp. Ms. on file BLM Carson City.

No report number or NSM site number for this site near Sand Springs.

1976a Archaeological Survey, Sand Springs Pony Express Station  
Excavation (HS-03-6). BLM Carson City Report  
CR 3-88P.

Archaeological reconnaissance of one square mile north of the  
Sand Springs Pony Express Station revealed 39 archaeological  
sites (26Ch428-467).

1976b Cultural Resources Report on an Archaeological Survey  
for Public Sale N-12653. BLM Carson City  
Report CR 3-64P.

Archaeological reconnaissance of the Tule Peak area revealed  
one site (26Wa2671).

1976c Archaeological Report on the Mount Rose Fire Station.  
BLM Carson City Report CR 3-73P. NSM Report 16-20.

1976d CR Report: Cold Springs Pony Express Station Excavations  
CRNv-03-167. BLM Carson City Report CR 3-87P.

Survey of 720 acres in the western foothills of the Desatoyas  
overlooking Edwards Creek Valley revealed 49 archaeological  
sites (26Ch378-427).

1976e BLM/USFS Survey: East Carson Boat Site #1.  
BLM Carson City Report CR 3-82P.

Dunbar, Helene and Reb Bennett

1976 Steamboat Springs Geothermal, Phillips Petroleum  
NV-030-24 (Wa2409). BLM Carson City Report CR 3-44P.

Dunbar, Helene and Rick Brigham

1976a Archaeological Survey: Rockblind Spring Development  
Lyon County, Nevada. BLM Carson City Report  
CR 3-56P; NSM 10-15.

Archaeological reconnaissance of proposed spring development surveyed 15 acres in the Virginia Range, locating two sites (26Ly236-237). The rock wall and quarry may be eligible for nomination to the National Register. Clearance not recommended.

1976b Archaeological Clearance: Stone Spring Brush Thinning Project Lyon County, Nevada. BLM Carson City Report CR 3-55P; NSM 10-19.

Archaeological reconnaissance of 60 acres in the Pine Nut Mountains revealed 4 isolated flakes (26Ly223) which were collected.

1976c Archaeological Survey: Slater's Mine Meadow Fence Douglas County, Nevada. BLM Carson City Report CR 3-70P; NSM 3-7.

Archaeological reconnaissance of 50 acres in the Walker River basin revealed three sites (26Do231-233). Clearance recommended.

Dunbar, Helene and R. Buder

1976 Archaeological Survey for Proposed Mineral-Material Sale to Eagle Valley Construction Company Carson City/Ormsby County, Nevada. BLM Carson City Report CR 3-52P; NSM 13-6.

Archaeological reconnaissance on material-mineral sale over 10 acres found no sites. Site 26Orl27 was located adjacent to the proposed sale area. Site was "salvaged".

Dunbar, Helene, R. Buder, D. Mason and M. McColister

1975 Archaeological Clearance: Rhodes Salt Marsh Mineral County, Nevada. BLM Carson City Report CR 3-30P; NSM 11-4.

Archaeological reconnaissance of 800 acres near Rhodes Salt Marsh revealed some historic ruins (26Mnl39). Clearance recommended with the stipulation of site protection.

Dunbar, Helene and Robert Gilbert

1975 Archaeological Survey: Proposed Zlokovitch Mineral Sale Carson City/Ormsby County. BLM Carson City Report CR 3-29P; NSM 13-5.

Archaeological reconnaissance of 15 acres revealed one small lithic scatter (26Orl23). Site was disturbed by historic mining; it was collected and clearance was recommended.

Dunbar, Helene and R. Nelson

1976 Archaeological Survey: Aldrich Grade Fenceline Extension Mineral County, Nevada. BLM Carson City Report CR 3-63P; NSM 11-14.

Archaeological reconnaissance of 3 acres revealed 4 lithic scatters (26Mn141-144). Clearance was recommended with the stipulation of on-site observation by a qualified archaeologist.

Dunbar, Helene and Nolan W. Roberts

1976 Archaeological Survey: Bureau Motion Classification for Proposed Private Land Exchange, Indian Hill Area. Douglas County, Nevada. BLM Carson City Report CR 3-57P; NSM 3-4.

Archaeological reconnaissance of proposed land exchange. Surveyed 285 acres locating one isolated find (26Do227). Clearance recommended.

Earl, Phillip I.

1978 A House to Offer Our Prayers. Washoe Rambler 2:2:47-54.

A brief history of Reno's Jewish community and the building of Temple Emanu El.

Eaton, J. E.

1941 The Pleistocene in California. California State Division of Mines Bulletin 118:2:203-206.

Edaburn, Sharon

1979 Historic Engineering Sites - Churchill County, Nevada. Ms. on file Churchill County Museum and Archive, Fallon Nevada.

1981 The Industrial Archaeology Segment of the Nevada State Historic Preservation Plan. M. Lyneis, ed. Carson City: State Office of Historic Preservation.

EDAW, Inc.

1975 Washoe Lake State Park Master Plan. Ms on file Nevada State Park Headquarters, Reno.

Recommends the park include an archaeological interpretative center; protection and acquisition of all lands within the park boundaries; and an intensive archaeological survey of any areas planned for future development. Considers the entire Washoe Valley an important archaeological resource.

Egan, Ferol

1972 Sand in a Whirlwind. The Paiute Indian War of 1860. New York: Doubleday.

The complete account of the Paiute Indian Wars.

Elliot, Russel R.

1965 Nevada's 20th Century Mining Boom: Tonopah-Goldfield-Ely. Reno: University of Nevada Press.

The effect of 20th century development on the history of the Carson City District.

Elliot, Russell R.

1973 History of Nevada. Lincoln: University of Nebraska Press.

One of the finest recent histories of Nevada.

Elsasser, Albert B.

1957 Report of an Archaeological Survey of Three Reservoir Sites of the Washoe Project, Lahontan Basin, California and Nevada. Ms. on file Region IV, National Park Service, U.S. Department of Interior, San Francisco.

The survey, part of the Watasheamu Reservoir project, covers the east fork of the Carson River, and portions of Alpine County within the Carson City District. Located 6 sites (4-Alp-17 to 22).

1960 The Archaeology of the Sierra Nevada in California and Nevada. University of California Archaeological Survey Report 51.

Expansion of Heizer and Elsasser's (1953) survey with the addition of numerous sites in the central Sierra. Deals with the archaeology and settlement pattern of Martis and Kings Beach.

Elsasser, Albert B. and Eduardo Contreras

1958 Modern Petrography in Central California and Western Nevada. University of California Archaeological Survey Report 41:12-18.

Discusses recent "rock art" near Genoa (26Do22).

Elsasser, Albert B. and E. R. Prince

1961 The Archaeology of Eastgate Cave. University of California Anthropological Records 20:4:138-149.

Eastgate was a cache cave, used exclusively in the prehistoric period. Discovered a shaman's kit and buried bundle of animal snares among other items.

Elston, Robert G.

1967a Archeological Survey in the Area of Verdi, Nevada. Nevada Archeological Survey Reporter 1:2:3-5.

Survey revealed two rock art sites (26Wa77 & 1406) and a bedrock mortar (26Wal407).

1967b Archeological Survey of the Proposed Dam and Reservoir Project Area, Verdi, Washoe County Nevada. BLM Carson City Report CR 3-439P.

Description of survey and brief account of sites discovered (26Wal406-1412, 105 & 77). Much of the area is destroyed. Recommends test of 26Wal407, 1409-1411.

1969 Investigation of Washo Settlement Patterns. Nevada Archeological Survey Reporter 3:6:7-8.

Proposal to study the land use and settlement pattern of the ethnographic Washoe from an ecological perspective. Applies Fitting's (1966) and Odum's (1959) edge effect/ecotone hypothesis.

Elston, Robert G.

1970 A Test Excavation at the Dangberg Hot Spring Site (26Dol), Douglas County, Nevada. Nevada Archeological Survey Reporter 4:4:3-5.

Brief discussion of archaeological materials from 26Dol and how they fit into the Great Basin chronological and cultural sequences.

1971 A Contribution to Washo Archeology. Nevada Archeological Survey Research Paper 2.

Primary source on the archaeology of the eastern Sierra dealing with Martis-Kings Beach-Washoecontinuum questions. Reminiscent of Davis (1966a).

1975a Highway Archeology in the Territory of the Northern Washo, Summer 1975. Nevada Archeological Survey Reporter 8:2:18-23.

Initial report on 26Wal676 (Bordertown site) containing numerous features, complex stratigraphy, and dating to Martis and Kings Beach/Washoeperiod.

1975b A Proposal for Completion of Work Necessary to Mitigate the Impacts of Highway Construction on Archaeological Sites Between the California-Nevada Border and Hallelujah Junction. Proposal to CALTRANS, December 5, 1975. BLM Carson City Report CR 3-417P.

Proposal to excavate 4-Las-317 (551) and 26Wal676.

1975c Assessment of Impacts on Archeological Sites by Donner Springs, Unit 2. BLM Carson City Report CR 3-418P.

Resurvey of portion of an area covered in Elston and Turner (1968). Site 26Wal491, a boulder mortar, has been removed as fill, and dumped on site 26Wal492. Both sites have, in effect, been removed as resources. No clearance recommended.

1976a Holocene Environmental Change in the Great Basin. Nevada Archeological Survey Research Paper 6.

Editors preface states that Antevs' climatic model still serves archaeologists, though there are several open questions which preclude correlation of Antevs' stages and their effects on Holocene man.

1976b NAS # 181-N, Preliminary Archaeological Reconnaissance of the Deadman's Creek Area, Washoe Lake State Park, Nevada State Park System & Desert Research Institute Contract Agreement, No. 14. BLM Carson City Report CR 3-191P.

Survey of four arbitrarily chosen sampling units. No excavation or collection. The survey revealed 7 previously unrecorded archaeological sites and two historic features (26Wa2158-2164 & 2501). All sites would be affected by the proposed recreation site.

Elston, Robert G.

1976c Preliminary Report on the Proposed Reno-Sparks Joint Water Pollution Control Plant Expansion. BLM Carson City Report CR 3-435P.

Survey revealed 67 small sites and 3 large sites (26Wa2200-2236) in Spanish Springs Valley. Most activities revolved around hunting and tool repair. Recommended avoidance of small sites and collections and tests of the large sites.

1976d Archeological Reconnaissance of Sunrise Basin Timber Sale Area, Toiyabe National Forest. BLM Carson City Report CR 3-415P.

1976e Archeological and Historical Reconnaissance of the Proposed Panther Valley Sewer Line. BLM Carson City Report CR 3-416P.

Archive search and field reconnaissance of an area from Panther Valley exit on north Virginia Street to I-395, then to Golden Valley Road. Seven archaeological sites (26Wa1465 to 1471) were located. Recommendation: avoidance.

1976f Preliminary Archeological Reconnaissance of U.S. 50 from Junction U.S. 95A, East to Main Street in Fallon. Nevada Highway Department Report EA 70697.

Negative report: archive search and pedestrian survey revealed no cultural resources in Fallon.

1976g Preliminary Archeological Reconnaissance of the Proposed Spooner Lake Day-Use Area, Lake Tahoe. Ms. on file Nevada Archeological Survey, Reno.

Review of data for 26Do38 and discovery of 26Do40 & 41. Do38 was deemed eligible for the Register. Do 40 & 41 did not contain sufficient data for evaluation. It was noted that, while the sites will receive no direct impacts from the Day Use Facility, they will receive sufficient secondary impacts to virtually obliterate the remains. Further work was recommended at Do40 & 41.

1977a A Preliminary Archeological Reconnaissance for Clearance on the Proposed Land Acquisition by the Reno International Airport. BLM Carson City Report CR 3-431P.

Survey revealed one prehistoric site (26Wa1701) and some historic debris. Mitigation completed.

Elston, Robert G.

1977b Report on Cultural Resources Reconnaissance of Geophysical Instruments Sites Near Virginia City.  
BLM Carson City Report CR 3-429P.

Survey of a 30-50 mile area near Virginia City revealed two archaeological sites: Site A-a small lithic scatter associated with a Rosegate point; Site B-consists of an isolated Pinto point and a hammerstone. Clearance recommended.

1977c Preliminary Archaeological Reconnaissance of 11 Drill Sites, Allen Springs, Churchill County, Nevada.  
BLM Carson City Report CR 3-405P.

Archaeological reconnaissance revealed two previously recorded sites (26Ch74 & 86). Clearance unresolved.

1978 Preliminary Archaeological Reconnaissance of Dayton State Park. BLM Carson City Report CR 3-424P.

Reconnaissance of 180 acres near the border of Washoe-Paiute territory revealed 15 archaeological and historic sites and 14 isolated finds (26Ly112-126, 3, 11, & 19). Recommends steps be taken to prevent negative impact to these resources prior to further alteration.

1979a The Archeology of U.S. 395 Right-of-Way Between Stead, Nevada and Hallelujah Junction, California. Report to Nevada Highway Department and CALTRANS, Sacramento.

Major synthesis of the area. Contains the results of surface collection, tests and mitigation of several sites which indicate an early Holocene prehistoric occupation of the region which persists into the ethnographic Washoe period. Recommends that the Bordertown site (26Wal676) and 4-Las-317 be nominated to the Register, and that most of the sites in the corridor be nominated in aggregate. Feels that the effects of the Highway have been sufficiently mitigated. Appendices of flora, fauna and history of the area.

1979b A Report to the Washo Tribe Concerning Cultural Resources at Saratoga (Dangberg) Hot Springs and Adjacent Areas. Ms on file Nevada Archeological Survey, Reno.

Reviews previous excavations at 26Dol by Shutler (1962-63), and Tuohy, Elston and Jerrems in 1970. New data concerns the evidence of house floors. Occupation of the site presumed from 6000 years ago. Martis/Elko period contains the most abundant remains. Concurs with d'Azevedo (nd) that it was the site of a large Washoewinter village--but curiously, the site contains no late points. Recommends nomination to the National Register.

Elston, Robert G.

- 1979c Archeological Reconnaissance of a Proposed Waste Treatment Settling Pond at the Lahontan National Fish Hatchery. Ms. on file Nevada Archeological Survey, Reno.

Brief history of Carson Valley. Mentions 26Do33.

- 1979d Archive Research for Cultural Resources in Four Potential Relocation Areas for the Cannon International Airport. Ms. on file Nevada Archeological Survey, Reno.

An evaluation of Spanish Springs Valley, Warm Springs Valley, Dodge Flat, and Alkali Flat as potential sites for the Cannon Airport. Data judged insufficient for evaluation of the potential impacts in a quantitative fashion, however they did suggest the greatest impact would be to Spanish Springs, Dodge Flat, Warm Springs, and Alkali Flat, in that order. Avoidance recommended.

- n.d. Good Times, Hard Times: Prehistoric Culture Change in the Western Great Basin. Society for American Archaeology Special Publication 2. In press.

Takes to task the Numic expansion model and the cultural ecology model by presenting a new model in which culture change is driven by population density and climatic variation.

Elston, Robert G. and Cameron Covington

- 1976 Intensive Examination of Site 26Wa2065. Project No. M-476-1 70676-0, Widening of Glendale Road. Ms. on file Nevada Archeological Survey, Reno.

Site of an old Washoe settlement east of Reno mentioned by d'Azevedo (nd). Site was tested with numerous sub-surface features. Remnant seems to be part of a much larger winter village. Excavation recommended to delineate group size and social structure within the area.

Elston, Robert G. and S. A. Cupples

- 1979 Archeological Reconnaissance of Five Proposed Geothermal Well Sites, Dixie Valley, Nevada. BLM Carson City Report CR 3-406P.

Archaeological reconnaissance of approximately 16 acres revealed one isolated find. Clearance recommended.

Elston, Robert G. and Jonathan O. Davis

- 1972 An Archeological Investigation of the Steamboat Springs Locality, Washoe County, Nevada. Nevada Archeological Survey Reporter 6:1:9-14.

A short interim report on the excavations, description of stratigraphy, artifacts and review of radiometric data from the Thompson and Towne sites, among others.

Elston, Robert G., Jonathan O. Davis, Alan Leventhal and Cameron Covington

1977 The Archeology of the Tahoe Reach of the Truckee River. Ms. on file Nevada Archeological Survey, Reno.

Details the mitigation of several sites along the Truckee River. NAS report submitted to the Tahoe-Truckee Sanitation Agency. Includes Leventhal's revision of Thomas (1971a) projectile point key--modifying it for Martis series points.

Elston, Robert G. and D. Lemler

1973 1972 Nevada Archeological Field School. Nevada Archeological Survey Reporter 7:1:15-16.

Brief mention of Thompson and Towne sites.

Elston, Robert G. and Mary Rusco

1975 Review of Tentative Subdivision, Virginia City Highlands No. 2. Storey County, Nevada. BLM Carson City Report CR 3-434P; NSM 15-2.

Literature review and survey of 32 square miles in the Virginia Range revealed 20 sites (26St1, 2, 6, 8, 10, 12, 13, 15-17, & 101-105). Recommendations for prevention or mitigation of impacts.

Elston, Robert and Gail Townsend

1974a A Preliminary Archeological Reconnaissance of the Silver Basin Area. Ms. on file Nevada Archeological Survey, Reno.

1974b An Intensive Archeological Investigation of Sites in the U.S. 395 Right-of-Way Between Stead Interchange and the State Line. BLM Carson City Report CR 3-8P.

Report of test excavations and surface collection at 4 sites in Anderson Pass area (26Wal685-1687, & 2688).

1975 Intensive Evaluation of the Evans Site (26Wal676). BLM Carson City Report CR 3-417P.

Elston, Robert G. and David Turner

1968 An Archeological Reconnaissance of the Southern Truckee Meadows. Washoe County, Nevada. Reno: Desert Research Institute Publication.

Initial description of 26Wal413-1419, 1441-1452, 1456, 1480-1482, 1486-1489, & 1491-1495, plus synthesis of survey data.

Ewers, John C. (ed.)

1959 Adventures of Zenas Leonard, Fur Trader. Norman, Oklahoma: University of Oklahoma Press.

Fairfield, Asa M.

- 1916 Fairfield's Pioneer History of Lassen County, California.  
San Francisco: H.S. Crocker Co.

Account of the history of northeast California and northwest Nevada. No discussion of historic material from Long Valley.

Farquhar, Francis P.

- 1969 History of the Sierra Nevada. Berkeley: University of California Press.

Discusses the itinerary of early travelers who passed through the Carson City District.

Farris and Smith

- 1882 Illustrated History of Plumas, Lassen & Sierra Counties, with California from 1513 to 1850. San Francisco: Farris and Smith.

History of northeastern California with early geographic information on Long Valley and data on Summit House.

Fautin, R. W.

- 1946 Biotic Communities fo the Northern Desert Shrub. Ecological Monographs 16:251-310.

Fay, George E. (ed.)

- 1971 Charters, Constitutions and By-Laws of the Indian Tribes of North America. Part XI & XII: The Basin-Plateau University of Northern Colorado Occasional Publications in Anthropology and Ethnology 13.

Contains data on Washoe and Northern Paiute reservations and colonies.

Fenenga, Franklin

- 1975 A Washo Pine Nut Camp in Douglas County, Nevada. Journal of California Anthropology 2:205-213.

Discussion of the 1939 discovery of Indian implements in a contemporary Washoe pine nut camp (26D010), and describes the weave structure of baskets used for gathering nuts.

Fenenga, Franklin and Francis A. Riddell

- 1949 Excavation of Tommy Tucker Cave, Lassen County, California. American Antiquity 3:203-214.

Brief report on cave excavation and comment on Northern Paiute petroglyphs.

Fike, Richard

- 1974 Staff Report Archaeological Evaluation of the Hallelujah Fire Rehabilitation. BLM Carson City Report CR 3-20P Addendum.

Report on damage to 55 archaeological sites from the reseeding

of the Hallelujah Junction fire area. Sites were flagged and evaluated. The failure of several institutions to properly record the area on previous surveys was noted. Recommends removal of site markers to decrease public access.

Forbes, Jack D.

1967 Nevada Indians Speak. Reno: Univeristy of Nevada Press.

Anthology of speeches and comments by Paiute, Shoshone, and Washoe from the 1820s to the 1960s. Discusses Indian-White relations and the Pyramid Lake land controversey.

Forbes, Jack D. , Don L. McCaughey and Brooke D. Mordy

1966 Significant Nevada Historical Sites. Reno: Desert Research Institute Center for Western North American Indian Studies.

Selected historical sites recommended for protection and development. Sites in the Carson City District include: Carson City, Como, Ludwig, Buckskin, Dayton, Olinghouse and Rawhide.

Foster, John W.

1979 Archaeological Reconnaissance of THP 4-79-172/Al-1. Ms. on file California State College, Stanislaus.

Survey revealed one site (4-Alp-119) with two loci. One loci contained historic debris, the other a historic cemetery. The site was determined to be of high significance. Avoidance recommended.

Fowler, Catherine S.

1969 The Black Springs Site (26Wal200), Washoe County, Nevada. Nevada State Museum Anthropological Papers 14:1-25.

Stratified site located on northeast slope of Peavine Mountain excavated by UNR in 1966. Typological estimates indicate a 2500 year occupation. Possible function: flora collection.

1970 Great Basin Anthropology. A Bibliography. Desert Research Institute Social Sciences and Humanities Publication 5.

1972 Some Ecological Clues to Proto-Numic Homelands. In Great Basin Cultural Ecology: A Symposium. D.D. Fowler, ed. Desert Research Institute Social Science and Humanities Publication 8:105-122.

1977 Ethnography and Great Basin Prehistory. In Models and Great Basin Prehistory: A Symposium. D.D. Fowler, ed. Desert Research Institute Social Science and Humanities Publication 12:11-48.

A historical review of the use of ethnographic models and analogies in the Great Basin.

n.d. Annotated Field Notes of Willard Z. Park. Ms. in preparation.

## Lacustrine -adapted tribes.

- Fowler, Catherine, Robert Elston, Marybeth Hamby and Joann Nevers  
1981 An Ethnohistoric and Ethnoarchaeological Study of a Washoe Cemetery at Camp Richardson, Lake Tahoe. Ms. on file Intermountain Research, Silver City, Nevada.
- Fowler, Don D.  
1966 Great Basin Social Organization. In The Current Status of Anthropological Research in the Great Basin, 1964. W. d'Azevedo, ed. Desert Research Institute Social Sciences and Humanities Publications 1:57-74.  
1975 Report on Preliminary Cultural Resources Reconnaissance of the Proposed Salt Wells Basin Geothermal Project, Churchill County, Nevada. BLM Carson City Report CR 3-33P.
- Fowler, Don D. and Catherine S. Fowler  
1971 Anthropology of the Numa: John Wesley Powell's Manuscripts on the Numic Peoples of Western North America, 1868-1880. Smithsonian Contributions to Anthropology 14.
- Frank, Alan R.  
1974 A Functional Analysis of Certain Chipped Stone Artifacts from Steamboat Springs, Nevada. M.A. thesis, Department of Anthropology, University of Nevada, Reno.  
Analysis of bifaces to determine the function: preforms or tools. Tests Elston's (1971) suggestion that they are preforms, against Heizer and Elsasser's (1953) suggestion that they are tools. Based on the 372 preforms from the Towne site, Elston appears to be correct.
- Freed, Stanley A.  
1960 Changing Washo Kinship. University of California Anthropological Records 14:6:349-418.  
Reprint of Freed's dissertation. A detailed study of Washoe kinship behavior and changing terminology. Outstanding.  
1963 A Reconstruction of Aboriginal Washo Social Organization. University of Utah Anthropological Papers 67:8-24.  
Reconstruction of Washoe social structure based on informant interviews and previous research.  
1966 Washo Habitation Sites in the Lake Tahoe Area. University of California Archaeological Survey Report 66:73-83.  
Description of sites bordering Lake Tahoe from informant interviews; also contains a summary of Washoe lifeways and ethnographic notes on fishing, gathering and seasonal round.
- Freed, Stanley and R. S. Freed  
1963a The Persistence of Aboriginal Ceremonies Among the Washo Indians. University of Utah Anthropological Papers 67:25-40.  
Reconstruction of various Washoe ceremonies based on informant questionnaires and previous research.

Freed, Stanley, and Ruth S. Freed

- 1963b A Configuration of Aboriginal Washo Culture. University of Utah Anthropological Paper 67:41-56.

Description of the characteristics of supernatural powers in Washo culture based on reconstruction of aboriginal life.

- 1968 Mohave and Washo Role Behavior. American Museum of Natural History Novitates 2330.

Frémont, John C.

- 1845 Report of the Exploring Expedition to the Rocky Mountains in the Year 1842, and to Oregon and North California in the Years 1843-1844. Senate of the United States and House of Representatives, Senate Executive Document, No. 174. 28th Congress, 2nd Session.

Descriptions of the early geography and ethnohistory of the region; marks Frémont's trail into western Nevada.

- 1887 Memoirs of My Life, Including in the Narrative, Five Journeys of the Western Exploration During the Years 1842-1849, 1853-1854. 2 Volumes. Chicago: Belford, Clarke.

Descriptions of Shoshone, Paiute, Washoe, history, trappers, and trading in the Great Basin.

Fry, G. F. and J. M. Adovasio

- 1976 Human Adaptation During the Altithermal in the Eastern Great Basin. In Holocene Environmental Change in the Great Basin. R. Elston, ed. Nevada Archeological Survey Research Paper 6:66-74.

Galloway, John D.

- 1947 Early Engineering Work Contributory to the Comstock. University of Nevada Bulletin, Geology and Mining Series 45.

Mentions site 26Ly66.

Gault, James

- 1978 The History of the Orr Ditch and Water Company As I Remember While Henry Orr and Myself Was Digging the Orr Ditch. Washoe Rambler 2:2:61-66.

Gianella, Vincent P.

- 1936 Geology of the Silver City District and the Southern Portion of the Comstock Lode, Nevada. Nevada Bureau of Mines and Geology Bulletin 29.

- 1959 Where Frémont Crossed the Sierra in 1844. Sierra Club Bulletin 44:7:54-63

Excellent discussion of Frémont's entry into the Sierra near Markleeville.

- Gianella, Vincent P.  
1960 The Site of Williams Station, Nevada. Nevada Historical Society Quarterly 3:4:5-12.

Williams Station is the spot at which Paiutes killed five white men in retribution for kidnapping, thus precipitating the Pyramid Lake Indian War.

- Gilbert, Bill  
1973 The Trailblazers. New York: Time-Life Books.

Description of early exploration in the Far West.

- Gilmore, Harry W.  
1953 Hunting Habits of the Early Nevada Paiute. American Anthropologist 55:1:148-153.

Description of game drives and rock-wall corral fences.

- Glasscock, C. B.  
1932 Gold in Them Hills. Indianapolis: Bobbs-Merril.

History on Nevada's 20th century mining boom.

- Godecke, Frieda Cordes  
1973 Remembrances of Centerville (Nevada). Private Printing.

Book has little substance. Map locates residences of: Cordes, Thran, Berning, Wennhold (later Cagliari), Rieman (later Park), Lloyd Store, Buel, Hiehaus, Pete and Charles Anderson, Springmeyer and Heise. Also locates saloon (later cheese factory), blacksmith shop, Centerville (?) school and Centerville Pond. A short section on Indians (pp. 27-29).

- Goodyear, Albert C.  
1977 Research Design in Highway Archaeology: an example from South Carolina. In Conservation Archaeology. A Guide For CRM Studies. M. B. Schiffer and G. J. Gumerman, eds., pp.157-166. New York: Academic Press.

- Gordon, G. B.  
1919 The Richard Waln Meirs Collection. The Museum Journal 10:1 & 2:26-28.

Description of the Washø basketry collection at University of Pennsylvania.

- Grayson, Donald K.  
1976 The Nightfire Island Avifauna and the Altithermal. Nevada Archeological Survey Research Paper 6:74-103.  
  
1978 Reconstructing Mammalian Communities: A Discussion of Shotwell's Method of Paleoecological Analysis. Paleobiology 4:1:77-81.

Green, James P.

- 1975 McKean and Little Lake Technology: A Problem in Projectile Point Typology in the Great Basin of North America. In Lithic Technology. E. Swanson, ed., pp. 159-171. Chicago: Aldine.

Brief overview of current problems with the Pinto/Humboldt projectile point typology. Makes comparisons between the Little Lake series and points from several other sites, including some in the Humboldt- Carson sink.

- 1976 Washo Cultural Geography. Paper presented at the 15th Great Basin Anthropological Conference, Las Vegas.

Attempted reconstruction of Washo cognitive view of their world. Ceremonial community patterns indicate a correspondence between summer settlement around Lake Tahoe. Settlement-subsistence patterns suggest two main ceremonial periods in the yearly cycle. Feels the focal point of the Washo world is in the Carson Valley, rather than Lake Tahoe as suggested by others.

Green, Stanton W.

- 1980 Toward a General Model of Agricultural Systems. In Advances in Archaeological Method and Theory. M. B. Schiffer, ed., pp. 311-356. New York: Academic Press.

Griffin, Frank

- 1974 Views from the Valley. Ms. on file Special Collections Getchell Library, University of Nevada, Reno.

Early accounts of Douglas County and Carson Valley.

Grosscup, Gordon L.

- 1956 The Archaeology of the Carson Sink Area. University of California Archaeological Survey Report 33:58-64.

Discussion of the excavation of Hidden Cave and several surrounding sites in the Carson Sink.

- 1957 A Bibliography of Nevada Archaeology. University of California Archaeological Survey Report 36.

- 1958 Radiocarbon Dates From Nevada of Archaeological Interest. University of California Archaeological Survey Report 44:17-29.

Primarily sites in the Humboldt-Carson Sink.

- 1960 The Culture History of Lovelock Cave, Nevada. University of California Archaeological Survey Report 52:1-72.

Reworking of Grosscup's M.A. thesis, which was a study of the MAI-HF collections from Lovelock Cave, concluding the site was abandoned at A.D. 900, and that a 800 year occupational hiatus occurred between the prehistoric Lovelock and the Numic.

Grosscup, Gordon L.

- 1974 Northern Paiute Archaeology. In Paiute Indians, Vol. 4. D.A. Horr, ed., pp.9-52. New York: Garland Press.

Complete summary to date (+1960) of archaeological sites within Paiute territory--basically a temporal presentation.

- n.d. The Archaeology of the Carson Sink Basin. Ms. in possession of author. Wayne State University, Indiana.

Mentions most sites from 26Ch1-93.

Gudde, Edwin G. (ed.)

- 1962 Chronicle of the West; the Conquest of California, Discovery of Gold, and Mormon Settlement as Reflected in Henry William Bigler's Diaries. Berkeley: University of California Press.

Discusses Shoshone on the Snake River Idaho and other experiences with the Indians.

- 1969 California Place Names. Berkeley: University of California Press.

The origin and some history of places in Markleville and Long Valley.

Hagerty, Donald J.

- 1969 Archaeological Survey of the Pine Nut Mountains, Nevada. Nevada Archeological Survey Reporter 3:5:4.

Brief note on hypotheses behind Hagerty's thesis: archaeology will reflect ecology.

- 1970a A Hunting Blind Site in the Pine Nut Mountains. Nevada Archeological Survey Reporter 4:5:5-7.

Description of rock hunting blind and two shallow pits in a talus slope at an elevation of 7100ft. No diagnostic artifacts.

- 1970b Archaeology and Ecology in the Pine Nut Mountains, Nevada. M. A. thesis, University of California, Davis.

A stratified random sample of the Pine Nut Mountains, including definition of the present ecosystems operant by observation and trapping. Interpretations based on cautious use of ethnographic analogy. Conclusion: diverse ecosystem led to diverse exploitation pattern.

Hague, Arnold  
1877 West Humboldt Region, Section V. Geological Exploration  
of the 40th Parallel 2:713-750.

Hall, E. R.  
1946 Mammals of Nevada. Berkeley: University of  
California Press.

The classic study of mammal distributions in the Great Basin; although more recent studies have perfected the data base, every scholar working on the subject is ultimately building on the work of Hall.

Hansen, Meri  
1979 From Walker Lake to Walker Pass with Fremont's Third Expedition: The Travel Journal of Edward Kern. Nevada Historical Society Quarterly 21:1:56-65.

Discusses Kern's 1845 route from Walker Lake south into Calif..

Hardesty, Donald  
1969 A Salvaged Burial from Fallon. Nevada Archeological Survey Reporter 3:4:10.

Describes a generally disarticulated, semi-flexed burial found on a shoreline overlooking the dry lakebed; adult male with no direct associations.

1973 Comstock Era Archaeology: A Preliminary Report on the Little Valley Project. Nevada Archeological Survey Reporter 7:2:18-19.

Discusses survey between Washoe Valley and Lake Tahoe Basin; 5 historic sites recorded.

1976 Historical Archaeological Survey at Mormon Station, Genoa, Nevada. Report to the Nevada Division of State Parks.

1977 The Archaeology of Sand Springs Pony Express Station. BLM Carson City Report CR 3-87P.

1978a Historical, Architectural and Archaeological Studies of Fort Churchill, Nevada. Report to the Nevada Division of State Parks.

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1979 The Pony Express in Central Nevada. BLM Nevada Cultural Resources Series 1.

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- Hardesty, Donald  
 1980 The Use of General Ecological Principles in Archaeology. In Advances in Archaeological Method and Theory, Vol. 3. M. B. Schiffer, ed., pp. 158-188. New York: Academic Press.
- 1981a Recovery of Historical Archaeological Data in Bullfrog Claim and Mining Sites, Nye County, Nevada. Report to the Death Valley National Monument.
- 1981b The Farming/Ranching Segment of the Nevada State Historic Preservation Plan. M. Lyneis, ed. Carson City: State Office of Historic Preservation and Archaeology.
- Hardesty, Donald and Robert Elston  
 1979 A Cultural Resources Reconnaissance of the Marlette Lake-Hobart Watershed. BLM Carson City Report CR 3-768P.
- 49 historic and prehistoric sites recorded (Wa2763-2811).
- Hardesty, Donald and Valerie Firby  
 1980 Managing Archaeological Resources on the Comstock. Washington, D. C.: Heritage Conservation and Recreation Service, National Architectural and Engineering Record.
- Harner, Nellie S.  
 1974 Indians of Coo-Yu-ee-Pah. The History of the Pyramid Lake Indians, 1843-1959, and Early Tribal History, 1825-1834. Sparks: Dave's Printing and Publishing.
- Complete analysis from earliest contact through today at Pyramid Lake, with a consideration of the impact of federal legislation on economic, educational and social development.
- Harper, K. T. and G. M. Alder  
 1972 Paleoclimatic Inferences Concerning the Last 10,000 Years From a Resampling of Danger Cave. In Great Basin Cultural Ecology: A Symposium. D. Fowler, ed. Desert Research Institute Publications in the Social Sciences 8:13-24.
- Harrigan, William A.  
 1977 Cultural Resources Report of Survey of Transmission Lines for Indian Hill Improvement District. BLM Carson City Report CR 2-206P.
- Harrigan, William A. and Lonnie Pippin  
 1978 Sierra Pacific Report for J. C. Penny Company's 60 KV Extension. BLM Carson City Report CR 3-235P.
- Survey on Peavine Mt. located 26Wa2818-2829. Noted that the Black Springs site (26Wal200) was destroyed by construction.
- 1980 Tracy to Valley Road Substation 230/245 KV Transmission Line for the North Reno Power Grid. BLM Carson City Report CR 3-236P.
- Located CrNv-03-71 - CrNv-03-76 in Washoe County survey.

Harrigan, William and Michael Sullivan  
 1975 Gooseberry Mine 60 KV Extension. Nevada State Museum  
 Report 15-1.

Archaeological survey of 37 acres in the Virginia Range located  
 26St18-24; all sites were collected. Clearance recommended.

Harrington, John H.  
 1938 Lehman Caves. Desert Magazine 2:2:34.

Brief mention of Hidden Cave.

1947 Chauffeur for a Mummy. Desert Spotlight 2:4:4, 21.

Brief mention of Spirit Cave.

Harris, Robert P.  
 1973 Nevada Postal History. Santa Cruz, Ca.: Bonanza Press.

Dates of operation for Nevada Post Offices.

Hart, John  
 1981 Hiking the Great Basin. San Francisco: Sierra Club Books.

Illustrates the potential harm to high altitude archaeological  
 sites from hikers, and that research in remote areas should  
 be encouraged while they are still relatively pristine.

Hastings, Lansford W.  
 1845 The Emigrants' Guide to Oregon and California. Cincinnati:  
 George Goulet (reprinted in 1850).

Hatoff, Brian  
 1977a Temperature Gradient Holes, Andarko-Salt Wells Basin,  
 Churchill County, Nevada. BLM Carson City Report CR 3-186P.

Archaeological survey for proposed geothermal drilling located  
 26Ch595. Clearance recommended following relocation of holes.

1977b Desert Bums Motorcycle Race, Churchill-Lyon Counties,  
 Nevada. BLM Carson City Report CR 3-143P; NSM 18-60.

Archaeological survey of 10 acres located 26Ly255. Clearance given.

1977c Republic Geothermal Notice of Intent, NV-030-45, Dixie  
 Valley, Churchill and Pershing Counties, Nevada. BLM  
 Carson City Report CR 3-161P.

Archaeological survey of 25 drill sites located an isolated  
 find (26Ch500). A historic borax works ruin was noted, but  
 not recorded. Clearance recommended.

1977d Cultural Resource Management at Grimes Point. Nevada  
 Archeological Survey Reporter 10:2:1-3.

1977e Prison Hill Recreation Management Plan, Ormsby County.  
 BLM Carson City Report CR 3-132P; NSM 13-15.

Hatoff, Brian (cont'd)

Survey of 2515.2 acres on Prison Hill located 26Or132-136.

1977f Cultural Resources Report of Cooperative Soil Survey, Washoe County. BLM Carson City Report CR 3-151P.

Archaeological reconnaissance in the Tule Peak area revealed 7 sites (26Wa2602-2605, 2607-2609).

1977g Geothermal Temperature Gradient Hole in the Vicinity of Steamboat Springs, Nevada. BLM Carson City Report CR3-144P.

1977h Cultural Resources Report: Washoe Lake Park Right-of-Way. BLM Carson City Report CR 3-157P.

1977i Cultural Resources Report: Spanish Flat Meadows Enclosures. BLM Carson City Report CR 3-182P.

15 acre survey revealed two sites (26Wa2647, 2648).

1978a Cultural Resources Report: Dixie Hot Springs Fenceline, Sheldon Lamb Ranch, Churchill County, Nevada. BLM Carson City Report CR 3-196P.

Archaeological reconnaissance for proposed fencing project surveyed 1 acre, revealing a small lithic scatter (26Ch577). Clearance recommended.

1978b Cultural Resources Report: N-10035 Right-of-Way Flanigan Land and Development Company (Honey Lake), Washoe County, Nevada. BLM Carson City Report CR 3-231P; NSM 16-95.

Survey of 3.73 acres revealed 1 site (26Wa2671). Clearance given.

1978c Cultural Resource Report: Phillips Petroleum Geothermal Access Improvements, Steamboat Hills, Washoe County, Nevada. BLM Carson City Report CR 3-224P; NSM 16-83.

Survey of 1 acre revealed 1 site (26Wa2455). Clearance given.

1978d Cultural Resources Report: Bird Spring Enclosure. BLM Carson City Report CR 3-251P.

1978e Cultural Resources Report: Lake Spring Enclosure. BLM Carson City Report CR 3-252P.

1978f Cultural Resources Report: Mud Spring Fence. BLM Carson City Report CR 3-255P.

1978g Grimes Point Study Area: A Teachers Guide to Field Investigations. Pamphlet, BLM Carson City.

1979 Cultural Resources Report: Jack Wright Summit Wood Cutting Area. BLM Carson City Report CR 3-329P; NSM 3-30.

Eight sites located (26Do303-310).

## Hatoff, Brian (cont'd)

- 1980 Class III Survey of the B-20 Lone Rock Area.  
BLM Carson City Report CR 3-493P.

Systematic survey by BLM and AMNH personnel in a dune and playa area revealed three sites (26Ch473-474; CrNv-03-2032). Scientific value of the sites is limited since the area has been trashed by bombers for the last 40 years.

## Hatoff, Brian and G. Beals

- 1978 Cultural Resources Report. Pine Nut Mountains, Lebo Springs Tree Cutting Area. BLM Carson City Report CR 3-218P; NSM 3-25.

## Hatoff, Brian and Nancy Botti

- 1977 An Archaeological Assessment of Temperature Gradient Holes in the Salt Wells Basin. BLM Carson City Report CR 3-185P.
- 1980 Archaeological Cultural Resource Report for the Smith Valley Land Sale, N-29850. BLM Carson City Report CR 3-518P.

Survey revealed 44 sites (26Ly88-99, 261-292); 43 sites collected. Subsurface tests of 26Ly89 revealed a cache of 37 obsidian bifaces. The site is currently under analysis, and recommended for National Register nomination; nevertheless clearance given.

## Hatoff, Brian and Rick Brigham

- 1976 Cultural Resources Report, Sheepbed Pinon-Juniper Thinnings, No. 1 & 2, Lyon County, Nevada. BLM Carson City Report CR 3-113P; NSM 10-36.

Intensive survey of 40 acres of an 80 acre survey revealed 1 site (26Ly58). Clearance recommended.

## Hatoff, Brian and Hal Bybee

- 1977 Cultural Resources Report, Pepper Spring Pipeline. Mineral County, Nevada. BLM Carson City CR 3-137P; NSM 11-20.

Survey of 11 acres revealed two isolated finds (26Mn155-156). An additional sites (26Mn132) was located on the property. Clearance recommended.

## Hatoff, Brian and Dan Delaney

- 1977 Cultural Resources Report Three Flat Brush Thinning II. Douglas County, Nevada. BLM Carson City Report CR 3-190P.

Survey in Walker River Basin revealed 2 sites (26Do263-264). Clearance recommended.

- 1979 Cultural Resource Report: Jack Wright Wood Cutting Area. BLM Carson City Report CR 3-329P.

Hatoff, Brian and Tod Ruhstaller

- 1977 Cultural Resources Report for Huffaker Tram Road Right-of-Way. BLM Carson City Report CR 3-170P.

Three sites located, a large lithic scatter (Wa1480), a small lithic scatter (Wa2645) and a rock wall (no number).

Hattori, Eugene M.

- 1975 Northern Paiutes on the Comstock: Archaeology and Ethno-history of an American Indian Population in Virginia City, Nevada. Nevada State Museum Occasional Papers 2.

Excavation of a historic Paiute village near Virginia City, occupied between 1881 and 1930.

- 1978 Cultural Resources Report: The Archaeology of the Steward Dump Site (26Or121), Ormsby County, Nevada. Nevada State Museum Report 13-2.

Ethnoarchaeological investigation of site failed to support previous identification of the site as a Washoe settlement known as "Old Camp". Site is a trash disposal area for the Steward School, dating from 1890-1930.

- 1979 An Archaeological and Historical Investigation of the Simpson Pass Area, Churchill County, Nevada. BLM Carson City Report CR 3-314P.

Archaeological reconnaissance of Simpson's Pass revealed several sites (26Ch482-485, 587-598). The Pass was used ethnographically and historically as access between the Carson Sink and Salt Wells Basin.

- 1980 Report. In Managing Archaeological Resources on the Comstock by D. Hardesty and V. Firby, pp. 24-25. Washington, D.C.: National Architectural and Engineering Record.

- 1982 The Archaeology of the Falcon Hill Caves. Nevada State Museum Anthropological Papers 18.

Hattori, Eugene M. and Alvin R. McLane

- 1980 Archaeological and Historical Studies at Simpson Pass, Churchill County, Nevada. Desert Research Institute Technical Report 12; BLM Carson City Report CR 3-459P.

Survey of Simpson Pass area revealed several sites, including Burton's Overlook (26Ch595), and the Ft. Churchill-Sand Springs Turnpike (26Ch598).

Hauck, F. R.

- 1976 An Archaeological Survey of Drill Stations and Access Roads in the Wilson Hot Springs Locality, Lyon County, Nevada. BLM Carson City Report CR3-208P; NSM 10-34.

Survey of one acre located 26Ly55-56. Clearance recommended.

Hawley, Amos

- 1981 Human Ecology, Persistence and Change. American Behavioral Scientist 24:3:423-444.

Heizer, Robert F.

- 1938 A Complete Atlatl Dart from Pershing County, Nevada. New Mexico Anthropologist 2:4-5:70-71.

Description of Leonard Rockshelter dart associated with 50 spire-ground Olivella beads.

- 1951 Preliminary Report on the Leonard Rockshelter Site, Pershing County, Nevada. American Antiquity 17:89-98.

- 1956 Recent Cave Explorations in the Lower Humboldt Valley, Nevada. University of California Archaeological Survey Report 33:50-57.

Discussion of Lovelock Cave, Humboldt Cave and Leonard Rockshelter.

- 1960 Notes on Some Paviotso Personalities and Material Culture. Nevada State Museum Anthropological Papers 2.

- 1966 General Comments. In The Current Status of Anthropological Research in the Great Basin, 1964. W. d'Azevedo, ed. Desert Research Institute Publications in the Social Sciences 1:239-247.

Discusses several ethnographic and ecological models, including the limnosedimentary adaptation.

- 1967 Analysis of Human Coprolites from a Dry Nevada Cave. University of California Archaeological Survey Report 70:1-20.

- 1969 Catalogue of the C. Hart Merriam Collection of Data Concerning California Tribes and Other American Indians. Non-serial Publication of the University of California Archaeological Research Facility.

- 1970 Ethnographic Notes on the Northern Paiute of the Humboldt Sink, West Central Nevada. In Languages and Culture of Western North America. Essays in Honor of Sven S. Liljeblad. E. H. Swanson, ed., pp 232-245. Pocatello: Idaho State University Press.

- 1972 Reports of the University of California Archaeological Survey. University of California Archaeological Survey Report 75.

Heizer, Robert F. and M. A. Baumhoff

1959 Great Basin Petroglyphs and Prehistoric Game Trails.  
Science 129:904-905.

Proposal of hunting hypothesis as function of rock art.

1961 Wagon Jack Shelter. Anthropological Records of the  
University of California 20:4:119-138.

1962 Prehistoric Rock Art of Nevada and Eastern California.  
Berkeley: University of California Press.

Major synthesis of Great Basin rock art. Although many  
descriptions are brief and often leave out important  
panels, the coverage is extensive and the hypothesis --  
that most prehistoric rock art in the area related directly  
to artiodactyl hunting -- seems to have survived the decades.

1970 Big Game Hunters in the Great Basin: A Critical  
Review of the Evidence. Contributions of the University  
of California Archaeological Research Facility 7:1-12.

Cautionary note about equating temporal and cultural similarities  
based merely on morphological comparison; no lack of evidence  
regarding early subsistence, especially as relates to association  
of fluted points and extinct fauna in the western Great Basin.

Heizer, R. F., M. A. Baumhoff, and C. W. Clewlow

1968 Archaeology of South Fork Rock Shelter (NV-EL-11), Elko  
County, Nevada. University of California Archaeological  
Survey Report 71:1-59.

Heizer, R. F. and C. W. Clewlow

1968 Projectile Points from NV-CH-15, Churchill County, Nevada.  
University of California Archaeological Survey Report  
71:59-88.

Heizer, R. F. and Albert B. Elsasser

1953 Some Archaeological Sites and Cultures of the Central  
Sierra Nevada. University of California Archaeological  
Survey Report 21.

Definition of Martis and Kings Beach Complexes.

Heizer, R. F. and Thomas J. Hester

1978 Great Basin. In Chronologies in New World Archaeology.  
R. E. Taylor and C. W. Meighan, eds., pp. 147-200.  
New York: Academic Press.

Heizer, Robert F. and Alex D. Krieger

- 1956 The Archaeology of Humboldt Cave, Churchill County, Nevada. University of California Publications in American Archaeology and Ethnology 47:1:1-190

Heizer, Robert F. and Lewis K. Napton

- 1970 Archaeology and the Prehistoric Great Basin Lacustrine Subsistence Regime As Seen from Lovelock Cave, Nevada. Contributions of the University of California Archaeological Research Facility 10.

Heizer, Robert F. and Karen M. Nissen

- 1978 Prehistoric Rock Art of Nevada and California. IPEK (Jahrbuch fur Prähistorische und Ethnographische Kunst) 24:148-157. New York and Berlin.

History of the research on rock art, types styles and dates. Offers functional interpretations as well as ethnographic accounts.

Hermann, Ruth

- 1972 The Paiutes of Pyramid Lake. San Jose: Harlan-Young.

Hester, Thomas R.

- 1973 Chronological Ordering of Great Basin Prehistory. Contributions of the University of California Archaeological Research Facility 17.

Synthesis of relative and absolute dating of archaeological sequences up to 1972 (the date of his dissertation).

- 1974 Archaeological Materials from Site NV-Wa-197, Western Nevada: Atlatl and Animal Skin Pouches. Contributions of the University of California Archaeological Research Facility 21:1-37.

Analysis of several skin pouches containing hafted and unhafted bifaces, cordage, leather and wooden handles. One atlatl was radiocarbon dated at 7980±660 B.P.(6030 B.C.).

Hester, Thomas R. and L. R. Jameson

- 1977 Evidence for the Early Occupation of the Washoe Lake Basin. Contributions of the University of California Archaeological Research Facility 35:17-22.

Discussion of Clovis-like and stemmed points from the north-east shore of Washoe Lake.

Hester, Thomas R., M.P. Mildner and L. Spencer

- 1974 Great Basin Atlatl Studies. Ballena Press Publications in Archaeology, Ethnology and History 2.

Articles on the distribution of atlatls and atlatl weights in the Great Basin, an atlatl from Council Hall Cave and replicative experiments in atlatl manufacture.

## Hill, James

- 1915 Some Mining Districts in Northeastern California and Northwestern Nevada. U.S. Geological Survey Bulletin 594.

History of several of the mines in the project area.

## Hinds, M. G.

- 1962 The Archaeology of the Huntington Lake Region in the Southern Sierra Nevada, California. University of California Archaeological Survey Reports 58:

Mentions 26Dol2.

## Houghton, J. G., C. M. Sakamoto, R. O. Gifford

- 1975 Nevadas Weather and Climate. Reno: Nevada Bureau of Mines and Geology Special Publication 2.

## Hubbs, Carl L. and R. R. Miller

- 1948 The Great Basin with Emphasis on Glacial and Postglacial Times, Part II. The Zoological Evidence. University of Utah Bulletin, Volume 38, No. 20; Biological Series Volume X, No. 7, pp. 17-165.

## Hubbs, Carl L., R. R. Miller and L. Hubbs

- 1974 Hydrographic History and Relic Fishes of the North-Central Great Basin. California Academy of Sciences Memoirs 7:1-257.

Discusses the non-Lahontan-Bonneville systems from Austin on the west to Wendover Nevada on the east, and from Wells on the north to Railroad Valley on the south. Describes hydrogeography and relic fishes of each pluvial lake.

## Hulse, James

- 1964 Captain Simpson of the United States Army. Nevada Highways and Parks, Special Centennial Issue, Pp. 21-25, 32-33

Description of H. V. A. von Breckh's and J. J. Young's water colors made on the 1859 Simpson Survey.

## Hummel, N. A.

- 1888 General History and Resources of Washoe County, Nevada. Reno: Gazette Job Print.

An account of the early settlements and ranches in southern Washoe County. Mentions Verdi petroglyph site.

## Hunt, Thomas and Robert V. H. Adams

- 1974 Ghost Trails to California. Palo Alto: American West Publishing Co.

Text and photos pertaining to the California trail.

## Ingalls, Rufas

- 1855 Letter to Major General Thomas S. Jesup, November 22, 1855. In Message from the President of the United States... Senate Executive Document, No.1, Part II, 34th Congress, 1st Session, pp. 152-168.

Data on Steptoe's search for a shorter route to Mormon Station (Genoa) from Salt Lake City. Contains several maps of early exploration routes used in 1855 from Salt Lake to San Francisco.

## Inter-Tribal Council of Nevada

- 1976 Numa. A Northern Paiute History. Salt Lake City: University of Utah Printing Service.

Discusses the Pyramid Lake War, various reservations, life-ways, myths, seasonal round, and history of Anglo contact.

## Jacobsen, William H., Jr.

- 1966 Washo Linguistic Studies. In The Current Status of Anthropological Research in the Great Basin, 1964. W. d'Azevedo, ed. Desert Research Institute Publications in the Social Sciences 1:113-136.

- 1978 Washo Internal Diversity and External Relations. Ballena Press Publications in Archaeology, Ethnology and History 11:115-148.

## James, George Wharton

- 1921 The Lake of the Sky, Lake Tahoe. Pasadena: The Radiant Life Press.

Claims that the Washoe and Paiute used rock art as boundary markers between their territories.

## Jennings, Jesse D.

- 1953 Danger Cave: A Progress Summary. El Palacio 60:179-213.

A discussion of the author's excavations in Utah, along with an analysis of the archaeology of the Desert Culture.

- 1956 The American Southwest: A Problem in Cultural Isolation. Society for American Archaeology Memoirs 11:59-128.

- 1957 Danger Cave Society for American Archaeology Memoir 14.

- 1964 The Desert West. In Prehistoric Man in the New World. J. D. Jennings and E. Norbeck, eds., pp. 149-174. Chicago: University of Chicago Press.

Basic revision of the Desert Culture Model to include a lacustrine adaptation. Rejects Antev's model of Altithermal abandonment of the Basin.

- 1968 The Prehistory of North America, 2nd edition. New York: McGraw-Hill.

- 1973 The Short Life of a Simple Hypothesis. Tebiwa 13:1:1-9.

Discusses the usefulness of the Desert Culture Model in light of research since 1953.

Jennings, Jesse D. and Edward Norbeck

1955 Great Basin Prehistory. American Antiquity 21:1-11.

The "Desert Archaic" is explained in the general framework of Great Basin archaeology.

1964 Prehistoric Man in the New World. Chicago: University of Chicago Press.

Jensen, Andrew and Mary K. Rusco

1980 Further Archaeological Investigations at Spooner Lake, Douglas County, Nevada. Nevada State Museum Report 13-12.

An evaluation of the potential impact to sites 26Do38, 311, 322 due to repair and construction at Spooner Lake Dam. Tested the sites. Further tests were proposed for mitigation.

Jerrems, Jerry

1971 The Pistone Site: A Petroglyph Site in the Wassuk Mountains, Nevada. Nevada Archeological Survey Reporter 5:1:3-7.

Analysis of rock art at site 26Lyl02 in a box canyon in the mountains separating the east and west forks of the Walker River. Rock circles and bedrock mortars nearby.

Jerrums, W. and Mary Rusco

1976 Archaeological Resources Short Report for Bendix Corporation, Swingle Bench. Nevada State Museum Report 1-31; BLM CR 3-128P.

Brief mention of sites 26Ch473 & 474.

Johnson, Edward C.

1975 Walker River Paiutes. A Tribal History. Salt Lake City: University of Utah Printing Service.

Excellent summary of the history of the Walker River Paiute, including Paiute-white relations.

1978 The Clear Creek Area. In The Archaeology of the Stewart Dump Site (26Or121) by Eugene M. Hattori. Nevada State Museum Report 13-2:4-7.

Jones, J. C.

1925 Geologic History of Lake Lahontan. Carnegie Institute of Washington Publication 352.

Katzer, T.L.

1971 Reconnaissance Bathymetric Map and General Hydrology of Lahontan Reservoir, Nevada. Nevada Department of Conservation and Natural Resources 9.

History of the construction of the Lahontan Dam.

- Katzer, T. L. and Lynn Harmsen  
 1973 Bathymetric Reconnaissance of Weber Reservoir, Mineral  
 County, Nevada. Nevada Department of Conservation and  
 Natural Resources, Water Resources Information Series 15.

Paragraph on the building of Weber Dam.

- Kautz, Robert R. and David Hurst Thomas  
 1972 Palynological Investigations of Two Prehistoric Cave Middens  
 in Central Nevada. Tebiwa 15:2:43-54.

Pollen diagrams from Gatecliff and Toquima Cave.

- Kelley, J. Wells  
 1862 First Directory of Nevada Territory. San Francisco:  
 Valentine and Company.

Early historical information on western Nevada.

- Kelly, Robert L.  
 1978 Paleo-Indian Settlement Patterns at Pleistocene Lake  
 Tonopah, Nevada. Senior thesis, Anthropology Department,  
 Cornell University.

Presentation of data from American Museum survey in summer  
 of 1977, and general discussion of Paleo-Indian adaptations  
 in the Great Basin.

- 1980 Prehistoric Use of Lacustrine Resources in the Great  
 Basin. Paper presented at the 17th Great Basin Anthropol-  
 ological Conference, Salt Lake City.

Recent research revealed that lacustrine resources are ecologically  
 unstable, and provide low quality food resources which preclude  
 primary dependence by Great Basin groups. They would, instead,  
 provide back-up resources in times of dire need, or form a segment  
 of long-term transhumant adaptation.

- 1981a Carson-Stillwater Archaeological Project. Proposal  
 submitted to David Hurst Thomas, American Museum of  
 Natural History. BLM Carson City Report  
 CR 3-567P.

Research design for systematic sample of the Carson Sink-Stillwater  
 area.

- 1981b Carson-Stillwater Archaeological Project, Report of  
 Activities: 1981. Ms. on file, BLM Carson City.

Report on location of sites 26Ch705-765 in the first year  
 of survey.

- n.d. Long Term Hunter-Gatherer Adaptation and Marsh Resource  
 Use in the Great Basin. Ms. submitted to the Journal  
 of California and Great Basin Anthropology.

Reworking of paper presented in 1980.

Kern, Edward M.

- 1876 Journal of Mr. Edward M. Kern...in 1845. In Report of Explorations Across the Great Basin of the Territory of Utah...in 1859, Appendix Q, by James H. Simpson, pp. 477-486. Washington D. C., U. S. Army Engineering Department.

A fine document describing early Nevada, with ethnographic data.

Kersten, Earl W., Jr.

- 1964 The Early Settlement of Aurora, Nevada and Early Nearby Mining Camps. Association of American Geographers Annals 54:4:490-507.

Discussion of mining development, and map with early routes.

King, Thomas F., Patricia P. Hickman, and Gary Berg

- 1977 Anthropology in Historic Preservation: Caring for Culture's Clutter. New York: Academic Press.

Good general overview of problems of Cultural Resource Management with a summary of legal archaeology (as it then stood).

Knopf, Adolf

- 1918 Geology and Ore Deposits of the Yerington District, Nevada. U.S. Geological Survey Professional Paper 114.

History of mines in the Singatse Range.

- 1921 Ore Deposits of Cedar Mountain, Mineral County, Nevada. U.S. Geological Survey Bulletin 725:361-382.

History of camps at Omco and Simon.

Kobori, L. S.

- 1976 The Occurrence of Ovis canadensis from an Archaeological Deposit in the Larson Lake Region of Western Nevada. Nevada Archeological Survey Reporter 9:3:1-6.

Faunal analysis of Burnt Cave (26Ch54).

Kral, Victor E.

- 1951 Mineral Resources of Nye County, Nevada. Nevada Bureau of Mines Bulletin 50.

History and production data for mines in Nye County.

Kroeber, A. L.

- 1923 The History of Native Culture in California. University of California Publications in American Archaeology and Ethnology 20:125-142.

- 1925 Handbook of the Indians of California. Bureau of American Ethnology Bulletin 78.

Classic of western American ethnology; brief summary of Washoe social organization and material culture.

Kuffner, Carmen

1978 Archaeological Resource Investigation for Proposed Yerington Park, Lyon County, Nevada. Nevada State Museum Report 10-31.

Survey for proposed park of 5.4 acres with one site containing historic debris less than 50 years old (Ly60); clearance recommended.

Lalich, Branislav

1974 Fire at Washoe. Nevada Archaeologist 2:1:24-25.

Account of Am-Arcs dig at "Old Washoe City" (Wal436); in this paper doubts are raised that this building was destroyed in the Washoe City fire of 1873.

La Rivers, Ira

1962 Fishes and Fisheries of Nevada. Reno: Nevada State Fish and Game Commission.

Lawrence, Edmond F.

1963 Antimony Deposits of Nevada. Nevada Bureau of Mines Bulletin 61.

History and production data from selected Nevada mines.

Layton, Thomas N.

1979 Archaeology and Paleo-Ecology of Pluvial Lake Parman, Northwestern Great Basin. Journal of New World Archaeology 3:3:41-56.

Layton, Thomas N. and Jonathan O. Davis

n.d. Early Post-Pleistocene Culture History and Paleoecology of the Northwestern Great Basin.

Unpublished discussion of stratigraphy and cultural inventory of the basal, Paleo-Indian deposits at Last Supper Cave.

Layton, Thomas N. and David Hurst Thomas

1979 The Archaeology of Silent Snake Springs, Humboldt County, Nevada. Anthropological Papers of the American Museum of Natural History 55:3:251-269.

League of Women Voters

1974 Carson City, Nevada. Carson City: League of Women Voters.

Presents political facts relevant to Carson City voters.

LeBoron, Alan

1924 Hill of a Thousand Tombs. San Francisco Examiner, August 19.

Description of the East Walker River site, noting obsidian flakes and projectile points. Discusses the rock-walled "rooms" on top of a hill overlooking the river.

Lee, Willis T., Ralph W. Stone, Hoyt S. Gale, and others

1916 Guidebook of the Western United States. Part B The Overland Route. U.S. Geological Survey Bulletin 612.

Leland, Joy H.

1976 Great Basin Indian Population Figures (1873-1970), and the Pitfalls Therein. Desert Research Institute Publications in the Social Sciences 11.

Excellent summary of census data and cautions concerning their use.

Leonard, Zenas

1934 Narratives of the Adventures of Zenas Leonard. Milo M. Quaise, ed. Chicago: R. R. Donnelley & Sons.

Lewis, Kenneth

1977 Sampling the Archaeological Frontier. In Research Strategies in Historical Archaeology. Stanley South, ed., pp. 151-201. New York: Academic Press.

Lincoln, Francis Chruch

1923 Mining Districts and Mineral Resources of Nevada. Reno: Nevada Newsletter Publishing Co.

History and production of mines.

Lingenfelter, Richard E.

1963 Introduction. In Washoe Rambles by Dan DeQuille, pp. 7-13. Los Angeles: Westernlore Press.

Linsdale, J. M.

1936 The Birds of Nevada. Pacific Coast Avifauna 23:1-145.

Long, Ileen, Mabel C. Love and Angie T. Merrill

1971 Alpine Heritage. Markleeville: Alpine County Museum.

History, recreation and lore of Alpine County (1864-1964).

Loud, L. L. and M. R. Harrington

1929 Lovelock Cave. University of California Publications in American Archaeology and Ethnology 25:1:1-183.

Lord, Eliot

1883 Comstock Mining and Miners. U.S. Geological Survey Monograph 4.

Excellent early history of Virginia City and surrounding area.

Lowie, Robert

- 1939 Ethnographic Notes on the Washo. University of California Publications in American Archaeology and Ethnology 36:301-352.

Brief, but major source on the Washoe, particularly useful for material culture, myths, and general socioreligious practices.

Mabe, J.

- 1980 Cultural Resources Report for Freds Mountain Fence and Cattle Guard. BLM Carson City Report CR 3-454P.

MacDonald, Douglas

- 1976 Snowshoe Thompson's Lost Ledge. Lost Treasure 1:6:30-31.

Contains photo of Thompson, and alleged picture of his cabin.

MacNaughton, Clara

- 1903 Nevada Indian Baskets and their Makers. Out West, April-May, 1903, pp. 579-584.

Madsen, David B.

- 1972 Paleocological Investigations in Meadow Valley Wash, Nevada. In Great Basin Cultural Ecology: A Symposium. D. Fowler, ed. Desert Research Institute Publications in the Social Sciences 8:57-66.

- 1976 Pluvial-Post-Pluvial Vegetation Changes in the Southeastern Great Basin. In Holocene Environmental Change in the Great Basin. R. Elston, ed. Nevada Archeological Survey Research Paper 6:104-119.

- n.d. Get It Where The Gettin's Good. Society for American Archaeology Special Publication. In press.

Suggests that the range of variation in Great Basin lifeways does not fit into the general ethnographic models now in use. A continuum exists, both areally and temporally, between semi-sedentary large groups and highly transient smaller bands.

Madsen, David B. and Michael S. Berry

- 1975 A Reassessment of Northeastern Great Basin Prehistory. American Antiquity 40:391-405.

Malde, Harold E.

- 1964 Environment and Man in Arid America. Science 145:123-129.

Mallery, Garrick

- 1886 Petroglyphs of the North American Indians. Fourth Annual Report of the Bureau of American Ethnology 1884-1885, 17:42.

Extensive survey of rock art throughout the West.

## Mallery, Garrick (cont'd)

- 1893 Picture-Writing of the American Indians. Tenth Annual Report of the Bureau of American Ethnology, pp. 3-807 (reprinted 1972. New York: Dover Publishing).

Includes a discussion of several petroglyph sites in Nevada; suggests that the Washoe knew nothing of this rock art.

## Maloney, Alice Bay

- 1940 Peter Skene Ogden's Trapping Expedition to the Gulf of California, 1829-1830. California Historical Quarterly 14:4:308-316.

She believes that Ogden went south of the Humboldt Sink, past Walker Lake.

## Malouf, Carling

- 1966 Ethnohistory in the Great Basin. In The Current Status of Anthropological Research in the Great Basin, 1964. W. d'Azevedo, ed. Desert Research Institute Publications In the Social Sciences 1:1-39.

Outlines five phases of transition from prehistoric times: aboriginal, trappers and explorers, Mormons, miners and ranches and government. Argues that Great Basin is worthwhile anthropological laboratory because of simplicity of culture and late contact.

## Mason, Dorothy

- 1976 The Pony Express in Nevada. Reno: Harrah's Club.

Description of Pony Express stations in Nevada.

## Matley, John and David Turner

- 1967 Rock Walled Enclosures in the Virginia Range, Washoe County, Nevada. Nevada Archeological Survey Reporter 1:5:4-5.

Survey of Virginia Mountains north of State Highway 33: Located 8 rock walled structures; recorded 26Wal026-1037.

## Maule, William M.

- 1938 A Contribution to the Geographic and Economic History of the Carson, Walker and Mono Basins in Nevada and California. U. S. Department of Agriculture, California Region, Forest Service. San Francisco.

Although incomplete, a good study of the history of the Carson and Walker Rivers region.

Mayer, D.

- 1975 Star-Patterns in Great Basin Petroglyphs. In Archaeo-astronomy in Pre-Columbian America. A. F. Aveni, ed., pp. 109-131. Austin: University of Texas Press.

Argues for astronomical significance of 53 Nevada rock art panels; primarily based on a reanalysis of Heizer and Baumbach (1962) data.

- 1976 A Possible Astronomical Petroglyph Panel at Spanish Springs. American Indian Rock Art 2:139-156.

A test of the adequacy of her predictive model on 26Wal2 for the use of rock art as astronomical symbols.

McGee W. J.

- 1889 An Obsidian Implement from Pleistocene Deposits in Nevada. American Anthropologist 2:4:301-312 (reprinted, 1955, University of California Archaeological Survey Report 32:30-38).

Classic example of deductive reasoning; McGee evaluated the data and concluded that Mi-7 was an obsidian biface dated to the Pleistocene.

McLane, Alvin R.

- 1975 Pyramid Lake: A Bibliography. Reno: Camp Nevada Monograph 1.

- 1978 Silent Cordilleras. The Mountain Ranges of Nevada. Reno: Camp Nevada Monograph 2.

Descriptions of several early exploration routes through Nevada.

- 1980 Cultural Resources Inventory in Spanish Springs Valley, Washoe County, Nevada. Desert Research Institute Social Science Technical Report Series 16.

Survey of 478 acres in Spanish Springs Valley for the Reno-Sparks Joint Water Pollution Control Plant expansion revealed 26Wa-2689, 2692, 26Wa2699-2756. No collections were made. Recommends a planned CRM program at Spanish Springs.

McMillen, Doug

- 1980 Comstock Residents Petitions for Vote on Gold Hill Offer. Nevada State Journal, July 31:19.

Discusses Houston International Corporation's plan to obliterate Gold Hill.

McNeil, D. Jean

- 1978 Archaeological Investigations in Queen Valley, Mineral County, Nevada. BLM Carson City Report CR 3-229P.

Archaeological reconnaissance of 240 acres in Queen Valley revealed 6 sites (26Mn83-88). Sites were collected and two activities delineated: core reduction and biface manufacture.

McNeil, D. Jean and Thomas Hal Turner

1979 CR Report for the Withdrawal of 100 Acre Material Pit, Smith, Nevada, EA 70740. BLM Carson City Report CR 3-337 P.

Survey and clearance of 100 acres located sites 26Ly63-65, sparse lithic and historic scatters. Avoidance, or mitigation through further tests, was recommended.

Mehringner, Peter J.

1967 Pollen Analysis of the Tule Springs Area, Nevada. In Tule Springs. H. M. Wormington and D. Ellis, eds. Nevada State Museum Anthropological Papers 13:129-200.

1977 Great Basin Late Quaternary Environments and Chronology. In Models and Great Basin Prehistory: A Symposium. D. Fowler, ed. Desert Research Institute Publications in the Social Sciences 12:113-168.

Mehringner, Peter J., Stephen F. Arno and Kenneth L. Petersen

1977 Postglacial History of Lost Trail Pass Bog, Bitterroot Mountains, Montana. Arctic and Alpine Research 9:4:345-368.

Mifflin, Martin

1965 Hydrology of the Lahontan Basin, Northwestern Nevada. In INQUA, 7th Congress Guidebook for Field Conference I. Northern Great Basin and California, pp. 25-28.

Mifflin, Martin and Margaret M. Wheat

1979 Pluvial Lakes and Estimated Pluvial Climates of Nevada. Nevada Bureau of Mines Bulletin 94.

Miller, Margaret and Robert G. Elston

1979 Archaeology of the Glendale Site (26Wa2065). Nevada Highways Department Report.

Describes the excavations of the Glendale Road "Paint Rock" site. Prehistoric and historic Washoe components were unearthed. Site believed to date from 5000 B. C. to historic.

Miller, R. R.

1946 Correlation between Fish Distributions and Pleistocene Hydrography in Eastern California and Southwestern Nevada. Journal of Geology 54:43-53.

## Mining and Engineering World

- 1915 Late News from the World's Mining Camps (Fallon).  
November 27, pp. 872-873

Description of the Crehore Mine in Churchill County.

## Mining and Scientific Press

- 1876 A Geological Anomaly. Mining and Scientific Press,  
August 5, p. 121.

An important discussion of the Dayton Lime Works; a sketch map of the site is included.

## Mitchell, Stewart

- 1955 A Forgotten Exploration (In Search of a Route Across  
the Sierra Nevada for the Pacific Railroad). California  
Historical Society Quarterly 34:3:209-228.

Summary of an exploring trip taken in 1853 by John Ebbetts and Lt. Tredwell Moore that entered Nevada by way of the West Walker River. The route continued east to Walker Lake and then south along most of the alignment of U. S. Highway 95. The article also presents data on the Sonora Emigrant Road.

## Moody, Eric

- 1977 The Senator's Empty Town. Desert Magazine 2:6:36-38.

A history of Flanigan and Bonham School.

## Moody, Eric and Guy Louis Rocha

- 1980 Coney Island on the Truckee. Reno Magazine 2:7:26-27.

## Mooney, James

- 1928 The Aboriginal Population of America North of Mexico.  
Smithsonian Miscellaneous Collections 80:7.

Deals with Washoe population at several time intervals, discussing problems with epidemics, wars, and large-scale murders and massacres between 1845 and 1869.

## Moore, James G.

- 1969 Geology and Mineral Deposits of Lyon, Douglas, and Ormsby  
Counties, Nevada. Nevada Bureau of Mines Bulletin 75.

Some history and production on Nevada mines and quarries.

## Moore, Joseph M., P. F. Matranga, K. E. Davis, and L. S. Steinberg

- 1981 A Cultural Resources Report of U. S. 95 - Mi 00 to 36.  
F-095-4(3). Nevada Highway Department Report.

An archaeological survey over 39 miles of right-of-way, locating 21 historic and prehistoric sites; three were judged to be eligible for the National Register, and strong protective measures were recommended.

Mordy, Brooke D. and Donald L. McCaughey  
1968 Nevada Historical Sites. Western Studies Center,  
Desert Research Institute.

A compact study describing several historic sites.

Morgan, Dale L.  
1943 The Humboldt (Highroad of the West). New York:  
Farrar and Rinehart.

Morgan presents much history pertaining to the Lahontan basin.

Morrison, R. B.  
1958 Geology of Hidden Cave, near Fallon, Nevada. Paper  
presented at the 5th Great Basin Anthropological  
Conference, University of Nevada.  
  
1961 Lake Lahontan Stratigraphy and History in the Carson  
Desert (Fallon) Area, Nevada. U. S. Geological Survey  
Professional Paper 424-D:111-114.  
  
1964 Lake Lahontan. Geology of the Southern Carson Desert,  
Nevada. U. S. Geological Survey Professional Paper  
401.  
  
1965a The Quaternary Geology of the Great Basin. In The  
Quaternary of the United States, H. E. Wright and  
D. G. Frye, eds. International Association for  
Quaternary Research, 7th Congress.  
  
1965b General Features and Stratigraphy of the Lake Lahontan  
Area. In INQUA, 7th Congress Guidebook for Field  
Conference 1. Northern Great Basin and California,  
pp. 18-24.

Morrison, R. B. and J. C. Frye  
1965 Correlation of the Midden and Late Quaternary Successions  
of the Lake Lahontan, Lake Bonneville, Rocky Mountain  
(Wasatch Range), Southern Great Plains, and Eastern  
Midwest Areas. Nevada Bureau of Mines Report 9.

Morrissey, Frank R.  
1968 Turquoise Deposits of Nevada. Nevada Bureau of Mines  
Report 171.

Mentions sites in parts of Mineral, Lyon and part of Nye County.

Mottaz, Stanley

1978 County Evolution in Nevada. Nevada Historical Society Quarterly 21:1:25-50.

History of the creation of county boundaries and their changes.

Muir, John

1961 The Mountains of California. New York: American Museum of Natural History Press.

Reprint of the 1894 edition, contains excellent accounts of aboriginal bighorn hunting techniques

Munz, Phillip A. and David D. Keck

1968 A California Flora and Supplement. Berkeley: University of California Press.

Myrick, David

1962a Como. Nevada Historical Society Quarterly 5:2:2-27.

History and photos of two 1860s mining camps, Como and Palmyra.

1962b The Railroads of Nevada and Eastern California: Volume 1- the Northern Roads. Berkeley: Howell-North Books.

1963 The Railroads of Nevada and Eastern California: Volume 2- the Southern Roads. Berkeley: Howell-North Books.

Myrick's double volume provides an exhaustive, but enjoyable account of the Nevada railroad industry and the history surrounding its origin.

Napton, Lewis K.

1969 The Lacustrine Subsistence Pattern in the Desert West. Kroeber Anthropological Society Special Publication 2:28-98.

1971a University of California, Berkeley, Archaeological Research in Western Nevada during the Field Season of 1971. BLM Carson City Report CR 3-27P.

1971b Archaeological Research in Nevada by the University of California, Berkeley, Summer 1971. Nevada Archeological Survey Reporter 5:6:3-5.

Excavations and survey of the Carson Desert region. Team camped near Grimes Point and attempted excavations at Burnt and Hidden Caves, in addition to collections at High, Salt, Fallen-In, Dragon, Picnic and Fish Caves. Recorded several rock art sites, and continued investigations in the Eastgate and Lovelock areas.

Napton, L. K. and E. A. Greathouse  
 1976 Archaeological Survey of the Sierra Pacific Cold Springs  
 23KV Line Route, Nevada. BLM Carson City  
 Report CR 3-131P.

An archaeological reconnaissance for the powerline revealed  
 4 sites (26Ch493-496); primarily lithic scatters. Continued  
 survey, avoidance and monitoring was recommended.

Napton, L. K. and Robert F. Heizer  
 1970 Archaeology and the Prehistoric Great Basin Lacustrine  
 Subsistence Regime as Seen from Lovelock Cave, Nevada.  
 Contributions of the University of California Archaeological  
 Research Facility 10.

Neal, J. T.  
 1975 Playas and Dried Lakes. Occurrence and Development.  
 Pennsylvania: Halstead Press.

Nevada Emigrant Trail Marking Committee, Inc.  
 1978 The Overland Emigrant Trail to California - A Guide.  
 Reno: Nevada Historical Society.

Discussion and map of Humboldt River, Truckee River and Carson  
 River routes.

Nevada Historical Society  
 1966a Field Trip, No. 1. Nevada Historical Society, Reno,  
 May 22, 1966.

Description of the abandoned quartz mines along the Carson  
 River.

1966b Field Trip, No. 2. Nevada Historical Society, Reno,  
 September 11, 1966.

Description of historical sites in Carson Valley along the  
 emigrant road.

Nevada National Bank  
 (1976) Nevada Historic Markers. Reno: Nevada National Bank.

Description of the historical markers along Nevada highways.

Nevada State Museum, Department of Anthropology  
 1973 Evaluative Report on Archaeological Sites Located on  
 Proposed 120 KV Power Line from Lakeview to Incline  
 Village, Nevada. Washoe County, Nevada.  
 Nevada State Museum, Carson City Report 16-1.

Surveyed an unspecified acreage in the Carson Range. Surveyed  
 all slopes under 30°. Recorded 3 prehistoric, and 3 historic  
 sites (26Wa2812-1817). Clearance recommended for the right-  
 of-way, but suggested that the NPS fund systematic surveys  
 of high altitude archaeological sites.

## Nevers, Joanne

- 1976 Wa She Shu, A Washo Tribal History. Reno: Inter-Tribal Council of Nevada.

Discusses Washoe- white relations, and the establishment of Washoe colonies, seasonal subsistence-settlement patterns, and persistence of certain traditions into the 20th century.

## Nissen, Karen M.

- 1971 A Survey of Petroglyphs in the Fallon Area. Nevada Archeological Survey Reporter 5:5:4-5.

Discusses techniques for carefully recording rock art and the relationships of various styles. Recorded 240 boulders at Grimes Point and later recorded 325 additional boulders. Analysis includes inter-intra site differences in style and design.

- 1974 The Record of a Hunting Practice at Petroglyph Site NV-Ly-1. Contributions of the University of California Archaeological Research Facility 20:53-81.

- 1975a Petroglyph Survey in the Western Great Basin. Nevada Archeological Survey Reporter 8:2:7-10.

Mentions (indirectly) the sites that were part of Nissen's extensive survey of the east Walker River. Also discusses her research at the East Walker River Petroglyph site (26Lyl).

- 1975b A New Style of Rock Art in the Great Basin: The Stillwater Faceted Style. Nevada Archeological Survey Reporter 8:2:10-11.

Discusses new type of pit and groove style and its type site (26Ch602) north of Fish Cave in the Grimes Point area.

- 1977 Grimes Point Revisited: Are Petroglyph Sites to be Art Museums and Remain Archaeological Mysteries? Nevada Archeological Survey Reporter 10:3:12-14.

Discussion of new interpretive center at Grimes Point and the lack of adequate protection of the site.

- 1981 Rock Art of the Humboldt and Carson Sinks. In A Cultural Resources Overview of the Carson and Humboldt Sinks by J.C. Bard, C.I. Busby and J. H. Findlay. Nevada BLM Cultural Resources Series 2:199-214.

Summary of the rock art research in the study area and surrounding area, plus interpretations and chronology of rock art in Nevada and eastern California.

- n.d. Images from the Past: An Analysis of Six Western Great Basin Petroglyph Sites. Ph.D. dissertation in preparation, Department of Anthropology, Berkeley.

Nyland, Robert A.

1978 Mount St. Mary's Academy. Washoe Rambler 1:2:3-7.

O'Bryan, Frank J.

(1978) Overland Chronicle (Emigrant Diaries in Western Nevada Libraries). Reno: Nevada Historical Society.

Lists of 191 emigrant diaries in various libraries.

O'Connell, James F.

1967 Elko Eared-Elko Corner-notched Projectile Points as Time Markers in the Great Basin. University of California Archaeological Survey Report 70:129-140.

Mentions points from 26Dol2, Do36, Hidden Cave, and Wagon Jack Shelter in the study area.

Olds, Sarah

1978 Twenty Miles from a Match. Reno: University of Nevada Press.

Mrs. Olds describes homesteading days in Winnemucca Valley with her husband Albert and six children from 1908 to 1931.

Orr, Phil C.

1956 Pleistocene Man in Fishbone Cave, Pershing County, Nevada. Nevada State Museum Department of Archeology, Bulletin 2.

Ostrogorsky, Michael

1980 Idaho Model of Frontier Settlement. Boise: Idaho State Historical Society.

Overton, Theodore D.

1947 Mineral Resources of Douglas, Ormsby and Washoe Counties. University of Nevada Bulletin, Geology and Mining Series 46.

History of several mines in the project area.

Paher, Stanley W.

1970 Nevada Ghost Towns and Mining Camps. Berkeley: Howell-North Books.

Important for the many historical photographs collected in the publication.

1972 Ponderosa Country. Las Vegas: Nevada Publications.

Photos and descriptions of country around Reno, Lake Tahoe, Pyramid Lake, Virginia City, and Wadsworth. Includes historical photographs.

## Papke, Keith G.

- 1972 Erionite and Other Associated Zeolites in Nevada. Nevada Bureau of Mines and Geology Bulletin 79.

Describes an early rock quarry near Eastgate and two buildings in Eastgate built from the quarried rock.

- 1976 Evaporites and Brines in Nevada Playas. Nevada Bureau of Mines and Geology Bulletin 87.

Significant account of the history of salt and borate mining in Nevada.

## Park, Willard Z.

- 1934 Paviotso Shamanism. American Anthropologist: 36:98-113.

- 1937a Tribal Distribution in the Great Basin. American Anthropologist 39:625-634.

- 1937b Paviotso Polyandry. American Anthropologist 39:366-368.

- 1938a The Organization and Habitat of Paviotso Bands. American Anthropologist 40:622-626.

Location and conflicts over Washoe-Paviotso territories; Paviotso land-use and ownership.

- 1938b Shamanism in Western North America. Northwestern University Studies in the Social Sciences 2.

Includes data on Washoe, Pyramid Lake Paiute, Oregon, Owens Valley and Surprise Valley Paiute.

- 1941 Culture Succession in the Great Basin. In Language Culture, and Personality. Essays in Honor of Edward Sapir. L. Spier, A. I. Halowell, and S. S. Newmann, eds., pp. 180-203. Menasha, Wisconsin: Am. Anthropol. Assoc.

Comparison of dance ceremonies, deals with the nature and diffusion of dances in the Great Basin.

## Park, Willard Z., E. Siskin, A. Cook, W. Mulloy, M. Opler, I. Kelly and M. Zigmund

- 1937 Tribal Distribution in the Great Basin. American Anthropologist 39:625-634.

## Payen, Louis A. and D. S. Boloyan

- 1961 Archeological Excavations at Chilcoat Rockshelter, Plumas County, California. State of California, Department of Parks and Recreation, Archaeological Report 4.

## Peak, Ann S. and Associates

- 1977 Cultural Resource Study, Pacific Northwest-Pacific Southwest Intertie. Western Nevada, Clark County to Oregon. BLM Carson City Report 5-366P.

Study of 200 ft. corridor from Potosi Mt., Clark Co. through western Nevada, terminating at the Oregon border, Washoe County. Survey of 560 mile long corridor and test excavation of 21 prehistoric and 1 historic sites including 26Mn150 & 151 in the study area.

- 1978 Cultural Resource Assessment of the Proposed South Lake Tahoe Public Utilities District Waste-Water Treatment Facility, Phase II. Ms. on file Ann S. Peak & Assoc., Sacramento.

Survey revealed 5 sites (4-Alp-120 to 124). Recommendations were predicated on location of final facility. Tests recommended for impacted sites only.

- 1979 Cultural Resource Assessment of the Incline Village G.I.D. Wetland Enhancement Area, Carson Valley, Douglas County, Nevada. Ms. on file Ann Peak & Assoc., Sacramento.

Includes assessment of 26Dol-see Elston(1979b) for review of work.

## Pendleton, Lorann S. A.

- 1979 Lithic Technology in Early Nevada Assemblages. Masters thesis. Department of Anthropology, California State University, Long Beach.

Technological differences in manufacturing between the Stemmed and Concave Base series Paleo-Indian bifaces are delineated, based on the Campbell Collection from the Big Smoky Valley, Nevada. In addition, the thesis presents comparative data from Paleo-Indian sites in the Great Basin and southern California deserts.

- n.d. The Ft. Sage Drift Fence (26Wa3030). Ms. in preparation.

## Penrose, R. J.

- 1977 Ancient Indian Camp in Nevada Described. Reprinted from the Reno Gazette in the 1930s. Contributions of the University of California Archaeological Research Facility 35:107.

Description of a site 30 miles south of Hawthorne (26Mi5).

## Phillips, H. B.

1975a Construction Impact Assessment on the Archaeology of Cold Springs Valley, Nevada. Report to the Nevada Highway Department. BLM Carson City Report CR 3-11P.

1975b Construction Impact Assessment on the Archaeology of Barrow Source, Wa07-16, Cold Springs Valley, Nevada. Report to the Nevada Highway Department. BLM Carson City Report CR 3-11P & 3-420P

Subsurface tests of 3 sites and discovery of a 4th (26Wa2141-2143 & 2152). Lithics and charcoal discovered to a depth of 30cm. No recommendations. No report on excavations-other than these extremely brief ones.

1975c Intensive Archeological Site Survey of the Raleigh Heights Area, Reno, Nevada. BLM Carson City Report CR 3-421P.

Intensive survey located 26Wa2145-2151, all of which were collected. Attempted to redefine 26Wa1402 & 2146, across the stream from the project.

1975d Archeological Reconnaissance of the Crystal Bay Improvement District. Ms. on file, Nevada Archaeological Survey.

## Pinzl, J. J.

1976 Right-of-way, N-12773, Sierra Pacific Power Company, Bailey-Spanish Springs 14.4 KV Extension  
BLM Carson City Report CR 3-65P.

## Pippin, Lonnie C.

1980a Preliminary Cultural Resources Reconnaissance of the Reno-Sparks Sewage Effluent Sludge Disposal Alternative Spanish Springs Valley, Washoe County, Nevada.  
BLM Carson City Report CR 3-392P.

Survey found 26Wa2689-2696 in seven localities in Spanish Springs Valley. One site (Wa2689) was may have excavation potential; 100% survey recommended.

1980b Prehistoric and Historic Patterns of Lower Pinon-Juniper Woodland Ecotone Exploitation at Borealis, Mineral County, Nevada. Desert Research Institute Technical Report Series 17.

Survey and evaluation of six square miles revealed 153 prehistoric and historic sites (26Mn194-347); all sites were flagged, no collections made.

## Pope, Charles

- 1979 Cultural Resources Report, N-20913 Right-of-Way, McClatchy Newspapers, Sicensee of Radio Station KOH. BLM Carson City Report CR 3-276P.

Survey located CrNv-03-1134 - 1137; all were collected.

- 1980 Cultural Resources Report: Red Rock Estates Right- of-Way N-28605. BLM Carson City Report CR 3-457P.

## Powers, Stephen

- 1877a Centennial Mission to the Indians of Western Nevada and California. Annual Report of the Smithsonian Institution for 1876, pp. 449-460.

General report of itinerary, includes data on location and population of Washoe, Paiute and Mono, Washoe-Paiute war, Paiute pinenut locales, and rules of tresspass.

- 1877b Tribes of California. Contributions of North American Ethnology, Vol. III. Department of the Interior, U.S. Geographical and Geological Survey of the Rocky Mountain Region (reprinted 1976, Berkeley: University of California).

- 1970 The Life and Culture of the Washo and Paiutes. Ethno-history 17:3-4:114-122, 135-138.

Reprint of part of the report on Indians of California and Nevada; data on Washoe-Paiute languages, material culture, ceremonies, technology and festivals.

## Preuss, Charles (Translated and edited by E.G. Gudde and E.K. Gudde)

- 1958 Exploring with Frémont. Norman: University of Oklahoma Press

## Price, J. A.

- 1962 Washo Economy. Nevada State Museum Anthropological Paper 6.

Excellent literature review, plus original research on precontact Washoe. Originally an M.A. thesis (University of Utah), presents material on white contact and its effect on the Washoe.

- 1963a Washo Culture Change. Nevada State Museum Anthropological Paper 9.

- 1963b Some Aspects of Washo Life Cycle. University of Utah Anthropological Papers 67:96-114.

Describes various Washoe rites of passage reconstructed from precontact times.

Price, J. A. (con't)

- 1963c Washo Prehistory: A Review of Research. University of Utah Anthropological Papers 67:78-95.

Discussed collections at various sites in Douglas and Alpine Counties, plus some unrecorded data.

- 1980 The Washoe Indians: History, Life Cycle, Religion, Technology, Economy and Modern Life. Nevada State Museum Occasional Papers 4.

Purdy, Tim I.

- 1980 The Costantia House. Lassen County Times, March 12.

A short history of the Ross Ranch, southeast of Constantia, California. Included is a photograph of the old ranch.

Ranere, Anthony J.

- 1970 Prehistoric Environments and Cultural Continuity in the Western Great Basin. Tebiwa 13:2:52-72.

Summary of archaeology and ethnography in the western Basin, especially Pyramid Lake, Humboldt and Carson Sinks.

Ratay, Myra Sauer

- 1973 Pioneers of the Ponderosa: How Washoe Valley Rescued the Comstock. Sparks: Western Printing and Publishing Company.

Data on several historic sites in Washoe County, as well as photographs of Indian artifacts from the area. Interesting ethnographic information.

Reichlen, P. and R. F. Heizer

- 1966 The Ophir Skull from Virginia City, Nevada. University of California Archaeological Survey Report 66:85-99.

Rediscovery of plaster cast of Ophir Skull, forgotten for 90 years; originally described by DeQuille in 1876, from a 300-400' deep shaft in the Ophir Mine, Virginia City.

Rendall, Doris L.

- 1966 A Barbed Antler Point found at Pyramid Lake, Nevada. American Antiquity 31:740-742.

Riddell, Francis A.

- 1956a Archaeological Research in Lassen County, California. University of California Archaeological Survey Report 33:44-49.

- 1956b Final Report on the Archaeology of Tommy Tucker Cave. University of California Archaeological Survey Report 35:1-24.

- Riddell, Francis A. (cont'd)  
 1960 The Archaeology of the Karlo Site (Las-7), California.  
 University of California Archaeological Survey Report 53.
- 1978 Honey Lake Paiute Ethnography. Nevada State Museum  
 Occasional Papers 3:1.

- Robison, Ruby  
 1977 Letters to the Editor. Desert Magazine 40:11:47.

Information on Weeks.

- Rocha, Guy Louis  
 1980 Reno's First Robber Baron. Nevada Magazine 40:2:28-29,62.

Contains 1868 photograph of Myron C. Lake's toll bridge across Truckee River at Reno. The date generally given for Lake's purchase of Fuller's bridge is 1863, but Rocha located a Territorial Enterprise advertisement dated June 29, 1861 in which Lake described his purchase of the bridge and hotel at Fuller's Crossing.

- Rollin, La Verne  
 1966 The Story of Nevada Mining. Brochure prepared by  
 Nevada Bureau of Mines.

Gives a chronology of mineral discoveries and mining camps in Nevada.

- Roney, J.  
 1977 Cultural Resources Survey for Geothermal Leasing near  
 Fallon, Nevada. BLM Winnemucca Report  
 CR 2-164.

Reports on sites along the immigrant trail and the low pebble mounds (26Ch510).

- Rose, Robert L.  
 1969 Geology of Parts of the Wadsworth and Churchill Butte  
 Quadrangles, Nevada. Nevada Bureau of Mines Bulletin 1.

Discusses geology and history of the eastern portion of the Virginia Range.

- Ross, Donald C.  
 1961 Geology and Mineral Deposits of Mineral County, Nevada.  
 Nevada Bureau of Mines Bulletin 58.

History and mineral production of various mines.

Roust, N. L.

1966 The Archaeology of Granite Point, Pershing County, Nevada. University of California Archaeological Survey Report 66:37-72.

1967 Preliminary Examination of Prehistoric Human Coprolites from Four Western Nevada Caves. University of California Archaeological Survey Report 70:49-88.

Roust, Norman L. and C.W. Clewlow, Jr.

1968 Projectile Points from Hidden Cave (NV-Ch-16) Churchill County, Nevada. University of California Archaeological Survey Report 71:103-115.

Roust, Norman L. and Gordon L. Grosscup

n.d. The Archaeology of Hidden Cave (NV-Ch-16) Nevada. Ms. # 171. Archaeological Research Facility, Berkeley.

Preliminary, unpublished report on stratigraphy and artifacts. Results await reanalysis by the American Museum of Natural History.

Rozaire, Charles

1963 Lake-Side Cultural Specializations in the Great Basin. Nevada State Museum Anthropological Papers 9:72-77.

Discussion of evidence for lacustrine oriented subsistence pattern in the Holocene, based on Lovelock, Humboldt Cave, Hidden Cave, Leonard Rockshelter, Pinto Basin and Lake Mojave.

Ruhstaller, Tod

1977 Cultural Resources Report: Huffaker Tram Road. Washoe County, Nevada. BLM Carson City Report CR 3-170P; NSM 16-81.

Archaeological reconnaissance of right-of-way in the Truckee Meadows of 5 acres revealed 1 site (26Wa2645). Rock wall noted nearby.

Ruhlen, George

1964 Early Nevada Forts. Nevada Historical Society Quarterly 7:3-4.

Description of forts, posts, and military camps in Nevada.

## Rusco, Elmer

- 1975 Good Time Coming? Black Nevadans in the Nineteenth Century. Westport, Connecticut: Greenwood Press.

## Rusco, Mary

- 1969a Survey and Excavation in Spanish Springs Canyon Area, 1969. Nevada Archeological Survey Reporter 3:5:5-6.

Discusses sites 26Wal606, 1604, 1608 & 1612, Wal606 excavated.

- 1969b Report of Archeological Investigations in the Spanish Springs Canyon Area, Washoe County, Nevada. BLM Carson City Report CR3-49P.

Report of the test of Heizer and Baumhoff's theory that rock art manufacture was a subsistence related activity; Rusco expects her research to support their suggested chronology. Suggests that glyphs may be related to more than big game; rock walls may indicate camps, rather than hunting blinds as suggested by Heizer and Baumhoff. Spanish Springs camps were occupied from early Rosegate times to protohistoric.

- 1970a News and Notes. Nevada Archeological Survey Reporter 4:2:3.

Rusco and Tuohy's expedition to determine the impacts from construction at 26Do38; impact negative.

- 1970b Nevada Archeological Survey Annual Report, 1969-1970. Nevada Archeological Survey Reporter 4:3:3-8.

Short report of test excavation of 26Wal608, and further surveys in Spanish Springs area.

- 1971 Nevada Archeological Survey Annual Report, 1970-1971. Nevada Archeological Survey Reporter 5:3.

Report on the continuing progress in the analysis of data from several sites in Spanish Springs.

- 1973 Types of Anthropomorphic Figures in Great Basin Art. Nevada Archeological Survey Reporter 7:2:4-17.

Seriation of elements based on Heizer and Baumhoff's anthropomorphic styles. Looks for intuitive types and redefines elements. Proposes method for defining style horizons which should reflect spatial and temporal variation.

- 1975 Preliminary Evaluation of Archaeological Potential Along Proposed Power Line Routes Report. Lyon, Washoe, Pershing, Churchill, Lander and Humboldt Counties, Nevada. BLM Carson City Report CR 3-468P; NSM 18-10.

Delineates type, condition and management of sites along alternate power-line routes. Sites in District include (26Wal455, Ch4/55, 84, 307, 195-199, 168, 175, 192, 166, 170-173, & Ly27).

## Rusco, Mary (cont'd)

- 1976b Archaeological Resources Short Report, NAS #202-C, Chevron Oil Company, Wilson Hot Springs. BLM Carson City Report CR 3-193P.

Archaeological reconnaissance of six drilling sites revealed 3 sites (26Ly247-249). Partial collections were made. No further impacts noted and clearance approved.

- 1977 Evaluation of Cultural Resources of the Proposed Watasheamu Reservoir Location, Lahontan Basin, Toiyabe National Forest, Nevada and California. Nevada State Museum Report 1007; BLM CR 3-382P.

Provides summaries of Elsasser's (1957), Davis' (1958) and other reports from the area. Discusses evolution of the Martis-Kings Beach continuum and how it relates to the 7 sites (4-Alp-17-22) found on the east fork of the Carson River. Evaluates Elsasser on the basis of the value of stratified sites, versus Elston on value of unstratified single component sites.

- 1979 Archaeological Reconnaissance for Republic Geothermal, Inc. Gabbs Valley, Nevada. BLM Carson City Report CR 3-328P; NSM 18-65.

Archaeological reconnaissance of six temperature gradient holes revealed 26Mn92-93 and 26Ny2012. Two sites were collected. No adverse impacts were seen from the proposed development, hence clearance was recommended.

- 1980 Addendum to Stephenson (1968) Report on Excavation of 26Wal604. Artifact Analysis. M.s. on file Nevada State Museum Carson City.

- 1981 The Spanish Springs Canyon and Upper Valleys Archaeological Project: Progress Report. BLM Carson City Report CR 3-616P.

## Rusco, Mary and Amy Dansie

- 1977 Archaeological Records and Literature Search: U.S. Forest Service, Toiyabe National Forest, Bridgeport District and Humboldt National Forest, Santa Rosa District. Nevada State Museum Report 18-24.

Records and literature search revealed 37 sites in the District among which 26Mn104 is believed to be quite early.

Rusco, Mary and A. Dansie (con't)

- n.d. Cultural Resources Report: Report of Preliminary Examination and Test Excavation of an Archaeological Site on the Proposed Route of the Carson City South Interceptor Sewer, Ormsby County, Nevada. Nevada State Museum Report 13-2.

An estimated 100 concentrations of historic period debris were observed on the survey of "Old Camp" settlement, a contact period Washoe site.

Rusco, Mary and Evelyn

- 1974 Report of Archaeological Reconnaissance along Proposed 230 KV Transmission Line Right of Way of Sierra Pacific Power Co., Part I. Nevada State Museum Report 18-9.

Reconnaissance of transmission line corridor. Discovered 77 sites, 62 of which were too small for testing.

Rusco, Mary and D. R. Tuohy

- 1975 Archaeological Assessment of Five Sierra Pacific Potential Power Plant Sites in the State of Nevada. BLM Winnemucca Report CR 2-10; NSM 18-13.

Discusses pebble mounds near the Sadmat site. Also mentions 26Ly30-40, and Ch189-191 in the District.

Rush, F. Eugene and Victor R. Hill

- 1972 Bathymetric Reconnaissance of Topaz Lake, Nevada and California. Nevada Department of Conservation and Natural Resources, Water Resources Information Series Report 12.

History on the building of Topaz Lake.

Russell, Israel C.

- 1885 Geologic History of Lake Lahontan, A Quaternary Lake of Northwestern Nevada. U.S. Geological Survey Monograph 13.

The early salt and soda industry of the Carson Desert Region is described and illustrated.

- 1895 Present and Extinct Lakes of Nevada. National Geographic Monographs 1:4 (reprinted as Camp Nevada Monograph 3, 1976).

Sanborn, Margaret

1974 The American. River of El Dorado. New York: Holt, Rinehart and Winston.

An account of Johnson's cutoff across the Sierra, later used by George Chorpensing's "Jackass Mail".

Sapir, Edward

1917 The Status of Washo. American Anthropologist 19:449-450.

Agrees with Harrington (same volume) that Chumash and Washoe are linguistically related Hokan groups.

Scaglione, John

1949 Ogden's Report of his 1829-1830 Expedition. California Historical Society Quarterly 27:2:117-124.

Scaglione suggests that Ogden penetrated east from the Humboldt Sink.

Schaafsma, Polly

1971 The Rock Art of Utah. Papers of the Peabody Museum of Archaeology and Ethnology.

Schellbach, Louis

1927 A Bone Implement of the Washo Basin. Museum of the American Indian, Heye Foundation Indian Notes 4:4:400-403.

An ornamented bone awl-like implement found on the eastern shore of Washoe Lake amongst the dunes. Noted the dunes appear to be the remains of an extensive old Washoe camp.

Schiffer, Michael B. and George J. Gumerman

1977 Conservation Archaeology: A Guide for Culture Resource Management Studies. New York: Academic Press.

Schilling, John H.

1976 Metal Mining Districts of Nevada, 3rd Edition. Nevada Bureau of Mines and Geology, Map 37.

Schott, Charles

1900 The Transcontinental Triangulation and the American Arc of the Parallel. U.S. Coast and Geodetic Survey Special Publication 4.

Schrader, Frank C. 1947

1947 Carson Sink Area, Nevada. U.S. Geological Survey Open File Report. Ms. on file Mackay School of Mines Library University of Nevada, Reno.

Seelinger, Evelyn

1976 Archaeological Investigations of Lahontan State Recreation Area. Nevada State Museum Report 18-5; BLM CR 3-111P.

Archaeological survey for a recreation development project located 16 sites. 26Ch371-375; 26Ly238-240, 242-245 were collected. 26Ch376-377, 26Ly241, 246 were recorded. Recommended rock art site 26Ly241 receive protective measures; also recommended 26Ly246 be tested.

1977a Cultural Resources Report on the Sun Valley Sewer Project. Nevada State Museum Report 16-35; BLM CR3-167P.

Survey located 26Wa2619-2621.

1977b Archaeological Resources Short Report: Carson City Treatment Plant Expansion Project Reconnaissance, Carson City/Ormsby County. Nevada State Museum Report 13-13.

Survey in Eagle Valley located 26Or129-131. 26Or131 may have deposits; may be eligible for the Register. Avoidance recommended.

1978a Summary of Cultural Resources for the Eastern Lake Tahoe Basin, Washoe and Placer Counties, Nevada, and Eldorado County, California. Nevada State Museum Report 18-42.

Archives search for proposed SPPC projects in the Truckee River basin located 13 sites (26Do4, 8, 36; 26Wa38-39, 1476, 2056, 2137, 168, 169, 180-182).

1978b A Preliminary Archaeological Reconnaissance of Four Tracts in the Toiyabe National Forest: Blackwell Canyon, Fryingpan Creek, Sweetwater Summit, Summit Spring, Mono County, California, Lyon and Mineral Counties, Nevada. Nevada State Museum Report 18-25.

Survey by stratified random sample consisting of 48 linear transects of approximately 40 acres each. Management recommendations include additional survey and tests of Mno-702, restricted access to Ly54, Mno-693-695, 701, 704, and Mn49-50, and avoidance of Ly 54, Mn52, Mno-693-694, 701, and 704.

Seelinger, Evelyn, Bonita Brown, and Mary Rusco

1979 Cultural Resource Overviews of Five Proposed Wilderness Areas in Northern Nevada. BLM Carson City Report CR 3-387P.

Covers large area around Pyramid Lake. Tuohy's overview of the Pyramid Lake area is included. Excellent ethnographic and historic backgrounds.

Sellards, E. H.  
1952 Early Man In America. Austin: University of Texas Press.

Serelj, A. and David P. Adam  
1975 A Late Holocene Pollen Diagram from Near Lake Tahoe  
El Dorado County, California. U.S. Geological Survey  
Journal of Research 3:6:737-745.

Description of pollen profile from Ralston Bog.

Shamberger, Hugh A.  
1969 Water Supply for the Comstock. U.S. Geological Survey  
Professional Paper 779.

Pertinent data on the history of Virginia City and the surrounding region.

1970 The Story of Rawhide. Carson City: State of Nevada,  
Department of Conservation and Natural Resources.

History of Rawhide's mines and water development.

1973 The Story of Fairview. Carson City: Nevada Historical Press.

History of Fairview and its mines. Also, history on Nevada  
Hills, Togo Canyon, Chalk Hills, Fairfield, Eastgate City  
Sand Springs and West Gate.

1974 The Story of Wonder. Carson City: Nevada Historical Press.

History of Wonder, Hercules, Victor, Redtop, Kingston and  
La Plata.

1978 The Story of Candelaria and its Neighbors. Carson  
City: Nevada Historical Press.

Data on Candelaria, Columbus, Metalic City, Belleville,  
Marietta, Sodaville and Coaldale.

Shepperson, Wilbur S.

- 1966 Retreat to Nevada. A Socialist Colony of World War I.  
Reno: University of Nevada Press.

Detailed history of the socialist town of Nevada City.

- 1970 Restless Strangers. Nevada's Immigrants and Their Interpreters. Reno: University of Nevada Press.

Shimkin, D. B. and R. M. Reid

- 1970 Socio-cultural Persistence Among Shoshoneans of the Carson River Basin (Nevada). In Language and Culture of Western North America. E. H. Swanson, ed., pp.172-200. Pocatello: University of Idaho Press.

Excellent review of Northern Paiute ethnographic data and the reasons for the more tenacious aspects of their culture. A must for anyone interested in aboriginal occupation of the area.

Shutler, Richard J., Jr.

- 1960 Archaeological Survey of the Peavine Mountain Watershed Project. Ms. on file Nevada State Museum.

Negative report on a reconnaissance of Peavine Mt. from the eastern slope to the northwest portion of Reno. No traces of aboriginal occupation were discovered, although part of the survey covered the river courses. Curiously, he concludes the area was uninhabited because of insufficient resources, ethnographic data to the contrary.

- 1961 Correlation of Beach Terraces with Climatic Cycles of Pluvial Lake Lahontan, Nevada. Annals of the New York Academy of Sciences 95:513-520.

Reconstruction of paleoenvironmental conditions in western Nevada. Definition of the "Great Basin Archaic" and its significance to the prehistory of the west.

- 1962 Archaeological Excavations and Survey in Washoe and Churchill Counties, Nevada. Preliminary Report to the Secretary, Smithsonian Institution.

Could be an important document, unfortunately no copies on file in Nevada, and correspondence to Shutler (4-80) proved negative.

Silberman, M. L., D. E. White, T. E. C. Keith and R. D. Dockter  
 1968 Duration of Hydrothermal Activity at Steamboat Springs  
 Nevada, From Ages of Spatially Associated Volcanic  
 Rocks. U.S. Geological Survey Professional Paper 458-D.

Simpson, James H.  
 1876 Report of Explorations Across the Great Basin Territory  
 of Utah for a Direct Wagon-Route from Camp Floyd to  
 Genoa, in Carson Valley, In 1859. U.S. Army Engineer  
 Department, Washington D.C.

Early exploration of the Carson City District; mentions sites  
 Ly7, 9 & Ch78 indirectly.

Siskin, E. E.  
 1938 Washo Territory. American Anthropologist 40:4:626-627.

Indicates the Washo recognized 3 internal divisions, also  
 discusses perimeter of Washo territory.

Smith, J. E. and A. B. Elsasser  
 1962 Test Excavation of Cave Rock, Nevada. Kroeber  
 Anthropological Society Papers 27:45-48.

1957 dig at 26Do8, following test excavations by Heizer and  
 Elsasser (1953). Deposits to 42". No historic or protohistoric  
 occupation noted. Probably a temporary hunting camp avoided  
 by the Washo because it was the place of their "wild man" myth.

Smith, Timothy B.  
 1913 Recollections of the Early History of Smith Valley.  
 Nevada Historical Society 3rd Biennial Report, 1911-  
 1912, pp. 224-230.

History of settlement.

Snyder, C. T. and W. B. Langbein  
 1962 The Pleistocene Lake in Spring Valley, Nevada and its  
 Climatic Implications. Journal of Geophysical Research  
 67:6:2385-2394.

Quaternary environments in east-central Nevada.

Snyder, J. O.  
 1917 The Fishes of the Lahontan System of Nevada and Northeast  
 California. Bulletin of the U.S. Bureau of Fisheries 35.

Stanley, D. A., G. M. Page and R. Shutler, Jr.

- 1970 The Cocanour Site: A Western Nevada Pinto Phase Site with Two Excavated "House Rings". Nevada State Museum Anthropological Papers 15:1-46.

Excavation of several house rings and survey of 3 mile area on the shore of Lake Lahontan revealed Pinto Phase cultural material.

Stearns, Patricia A.

- 1978 Cultural Resource Report, Price Lake Trail. U.S. Forest Service, Reno Report TD1-1-78.

Survey revealed one site, not recorded into Nevada Trinomial system.

- 1979a Cultural Resource Report. Merle Windburn Land Exchange. U.S. Forest Service, Reno Report TD 1-15-79.

Survey located two sites (26Wa2414 & another with no Nevada trinomial).

- 1979b Barber Peak Pinyon-Juniper Wildlife Habitat Improvement, Cultural Resources Report. U.S. Forest Service, Reno Report TD1-5-79.

Survey located 14 sites in Alpine Co.; no California trinomials.

Stearns, Steven

- 1980 Cultural Resource Evaluation of the Evans Land Exchange, Lassen County, California. BLM Carson City Report CR3-523P.

Survey in Lassen County included resurvey of the Hallelujah Junction area. Located 16 new sites (CrNv-03-2139 to 2155).

Steed, Paul P.

- 1975 The Grimes Point Petroglyph Site. Ms on file University of California, Los Angeles, Rock Art Archives.

A survey of the Grimes Point area recorded 95 glyphs: 3% anthropomorphs; 8% zoomorphs; 89% abstract.

Steinberg, Larry and Dennis Thompson

- 1976 Cultural Resources Short Report: NHD Dayton Materials Area 136-C, Lyon County, Nevada. Nevada State Museum Report 10-8.

Archaeological survey of 160 acres located 10 prehistoric sites (26Ly224-133) which were recorded and collected; and one historic site (26Ly234) which was also recorded and collected. Clearance recommended.

Stephenson, Robert L.

1967 Working Together. Nevada Archeological Survey Reporter  
1:7:5-6.

Progress report on Spanish Springs.

1968 The Spanish Springs Peak Area: A Brief Initial Report  
of Investigations. Nevada Archeological Survey Reporter  
2:4:6-10.

Report on survey and excavation in Spanish Springs by the NAS  
in 1968. Time diagnostic artifacts indicate repeated reoccupation  
of the area for 2500 years. House rings, associated with rock  
art, were recorded.

Steward, Julian H.

1929 Petroglyphs of California and Adjoining States. University  
of California Publications in American Archaeology and  
Ethnology 24:2.

Mentions several locations in the Carson City District. First  
scholarly inventory of rock art in California and Nevada.  
Attempts a synthesis of design element distributions and an  
analysis of the concept of rock art.

1937 Linguistic Distributions and Political Groups of the  
Great Basin Shoshonean. American Anthropologist 39:625-634.

Disagrees with Park, et al. on tribal distributions.

1938 Basin-Plateau Aboriginal Sociopolitical Groups. Smith-  
sonian Institution Bureau of American Ethnology Bulletin  
120.

Classic work on the cultural ecology of Great Basin aboriginal  
groups. Primary ethnographic model for "Desert Culture" adaptation.  
Weak to non-existent data on lacustrine groups.

1939a Some Observations on Shoshonean Distributions. American  
Anthropologist 41:261-265.

Reply to Park, et al. (1938). Feels discrepancies in interpretation  
are probably due to differences in classification, especially  
concerning the use of the term "band", and boundary definitions.

1939b Changes in Shoshonean Indian Culture. Scientific Monthly  
49 (December):524-537.

Important article on the Paiute and Shoshone and their relation-  
ships to their neighbors. Notes the impoverished state of Basin  
groups, except for the Bannock and the Ute. Review of arch-  
aeological evidence to date, and brief ethnographic sketch.  
Many photos.

Steward, Julian H. (cont'd)

- 1940 Native Cultures of the Intermontane (Great Basin) Area. Smithsonian Miscellaneous Collections 100:445-502.
- 1941 Culture Element Distributions: XIII. Nevada Shoshoni. University of California Anthropological Records 4:2: 209-360.
- 1955 Theory of Culture Change. Urbana: University of Illinois Press.

The concepts and methods of culture-ecology used to determine the ordering of functional relationships between culture patterns and the processes of culture change.

- 1970 The Foundations of Basin-Plateau Shoshonean Society. In Language and Culture of Western North America. E. H. Swanson, ed., pp. 113-151. Pocatello: University of Idaho Press.

Steward, Julian H. and E. Wheeler-Voeglin

- 1974 The Northern Paiute Indians. In Paiute Indians, volume 3. D.A. Horr, ed., pp. 1-307. New York: Garland.

Divided into three periods: 1845 (Aboriginal Period); 1845-1880 (Predatory Bands); 1880--- (Assimilation and Reservation). Mentions several areas within the District, including Truckee River, Carson River, Carson Lake, Walker River, and Walker Lake.

Stewart, George R.

- 1962 The California Trail. An Epic with Many Heroes. New York: McGraw-Hill.

Stewart, Omer C.

- 1937 Northern Paiute Polyandry. American Anthropologist 39:368-369.

Refutes Steward (1936) by noting polyandry among the Northern Paiute of Burns, Oregon, Pyramid Lake, McDermitt, Winnemucca and Owyhee, Nevada. Also notes it was not a common practice, nor institutionalized.

- 1938 Northern Paiute. American Anthropologist 40:405-407.

Brief account of boundaries, affiliations. Suggests long, continuous occupation of the area.

- 1939 The Northern Paiute Bands. University of California Anthropological Records 2:3:127-149.

Delineates Northern Paiute and Washoe territory and boundaries.

Stewart, Omer C. (cont'd)

- 1941 Culture Element Distributions: XIV. Northern Paiute.  
University of California Anthropological Records 4:3:  
361-446.

Important source on Washoe, Achomawi and Northern Paiute elements.

- 1944 Washo-Northern Paiute Peyotism. A Study in Acculturation.  
University of California Publications in American Archaeology  
and Ethnology 40:3:63-142.

Introduction of the Peyote cult to the Washoe and Northern  
Paiute. Discusses the nature of ceremony and ideology and a  
history of Peyotism. Compares and contrasts practices among  
different groups, and gives a discussion of the cult's diffusion.

- 1966 Tribal Distributions and Boundaries in the Great Basin.  
In The Current Status of Anthropological Research in  
the Great Basin: 1964. W. L. d'Azevedo, ed. Desert  
Research Institute Publications in the Social Sciences  
1:167-238.

Synthesis of available data on the tribal boundaries of several  
Native American Indian groups in the West. Research resulted from  
a study for the Indian Land Claims Commission. See d'Azevedo  
(1966) for a complete criticism of Stewart's position.

Stroebe, Bill

- (1970s) The Mailman Doesn't Stop Here Anymore. Unidentified  
Newspaper Clipping on file at the Nevada Historical  
Society, Reno.

Data on Constansia, California and the nearby Ross Ranch. Includes  
a photo of the ranch's Catholic church.

Strong, E.

- 1969 The Stone Age in the Great Basin. Portland: Binford &  
Mort.

Mentions Hidden Cave and Grimes Point.

Tadlock, W. Lewis

- 1966 Certain Crescentic Stone Objects as a Time Marker in  
the western United States. American Antiquity 31:662-675.

Early sites in Nevada yielding crescents and early point types.  
States that these crescents are not associated with later  
point types, but this was proven incorrect in Long Valley.  
Provides analysis and discussion of distributions and possible  
functions of Great Basin Transverse series points. Some  
faulty correlations---use with caution.

## Teague, George

- 1980 Reward Mine and Associated Sites. Western Archeological Center, National Park Service, Publications in Anthropology 11.

## Teague, George, and Lynette Shenk

- 1977 Excavations at Harmony Borax Works. Western Archeological Center, National Park Service, Publications in Anthropology 6.

## Texas Tech University

- 1980 Nevada Historic Engineering Site Inventory Phase I. History of Engineering Program, Texas Tech University, Lubbock, Texas. (Prepared through the Nevada Division of Historic Preservation and Archaeology).

An extensive computer-generated list of historic sites in Nevada. Useful for the alphabetical listing of sites by county and construction dates. Information on individual sites is scanty, sometimes erroneous, and not documented.

## Thomas, David Hurst

- 1971a Prehistoric Subsistence-Settlement Patterns of the Reese River Valley, Central Nevada. Unpublished Ph.D. dissertation University of California, Davis.

Test of Steward's (1938) ethnographic model of Great Basin Shoshone cultural ecology against the archaeological remains of the Reese River Valley. Found Steward's model best explains the archaeological data. Also reviews the archaeology of the central Great Basin, placing Reese River into wider perspective. Presents the initial version of the Key I, for central Great Basin Projectile Points.

- 1971b Historic and Prehistoric Land-Use Patterns at Reese River. Nevada Historical Society Quarterly 14:2-9.

Compares historic and prehistoric vegetation in the Austin area, using sequences of comparative photographs. Thomas suggests that the two major factors involved in western Shoshone acculturation were depletion of the woodland and overgrazing of the grassland.

- 1973 An Empirical Test of Steward's Model for Great Basin Settlement Patterns. American Antiquity 38:115-176.

See Thomas (1971a).

- 1974 An Archaeological Perspective on Shoshonean Bands. American Antiquity 76:11-23.

A consideration of the archaeological outcomes of the Steward and Service models of Great Basin social organization. Archaeologic data from the Reese River Valley are presented for prehistoric comparison. Score, 4th quarter: Steward - 1, Service - 0.

Thomas, David Hurst (cont'd)

1979 Archaeology. New York: Holt, Rinehart and Winston.

Contains several sections on Great Basin prehistory.

1981 How to Classify the Projectile Points from Monitor Valley, Nevada. Journal of California and Great Basin Anthropology 3:1:7-43.

Revision of Key I for Great Basin Projectile Points, based on an analysis of comparative data from over 20 sites in the Great Basin and new chronological data from Gatecliff Shelter, Monitor Valley, Nevada. Cautions against applying this key to collections outside of central Nevada.

n.d.a The Archaeology of Monitor Valley, Nevada. American Museum of Natural History Anthropological Papers. In press.

Central Great Basin archaeology, with Basin-wide comparisons.

n.d.b The Archaeology of Hidden Cave, Nevada. American Museum of Natural History Anthropological Papers. In preparation.

n.d.c An Overview of Central Great Basin Prehistory. Society for American Archaeology Special Publication. In press.

The central Great Basin, with a relative paucity of well-stratified sites is, nevertheless well suited to research on matters of cultural ecology and subsistence of hunter-gatherers. The lifeway of the area is limited to the Archaic pattern. Still feels that Steward's model best explains the archaeological record in this area.

Thomas, David Hurst and Robert L. Bettinger

1976 Prehistoric Pinon Ecotone Settlement of the Upper Reese River Valley, central Nevada. Anthropological Papers of the American Museum of Natural History 53:3:263-366.

Analysis of 1971 pinyon-ecotone survey data from Reese River.

Thomas, David Hurst and Trudy Thomas

1972 New Data on Rock Art Chronology in the Central Great Basin. Tebiwa 15:1:64-71.

Attempted correlation of representational rock art from Toquima Cave with its suggested chronological imagery.

Thomas, Trudy

- 1976 Petroglyph Distribution and the Hunting Magic Hypothesis in the Central Great Basin. Tebiwa 18:2:65-74.

Attempt to correlate rock art motifs with the surfaces on which they occur.

Thompson, G. A. and D. B. Burke

- 1974 Regional Geophysics of the Basin and Range Province. Annual Review of Earth and Planetary Sciences 2:213-238.

Thompson, G. A., D. E. White and C. H. Sandberg

- 1968 Regional Geology of the Steamboat Springs Area, Washoe County, Nevada. U.S. Geological Survey Professional Paper 458-A.

Tidestrom, Ivar

- 1925 Flora of Utah and Nevada. Contributions from the U.S. National Herbarium 25.

Tidwell, W. D., S. R. Rushforth and D. Simper

- 1972 Evolution of Floras in the Intermountain Region. In Intermountain Flora, Volume 1. A. Cronquist, A.H. Holmgren, N.H. Holmgren, and J.L. Reveal, pp. 19-39. New York: Hafner.

Ting, Peter

- 1967 A Pyramid Lake Surface Artifact Assemblage. Nevada Archeological Survey Reporter 1:8:4-12.

- 1968 Bone Points from Pyramid Lake. Nevada Archeological Survey Reporter 2:3:4-13.

Toll, David W.

- 1976 The Compleat Nevada Traveler. Reno: University of Nevada Press.

Many historical points are included in this travel guide. Contains several errors, according to historians.

Toll, Susan

- 1980 Archaeological Reconnaissance of Seismic Lines in Dixie Valley, Nevada. BLM Carson City Report CR3-490P.

Archaeological reconnaissance of 33 miles of seismic test line and 5 miles of access route in Dixie Valley revealed 5 archaeological sites (26Ch694-697 & IMR342-St5). Avoidance recommended.

Townley, Carrie M.

- 1978 S Bar S Ranch and the Lower Truckee River. Helen Marye Thomas Memorial Series No. 2: Agricultural Experiment Station, Max C. Fleischman College of Agriculture, University of Nevada, Reno.

Discusses the Indians, early explorers and immigrants, the growth of Wadsworth and ranches in the vicinity; specifically the S Bar S Ranch, formerly known as the Staige-Stop, Ranch.

Townley, John M.

- 1977 Turn This Water Into Gold. The Story of the Newlands Project. Reno: Nevada Historical Society.

History of the Carson Desert, in addition to the story of the first Federal reclamation project.

- 1979 U. S. 395 Relocation Project, Peavine City Area. In The Archeology of U. S. 395...by Robert Elston, pp. 402-405 (Ms. originally written in 1974). Nevada Highways Department Report.

Townsend, Gail

- 1974a A Preliminary Archeological Reconnaissance of the Buckeye-Roundhill 120 KV Right-of-Way. Nevada Archeological Survey Report.

26Do39 was encountered during a reconnaissance for the Sierra Pacific Power Company. The site was collected and tested. Clearance recommended.

- 1974b A Preliminary Archeological Survey of U.S. 395 Between Stead Interchange and Stateline. BLM Carson City Report CR 3-(8?)P.

Located several lithic scatters and historic sites in Anderson Pass.

- 1974c Preliminary Archeological Reconnaissance of Slide Mountain Ski Area. BLM Carson City Report CR 3-438P.

Survey to determine the efficacy of enlarging the Slide Mt. Ski Area. Located 26Wa2090-2095: a lithic scatter, a hunting drive, a rockshelter, and two isolated finds. Tests recommended for 26Wa2090-2092.

- 1974d Intensive Archeological Survey of El Rancho Buena Vista Subdivision. BLM Carson City Report CR 3-425N.

No sites located, but several recorded nearby; no recommendations.

- 1974e Preliminary Archeological Reconnaissance of the Shadow Hills Subdivision. BLM Carson City Report CR 3-432P.

Archaeological resources within the subdivision were restricted to lithic scatters and a possible historic race track (26Wa2096-2098). Tests recommended for 26Wa2097 (later revision recommends against these tests).

- 1975 Preliminary Archeological Reconnaissance of the Reno-Verdi Interceptor. BLM Carson City Report CR 3-423P.

An attempt to locate only National Register quality sites and those requiring extensive mitigation (26Wa2155-2157, 68, 154, 1406, 1407, 1411).

## Townsend, Gail (cont'd)

1976a P.A.R. for N.H.D. Project M-476(1). Widening of Glendale Road. Nevada Archeological Survey Report 118N.

Preliminary report on Glendale Road "Paint Rock" site (26Wa2065).

1976b Preliminary Archeological Reconnaissance of the Nevada Bell Buried Cable Right-of-Way from Reno to Incline. BLM Carson City Report CR 3-410P.

Little impact from proposed project. Located 26Wa2092. Clearance recommended.

## Townsend, Gail and Cameron Covington

1976 Preliminary Archeological Reconnaissance of the Ring Road from U. S. 40 North and East to U. S. 395. BLM Carson City Report CR 3-409P.

Washoe winter village located at the present Mt. View cemetery site. Five prehistoric sites (26Wal696-1700) and one historic site (26Wal675) were to receive negative impact; tests and controlled collection recommended.

## Townsend, Gail and Robert G. Elston

1975a Intensive Evaluation of the Upper Terrace Site (4-Las-321), Report to CALTRANS. BLM Carson City Report CR 3-417P.

1975b Evaluation of Impacts on Archeological Resources from the Proposed Realignment of U.S. 395 from Washoe Valley North to Panther Siding. BLM Carson City Report CR 3-8, CR 3-417, CR 3-422P.

Significant update of Elston and Turner (1968), reevaluates previously recorded sites and locates several new ones. Alternative corridors for the proposed 395 realignment were ranked for significance. Avoidance was primary recommendation.

## Treadwell, Edward F.

1950 The Cattle King. Fresno: Valley Publishers.

Data on N. H. A. "Hoc" Mason settling Mason Valley.

## True, Delbert L.

1976 Archaeological Investigations at Turtle Rock Park, Alpine County, California. University of California, Davis Report.

Survey of ca. 140 acres located and collected CA-Alp-105; no further recommendations.

Tuohy, Donald R.

1963 Archaeological Survey in Southwestern Idaho and Northern Nevada. Nevada State Museum Anthropological Papers 8.

Presents summary of environmental, ethnographic (Snake River Shoshone and Northern Paiute) and archaeological data. One site located in the District (N-2-6739) in the Truckee Basin consisted of a basalt knife--it is unclear whether this find received a Nevada trinomial.

1965 Nevada's Prehistoric Heritage. Nevada State Museum, Popular Series 1.

General overview of Nevada's prehistory directed principally at the lay reader.

1967 A Notable Stemmed Obsidian Knife from Washoe Lake, Nevada. Nevada Archeological Survey Reporter 1:5:10-11.

Isolated find from the west shore of Washoe Lake, found imbedded in lake sediments. Similar to the large stemmed knives from central California. Technological description.

1968a Some Early Lithic Sites in Western Nevada. In, Early Man in Western North America. Cynthia Irwin-Williams, ed. Eastern New Mexico University Contributions in Anthropology 1:27-39.

Review of possible early man sites in the western Great Basin with postulated temporal/cultural affiliations between those and reputedly similar assemblages (e.g., San Dieguito). Discusses several sites in the District and immediately adjacent, including Coleman, Harvey, Hathaway Beach, Sadmat and Cocanour.

1968b An Obsidian Ovate Biface from Pyramid Lake, Nevada. Nevada Archeological Survey Reporter 2:2:12-15.

Evaluation of various hypotheses concerning its age (McGee revisited). Semi-conclusion: from a quarry-workshop.

1969a Breakage, Burin Facets and the Probable Technological Linkage Among Lake Mohave, Silver Lake, and other Varieties of Projectile Points in the Desert West. Nevada State Museum Anthropological Papers 14:132-153.

Review of technology of Western Pluvial Lakes Tradition points primarily from Tonopah, Mud Lake and Sadmat site.

1969b Appendix to Recent Discoveries of Fluted Points in California and Nevada by E.L. Davis and R. Shutler, Jr. Nevada State Museum Anthropological Papers 14:170-177.

1969c Two Conical Wood Houses near Masonic, Mono County. Nevada Archeological Survey Reporter 3:3:5-11.

Two houses located in Kuzedika Paiute territory fit description of Washoe structures (galesdangl). Rare, especially in p-j zone.

1969d Test Excavation of Hanging Rock Cave, Churchill County, Nevada. Nevada State Museum Anthropological Papers 14:26-53.

Report on the re-excavation of a cave site near Grimes Point revealed cultural material to a depth of 60", including Pinto, Humboldt, Elko and Rosegate series points. Perishables constitute the bulk of the collection. Attributed to the Lovelock Culture, with a radiocarbon date of A.D. 250+100. Deposits indicate sporadic occupation by a culture which shared many traits with the Southwest.

1970a The Coleman Locality: A Basalt Quarry and Workshop near Falcon Hill, Nevada. Nevada State Museum Anthropological Papers 15:143-206.

Review of investigations between Pyramid and Winnemucca Lakes which may be a Western Pluvial Lakes Tradition site.

1970b Violence at Miller's Ranch. Nevada Archeological Survey Reporter 4:2:5-10.

Report on burial found under a mortar, with a point in its eye.

1970c Cultural Succession at Mud Lake, or, A Preliminary Report on the Nevada State Museum's Excavation of Lowe Cave, Nye County, Nevada, 1970. Nevada Archeological Survey Reporter 4:5:3-4.

1973 A Newly Discovered Pit-and-Groove Petroglyph Site, Lyon County, Nevada. Nevada Archeological Survey Reporter 7:2:26-29.

Within the District, in the Dead Camel Mountains, overlooking the Lahontan Reservoir at an elevation of 4800', the site (26Ly250) is not associated with a game trail or hunting blind (a suggestion advanced by Heizer and Baumhoff (1962) for pit-and-groove glyphs).

1974a A Comparative Study of Late Paleo-Indian Manifestations in the Western Great Basin. In A Collection of Papers on Great Basin Archaeology. R. Elston and L. Sabini, eds.. Nevada Archeological Survey Research Paper 5:92-116.

Discussion of possible Paleo-Indian lithics and a review of the fluted point-big game hunting tradition in the western Basin.

Tuohy, Donald R. (cont'd)

- 1974 In the Path of Electrical Energy. Nevada Archaeologist 2:1:18-23.

Survey of Edwards Creek playa for the SPPC and report of general plan developed by the SPPC and governmental agencies to protect cultural resources. 67 sites were recorded near, or on the right-of-way. Notes the virtual absence of "early man" finds in central or eastern Nevada. Pinto was also scarce, most materials reflecting the period from 2500 B.C. to A.D. 1200. Also presents a brief summary of ceramic distributions.

- 1977 More on Clovis Points from Washoe Lake, Nevada. Nevada Archeological Survey Reporter 10:4:1-7.

Summary of reserach at Washoe Lake and description of 9 Clovis points.

- 1979 Tule Peak, Virginia Mountains, Ethnological and Archaeological Overview. In Cultural Resources Overviews of Five Proposed Wilderness Areas in Northern Nevada, by E. Seelinger, B. Brown, and M. Rusco, pp. 235-239. BLM Carson City Report CR 3-387P.

Summary of ethnographic data on seasonality-scheduling of the Pyramid Lake Paiute, and their use of the Tule Peak area.

- 1981 A Brief History of the Discovery and Exploration of Pebble Mounds, Boulder Cairns, and other Rock Features at the Sadmat Site, Churchill County, Nevada. Nevada Archaeologist 3:1:4-16.

Tuohy, Donald R. and David T. Clark

- 1979 Excavations at Marble Bluff Dam and Pyramid Lake Fishway, Nevada. Ms. on file Nevada State Museum and Interagency Archaeological Services, San Francisco.

Three sites near the Truckee River Delta were excavated to explore structural remains, burial patterns, and eco-adaptations and to place them chronologically and culturally in western Great Basin prehistory. The sites included one protohistoric Paiute site, and two multicomponent sites dating back to 2000 B.C. Activities reflect freshwater fishing at Pyramid Lake, in conjunction with other hunting and gathering activities.

Tuohy, Donald R. and Thomas N. Layton

- 1977 Towards the Establishment of a New Series of Great Basin Projectile Points. Nevada Archeological Survey Reporter 10:6:1-5.

Propose the concept of homogeneity within projectile point series, with the added designation of local variation: e.g., Great Basin Stemmed series, Lake Mohave variant.

Tuohy, Donald R. and M. C. Stein

1969 A Late Lovelock Shaman and His Grave Goods. Nevada State  
Museum Anthropological Papers 14:5:96-130.

Shaman burial associated with Elko series points and slate  
pendants, fish effigies, bone pendants, beads; found  
at the south end of Pyramid Lake and dated to A.D. 130±180.

Turner, George

1964 Slim Rails Through the Sand. Los Angeles: Anglo Books.

Pictorial presentation of the Carson and Colorado Railroad.

Turner, Thomas Hal

1977a Preliminary Site Survey, 26Wal696-1700, & 1675. Ring Road  
Projects RS-SU-821(5) RS-Su-820(1) and I-080-1(82)10. Reno,  
Nevada. BLM Carson City Report CR 3-150p.

Description of surface collection and limited test of these  
sites which are claimed to be surface manifestations. Found  
two features—a rock alignment and associated debitage at site  
26Wal700; and a huge pit at 26Wal698 (with a charcoal lens).  
Proposes complete excavation for mitigation.

1977b U.S. 395 Topaz Junction North to 5 Miles South of Gardner-  
ville, Douglas County, Nevada. Nevada State Museum  
Report 3-15.

Archaeological reconnaissance, literature search, subsurface  
test and analysis for proposed highway right-of-way in the  
Carson and Walker River basins. Located 20 sites: 26Do236-251,  
2, & 33. Avoidance recommended for Do2 & 33, clearance recommended  
for other sites with no further work.

1978a Cultural Resources Report, Boynton Lane Right-of-Way  
Survey, EA 70877. Nevada Highways Department Report,  
Carson City.

Survey of Boynton Lane right-of-way located one surface site (26  
Wa2667) which was collected and tested to 80cm--negative results.

1978b SP-501Mi381(1), 70839 Stockpile Pit for District V.  
BLM Carson City Report CR 3-201P; NSM 11-21.

An archaeological reconnaissance for a proposed minerals pit  
in Mineral County at the foot of the Powell Mts. revealed one  
lithic scatter of 2500 sq. meters (26Mn80), clearance was,  
nevertheless, recommended.

1980a Archaeological Report on the Carson City Ring Road Project.  
Nevada Highways Department Report.

1980b Material Testing Survey, District II, EA 70971.  
BLM Carson City Report CR3-484P.

Survey of 160 acres located one site (26Do234) a limited task  
site consisting of 3 metates. Avoidance recommended.

Turner, Thomas Hal and Arnie L. Turner

- 1979 Archaeological Investigations of Sites 26Wa2158-2161.  
Ms. on file Nevada Highways Department.

Mapping and surface collection on previously recorded (Elston 1976b) sites on southeast shore of Washoe Lake. Recommends avoidance.

Valory, Dale

- 1971 Guide to Ethnological Documents (1-203) of the Department and Museum of Anthropology, University of California, Berkeley, now in the University Archives. Non-serial Publication of the University of California Archaeological Research Facility.

Van Denburg, A. S. and P. Glancy

- 1970 Water Resources Appraisal of the Columbus Salt Marsh, Soda Spring Valley, Mineral and Esmeralda Counties, Nevada. Nevada Department of Conservation and Natural Resources, Water Resources Reconnaissance Series Report 52.

Photos of the Rhodes Salt Marsh sodium-sulfate loading tower ruins from the 1930s, and the Mount Diablo Mill, near Sodaville.

Vanderburg, W. O.

- 1936 Placer Mining in Nevada. Nevada Bureau of Mines and Geology Bulletin 27.

Votaw, H. C.

- 1952 Preliminary Archeological Site Survey of Alpine County. Ms. on file University of California, Los Angeles, Rock Art Archives.

Mentions several sites in Alpine and Douglas counties; also some unrecorded sites.

Wallof, Curt

- 1977a Archaeological Resources Short Report: Archaeological Assessment of Proposed Nevada State Park Group Use Area and Leach Field to Locate and Evaluate any Subsurface Remains. Nevada Archeological Survey Report 16-34/243C.

Deadman's Creek test excavations of 26Wa2159; depth 135 cm. Further testing recommended (subsequently done by Rusco).

- 1977b Archaeological Survey of Material Site and Tramroad for U.S. 395 South (NSHD #70457). BLM Carson City Report CR 3-176P; NSM 3-14.

Survey of ca. 45 acres in hills south of Carson Valley located an isolated find and small lithic scatter (26Do261-262). Clearance recommended.

Warren, Claude N.

1967 The San Dieguito Complex: A Review and Hypothesis.  
American Antiquity 32:168-185.

Presents the data (to date) defining the San Dieguito Complex and discusses its placement within California and Great Basin prehistory.

Warren, Claude N. and Anthony J. Ranere

1968 Outside Danger Cave: A View of Early Man in the Great Basin. Eastern New Mexico University Contributions in Anthropology 1:6-19.

Cautionary note warning of narrow practice of viewing all of Great Basin archaeology from the "one site" perspective.  
"There's more to Great Basin archaeology than Danger Cave".

Warren, Claude N. and Donald R. Tuohy

1976 Archaeological Reconnaissance at Ft. Churchill. Lyon County, Nevada. Nevada State Museum Report 10-7.

Archaeological reconnaissance for alteration alternatives at Ft. Churchill revealed several archaeological and historical sites, none of which were recorded or numbered. Avoidance was recommended, along with replica-construction of buildings and preservation of the ruins by stabilization.

Washoe Rambler

1977a NCO Depot. Washoe Rambler 1(Spring):14-15.

Short sketch and two photos of Nevada-California-Oregon Railway Depot.

1977b Overland Hotel R.I.P. Washoe Rambler 1(Summer):39.

Short story of the Overland Hotel, built in 1903 and demolished by Harold's Club in 1977.

1978a Southern Washoe County in 1860. Washoe Rambler 2:4:80-82.

Early history of southern Washoe County reprinted from three Territorial Enterprise articles.

1978b Site of Johnson-Jeffries Fight Located. Washoe Rambler 2:4:83-87.

1979 Society Notes (of Washoe County Historical Society). Washoe Rambler 3:2:43.

Erecting historical marker at Johnson-Jeffries 1910 fight.

Weide, David L.

- 1976 The Altithermal as an Archaeological "Non-Problem" in the Great Basin. In Holocene Environmental Change in the Great Basin. R. Elston, ed. Nevada Archeological Survey Research Paper 6:174-185.

Cautions against general models of Altithermal drying, proposes instead, viewing dessication as a more localized phenomenon.

Weide, David L. and Margaret L. Weide

- 1977 Time, Space, and Intensity in Great Basin Paleo-Ecological Models. In Models and Great Basin Prehistory: A Symposium. D. Fowler, ed. Desert Research Institute Publications in the Social Sciences 12:79-112.

Weight, Harold O.

- 1954 Crystal Roses of Eldorado. Desert Magazine 17:12-16.

Mentions site 26Ch133.

Wheat, Margaret M.

- 1941 More Information Wanted of Old Time Station. Fallon Standard, October 1, 1941.

- 1967 Survival Arts of the Primitive Paiute. Reno: University of Nevada Press.

Excellent summary of native Paiute lifeway and description of production methods of several types of material culture. Based on informant observation from Wuzzie George and several other Paiute Indians from the Fallon area, monograph presents pictorial of production methods.

Wheeler, S. M.

- 1939 Original Survey Records and Information: Chruchill, Clark, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Ormsby, Pershing, Storey, Washoe and White Pine Counties. Compiled for the Nevada State Park Commission. Forms on file Nevada Archeological Survey, Reno.

- 1940a Preliminary Report of Archeological Field Work, June 6 to November 18, 1940. ms. on file Nevada State Museum, Carson City.

Description of results of survey and excavation around Grimes Point area, including Hidden, Cache, Spirit, Hanging Rock, Polished, and Fish Caves, and the flats and burial crevices nearby.

- 1940b Rattlesnake Incentive. Nevada Cremations. Another Nevada Burial. Mining Deed. Pictograph Cave. Ocala Cave. Manuscripts on file Southwest Museum, Los Angeles.

Descriptions of work in 1939-1940. Includes report of Spirit Cave excavations; some at Fish Cave and visit to Pictograph Cave.

Wheeler, S. M. and G. N. Wheeler

- 1969 Cave Burials Near Fallon, Churchill County, Nevada.  
Nevada State Museum Anthropological Papers 14:70-80.

Written in 1944; mentions Hidden Cave excavation, but focusses on discovery of burials in Spirit and Fish Caves.

White, Donald E., G. A. Thompson, and C. H. Sandberg

- 1968 Rocks, Structure and Geologic History, Steamboat Springs Thermal Area, Washoe County, Nevada. U.S. Geological Survey Professional Paper 458-B.

Whiting, Beatrice B.

- 1950 Paiute Sorcery. New York: Viking Fund Publications in Anthropology 15.

Detailed study of social controls operating in a Northern Paiute (Burns, Oregon) community. Includes data on economic, social and religious aspects of Paiute society. Reprint of Yale (1942) dissertation.

Wilke, Phil J., Thomas F. King and Robert Bettinger

- 1974 Ancient Hunters of the Far West? Nevada Archeological Survey Research Paper 5:80-90.

Review of the big game hunting tradition, the paucity of evidence to date in the Great Basin, and a warning not to place too much emphasis on mere morphological traits for comparative data.

Willden, Ronald And Robert C. Speed

- 1974 Geology and Mineral Deposits of Churchill County, Nevada. Nevada Bureau of Mines and Geology Bulletin 83.

History and mineral production of the mines.

Willey, Gordon R.

- 1966 An Introduction to American Archeology, volume I, North and Middle America. New Jersey: Prentice-Hall.

General overview of North American prehistory emphasizing time-space relationships. Good illustrations of material culture.

Willey, Gordon R. and Jeremy A. Sabloff

- 1974 A History of American Archaeology. San Francisco: W. H. Freeman & Co.

History of theory.

Williams, Leonard, David Hurst Thomas and Robert L. Bettinger

- 1973 Notions to Numbers: Great Basin Settlement Patterns as Polythetic Sets. In Research and Theory in Current Archaeology. C.L. Redman, ed., pp. 215-237. New York: John Wiley.

Several lines of evidence brought together to predict archaeological site locations.

Wilson, Walt

- 1980 Nevada Children's Home Stresses Training, Education.  
Reno Evening Gazette-Nevada State Journal. July 13, p. 53.

Short history of Carson City's Children's Home.

Winchell, N. H.

- 1907 Pre-Indian Inhabitants. Records of the Past Exploration  
of Society. Washington, D. C.

Discussion of the McGee find at 26Mi7.

Wobst, H. Martin

- 1978 The Archaeology-Ethnology of Hunter-Gatherers, or the  
Tyranny of the Ethnographic Record in Archaeology.  
American Antiquity 43:303-309.

Rapidly becoming a classic, makes the point that there is  
more to the explanation of lifeway than ethnographic models  
provide. Implies that anthropology is archaeology-or it is nothing.

Woon, Basil

- 1967 None of the Comforts of Home. Reno: Federated Features, Inc.

A story of Nevada dude ranches that started in 1927 with the  
T-H Ranch (Hardscrabble) in the Virginia Mountains. Woon  
describes other dude ranches in the area and in the Washoe  
Valley and Verdi.

York, Robert

- 1973a Archaeology Short Report. BLM Cave Rock Estates (Carson  
Valley) Land Exchange. Douglas County, Nevada.  
Nevada State Museum Report 3-2.

Surveyed an area of 360 acres on the east side of Carson Valley.  
Located a small (possible) pine nut camp (26Do224). No recom-  
mendations.

- 1973b Hallelujah and Winnemucca Valleys Fire Site Identification  
and Preservation Project Report. BLM Carson City  
Report CR 3-(2?); NSM 16-8

Report missing from all files.

- 1974a BLM Cultural Resources Short Report on the Winnemucca  
Valley Fire Rehabilitation. BLM Carson City Report  
CR 3-2P; NSM 16-8.

Location of sites 26Wa2132-2135.

- 1974b Short Report BLM Carson City, YCC Spring Developments  
Check, Seven Lakes Mountain, Valley View Springs.  
BLM Carson City Report CR 3-9P.

Recorded 3 sites (26Wa2111-2113) in the vicinity of springs.  
No impact from proposed project.

York, Robert D. (cont'd)

1975a Cultural Resource Investigation for Proposed Big Canyon  
Reaper, BLM Job #4383. BLM Carson City Report  
CR 3-3P, CR 3-12P.

Description of a sheepherder's windbreak (26Wa2136) in the  
Virginia Mountains.

1975b Proposed Cold Springs Pony Express Station Developments.  
BLM Carson City Report CR 3-19P.

Survey recorded two historic sites (26Ch310-311).

1976 Cultural Resources Survey-Clearance Report for the Proposed  
Desert Bums Salt Wells Motorcycle Race, 1976.  
BLM Carson City Report CR 3-109P.

Survey recorded sites 26Ch18/89, 479-485. Clearance not recommended.

Young, James A., Raymond A. Evans and Paul T. Tueller

1976 Great Basin Plant Communities-Pristine and Grazed. In  
Holocene Environmental Change in the Great Basin. R.  
Elston, ed. Nevada Archeological Survey Research  
Paper 6:186-216.

## APPENDIX A

### COLLECTIONS

Various institutions currently house ethnographic and archaeological artifacts, and archival data from within the Carson City District boundaries. This summary, while by no means exhaustive, is offered as a guide to those interested in further research. Several private collections are also listed. The reader is referred to Table 1 for curation data for specific sites.

#### INSTITUTIONS:

1. American Museum of Natural History. The American Museum houses collections of Washoe and Northern Paiute ethnographic material including a collection of Washoe baskets and Paiute duck decoys. These collections were gathered by Roland B. Dixon, Isabel Kelly, Robert Lowie, C.F. Briggs, Willard Z. Park, George F. Peabody, and Clark Wissler, among others. In addition, the Museum houses the original Great Basin ethnographic field notes of Park, Lowie, and Stanley A. Freed.

The American Museum holds several early photographs of Great Basin Indian life, including several from Lowie's expedition to Pyramid Lake and those from the Park expedition. Ethnographic groups represented in the collections include the Northern Paiute from Honey Lake, Pyramid Lake, and Walker Lake, Fallon, Wadsworth, Carson City, Plumas County, and the Lovelock area, as well as the Washoe in Douglas County.

Archaeological collections include those gathered by David Hurst Thomas and Robert Kelly, both within and adjoining the Carson City District.

2. Churchill County Museum. The Churchill County Museum, Fallon, has extensive archaeological collections from the Carson Sink which were donated by private collectors. In addition, the Museum is the repository for significant primary data on the early history of Churchill County.

3. Joshua Tree National Monument Museum. Managed by the U.S. Park Service, this Museum in Twentynine Palms, California houses the collections of Elizabeth W. Crozier Campbell, including her field notes, artifacts, and library. The Campbell collection includes artifacts from the Carson River plains, east of Virginia City; the area between Dayton and Ft. Churchill; Lemmon Valley, near Reno; the area around Lovelock; and an area near Washoe Lake.

4. Museum of the American Indian, Heye Foundation. The Heye Foundation in New York City has ethnographic specimens from Shoshone, Washoe, and Northern Paiute groups in the Ormsby, Nye, Pershing, Clark, and Churchill County areas. The archaeological collections include Lovelock Cave and other caves in the Carson Sink-Stillwater area collected by John P. Harrington (various). In addition, the Heye Foundation contains the artifacts collected in the Great Basin by Louis Schellenbach (1927).

5. National Museum of Natural History, Smithsonian Institution. The Smithsonian has several archaeological collections from the Great Basin, in addition to extensive ethnographic holdings. Photo collections include the works of Vernon Bailey in the Carson Sink, and John Hillers (1872) photos from Ocala Cave. John P. Harrington's and John W. Powell's manuscripts and field notes are on file, both pertaining to Great Basin groups adjoining the District. Willard Z. Park's ethnographic field notes from his study of Great Basin lacustrine groups at Pyramid and Walker Lake are also on file.

6. Nevada Bureau of Mines. The Bureau has a fine collection of photographs relating to mining.

7. Nevada Historical Society. The Historical Society houses manuscripts on early exploration and settlement of the District, in addition to historical artifacts and a more or less complete run of several early newspapers from the area.

8. Nevada State Museum. As primary repository for archaeological, historical, and ethnographic collections from Nevada, the Museum houses the S.M. Wheeler, Tom Derby, Peter Ting, Nicolarsen, and S.L. Lee Collections, among others. Dr. Lee's collections include examples of Washoe basketry, artifacts, and petroglyph tracings from Nevada and California. The Museum is also the state repository for the collections of the Bureau of Land Management and the Nevada Highway Department.

9. Peabody Museum, Harvard University. The Peabody contains several archival sources, among which are part of Park's collection and notes.

10. Public Museum of the City of Milwaukee. The Museum houses the S.A. Barrett (1917) collection of Washoe baskets.

11. Southwest Museum. This private museum in Los Angeles houses a fine collection of photographs, some illustrating Washoe basketry (MacNaughton 1903). In addition, many of Curtis' photos of early Great Basin Indian life are on file at this museum. Their archaeological collections cover areas somewhat outside the District.

12. University of California, Berkeley. The University of California houses Great Basin collections in the Lowie Museum of Anthropology, the Bancroft Library, the Archaeological Research Facility, and the Department of Anthropology. Their collections include numerous manuscripts, site files, archaeological survey maps (current to 1960), and publications (Heizer 1972; Valory 1971), in addition to archaeological collections from the Washoe and Northern Paiute areas. Berkeley also houses a collection of human skeletal remains from Churchill, Douglas and Washoe County, and the Winnemucca and Pyramid Lake caves. Ethnographic specimens include the S.A. Barrett collection of Washoe basketry and C. Hart Merriam's collection (Heizer 1969).

13. University of California, Los Angeles. The Archaeological Survey contains several manuscripts from the area and also the personal papers of Robert Heizer on the rock art in Nevada and California, which are housed at the Rock Art Archives.

14. University of California, Riverside. The Department of Anthropology currently houses the collection of Matt Hall, a doctoral candidate who is studying an area in southern Mineral County.
15. University of Colorado Museum, Boulder. The Museum houses the Nyswander Collection of 22 baskets collected between 1850 and 1900 in the Washoe territory near Topaz Lake.
16. University of Illinois, Urbana-Champaign. "The University Library is currently organizing (in conjunction with the Department of Anthropology) the personal papers of Dr. Julian H. Steward, the foremost ethnographer for the Great Basin. An Index may be available in the future" (Busby, Findlay, and Bard 1979).
17. University of Nevada, Reno. The University houses materials pertaining to the District in the Department of Anthropology, at the Nevada Archeological Survey, and at the Library in the Special Collections Department. The collections include unpublished manuscripts, masters theses, survey maps, site forms, the majority of the Gladys Smith Collection from western Nevada, collections from the Survey operations from 1967 to 1980, and several original survey files from the Wheeler Survey of 1939 and the Roust and Grosscup Survey of 1951. The Mackay School of Mines Museum has a fine collection.
18. University of Pennsylvania Museum, Philadelphia. The Richard Waln Meirs Collection (Gordon 1919) of Washoe basketry is housed in this institution.
19. U.S.G.S., Denver. An important collection of photographs related to early activities in Nevada.
20. Weber State College, Ogden, Utah. Weber State is the storage facility for the U.S. Forest Service collections.

#### PRIVATE COLLECTIONS:

Some of the finest private collections from within the District include Ira Kent's, Stillwater, Nevada; George Luke's, Fallon, Nevada; Herbert Splatt's, Reno, Nevada; The Nicolarsen Collection; the William Lowe's, Tonopah, Nevada; the Lawrence and Weissshapts Collections in Stillwater, Nevada. Additional private collections are listed with their appropriate sites in Table 1.

Several unrecorded sites were collected by private sources; however they are not formally recorded. The Iva Ashurst collection from Topaz, California includes two sites in Douglas County. The first, a cache, consists of 21 leaf-shaped obsidian blades found north of Topaz Lodge along U.S. Highway 395 (Price 1963c:88). The second, approximately 1/4 mile west of the first, consists of 1600 glass trade beads in an area approximately 36 ft. square. The site had a depth of 6 to 8 in., and Price (1963c:88) believes they may be the remains of a cremation offering.

Juanita Schubert of Minden, Nevada reports a site (Sheep Bridge) in Douglas County on the east bank of the East Carson River, 1/4 mile south of Horseshoe Bend. The site consists of a mano, five scrapers and a blade (Price 1963c:87).

## APPENDIX B

### A CHRONOLOGICAL LIST OF SELECT DETAILED HISTORIC MAPS: RENO ES

#### 1860 Evans

Official Map of the Washoe Mining Region with relative distances from the principal places of California. The claims are located by Parker H. Pierce, Recorder of Carson City. Designed and drawn by R.M. Evans, Lith. Britton & Co., S.F.

#### 1861 Knight

Map of the Washoe Silver Region Nevada T., compiled by Wm. H. Knight, 1861.

#### 1861 Lawson & Ives

(Map of Western Nevada, by I.L. Lawson and B. Ives, September 1861.)

#### 1862 Bancroft

Bancroft's Map of the Washoe Silver Region of Nevada Territory. Published by H.H. Bancroft & Company Booksellers & Stationers, San Francisco, California, 1862. Entered according to Act of Congress A.D. 1862 by H.H. Bancroft & Company, in the Clerk's Office of the District Court of the United States, for the Northern District of California.

#### 1862 Surveyor General

Map of Public Surveys in Nevada Territory to accompany Report of Surveyor General, 1862.

#### 1864 Reed

A Map of the Silver Mountain Mining Districts. Including the territory of the proposed new county of Alpine. Compiled by Theron Reed. Published by H.H. Bancroft & Company, San Francisco, California, 1864. C.C. Kuchel, Print, 545 Clay Street, San Francisco.

#### 1864 Veatch

Map of the Comstock Lodes extending down Gold Canyon, Storey County, Nevada. Scale: 375 ft. to 1 in. Lith. G.T. Brown & Company, San Francisco.

#### 1864 Wescoatt

Map of Gold Hill Front Lodes on the Comstock Range N.T. Surveyed July 1864. By N. Wescoatt, C.E. Located September and October 1859. Made to accompany report of Dr. J.A. Veatch. Attenh. N. Wescoatt C.E. Scale: 375 ft. to 1 in. Oakley & Tompson Lith., 46 Water Street, Boston.

1872 Hoffman

Topographical Map Showing the Locations of the Sutro Tunnel and the Comstock Lode State of Nevada, United States of America. Drawn by Chas. F. Hoffman, San Francisco, California, March 1866. Scale: 2 in. to 1 mile.

1873 Browne

Map of the town of Sutro and other property belonging to the Sutro Tunnel Company, Lyon County, Nevada. Surveyed and drawn by Ross E. Browne, 1873.

1873 Lower Comstock Mining Company

Map of the Lower Comstock and Emigrant Consolidated Mining Companies Mines, Lyon County, Nevada. Scale: 200 ft. to 1 in. Lith. G.T. Brown & Company, San Francisco.

1875 Daggett

Map of Survey of the Virginia and Eldorado. N.G. Railroad.

1876 and 1877 Wheeler

Parts of Eastern California and Western Nevada. Atlas sheets 47 (B) and 47 (D). 1st Lieut. Geo. M. Wheeler, Corps of Engineers, U.S. Army. Scale: 1 in. to 4 miles.

1882 Becker

Atlas to accompany the monograph (3) of the Geology of the Comstock Lode and the Washoe District by George F. Becker, Washington, 1882. Scale: 1500 ft. = 1 in. (84 by 50 cm., when unfolded).

1883 Lord

Map of the Carson Valley. Topography from State Survey of California. Eliot Lord in Charge.

1883 Lord

Map of the Placerville Route. Topography from State Survey of California. Eliot Lord in Charge.

1883 Lord (Becker)

Map of the Washoe District Showing Mining Claims. Claims mapped by Hoffman and Craven, 1881. Eliot Lord in Charge. (This map was prepared under the direction of G.F. Becker, U.S. Geological Survey, to accompany his report on the Geology of the Comstock Lode.)

1884 (?) Winters

Map of Theodore Winter's System of Irrigating Ditches for his lands in townships 16 and 17 N, R 19 E, M.D.M.

1887 Becker

Steamboat Springs, Nevada. Topography by Eugene Ricksecker, 1885. G.F. Becker, Geologist in Charge. Scale: 1 in. = 1250 ft.

1889 U.S. Geological Survey

Markleeville sheet, California-Nevada, 1889. Scale: 1:125000.

1889 Warmer

Map of the Nevada-California-Oregon Railway, Showing Location of the Line in Nevada. Scale: 40 chains to 1 inch.

1890 Bancroft

Carson Valley.

1890 Newlands (Chalmers)

Carson Valley Irrigation. Enlargement from plan of Carson River System of Irrigation, etc. Submitted by Francis G. Newlands. A.J. Chalmers, Carson City.

1890 Newlands (Chalmers)

Plan of Carson River System of Irrigation and Water Storage. Submitted by Francis G. Newlands. A.J. Chalmers, Carson City.

1890 Newlands (Stewart)

Plan of the Truckee River System of Irrigation and Water Storage. Submitted by Francis G. Newlands. T.K. Stewart, Reno, Nevada.

1891 Taylor

Honey Lake Valley Land and Water Company. Office: Room 6, Flood Building, San Francisco, California. General Map Showing Location of Works and Watershed Tributary to Reservoir. L.H. Taylor, Engineer-in-Chief.

1893 U.S. Geological Survey

Carson City quadrangle edition of November 1893. Scale: 1:125000. (The early editions of this quadrangle were called the Carson Sheet.)

1893 U.S. Geological Survey

Reno sheet, Nevada Edition of December 1893. Scale: 1:125000.

1894 U.S. Geological Survey

Sierraville sheet, Edition of September 1894.

1895 U.S. Geological Survey

Lake Tahoe and Vicinity, Edition of August 1895.

Source: Unpublished Cartobibliography of Early Nevada in files of Alvin  
McLane.

APPENDIX C

A CHRONOLOGICAL LIST OF SELECT HISTORIC MAPS: WALKER AND LAHONTAN ES

1860 Evans

Official Map of the Washoe Mining Region with relative distances from the principal places of California. The claims are located by Parker H. Pierce, Recorder of Carson City. Designed and drawn by R.M. Evans. Lith. Britton & Co., S.F.

1862 Surveyor General

Map of Public Surveys in Nevada Territory to accompany Report of Surveyor General, 1862.

1864 Monroe

Map of the Indian Reservation on Walker River, Nevada. Surveyed by Eugene Monroe, December 1864.

1868 Monroe

Plat of Surveys made by E.B. Monroe, Deputy Surveyor, under his contract dated November 23, 1867. The field notes wereof have been examined and approved and are on file in this office. U.S. Surveyor General's office, Virginia City, Nevada, July 11, 1868. A.K.K. Safford, Surveyor General, Nevada.

1871 Wheeler

Parts of Southern Nevada and Eastern California, Atlas Sheet No. 57. 1st Lieut. Geo. M. Wheeler, Corps of Engineers, U.S. Army. Scale: 1 in. to 8 miles.

1876 Wheeler

Part of Western Nevada. Atlas Sheet No. 48 (C). 1st. Lieut. Geo. M. Wheeler, Corps of Engineers, U.S. Army. Scale: 1 in. to 4 miles.

1876 and 1877 Wheeler

Parts of Eastern California and Western Nevada. Atlas sheets 47 (B) and 47 (D). 1st Lieut. Geo. M. Wheeler, Corps of Engineers, U.S. Army. Scale: 1 in. to 4 miles.

1877 Wheeler

Parts of Eastern California and Western Nevada. Atlas Sheet No. 48 (C).  
1st Lieut. Geo. M. Wheeler, Corps of Engineers, U.S. Army. Scale: 1 in.  
to 4 miles.

1878 Wasson

(Map of veins at Aurora.)  
(16 by 14 cm.)

1880 Oliver

Map of the Carson and Colorado Railroad. Scale: 4.0 miles to an inch.

1881 Batterman

Map of that portion of the Carson and Colorado Railroad Situated in Lyon  
County, Nevada. Scale: 2 in. equal 1 mile.

1883 Lord

Map of the Placerville Route. Topography from State Survey of California.  
Eliot Lord in charge.

1885 Russell

Carson Desert, Nevada.

1885 Russell

Lake Lahontan A Quaternary Lake of Northwestern Nevada by Israel C.  
Russell, assisted by A.L. Webster, W.D. Johnson, Topographers; W.J. McGee,  
Geo. M. Wright, Geologists. Mountain Shading by J.W. Hays. Scale: 1 in.  
12 miles.

1885 Russell

Soda Lakes near Ragtown, Nevada. W.D. Johnson. I.C. Russell, Geologist.

1885 Russell

Walker Lake, Nevada. W.D. Johnson, Topographer. I.C. Russell, Geologist.

1889 U.S. Geological Survey

Markleeville sheet, California-Nevada, 1889. Scale: 1:125000.

1890 Bancroft

Carson Valley.

1890 Newlands (Chalmers)

Carson Valley Irrigation. Enlargement from plan of Carson River System of Irrigation, etc. Submitted by Francis G. Newlands. A.J. Chalmers, Carson City.

1890 Newlands (Chalmers)

Plan of Carson River System of Irrigation and Water Storage. Submitted by Francis G. Newlands. A.J. Chalmers, Carson City.

1890 Newlands (Stewart)

Plan of the Truckee River System of Irrigation and Water Storage. Submitted by Francis G. Newlands. T.K. Stewart, Reno, Nevada.

1890 U.S. Geological Survey

Wadsworth sheet, Nevada, 1890. Scale: 1:125000

1890 Newlands

Diagram Showing part of Irrigable Land in Nevada. Drawn for Francis G. Newlands by T.K. Stewart and A.J. Chalmers.

1894 U.S. Geological Survey

Wabuska sheet, Nevada. Edition of September 1894. Scale: 1:125000.

Source: Unpublished Cartobibliography of Early Nevada in files of Alvin McLane. These maps may be found at the following: files of the author, Special Collections at University of Nevada, Mines Library at University of Nevada, and Nevada Historical Society.

APPENDIX D

HISTORIC SITES ON THE NATIONAL REGISTER  
OF HISTORIC PLACES: RENO ES

<u>Name</u>	<u>County</u>	<u>Date Entered</u>
Senator Newland's Home	Washoe	1961
Virginia City	Storey	1961
Lake Mansion	Washoe	1972
V & T Locomotives	Carson City	1973
Morrill Hall	Washoe	1974
Winters Ranch/Mansion	Washoe	1974
Billingshurst Home	Washoe	1974
Genoa (District)	Douglas	1975
Governor Nye's Mansion	Carson City	1975
Nevada State Capitol	Carson City	1975
U.S. Mint (Museum)	Carson City	1975
Rinckel Mansion	Carson City	1975
Bowers Mansion	Washoe	1976
Raycraft Ranch	Carson City	1976
Governor's Mansion	Carson City	1976
Mt. Rose Elementary School	Washoe	1977
V & T Railroad Shops	Carson City	1977
James D. Roberts House	Carson City	1978
St. Peter's Episcopal Church	Carson City	1978
Lakeview House	Carson City	1978
Glendale School	Washoe	1978
Nevada State Printing Office	Carson City	1978
Derby Dam	Storey/Washoe	1978
Lew Meder House	Carson City	1978
Carson Brewing Company	Carson City	1978
Minden Flour Milling Company	Douglas	1978
Odd Fellow Building	Washoe	1978
V & T Combination Car No. 21	Carson City	1978
Carson City Post Office	Carson City	1979
G.W.G. Ferris House	Carson City	1979
Gov. Reinhold Sadlier House	Carson City	1979
Orion Clemens House	Carson City	1979
Ormsby-Rosser House	Carson City	1979
Carson Valley Hospital	Douglas	1979
The Alamo Ranch	Washoe	1979

NOMINATIONS IN PREPARATION  
 (Some of these may be already so designated)

<u>Name</u>	<u>City</u>
Hawking House	Reno
Rainier Brewing Co. Bott. Plant	Reno
Dangberg Ranch	Minden
Calkins House	Reno
Brougher Mansion	Carson City
Sauer Ranch House	Pleasant Valley
Walley Hot Springs	Genoa
NCO Depot	Reno
Virginia Street Bridge	Reno
V & T Waterstand	Franktown
Southern Pacific Shops	Sparks
Riverside Flour Mill	Reno

HSP

National Historic Landmarks

<u>Name</u>	<u>County</u>	<u>Date Entered</u>
Senator Newland's Home	Washoe	1961
Virginia City (District)	Storey	1961

Source: List prepared by Division of Historic Preservation and Archaeology,  
 State of Nevada, Carson City.

APPENDIX E

HISTORIC SITES ON THE NATIONAL REGISTER: WALKER & LAHONTAN ES

<u>Name</u>	<u>County</u>	<u>Date Entered</u>
Ft. Churchill*	Lyon	1961
Cold Springs	Churchill	1972
Grimes Point	Churchill	1972
Aurora	Mineral	1974
Stillwater Marsh	Churchill	1975
Cold Springs Pony Express	Churchill	1978

\*National Historic Landmark

NOMINATIONS IN PREPARATION

Wovoka Earth Lodge  
Carson River Diversion Dam

Source: List prepared by Division of Historic Preservation and Archaeology,  
State of Nevada, Carson City.

APPENDIX F

NAMES AND ADDRESSES OF PERSONS WITH HISTORICAL EXPERTISE:

Mr. Richard C. Datin, Jr. 2248 Flagg Street Reno, NV 89502	Railroads, especially the Virginia and Truckee.
Prof. Everett W. Harris 855 Vine Street Reno, NV 89503	Emigrant trails.
Mr. Keith Mulcahy 6955 Cox Road Fallon, NV 89406	Telegraph route.
Mr. Walter Mulcahy P.O. Box 484 Reno, NV 89504	Regional historical sites and especially emigrant trails.
Mr. Hugh Shamberger 65 Lonesome Polecat Lane Carson City, NV 89701	Knowledge of Virginia City and its pipeline.

