

**Recovery, Synthesis, and Reporting:
1990s Anza-Borrego Desert State Park Cultural Resources Inventory
Conducted by the Archaeological Research Unit,
University of California, Riverside**

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Prepared for: **California State Parks**
Cultural Heritage Division

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MANAGEMENT SUMMARY

During the mid-late 1990s, the University of California, Riverside - Archaeological Research Unit (UCR-ARU) contracted with California State Parks (CSP), through an Interagency Agreement, to carry out the first large-scale holistic systematic cultural resources inventory for Anza-Borrego Desert State Park (ABDSP). The project leader was Dr. Matthew C. Hall, Director of the UCR-ARU. Between 1995 and 1998, the UCR-ARU conducted fieldwork in ABDSP, following an elaborate Research Design that combined both a statistically based random-sample of parklands and a judgmental-area approach. The former was called Probabilistic Sample; the latter, Targeted Areas which were identified by ABDSP staff as areas with known high concentrations of cultural resources that had not been fully recorded. Field methods used in the two approaches were identical. The Research Design was developed to maximize the gathering of information about ABDSP cultural resources.

As the project progressed, it became evident that, due to field conditions and findings, the Research Design was too ambitious and that the project could not be completed as was originally planned. This situation led to a change in the focus of the project; the end result was a much larger and more complete dataset from North ABDSP than from the Central and Southern areas, particularly in the realm of statistical sampling. Consequently, although huge amounts of data were collected, the data are uneven. Another reason for refocus of the project was the immediate need for cultural resource information for the development of the ABDSP General Plan. A final report on the UCR-ARU Cultural Resources Inventory was never completed, although a large body of site records and other archival data was transferred to CSP.

The goal of this document is to pull together a final report using information provided by the UCR-ARU and the CSP Southern Service Center. Portions of text and many tables had already been developed by Dr. Matthew Hall of the UCR-ARU. Joan Schneider used these materials, edited them, and expanded them.

The UCR-ARU inventoried 200 selected 500-meter by 500-meter survey blocks; in all, this encompassed 11,834 acres throughout ABDSP, almost a two percent sample. Cultural properties that were recorded included 143 archaeological sites and 580 other types of cultural properties (properties that did not meet the UCR-ARU criteria for sites). In addition, ARU-UCR proposed new criteria for sites and advocated the use of newly proposed consistent terminology for descriptions of archaeological assemblages. The body of data acquired during the project is housed at the Begole Archeological Research Center (BARC) at Colorado Desert District Headquarters (CDD) in Borrego Springs.

This report presents a variety of synthetic treatments of the data using tabular format. The findings indicate that:

- Most of the *surface* archaeological record in ABDSP was formed in the last 1500 years and more likely with in the past 1000 years, the Late Prehistoric period.

- Historical resources located during the project date from the very last portion of the 19th century and are mostly early-to-mid 20th century.

Schneider developed a random-sample basis for Central ABDSP from the 1970s Bureau of Land Management (BLM) Desert Study. She retrieved data from archival sources, for comparisons with the UCR-ARU data from North ABDSP. No random sample data are available from South ABDSP. During the course of the archival research, Schneider was able to clarify some of the aspects of the earlier BLM work within ABDSP.

ABDSP holds archaeological site records for somewhat over 5000 cultural properties at this time. If the two random sample datasets (one by UCR-ARU; the other by BLM) are used to make some simple observations, comparisons, and predictions about the numbers of cultural resources within ABDSP, some statements (with qualifications) can be made.

- Cultural resources are much more frequent in the Central portion of ABDSP than in the North – almost 30 times more frequent.
- The present data indicate that there are, very conservatively, more than 27, 400 cultural sites within all of ABDSP (using a calculation of a mean of the North and Central random-sample datasets and applying them to the total acreage of the Park, including the South).

The UCR-ARU Cultural Resources Inventory is the first systematic effort by CSP toward obtaining a full understanding of the surface archaeological record of ABDSP, although the effort was flawed in several respects that are discussed within the report.

Administrators and managers should be aware that survey-level data are weak in analytical usefulness because (1) tools of chronological placement are very limited and (2) surface vegetation conceals many sites. Moreover, indications of substantial subsurface cultural deposits are present throughout ABDSP; these need to be identified and investigated in order to protect and preserve them.

Recommendations to ABDSP and CSP include:

- Complete Probabilistic Sample inventory in Central and South ABDSP
- Identify and investigate subsurface cultural resources
- Enter into GIS layers all corrected and expanded cultural resources data discussed in this report
- Secure additional staff and funding to properly record, track, manage, protect, and preserve the very rich prehistoric and historic cultural resources of ABDSP.

More specifically, suggested subjects for further study include (1) excavation of several rockshelters in the upper Coyote Creek drainage; (2) final development and acceptance of an up-to-date Ceramic Typology for the area; (3) development of a Comparative Lithic Collection with consistent nomenclature and identification key; (4) full recordation of Bailey's Cabin in Coyote Creek drainage; (5) complete recommendations for Special Status for sites suspected or known to contain human remains; (6) further analytical treatment of the raw data generated by the UCR-ARU project.



Frontispiece: Hearths and artifacts along an unnamed drainage coming out of the mouth of Horse Canyon, Coyote Creek Drainage Probabilistic Sampling Domain. Part of site CA-RIV-6326 (CDD-086-S2)

PREFACE

This report is a combined effort of Joan S. Schneider, Ph.D., Associate State Archeologist, California State Parks, Colorado Desert District; Marla Mealey, Associate State Archeologist, Southern Service Center; and Matthew C. Hall, Ph.D., Director of the Archaeological Research Unit, University of California, Riverside, with the assistance of many people who participated in the fieldwork portion of the project during the 1990s and recent archival data-gathering by Heather Thomson, Archaeological Project Leader, and Bonnie Bruce, Archaeological Specialist on contract with California State University, Bakersfield. Although the fieldwork for the Project was completed in the mid-1990s, a final report was not completed for a variety of reasons (see History of the Project).

Data gathering, site record forms, and maps had been completed for most of the successive phases of the Project, but no draft text was available. The project methods and goals changed considerably during the interval between the first phase and the successive phases of the project, contributing to some discontinuity and non-conformity in the results and the reporting of the results from different areas. With the changes in methods and focus, some of the goals of the project also had to be altered resulting in the absence of random sample data for the Central (other than Borrego Badlands) and Southern portions of ABDSP.

Dr. Hall had completed drafts of various sections of the final report on the first aspect of the Anza-Borrego Desert State Park work, the Northern Portion, as well as all of the data tables. I have used these drafts, but edited them, reorganized various sections, and then have gone on to write sections of the report for the Southern and Central portions of ABDSP.

Over the years that I have been involved in the archaeology of ABDSP, I have seen the urgent need for substantive data to be used to understand the full extent of the cultural resources in ABDSP. Parks staff needs this information to manage and protect its resources in an optimal manner. Consequently, although not included in the original Scope of Work for this report, I have made a creative effort to use other data (namely BLM data from the 1970s Desert Survey and other available information, to “round out” some missing elements from fieldwork in the Central region of ABDSP. The purpose is to be able to build a representative random sample for comparison purposes and to make some projections, based on statistical modeling, about the numbers and types of cultural resources (particularly prehistoric resources) in all of ABDSP. Although statistical tests of validity were beyond the scope of this report, the data are presented for future statistical efforts. One of the chapters and one appendix in this report specifically address these efforts.

Keeping these things in mind, the random-sample data resulting from the UCR-ARU work in the Northern portion of ABDSP are the first that have been acquired in a systematic manner by CSP. For this reason, they are exceptionally valuable for research, management, and statistical predictive purposes.

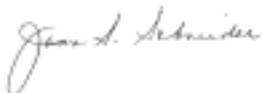


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Chapter 1

HISTORY OF THE PROJECT

by Joan S. Schneider

The manner in which the University of California, Riverside, Archaeological Research Unit (UCR-ARU) Cultural Resources Inventory Project (hereafter “Project”) was conceived, developed, conducted, and ended has led, over time, to a number of misconceptions and misinterpretations of the circumstances and the results. The following sections present a history of the Project, as gathered from a number of sources.

METHODS

During September and October of 2005, interviews were conducted with the following persons who were integral participants in the UCR-ARU work in ABDSP during the 1990s: Matthew Hall, Director of the UCR-ARU, Riverside; Manfred Knaak, former Park Ranger and acting archaeologist for the UCR-ARU project; Michael Sampson, Associate State Archeologist, Southern Service Center; Marla Mealey, Associate State Archeologist, Southern Service Center (formerly seasonal archeologist during the time of the Project); Michael Hogan, Ph.D., CRM Tech, Inc., (formerly Field Director for the UCR-ARU project); and Llouise Jee, GIS coordinator Colorado Desert District (CDD) at the time. In general, all persons interviewed had similar views of the problems that were encountered during the Project. The major problems concerned (1) changes in the Research Design during the course of the Project and the reasons for the changes and (2) rapid replacement, during the course of the entire Project, of traditional methods of mapping with newer technology (Geographic Information System [GIS]/Global Positioning System [GPS]). These two major problems resulted in making the data collected in the northern segment of ABDSP non-comparable to those data collected in the Southern and Central portions of the Park in terms of the ability to extrapolate from a random sample. The following history is a compilation of the information provided by those persons interviewed.

RESULTS

Between 1995 and 1998 the UCR-ARU conducted fieldwork in ABDSP. The purpose of the work was to obtain information about cultural resources for the development of the Cultural Resources Section of a General Plan for ABDSP. The Research Design was developed by Dr. Matthew Hall with the active participation of Ranger Manfred Knaak, then the lead for

archaeological work in ABDSP.¹ The Research Design (Appendix A) called for dividing the Park into northern, central, and southern portions and included both selected Targeted Areas and a random-sample survey based on a Probabilistic Sample. It was anticipated that the results of the Probabilistic Sampling would provide California State Parks (CSP) a means by which an extrapolation could be developed that would provide a more accurate picture of what types and numbers of cultural resources exist throughout ABDSP, only a small portion of which had been systematically surveyed. This information would be used for developing a management plan for present Park lands, as well as for predicting types and numbers of cultural resources on lands considered for future acquisition.

The Research Design purposefully did not call for Records Search in preparation for the fieldwork. This approach was taken for a variety of well-founded reasons: (1) documented inaccuracy and incompleteness of old site records in terms of site locations, site descriptions, and site extents; (2) amounts of field time that would be necessary to relocate sites from inadequate records and maps; and (3) a goal of efficient and expeditious fieldwork because of the huge amount of acreage to be sampled. The approach, although not ideal, considered that retrospective site concordance, if desired, could be carried out in the future by comparing site locations and descriptions on old site records and maps with the newly acquired site locations and descriptions. All sites discovered during the fieldwork would be assigned primary numbers within the CHRIS system and provided with new site trinomials. Also, according to the Research Design, a category of archaeological properties that did not meet stated qualifications (that is, criteria developed by Hall and Knaak) for resources called “a site,” were to be assigned primary numbers only. (e.g., a single milling feature with no associated artifacts, a small isolated sherd scatter, etc.).

The Project plan called for working successively from the north-to-south in the Park; therefore, the first part of the fieldwork took place in the Northern portion of ABDSP. To review, the Project called for dual approaches to acquiring data: (1) surveying selected Targeted Areas and (2) surveying a Probabilistic Sample.

Targeted Areas were selected by Knaak, based on his own field observations and those of other CSP staff. For the most part, the Targeted Areas had been observed to be rich in cultural resources that had not been recorded at all, or for which records were inadequate.

The *Probabilistic Sample* was constructed in the following manner:

- The northern portion of ABDSP was divided into four (4) *domains*: Pacific Coast Trail, Coyote Creek Drainage, Jackass Flat/Rockhouse Canyon/Butler Canyon, and Eastern/Santa Rosa Mountains. Park land within each of the domains was overlain by a grid consisting of 500-square-meter blocks that was superimposed on a composite map consisting of all 7.5 minute United States Geological Survey (USGS) topographic quadrangles that incorporated any portion of each of the northern domains.
- A grid numbering system was devised so that a random-numbers table could be used to draw a random sample from the 500-square-meter-block grid. The selected blocks were

¹ From Dr. Hall's account, he was approached by Manfred Knaak to develop a research design for gathering cultural resources data in anticipation of the development of a General Plan document for ABDSP; Hall and Knaak developed the plan together in order to meet the needs of the Park.

to be inventoried by UCR-ARU crews using a prescribed method of pedestrian survey (i.e., systematically walking over the land at set intervals of space and recording the findings).

Table 1 shows, for the Northern portion of ABDSP, the sampling domains, the names of the areas within the sampling domains, the number of units surveyed for both Targeted Areas and Probabilistic Samples, the number of acres surveyed, and the number of archaeological sites and “non-site” archaeological properties that were recorded in each of the domains.

The second part of the fieldwork took place in the Central portion of ABDSP, where the same protocol was followed to identify both Targeted Areas and a Probabilistic Sample. The central area contained three (3) domains: Borrego Badlands, Pinyon Mountains, and Vallecito Drainage. Starting with the Pinyon Mountains domain, Parks leadership was turned over to Associate State Archeologist Michael Sampson, working out of the Southern Service Center in San Diego, as Manfred Knaak had retired and left the project.

Table 2 shows, for the Central portion of ABDSP, the sampling domains, the names of the areas within the domains, the number of units surveyed for both Targeted Areas and Probabilistic Samples, the number of acres surveyed, and the number of archaeological sites and “non-site” archaeological properties that were recorded in each of the domains.

The third part of the fieldwork took place in the Southern portion of ABDSP. At this point in the Project, CSP staff and UCR-ARU staff were attempting to deal with a number of problems that had occurred and were accelerating. These included (but were not limited to): (1) excess travel time that was needed to gain access to some of the more remote randomly selected sample areas; (2) extremely high incidences of sites within some selected and targeted areas, necessitating lengthy recording time in the field; (3) the inability of UCR-ARU office staff to keep up with the demands of site-record paperwork, thus causing delays in interim reports as well as compilation and consolidation of data; and (4) severe limitations in availability of UCR-ARU personnel.

At the direction of Michael Sampson, various adjustments were made to the Research Design and fieldwork methods. As a result, the fieldwork in the Southern portion of ABDSP was quite different from that in the Northern and Central areas and was mostly limited to Targeted Areas, with little or no Probabilistic Sample survey being conducted. Table 3 shows the result of the fieldwork in the single sampling domain in the Southern portion of ABDSP: Jacumba Mountains. Sampson also changed the focus of the project, especially in the methods of recordation; he requested more detailed feature records as well as greater definition of site boundaries using GIS/GPS technology. These Research Design changes made it difficult to synthesize and analyze data because data gathered from the three ABDSP areas were not comparable.

Table 4 is a compilation of all the UCR-ARU work in the three portions of ABDSP (i.e., the sum of Tables 1-3. Appendix B lists concordances between ARU field numbers for sites and other archaeological properties (i.e., “non-sites.”), with CHRIS primary designations and trinomials (compiled by the UCR-ARU).

Table 1

NORTHERN ANZA-BORREGO DESERT STATE PARK: UCRARU SURVEY PARAMETERS AND NUMBER OF PROPERTIES RECORDED

<u>Sampling Domain</u>	<u>Targeted Area or Probabilistic Sample</u>	<u>Units</u>	<u>Acres</u>	<u>Properties Recorded*</u>							
				<u>Site</u>				<u>Other</u>			
				<u>PRE</u>	<u>HIS</u>	<u>P/H</u>	<u>Total</u>	<u>PRE</u>	<u>HIS</u>	<u>P?H</u>	<u>Total</u>
Pacific Crest Trail	Tule Spring	2	148	3	-	-	3	15	3	-	18
	>>> Sample <<<	8	494	2	-	-	2	8	1	-	9
	Subtotal	10	642	5	-	-	5	23	4	-	27
Coyote Creek Drainage	Horse Canyon	7	455	4	-	-	4	19	3	1	23
	Parks Canyon	5	292	4	-	-	4	38	5	-	43
	Fig Tree Valley	16	1038	8	1	-	9	47	9	1	57
	Alder Canyon	3	232	3	1	-	4	24	7	2	33
	Salvador Canyon	8	447	5	-	-	5	15	-	2	17
	Monkey Hill	1	89	4	-	-	4	23	-	-	23
>>> Sample <<<	28	1730	6	-	1	7	74	8	5	87	
Subtotal		68	4283	34	2	1	37	240	32	11	283
Jackass Flat/Rockhouse Canyon/Butler Canyon	Hidden Spring	8	494	10	-	1	11	108	6	-	114
	>>> Sample <<<	20	1236	5	-	-	5	71	3	1	75
	Subtotal	28	1730	15	-	1	16	179	9	1	189
Eastern Santa Rosa Mountains	>>> Sample <<<	25	1545	2	-	-	2	19	-	11	30
	Subtotal	25	1545	2	-	-	2	19	-	11	30
Total		131	8200	56	2	2	60	461	45	23	529

Note: PRE, prehistoric/aboriginal; HIS, historical/euroamerican; P/H, both PRE and HIS elements; P?H, either PRE or HIS element(s); PRE versus HIS classification heuristic and non-exclusive with respect to aboriginal affiliation (cf. PRE property post-dating aboriginal-euroamerican contact or HIS property comprising remains of aboriginal occupation/use of location); *properties within overlapping targeted area and probabilistic sample survey units not included in summary counts for latter.

Table 2

CENTRAL ANZA-BORREGO DESERT STATE PARK: UCRARU SURVEY PARAMETERS AND NUMBER OF PROPERTIES RECORDED

<u>Targeted Area or</u>	<u>Properties Recorded*</u>	
	<u>Site</u>	<u>Other</u>

<u>Sampling Domain</u>	<u>Probabilistic Sample</u>	<u>Units</u>	<u>Acres</u>	<u>PRE</u>	<u>HIS</u>	<u>P/H</u>	<u>Total</u>	<u>PRE</u>	<u>HIS</u>	<u>P?H</u>	<u>Total</u>
Borrego Badlands	Arroyo Salado	1	62	-	-	-	-	-	-	-	-
	Seventeen Palms	2	62	-	-	-	-	1	1	-	2
	Hawk Canyon	3	155	1	-	-	1	1	1	-	2
	The Slot	1	31	-	-	-	-	-	-	-	-
	Harper Canyon	2	62	2	-	-	2	2	-	1	3
	>>> Sample <<<	25	1545	1	-	-	1	-	3	7	10
	Subtotal	34	1917	4	-	-	4	4	5	8	17
Pinyon Mountains	Central Earthquake Valley	1	62	5	-	-	5	2	-	-	2
	Southern Earthquake Valley	3	185	6	-	-	6	-	-	-	-
	Grapevine Canyon	1	62	3	1	1	5	2	2	-	4
	Subtotal	5	309	14	1	1	16	4	2	-	6
Vallecito Drainage	Palm Spring	1	62	2	-	-	2	1	-	-	1
	Indian Valley	2	93	3	-	-	3	2	-	-	2
	Mountain Palm Springs	2	93	6	-	-	6	12	-	-	12
	>>> Sample <<<	1	62	1	1	-	2	-	-	-	-
	Subtotal	6	310	12	1	-	13	15	-	-	15
Total		45	2536	30	2	1	33	23	7	8	38

Note: PRE, prehistoric/aboriginal; HIS, historical/euroamerican; P/H, both PRE and HIS elements; P?H, either PRE or HIS element(s); PRE versus HIS classification heuristic and non-exclusive with respect to aboriginal affiliation (cf. PRE property post-dating aboriginal-euroamerican contact or HIS property comprising remains of aboriginal occupation/use of location); *properties within overlapping targeted area and probabilistic sample survey units not included in summary counts for latter.

Table 3

SOUTHERN ANZA-BORREGO DESERT STATE PARK: UCRARU SURVEY PARAMETERS AND NUMBER OF PROPERTIES RECORDED

<u>Targeted Area or Sampling Domain</u>	<u>Probabilistic Sample</u>	<u>Units</u>	<u>Acres</u>	<u>Properties Recorded*</u>							
				<u>Site</u>				<u>Other</u>			
				<u>PRE</u>	<u>HIS</u>	<u>P/H</u>	<u>Total</u>	<u>PRE</u>	<u>HIS</u>	<u>P?H</u>	<u>Total</u>
Jacumba Mountains	Bow Willow Ranger Station	1	92	1	-	1	2	-	-	-	-
	Carrizo Wash	4	155	5	-	-	5	3	-	-	3
	South Carrizo Wash	1	46	1	-	-	1	-	-	-	-

Sweeney Pass Road	5	216	4	-	-	4	-	-	-	-
Indian Hill	2	93	6	1	2	9	1	-	-	1
Piedras Grandes	7	325	22	-	1	23	8	-	-	8
Mortero Palms Camp	1	31	1	-	1	2	-	-	-	-
Dos Cabezas Spring	1	32	-	-	1	1	-	-	-	-
Syd Hayden Spring Road	1	46	3	-	-	3	1	-	-	1
>>> Sample <<<	1	62	-	-	-	-	-	-	-	-
Total	24	1098	43	1	6	50	13	-	-	13

Note: PRE, prehistoric/aboriginal; HIS, historical/euroamerican; P/H, both PRE and HIS elements; P?H, either PRE or HIS element(s); PRE versus HIS classification heuristic and non-exclusive with respect to aboriginal affiliation (cf. PRE property post-dating aboriginal-euroamerican contact or HIS property comprising remains of aboriginal occupation/use of location); *properties within overlapping targeted area and probabilistic sample survey units not included in summary counts for latter.

Table 4

SUMMARY

ANZA-BORREGO DESERT STATE PARK: UCRARU GENERAL SURVEY PARAMETERS AND NUMBER OF PROPERTIES RECORDED

<u>Park Region</u>	Targeted/Probabilistic <u>Units **</u>	<u>Acres</u>	<u>Properties Recorded*</u>								<u>TOTAL</u>
			<u>Sites</u>			<u>Others</u>					
			<u>PRE</u>	<u>HIS</u>	<u>P/H</u>	<u>Sub- Total</u>	<u>PRE</u>	<u>HIS</u>	<u>P?H</u>	<u>Sub- Total</u>	
Northern	131	8200	56	2	2	60	461	45	23	529	589
Central	45	2536	30	2	1	33	23	7	8	38	71
Southern	24	1098	43	1	6	50	13	-	-	13	63
Total	200	11834	129	5	9	143	497	52	31	580	723

Note: PRE, prehistoric/aboriginal; HIS, historical/euroamerican; P/H, both PRE and HIS elements; P?H, either PRE or HIS element(s); PRE versus HIS classification heuristic and non-exclusive with respect to aboriginal affiliation (cf. PRE property post-dating aboriginal-euroamerican contact or HIS property comprising remains of aboriginal occupation/use of location); *properties within overlapping targeted area and probabilistic sample survey units not included in summary counts for latter.

At this stage in the Project, all fieldwork was terminated and UCR-ARU efforts focused on completion of site records and compilation of data. Eventually, in about 2002, the UCR-ARU Graduate Student, who was Lead on the Project, left the university and abandoned the Project. At the present time (2006), there has been no synthesis of the data and therefore little in the way of useful information from the extensive data that were collected. CSP did not provide additional Project funding to UCR-ARU. The data collected, but not synthesized, reside in hard-copy files and digital formats and at UCR, CDD Headquarters, and in the SSC.

Through interviews, it was determined that certain portions of the final synthetic report are in draft form: The Research Design written by Dr. Matthew Hall and Manfred Knaak; according to Hall, an Ethnographic Overview written by Dr. Michael Hogan (which could not be located), various data tables compiled by Dr. Matthew Hall; many site records (some in draft format and some completed) either with or without trinomials; GIS layers with areas surveyed that can be accessed by Llouise Jee; and hard-copy USGS quadrangle maps with blocks that were surveyed and the cultural resources findings. All of these documents will be used in the furtherance of a synthesis of the data from the UCR-ARU Project work as well as for developing Cultural Resources projections based on the data.

STRUCTURE OF THIS REPORT

The purpose and focus of this document is to attempt to pull together various aspects of the Project into a data set that will be useful for Cultural Resources planning. Sections that were drafted by Dr. Matthew Hall were edited and clarified by Schneider. Other sections were developed by CSP Cultural Resources staff at the request of Schneider: Marla Mealey wrote the Environmental and Cultural Settings sections; Heather Tompson compiled the synopsis of Cultural Resources information to facilitate reading and use. The final sections, where other data were “mined” for a comparative sample were written by Schneider; and the final conclusions were written by Schneider incorporating notes by Hall.

It should be stated here that the collected data from the Project, in their non-synthesized form, *have already* been useful in a number of specific instances. For example, the UCR-ARU work in the Piedras Grandes region was used as a basis for determining that serious visitor impacts were occurring to Cultural Resources in this region and that a closure of a jeep trail was necessary to prevent further damage to archaeological sites. In another example, the data gathered by UCR-ARU in the Coyote Canyon area was useful in supporting determinations that certain sites should be placed on a Sacred Sites list as part of the NAGPRA Inventory Project in 2007.

Chapter 2

ENVIRONMENTAL SETTING

by Marla Mealey

This section of the report is a brief summary of available information about the geographical, topographical, geographical, hydrological, and climatological settings within which the Natural Resources and Cultural Resources of ABDSP exist.

LOCATION

The majority of Anza-Borrego Desert State Park (ABDSP) is located in eastern San Diego County, with other portions extending into southern Riverside County and the extreme western edge of Imperial County (Fig.1). ABDSP covers thirty-four USGS 7.5-minute quadrangles (Agua Caliente Springs, Arroyo Tapiado, Borrego Mountain, Borrego Mountain SE, Borrego Palm Canyon, Borrego Sink, Bucksnot Mountain, Butterfly Peak, Carrizo Mountain, Carrizo Mountain NE, Clark Lake, Clark Lake NE, Collins Valley, Cuyamaca Peak, Earthquake Valley, Fonts Point, Harper Canyon, Hot Springs Mountain, In-Ko-Pah Gorge, Jacumba, Julian, Monument Peak, Oasis, Plaster City, Painted Gorge, Rabbit Peak, Ranchita, Seventeen Palms, Shell Reef, Sombrero Peak, Sweeney Pass, Toro Peak, Tubb Canyon, and Whale Peak). It encompasses both sectioned and un-sectioned land in Townships 7 through 17 south, and Ranges 3 through 9 east of the San Bernardino Base Meridian. The communities of Anza, Ocotillo Wells, Ocotillo, Jacumba, and Julian surround the Park (on the north, east, southeast, southwest, and west respectively), while Borrego Springs and Shelter Valley are completely surrounded by the Park. Indian Reservations such as Los Coyotes, Cahuilla, Cuyapaipe, and Torrez-Martinez border the Park in the north and west, and Cleveland National Forest and BLM lands border the Park in the south. Many private landowners also have property surrounding the Park, and roughly 50,000 acres of inholdings also are scattered throughout its more than 600,000 acres. Access into ABDSP is via Interstate 8 in the south, Highway 79 in the central area, and Highway S22 in the north. Highways S2 and S3 provide northern and southern access routes within the Park.

TOPOGRAPHY and GEOLOGY

About two-thirds of Anza-Borrego is made up of mountainous terrain, while the remainder includes various flat plains and valleys (such as Borrego Valley, Carrizo Valley, Clark Valley, etc.) and the low-desert topography of the western edge of Imperial Valley (Remeika and Lindsay 1992). Elevations within the Park range from just 16 feet above sea level along the

ancient shoreline of Lake Cahuilla in the northeastern area of the Park, to 6,193 feet at the top of Combs Peak in the northwestern area of the Park. Topography can be extreme with slopes up to 2,400 feet per mile (45.5%) on the western face of the Santa Rosa Mountains (DPR 2005). The mountain ranges that surround and transect Anza-Borrego include the Santa Rosa Mountains (the tallest of the region with peaks over 8,700 feet in elevation) in the north; the San Ysidro, Volcan, Cuyamaca, Pinyon, and Laguna Mountains (tallest peaks are over 6,500 feet) in the west; the In-Ko-Pah and Jacumba Mountains (tallest peaks are just over 4,600 feet) in the south; and the Superstition, Coyote, Vallecito, and Fish Creek Mountains and San Felipe Hills (tallest peak is just over 5,200 feet) in the east.

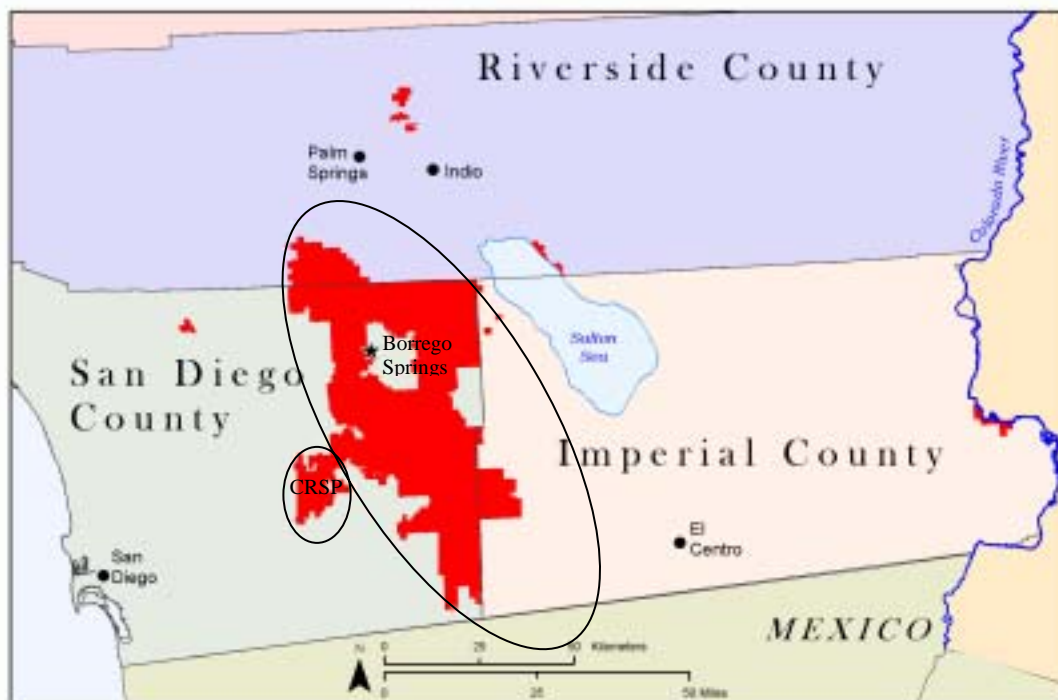


Fig. 1. Large circled red area marks the location of Anza-Borrego Desert State Park within southern California. Smaller circled red area is adjoining Cuyamaca Rancho State Park. Other smaller red areas represent other smaller Colorado Desert District properties.

The Peninsular Ranges that make up the western boundary of the desert were formed in the Mesozoic Era due to a major collision between two large tectonic plates (Remeika and Lindsay 1992:24). The Colorado Desert area is still tectonically active with three major north-south trending fault zones that run through the Salton Trough: the San Andreas, the San Jacinto, and the Elsinore. Of these, the San Jacinto and the Elsinore faults actually transect the Park.

HYDROLOGY

Lake Cahuilla once occupied a majority of the Salton trough, and remnants of the ancient shoreline can be seen along the eastern flank of the Santa Rosa Mountains at an elevation of about 40 feet (DPR 2005). Also known as the Blake Sea and Lake LeConte, Lake Cahuilla was a freshwater lake created during interglacial epochs when high water flows from distributary drainages of the Colorado River filled the low-lying Salton Sink (Hinds 1952; Moratto 1984:359; Remeika and Lindsay 1992:126). At its maximum extent, Lake Cahuilla was about 100 miles long and 35 miles wide. The earliest lakebed sediments have been dated at nearly 40,000 years old; however, more recent lake episodes occurred throughout the last few thousand years, with the most recent drying up approximately 400 years ago (Bean et al. 1991:7; Remeika and Lindsay 1992:126).

The Salton Sea currently occupies a small portion of ancestral Lake Cahuilla. It lies only about two miles from the northeastern corner of the Park. Water sources within the Park include the perennial streams of Coyote Creek, San Felipe Creek, and Carrizo Creek and the many drainages that run seasonally. Numerous springs and seeps also provide important sources of water in this arid environment.

CLIMATE

Weather data is available from Borrego Springs, which is in the Lower Sonoran desert zone (below 2,000 feet). The average high temperatures are between 69° and 73° in the winter and 100° to 107° in the summer, while the average low temperatures are between 43° and 46° in the winter and 68° to 75° in the summer (DesertUSA 2006). Much of the Park, however, also falls within the Upper Sonoran zone (1,500 to 3,000 feet), which experiences slightly cooler temperatures. There are some areas of the Park in the foothills of the Peninsular Ranges that fall within the Transition zone (3,000 to 5,000 feet), which averages about 15° cooler than Borrego Springs. Because the Park is on the eastern side of the Peninsular Ranges it is in a “rain shadow,” a phenomenon in which the mountains act as a moisture barrier resulting in an average of less than seven inches of rainfall per year. Most of the rainfall comes in the winter (ca. 2.86 inches) and autumn (ca. 1.44 inches), although the early spring (ca. 1.04 inches) and late summer (ca. 1.02 inches) averages are also notable (DesertUSA 2006). Occasionally more severe storms such as hurricanes such as Hurricanes Kathleen (1976) and Doreen (1977) can result in dramatic increases in precipitation and widespread flooding. Thunderstorms in the mountains along the western edge of the Park also can produce flash floods, such as the one that swept through Borrego Palm Canyon in September 2004.

VEGETATION

The distribution of vegetation follows the life zones described above. The Lower Sonoran zone includes such plants as creosote bush (*Larrea divaricata*), mesquite (*Prosopis* spp.), ocotillo (*Fouquieria splendens*), palo verde (*Cercidium floridum*), brittlebush (*Encelia farinosa*), ironwood (*Olneya tesota*), desert willow (*Chilopsis linearis*), smoke tree (*Dalea spinosa*), and various species of *Opuntia* cactus (Bean and Saubel 1987, Remeika and Lindsay 1992). Plants that are common in the Upper Sonoran zone include juniper (*Juniperus californica*), barrel cactus (*Ferocactus cylindraceus*), yucca (*Yucca* spp.), agave (*Agave* spp.), arrowweed (*Pulchea sericea*), buckwheat (*Eriogonum* sp.), catclaw (*Acacia greggii*), chia (*Salvia columbariae*), cottonwood (*Populus fremontii*), creosote bush (*Larrea tridentata*), desert trumpet (*Eriogonum inflatum*), jojoba (*Simmondsia chinensis*), mesquite (*Prosopis* spp.), Mormon tea (*Ephedra aspera*), mule fat (*Baccharis salicifolia*), saltbush (*Atriplex* spp.), saltgrass (*Distichilis spicata*), white sage (*Salvia apiana*), willow (*Salix* spp.), and various species of *Opuntia* (prickly pear, beavertail, and cholla) and *Mammillaria* (fishhook and pincushion) cactus (MacMahon 1985; Munz 1974; Raven 1966; Remeika and Lindsay 1992). The Transition zone contains coulter pine (*Pinus coulteri*), ponderosa pine (*Pinus ponderosa*), sycamore (*Platanus racemosa*), and various species of oak (*Quercus* spp.) (Remeika and Lindsay 1992).

FAUNA

Mammals such as squirrels, rabbits, woodrats, kangaroo rats, pocket mice, coyotes, and foxes inhabit both the Lower and Upper Sonoran zones, while larger mammals such as bighorn sheep and mountain lion keep to the Upper Sonoran zone and the Transition zone. A wide variety of birds, insects, and reptiles also inhabit the Sonoran and Transition zones. There are many species of rare, threatened, endangered, or special-concern animals found within, or are expected to occur within ABDSP. The most significant of these include: least Bell's vireo (USFW Federal Endangered [FE] and CFG Endangered [CE]), unarmored three-spine stickleback fish (FE & CE), Peninsular bighorn sheep (CFG Threatened [CT] & USFW Proposed Endangered [PE]), red-legged frog (proposed FE), fairy shrimp, and southwestern willow flycatcher (FE). Other bird species of concern include California black rail (CFG Endangered [CE]), northern harrier (CFG Species of Special Concern [CSSC]), yellow warbler (CSSC), yellow-breasted chat (CSSC), Cooper's hawk (CSSC), burrowing owl (CSSC), common yellowthroat (CSSC), prairie falcon (CSSC), sharp shinned hawk (CSSC), golden eagle (CSSC), white-tailed kite (California Fully Protected [CFP]), loggerhead shrike (CSSC), and Swainson's hawk (CT). Mammals that occur or are expected to occur in ABDSP that are considered sensitive include: California leaf-nosed bat (USFW Sensitive & CSSC), San Diego pocket mouse (USFW Sensitive & CSSC), badger (CSSC), and pallid bat (CSSC). Amphibians and reptiles that are present or are expected in the area and that are listed as sensitive by the U.S. Fish and Wildlife Service and CSSC include: western spadefoot toad (CSSC), orange-throated whiptail (USFW Sensitive & CSSC), northern red-diamond rattlesnake (CSSC), barefoot banded gecko (CT), leaf-toed gecko (CSSC),

granite night lizard (CSSC), two-striped garter snake (USFW Sensitive & CSSC), and San Diego horned lizard (USFW Sensitive & CSSC). Two butterfly species: Stephen's giant skipper (a locally significant population) and alkali skipper (USFW Sensitive) have also been reported in areas of the Park (DPR 2005).

Chapter 3

CULTURAL SETTING

by Marla Mealey

The following section provides concise descriptions of the peoples who have used the ABDSP area over time.¹ It includes the prehistoric era as well as the peoples who are known to have lived in the region just previous to European contact and during the contact period. ABDSP has also played a major role in the historical period, as has been recorded in diaries, maps, government documents, photographs, and other textual media.

PRECONTACT PERIOD

According to the indigenous people of the San Diego desert region, they are descendents of the First People, and have lived in their ancestral lands since the time of creation. In the words of Cahuilla elder, Katherine Siva Saubel, “The Cahuilla were the first people who existed. They were here before this place became desert” (Dozier 1998:11). Tom Lucas, a Kwaaymii of the Laguna Mountains, said it this way: “We have all the belief in the world that creation made our people right here, not in Europe or anywhere else. Right here, where they belong...” (Cline 1979a:103).

Scientific studies have found evidence of humans in the Colorado Desert possibly dating back nearly 10,000 years before present (BP). Malcolm Rogers, an archaeological researcher with the San Diego Museum of Man was one of the first in the region to record archaeological sites and to try to develop a chronology based on artifact types found at those sites. The majority of the sites within ABDSP are surface manifestations with scatters of artifacts and archaeological features with little or no subsurface deposits. They have been placed within the regional chronology based solely on the presence or absence of certain artifacts, inferred changes in artifact types and styles through time, and the chronometric dates that have been obtained for similar artifacts elsewhere by radiocarbon dating methods. Of the few sites with subsurface deposits in ABDSP that are dated using radiocarbon methods or obsidian hydration, most date to the most recent periods (Jacques 2006 [Glass Point Site in Little Blair Valley]; McDonald 1992² [Indian Hill Rockshelter]; Oxendine 2002 [Barrel Springs]; Schaefer 1994; Schneider 2004 [Elephant Trees Trail site]; Steidl 2000 [Mountain Palm Springs]).

Rogers (1966) named the earliest cultural complex of southern California sites the San Dieguito Complex or Tradition. This complex (also called the Paleoindian Period) dates to the early

¹ A more thorough overview of the Precontact Period for Anza-Borrego Desert State Park is provided in Resources Inventory for the General Plan (DPR 2005:Appendix 5.1).]

² McDonald’s work at Indian Hill Rockshelter also yielded earlier dates in the Archaic Period (see below).

Holocene (10,000 to 8,000 years BP). Rogers (1966) divided the San Dieguito Complex into four “aspects” (major zones of concentration): the Western, Central, Southwestern, and Southeastern Aspects. The Central Aspect covers the western portion of the Great Basin, the Mojave Desert, and the Colorado Desert including ABDSP. Common San Dieguito artifacts include a wide range of scrapers, leaf-shaped knives and dart points with an occasional stemmed or notched specimen, flaked-stone crescents, few hammerstones, and “crude” chopping tools. These artifacts typically show appreciable accumulations of desert varnish. Although the San Dieguito people were previously thought to have been almost exclusively “big game hunters” (Pourade 1966), more recent evidence suggests that they also gathered plant resources and utilized marine resources along the coast (Gallegos 1992). Recent preliminary analysis of San Dieguito lithic artifacts from ABDSP (Gross 2001) indicated that those identified as San Dieguito I did not appear to form a “coherent assemblage” and that there was no clear distinction between the so-called San Dieguito II and San Dieguito III artifacts.

Some researchers (e.g., Begole 1973, 1981) have identified what appears to be, in their view, a Late Pleistocene/Early Holocene cultural pattern in the Colorado Desert that predates the San Dieguito Period. To describe this cultural pattern, Begole adopted the term “Malpais,” a term originally coined by Rogers in the 1930s, but later abandoned by him in favor of “San Dieguito I”, the initial phase of the San Dieguito Complex (Rogers 1966:29). As with the San Dieguito materials, there are no reliable radiocarbon dates to support the existence of a Malpais Pattern, and placement of sites and artifacts within this period is based on inferred similarities to Acheulean artifacts from Africa and Eurasia (Begole 1973).

The Early Archaic Period (circa 8,000 to 4,000 years BP) is not well represented in the Colorado Desert, and the dates for this time period were established along the Pacific coast. Schaefer (1994) speculated that many of the Early Archaic sites in the Colorado Desert are “masquerading as so-called San Dieguito sites...” or were “buried under many meters of alluvium” or “plowed asunder.” Only a couple of sites have produced reliable dates that place them within the Early Archaic: a charcoal lens with an associated biface found in an exposed bank near the junction of San Felipe Creek and Grapevine Canyon which was dated at 4,980 +/- 100 years BP (McDonald 1992:16), and the lower levels of the deposit at Indian Hill Rockshelter dated to 4,070 +/- 100 years BP (McDonald 1992), which would put them at the very end of the Early Archaic Period or the very beginning of the Late Archaic Period. At the time of this report and its revision (2008) there are new data becoming available from sites north of ABDSP, in Desert Hot Springs, which seem to be reliably attributed to the Late Archaic period or the transition between Late Archaic and the earliest portion of the Late Prehistoric period (Eddy 2008).

The change to a more diversified subsistence strategy (hunting, fishing, and gathering) seems to have occurred around 4,000 to 5,000 years ago, marking the beginning of the Late Archaic Period (4,000 to 1,500 years BP). This also marks the beginning of a period of greater rainfall in the deserts, increases in population, and the beginning of specialized and selective exploitation of particular environments (Wallace 1978:35). In the southern California deserts, the rise and fall of Lake Cahuilla certainly had an impressive effect upon settlement patterns and the availability of lacustrine resources. When the lake dried up and these resources became scarce, people likely had to travel into the foothills and mountains to obtain water, food, medicinal plants, and other materials.

The Late Prehistoric Period in the Colorado Desert began around 1,500 years BP and likely originated out of the Archaic Period. Artifact assemblages characteristic of the Late Prehistoric include ceramics (especially brownware and buff wares), clay pipes, ground stone tools, bedrock grinding and pounding features, soapstone implements, shell beads, cremations, rock art, earthen art, an increased use of obsidian, and small triangular-shaped, side-notched, and serrated projectile points. Various names have been assigned to the patterns and complexes defining cultures within the Late Prehistoric Period including “Patayan,” “Yuman,” and “Hakataya.”

ETHNOGRAPHY³

Below are short synopses of the major cultural groups for which we have written documentation, either through direct interview and observation of living peoples, or via the observations recorded in historical documents of the first Europeans in the region. Figure 2 is a map of the traditional territories of the cultural groups in the region of ABDSP. The reader should be aware that the division lines are more a figure of the imagination of the Eurocentric ethnographer than reality. In practice, the territorial divisions were very “fuzzy” and people crossed over the boundary lines for visiting, trading, ceremonial events, and marriage.

Kumeyaay and Kamia

The southern half of the Park is within the ethnographic territory of the Diegueño Band of Mission Indians, who are divided into the Kumeyaay (also called the Tipai or Southern Diegueño), the Kamia (an eastern division of the Kumeyaay), and the Ipai (or Northern Diegueño). The Kwaaymii of the Laguna Mountains are a subdivision of the Kamia. The Diegueño range once covered much of San Diego County, a large part of Imperial County, and the northwestern region of Baja California. This territory was bordered on the north by the Luiseño, the Cupeño, and the Cahuilla; on the east by the Quechan (Yuma) and Cocopa; and on the south by the Paipai.

The southern portion of ABDSP falls within Kumeyaay territory (including both western and eastern divisions). The northern boundary of Kumeyaay territory approximately followed the San Felipe River (currently the Highway 78 corridor). The Kumeyaay who lived along this northern boundary of their territory more than likely had considerable contact with the Cahuilla and Cupeño to the immediate north. In support of this, Kroeber (1976:710) says of the Kumeyaay: “With the Cupeño there was intimate association and considerable intermarriage, at least from the vicinity of San Felipe.” There also was a close relationship between the western Kumeyaay and the Kamia (Eastern Kumeyaay) as shown by the accounts of Lieutenant A. W. Whipple who visited San Felipe Valley in 1849: “The village at this place contains probably fifty Indians, part of whom are Diegeenos [sic]...the rest belong to the tribe of the desert called Como-yel or Quemaya [Kamia]” (Whipple 1851 quoted in May 1995 and Rivers 1989).

³ A more thorough overview of the Ethnography for ABDSP is provided in the Resources Inventory for the General Plan (DPR 2005:Appendix 5.1).



Fig. 2. Traditional territories of the indigenous cultural groups within and in the vicinity of ABDSP. Map by Bonnie Bruce.

Kumeyaay language is part of the larger Yuman linguistic group, the language family of most of the groups living along the Colorado River and the Colorado Delta. Kumeyaay territory included a vastly varied terrain, ranging from coastal beaches and lagoons, across the mountains, and down into the arid desert. The Kumeyaay not only hunted game and gathered plant resources, but they also developed horticultural/agricultural techniques including burning (for both hunting and plant food management purposes), seed broadcasting, transplanting, and planting (Bean and Lawton 1973; Gee 1972; Luomala 1978; Shipek 1982). According to Kroeber (1976:709), the Northern Kumeyaay “about Mesa Grande and San Felipe, [said] that they did not live beyond the eastern foot of the mountains,” although they visited the desert to collect resources during the appropriate seasons (Hedges and Beresford 1986:4). A study done in the 1950s indicated that the San Felipe Valley was widely used for “temporary camps, as a route of travel, and in the search and preparation of *mescal*” (Meighan 1959:31). In a letter to the Area Manager of ABDSP, a representative from the Museum of Man stated: “Our site records indicate that use of the [San Felipe] valley was more as a major harvesting (mesquite and agave) area and hunting (rabbits) region, rather than the site of any large villages” (San Diego Museum of Man 1970).

Other groups from the west may also have traveled into this region of the desert during certain seasons. Delfina Cuero, a Kumeyaay who grew up in San Diego County in the early 1900s says “in April and May we used to hunt over toward the desert for mescal [agave]” (Shipek 1970:32). Aside from the food staples of mesquite (*Prosopis* spp.) and agave (*Agave* spp.), other important floral resources used by the Kumeyaay that are found in the desert include: saltbush (*Atriplex* spp.); Mormon tea (*Ephedra* spp.); buckwheat (*Eriogonum fasciculatum*); barrel cactus (*Ferocactus cylindraceus*); juniper (*Juniperus californica*); fishhook cactus (*Mammillaria* spp.); cholla, prickly pear, and beavertail cactus (*Opuntia* spp.); chia (*Salvia columbariae*); jojoba (*Simmondsia chinensis*); yucca (*Yucca* spp.); and various grasses. These and other locally available plants were used for food, medicine, ceremony, and/or tools (Bean and Saubel 1987; Hedges and Beresford 1986; Shipek 1970).

Kumeyaay women made and used pottery bowls, pots, and jars; baskets; net bags; digging and gathering sticks; manos and metates; mortars and pestles; and various wood, fiber, stone, shell, and bone utensils for collecting and processing vegetal foods and materials (Kroeber 1976:722-723; Luomala 1978).

Terrestrial hunting was typically done with bow and arrow, throwing stick, or net. Brush burning to scare up and drive game was also used (Bean and Lawton 1973; Gee 1972; Gifford 1931:26; Luomala 1978:601). Bows were made of mesquite, screwbean, scrub oak, huckleberry, or willow with a sinew, fiber, or twisted buckskin string and arrows were made of arrowweed and/or cane with a fire-hardened-wood or a stone point; the latter was attached by sinew (Cline 1979a, 1979b:24; Gifford 1931:28). Soapstone tools with a carved groove (arrowshaft straighteners) were used to straighten the arrows (Cline 1979a, 1979b:24). Throwing sticks were made of oak, wild lilac, or chokecherry and nets were made of agave, arrowweed, or milkweed fibers (Cline 1979a, 1979b:25, 29).

Trade was also an important means of obtaining resources. Delfina Cuero said: “In the old days, the people down near San Diego used to take lots of salt from the bay and trade it for mesquite beans and other things from the desert...Dried sea food, pumpkins, and dried greens were traded for gourds, acorns, agave, and honey” (Shipek 1970:33). Other trade items included seashells, agave fiber, juncus rushes, and eagle feathers (Luomala 1978:601-602). Trade was more frequent among the various Kumeyaay groups, but it was also fairly common between the Kumeyaay and the groups of the Colorado River region (Luomala 1978:601). The San Felipe Valley corridor was an important aboriginal trail route and many trade items moved through this corridor during both prehistoric and historic times (Rivers 1989:26-27; May 1995; Von Werlhof 1988).

The Kumeyaay were organized into autonomous bands with a hereditary (patrilineal) clan chief as well as at least one assistant chief, although the “Imperial Valley Tipais” (Kamia) did not have clan chiefs, but tribal chiefs like the Quechans farther to the east (Luomala 1978:597). Each band had a central primary village and a number of outlier homesteads located at small water sources, springs, or at the mouths of secondary creeks (Shipek 1982). Campsites were selected for accessibility to water, drainage, availability of boulder outcrops or other natural protection from weather and ambush, and the abundance of flora and fauna (Luomala 1978:597).

Warfare existed, but was not extensive. Kumeyaay clans may have feuded over women, trespass, murder, and sorcery, but the Cocopa were the only real outside threat until the arrival of the Europeans (Gifford 1931:16, 31; Luomala 1978:596). The Kumeyaay used hardwood war clubs, bow and arrows, “stabbing pikes,” and shields in warfare (Gifford 1931:30-31; Luomala 1978:596).

Kumeyaay structures varied by region and use. The more permanent dwellings were domed or gabled, with a slightly sunken floor, and were constructed of a tied-pole framework overlain with brush thatch and sometimes a mud and grass covering (Cline 1979a, 1979:11; Kroeber 1976:721; Luomala 1978:597). In 1846 the San Felipe village was visited by Kearney’s expedition, and it was noted that their houses were “built somewhat after the fashion observed among the Pimas and Maricopas” and were “standing about in groups” (Henry Turner quoted in Rivers 1989:32). A sketch by John W. Audubon in the collection at the Southwest Museum in Los Angeles shows the San Felipe (or Vallecito?) village in 1849 with a circular thatched hut, as well as an open-sided ramada-like structure (Luomala 1978:598; May 1995:179).

Clothing varied by elevation, environment, and season. In the summer, children often went naked, men wore woven fiber breech cloths, and women wore one- or two-piece bark or braided fiber skirts or aprons (Cline 1979a, 1979b: 55; Luomala 1978:599). In the winter, robes of willow bark, or rabbit, deer, or bear skins were used (Cline 1979a, 1979b:55; Gifford 1931:32-33; Luomala 1978:599). Although the Kumeyaay usually went barefoot, agave-fiber or deer-hide sandals were used for traveling over rough or thorny terrain (Cline 1979a, 1979b:55; Kroeber 1976:721). Women wore twined or coiled basketry caps and the men wore coiled caps (Cline 1979a, 1979b:57; Kroeber 1976:721; Luomala 1978:599). Other adornments included bone, shell, or stick ornaments for nose or ear piercings; shell, bone, or seed bead necklaces; and shell pendants (Cline 1979a, 1979b:57; Gifford 1931:37-38; Luomala 1978:599). Hair was worn long with bangs for both men and women, except when it was cut short for mourning (Gifford 1931:36-37; Kroeber 1976:721; Luomala 1978:559, 603). Tattooing was practiced by both sexes, but may have been more prevalent among women due to its place as part of the adolescence ceremony for girls (Gifford 1931:35-36; Kroeber 1976:721). Piercing (ears and nasal septum) was also practiced and face painting was used as another method of personal adornment (Gifford 1931:34-35; Luomala 1978:599; Shipek 1970:40).

The Ipais and Western Kumeyaay practiced shamanism, utilizing the toloache (*datura*) initiation customs that had been learned from the Luiseños and Gabrielinos to the north; while the Eastern Kumeyaay/Kamia practiced the system of song-myth cycles that came from the Colorado River region (Heizer and Whipple 1971). Items such as stone, cane, or ceramic pipes; pottery, tortoise shell, gourd, and deer-hoof rattles; and crescentic stones were part of ceremonial rituals (Gifford 1931; Kroeber 1976; Luomala 1978).

The Kumeyaay cremated their dead. The body and its possessions were burned on a pyre over a pit (Luomala 1978:603). After the cremation of the body, the ash, bones, and unburned fragments of possessions were gathered up and placed in a pottery jar that was then capped and buried or hidden among remote rocks (Kroeber 1976:716; Luomala 1978:603).

Cahuilla

The northern half of ABDSP falls within the ethnographic territory of the Cahuilla (see Fig. 2), whose ancestors likely entered this region of southern California approximately 3,000 years ago (Bean and Bourgeault 1989:14; Moratto 1984:559-560). The Cahuilla have been divided by ethnographers and linguists into three groups: the Mountain Cahuilla, the Desert Cahuilla, and the Western or Pass Cahuilla (Gee 1972; Heizer and Whipple 1971; Kroeber 1976:693-694; Moratto 1984). The Cahuilla language belongs to the Cupan group of the Takic Subfamily of the Uto-Aztecan (Shoshonean) Linguistic Family (Moratto 1984; Powell 1966). Uto-Aztecan speakers entered the Mojave Desert from the east approximately 5,000 years ago, displacing or absorbing the Hokan speakers who had previously inhabited most of California (Moratto 1984:549-560). Sometime around 3,500 to 3,000 years ago the Takic branch began to spread westward across the mountains and down to the coast (Moratto 1984:559-560). The Cahuilla range once covered much of Riverside County and parts of San Bernardino, San Diego, and Imperial Counties. This territory was bordered on the north by the Serrano and the Chemehuevi, on the east by the Chemehuevi, Quechan (Yuma), and Mohave, on the south by the Kumeyaay (also called Diegueño, Tipai, and Kamia), and on the west by the Gabrielino/Tongva, Luiseño (Juaneño), and Cupeño.

Cahuilla ancestral territory included a topographically and environmentally varied terrain, ranging from forested mountains over 10,800 feet in elevation to arid desert sinks 270 feet below sea level. The Cahuilla were hunters and gatherers, living in permanent villages, but traveling into other portions of their territory to take advantage of various resources. They also practiced limited horticultural/agricultural techniques including burning (for both hunting and plant food management purposes), pruning, irrigating, fallowing, transplanting, and planting (Bean and Lawton 1973; Gee 1972).

Trade was also an important means of obtaining resources, raw materials, and manufactured items including jewelry, baskets, and ritual equipment (Bean and Saubel 1987:23). Trade allowed the Cahuilla to obtain resources that were not abundant or were unavailable within their territory. The Cocopa-Maricopa Trail, a major trade route (roughly following what is now Interstate Route 10), bisected Cahuilla territory and linked the interior deserts with the Pacific coast and the Colorado River (Bean 1974). The Cahuilla traded with neighboring tribes including the Serrano, Kumeyaay, and Luiseño (Bean 1974). Cahuilla traders traveled as far west as Santa Catalina and east to the Gila River to obtain goods (Bean 1978:582).

Cahuilla women used seed beaters; baskets; net bags; digging sticks; manos and metates; mortars and pestles; pottery bowls, pots, and jars; and various wood, fiber, stone, shell, and bone utensils for collecting, processing, cooking, and storing vegetal foods and materials (Bean 1978; Kroeber 1976:692-705).

Terrestrial hunting was typically done with bow and arrow, throwing stick, net, snare, or traps. Brush burning to scare up and drive game was also used (Bean 1974:65; Bean and Lawton 1973; Gee 1972). The bow was typically made of mesquite, willow, or palm-leaf stem with a mescal-fiber or sinew string; the arrow was made either of cane with a wooden foreshaft, or stone or

wooden points, or a single sharpened stem of sagebrush or arrowweed (Bean 1978:579; Bean and Bourgeault 1989:34; Kroeber 1976:704). Mule deer, bighorn sheep, and pronghorn were the most important large game animals in Cahuilla territory; but rodents, reptiles, birds, fish, insects, and worms were also important (Bean 1974:57-62).

The largest grouping within Cahuilla society was the *ʔiviʔlyuʔatum* (“ʔ” represents a glottal stop), which refers to persons speaking the Cahuilla language and recognizing a commonly shared cultural heritage (Bean 1974:85). This “cultural nationality” was further divided into two moieties (the *tuktum*—wildcats and *ʔistam*—coyotes) and organized into clans (political-ritual-corporate units) made up of between three and ten lineages (Bean 1974:85-88; Bean 1978:580). At the time of the first European settlement in 1769, the Cahuilla were divided into approximately twelve patrilineal clans (Bean et al. 1991:5). Each lineage owned a village site and specific resource areas, but most of the clan territory was shared and open to all Cahuilla (Bean 1978:580). The office of lineage leader (*nét*) was usually passed on from father to eldest son (Bean 1978:580). The *nét* was responsible for correct maintenance of the rituals, care of the ceremonial bundle (*maiswat*), and upkeep of the ceremonial house (*kišʔámnawet*) [Bean 1974]. The *nét* of the “first” lineage of a clan (the one from which all other lineages of the clan segmented) was recognized as a nominal leader over all the lineages of the clan (Bean 1974:87). Wars were usually fought for many reasons including poaching or trespassing, failure to fulfill responsibilities in the reciprocal ritual system, sorcery, personal insults, kidnapping, nonpayment of bride prices, and theft; but actual armed conflict was rare and only occurred when all other efforts failed (Bean 1978:582). The thrusting war club with a thick cylindrical head was used by the Cahuilla, as were bows and arrows with poisoned tips (Bean 1978:582; Kroeber 1976:704). Houses were typically of pole-and-thatch construction and could either be circular and domed or rectangular (Bean and Bourgeault 1989:41; Kroeber 1976:703). Cone-shaped structures made with cedar bark were built for temporary shelter in the mountains, and cedar slabs were sometimes used to construct the walls of more permanent structures (Bean and Bourgeault 1989:41; Bean and Saubel 1987:85; Kroeber 1976:703-704). Other structures in villages included the ceremonial house (*kišʔámnawet*), the men’s sweathouse, and several granaries (Bean 1978:578). Sweathouses were small, semi-subterranean, and oval-shaped, with a ground-level door (Kroeber 1976:704). The Cahuilla also built shade ramadas (Kroeber 1976:703-704).

Cahuilla women wore skirts or aprons made of bark, skins, or tules, and men wore loincloths (Bean 1978:579; DPR 1968). Mesquite bark was used as diapers for babies (Bean 1978:579). Shoes were typically sandals made of mescal fibers or hide, or “high moccasins” made of hides (Bean 1978:579; Kroeber 1971). Women also wore basketry caps, and rabbit fur blankets were used for warmth (Bean 1978; Kroeber 1976). Olivella or clamshell beads were used for ornaments as well as for money (DPR 1968; Kroeber 1976:705). Body painting and tattooing were also used for decoration (DPR 1968).

The Cahuilla practiced shamanism, utilizing the toloache (*datura*) initiation customs that probably came from the Luiseños and Gabrielinos to the west, but they also practiced the system of song-myth cycles that came from the Colorado River tribes to the east (Kroeber 1971).

They believed in a generative power or force (*ʔivaʔa*) from which all things were created, and from *ʔivaʔa* came the creator beings: *Mukat* and *Temayawet* (Bean 1974:161). Ceremonial objects included charmstones, bullroarers, clappers, rattles, feathered headdresses and wands, and eagle-feather skirts (Bean 1978:579). The ceremonial bundle (*maiswat*), consisting of sacred objects wrapped in a reed mat, was the most important ceremonial object and was passed down from the clan leader to his successor (Bean 1978:579; Robinson and Risher 1993:25).

When a Cahuilla died, a series of rituals began that included cremation and funeral activities followed by a period of mourning (Bean 1974:136). During this mourning period, women cut their hair and the house and possessions of the dead were burned or destroyed (Bean 1974:136). Within a year after the death of a person, a ceremony called *nukil* (“the burning”) was held (Strong 1987:122). During the *nukil*, images representing the deceased were created and then ceremonially burned, thus ending the mourning period (Strong 1929:128-130).

Cupeño

Historically, the Cupeño occupied a small area in the mountains known as *Cupa*, the general area of what is today known as Warner Hot Springs (see Fig. 2). This place was surrounded by the Cahuilla, Luiseño, and Kumeyaay. Once the reservation system was established, the majority of the remaining Cupeño were placed on the Los Coyotes reservation in the mountainous area east of Warner Springs. The Los Coyotes reservation is on the western border of ABDSP, above Borrego Palm Canyon. Ethnographic accounts indicate that Cupeño from this area did come down into what is now ABDSP during historic, and probably prehistoric times.

The Cupeño language is closely related to Cahuilla and Luiseño (i.e., it is a Takic language), but is more than just a dialect of either tongue (Kroeber 1976:689). Cupeño culture appears to be based on Cahuilla customs but is influenced by the other groups that lived surrounding around them (Bean and Smith 1978).⁴

The Cupeño had a complex social organization, similar in form to that of the Cahuilla, with moieties, clans, and ceremonial groups or parties (Kroeber 1976:690). It was said that each clan had a chief, although there were no chiefs at either the moiety or village level (Kroeber 1976:691).

Clans owned the most productive food-gathering spots, but the intervening areas were open to all for hunting and gathering activities (Bean and Smith 1978).

Cupeño cosmology and values were similar to those of the Cahuilla; however, many of their religious rituals and ceremonies appear to have been acquired from the Luiseño and Kumeyaay (Bean and Smith 1978).

⁴ Some ethnographers and historians today believe that the Cupeño are a fairly recent group and are a recent amalgamation of individual families from surrounding groups that settled at the hot springs.

HISTORIC PERIOD⁵

The coming of the European settlers had a significant effect on the Native Americans living in the desert. They had not been subject to most of the early dealings with European missions and settlers on the Pacific coast because of the less desirable land that they inhabited. The earliest European contact with the desert Kumeyaay and Cahuilla came in 1774 and 1775 when the Juan Bautista de Anza expedition passed through their territories. The desert Kumeyaay and Cahuilla were probably already aware of the Europeans through their contact with coastal Kumeyaay populations, and had most likely been affected by European diseases before contact (Bean 1978:583). Some of the Cahuilla and Kumeyaay were baptized at Spanish missions in San Gabriel, San Luis Rey, and San Diego. By 1819 several *asistencias* (a type of small extension of the major missions) had been established near their territories in San Bernardino, Santa Ysabel, and Pala (Bean 1978:583; Rivers 1989).

Although adoption of European-style clothing, foods, and monetary exchange were all reported among the desert Kumeyaay and Cahuilla by the early-to-middle 1800s (Rivers 1989:36), the friction between the Native Americans and the Europeans reached a climax in 1850–1851 during the “Garra Uprising.” A Cupeño named Antonio Garra led attacks on a number of Anglo-American settlements, including nearby Warner’s Ranch, which was destroyed. The resulting campaign to suppress the uprising resulted in a series of punitive skirmishes. One of the most notable occurred in Coyote Canyon (within present-day ABDSP), where U.S. militia killed a local chief and a number of men, forcing their surrender. The militia held a military tribunal and then soldiers executed four of the Indians who had allegedly participated in the raid on Warner’s Ranch (Phillips 1975, 2005; Schneider 2005).

The establishment of the reservation system between 1877 and 1891 forced the relocation of the Kumeyaay, Cahuilla, and Cupeño; took away many of their freedoms; and forever changed their lifestyles. The Kumeyaay village at Scissors Crossing (the intersection of Highway 78 and Highway S-2 in San Felipe Valley) was known during the historic period as the village of San Felipe. It appears to have been occupied until the early part of the 1900s according to the records at the San Diego Museum of Man: “Village occupation in the lower San Felipe Valley did occur, however, between 1830, when Indians moved in from other areas, and 1906 [other sources say 1902 (Rivers 1989:48) or 1903 (Brigandi 1995:22)] when they were relocated to Pala” (San Diego Museum of Man 1970). By 1918 all that remained were “one or two families [in the vicinity of San Felipe], whose instinct for the old home was too strong to be defeated” (J. Smeaton Chase quoted in Rivers 1989:48).

The route through San Felipe Valley was “discovered” in 1824 by Santiago Argüello while chasing horse thieves (Brigandi 1995; Rivers 1989) and by 1827 it had been established as a link on the route between California and Sonora that came to be known as the “Southern Emigrant Trail” or the Sonoran Road, eventually becoming part of Highway 78 (Brigandi 1995; Rivers 1989:28). Other routes such as the Los Angeles and Yuma Road (c. 1880s), San Diego to Yuma Road (c. 1880s), Julian-Kane Springs Road (1925), and Truckhaven Trail (1929),

⁵ A more complete overview of the Historic Period can be found in the Resources Inventory for the General Plan (DPR 2005:Appendix 5.2).

eventually became the roads and highways that are still in use today. These and other roads and trails are major cultural features that have altered the landscape, opening up areas to impacts from erosion, vehicle use, and visitor access.

After the routes of travel were identified and established, more and more Anglo-Americans visited and used the desert. The desert route was used by American soldiers coming to fight in the Mexican-American War of 1846-1848. The influx of Anglo-Americans increased with the discovery of gold in California. The first Overland Mail service between San Diego and the East Coast was established in 1857. The "Jackass Mail" followed a segment of the Fages Trail from the desert floor up through Oriflamme Canyon to the Cuyamaca Mountains. In 1858 the Butterfield Overland Express started mail and passenger service from Tipton, Missouri to San Francisco and Sacramento. Both stage lines ran until the start of the Civil War in 1861.

After the Civil War, many settlers traveled over the desert route to start a new life in California. With the discovery of gold in Julian in 1870, interest in establishing a direct road between the gold mines and the east increased. This was also when many early Anglo-American settlers came to the desert to live or raise livestock. Broad valleys such as Borrego, Carrizo, Clark, Collins, San Felipe, and others were desirable for cattle and sheep grazing. The presence of springs or other permanent water sources made many of these valleys popular among the European homesteaders and ranchers. Numerous springs were improved through digging or enclosing; others were tapped with extensive piping systems that ran water to troughs or fields, sometimes over a mile away. These historic era inhabitants also dug wells and tapped into the underground water reservoir that eventually gave rise to the existence and prosperity of Borrego Springs. Over time, either through overuse or geological, climatological, and/or hydrological shifts, many of the historic springs dried up. This has caused major changes in vegetation and fauna.

The impact of cattle grazing on the natural landscape is still being evaluated, although some generalized observations have been made over the years. In 1956 the impact of grazing was described by Ben Madson: "...it is quite likely that any species which would have been destroyed by domestic animals had disappeared long before the areas were acquired for Park purposes...and there is no evidence that any system of management could ever restore the cover to its original condition" (quoted in Brigandi 1995:329-330). Many ranchers went out of business in the 1930s-1940s due to overgrazing and vanishing grasslands (Knaak 1997). Aside from the disappearance of certain native species, another impact of grazing was the introduction of exotic species that competed with native species for habitat, eventually winning the battle in some areas.

Another attraction of the desert was mining for precious metals and minerals. After the discovery of gold in the Julian area in 1870 and the proliferation of stories such as Peg Leg Smith's lost gold and the Aztec emerald mine, many prospectors staked claims in the desert, hoping to strike it rich. During World War II, and the increase in industrialization that followed, the economic value of other minerals such as gypsum, tungsten, dolomite, calcite, and limestone increased, and mining operations sprang up across the desert. There were also exploratory searches for petroleum and natural gas. Overall, there are almost 250 mines or mining claims recorded within the Park, of which at least 180 date to 1958 or earlier (DPR 1956; DPR 1998; Stewart 1956; Tucker and Reed 1939).

By the early 1900s, there were increasing attempts to settle the Colorado Desert area. The land boom in Imperial Valley, brought on, in part, by the arrival of irrigation water from the Colorado River in 1901, resulted in speculative town building. There were a few failed attempts to homestead within the area of ABDSP.

Special homestead laws passed after World War I made it easier for veterans to file for homesteads. The completion of the original Julian–Kane Springs Road in 1925, and the successful drilling of a deep-water well on the Ensign Ranch in 1926, brought more settlers into the Borrego Valley region. Soon a number of ranches were established in the valley, growing alfalfa, and winter vegetables.

In the 1920s there was an increase in recreational travel throughout southern California. Automobiles were becoming more common and the Colorado Desert offered many routes to choose from, including the old Southern Emigrant Road and other old stagecoach roads.

Besides the automobile routes, there was also the San Diego and Arizona Railway. Completed on November 15, 1919, its route went from San Diego to Jacumba, along and crossing the California–Mexico International Border. From there it turned north and entered what is now ABDSP. Many of its tunnels, blasted out of solid granite, and wooden trestles spanning deep gorges, still exist along this route. Advertised nationally, the route offered passenger service up until the 1950s.

It was also during the prosperous “Roaring Twenties” that the idea for establishing a desert State Park came about. A successful 1928 bond drive, plus advocacy by state and local civic leaders and environmentalists, persuaded the State Park Commission to create the Borrego Palms Desert State Park in 1933. Originally consisting of 83,840 acres, the Park was expanded to 448,840 acres in 1936. In December 1941, the State Park Commission further expanded and dedicated the Anza Desert State Park to the memory of Colonel de Anza and all of the other pioneers and settlers. However, the State didn’t receive full patent to the federal lands until May 1948. By the 1950s, land swaps and exchanges with private landholders enlarged the Park’s boundaries to include approximately 600,000 acres.

The Civilian Conservation Corps (CCC) was established during the “Great Depression” to complete public works projects and provide jobs for hundreds of men. The “Triple Cs” worked on a number of key federally funded public works construction and resource conservation projects throughout the Park from 1933 to 1942. Among the CCC’s earliest projects was the grading and improvement of the automobile road through Sentenac Canyon and Yaqui Pass in 1932. They also constructed the historic core of the Borrego-Palm Canyon Campground, as well as a Custodian’s Residence/Park Headquarters building and amphitheater near the campground.

With the outbreak of World War II, the United States military turned sections of the Park into a vast training center. The military’s main use of Park land was for artillery and aerial gunnery, and rocket and bombing training. Reminders of these activities can be found at Clark Dry Lake and within the more than 27,000-acre “Carrizo Impact Area,” the latter of which is still closed to the public due to the presence of unexploded ordinance.

Another important wartime activity was calcite mining in the Park. Used in the manufacture of artillery optics, sources of calcite were of strategic importance during the war. The calcite mine near the south fork of Palm Canyon contained one of the most important mining operations in the Western Hemisphere until the introduction of synthetic calcite crystals.

After the war, scientists continued to use the Park to conduct experiments. Starting in 1958, astronomers erected and enlarged a radio observatory facility at Clark Dry Lake. The purpose of the facility was to observe the universe by listening to radio emissions emanating from quasars, pulsars, novae, and supernovae, and other celestial phenomena. Linked together by computers, the individual radio antennae arranged around a central lab building became one of the most powerful and versatile low-frequency radio telescopes in the world. In 1986, with its funding gone, the radio observatory was abandoned and later demolished.

From as early as the 1930s, local real estate developers and businessmen sought to turn the Borrego Valley into a desert winter resort similar to Palm Springs in Riverside County, with the newly laid out town of Borrego Springs as its epicenter. After the war, air conditioning, inexpensive gasoline, and the proliferation of personal automobiles sparked an increase in vacationing tourists, which also necessitated improved and additional roads. Improved highway access into the valley stimulated speculators who sought to develop Borrego Springs as the gateway to one of the largest State Parks in the nation. Besides automobile traffic, improved roads brought regularly scheduled bus service from San Diego. In addition, San Diego County built an airport in 1949 with the hope of catering to the vacationing Hollywood crowd.

The proliferation of relatively inexpensive Jeeps and other war-surplus four-wheel-drive vehicles created an entirely new recreational activity in the Park and surrounding areas. The southern California desert region, including ABDSP, has been popular with recreational users for many decades. Camping, hiking, and off-road-vehicle use are the most popular of these recreational activities. From the 1950s onward, State Park ranger reports describe cavalcades and endurance runs of hundreds of off-road vehicles traveling through the Park, not always staying on designated trails (Beckman 1956; Crawford 1956; Fairchild 1957a, 1957b; Kenyon 1956; Newcity 1957; Short 1954a, 1954b; Welch 1954, 1956a, 1956b; Whitefield 1956a, 1956b, 1957).

The impacts of recreational activities to the natural landscape have become a serious issue in certain areas of the Park. Recent studies (Shore 2001; Webb and Wilshire 1983) examining the impacts of off-road vehicles on the desert landscape, demonstrate the types of damage that can be caused by overuse or abuse. In fragile desert environments, evidence of damage and deterioration can remain for decades after the original impact. Importantly, increased access to once-remote areas of the Park also greatly increases the potential for damages and destruction to cultural resources.

As a result of post-war increases in visitation, Park facilities were improved and expanded. The two parks were administered separately until 1957 when they were combined into the present ABDSP. Assisting Park personnel in obtaining and preserving desert lands were environmental interest groups such as the Desert Protective Council, the Sierra Club, and the Anza-Borrego Natural History Association, all of which lobbied to safeguard the entire desert, including the Park, for future generations to enjoy.

Chapter 4

PROJECT METHODS AND OPERATIONS FOR NORTHERN ABDSP

by Joan S. Schneider and Matthew C. Hall

The UCR-ARU Targeted Area and Probabilistic Sample surveys in northern ABDSP began in late October 1994 and concluded in early January 1997. The field effort involved 21 sessions, typically of five or six days duration, with a crew of five people (on two field rotations, two teams of five operated simultaneously). A total of 424 person-days was spent in the field. Most sessions were physically challenging, given the rugged terrain of the northern ABDSP survey localities. The fieldwork took 30 percent more time than estimated because of (1) the problems of accessing the remote locations of the majority of selected Probabilistic Sample units and many sections of the Targeted Areas; (2) extended crew travel time (on foot) required to reach them; and (3) the substantially greater-than-expected density of archaeological properties encountered. Similarly, despite procedures designed explicitly for this study to maximize field recordation efficiency and minimize post-field records processing (see below), the large number of properties recorded (590) led to protracted periods of records compilation, map preparation, and survey results tabulation, well over twice as long as estimated (nearly 400 person-days total).

TARGETED AREA DEFINITION

Eight small Targeted Areas in northern ABDSP were identified by Manfred Knaak (CSP State Representative for the project). These were chosen for inventory because they are subject to a considerable amount of Park visitor use (a source of possible adverse impact to the cultural resources) and/or because of the potential significance and/or evident fragility of cultural resources present. These Targeted Areas were labeled for local landforms or springs.

Seven of the eight Targeted Areas lie within the drainage catchment of Coyote Creek (Fig. 3). Five of the seven (or major portions thereof) are in primary side canyons of the northwest-to-southeast-trending Coyote Canyon: Tule Spring (TS [middle stretches of Tule Canyon]); lower Horse Canyon (HC), Parks Canyon (PC), Alder Canyon (AC), and Salvador Canyon (SC). Two of the seven Coyote Creek Targeted Areas occur along the main drainage: Fig Tree Valley (FTV), a roughly 7-8 km² basin at the upper end of Coyote Canyon and immediately below (northeast of) Alder Canyon; and Monkey Hill (MH), so designated for a low, but prominent ridge in the bottom of central Coyote Canyon. The remaining Targeted Area, Hidden Spring (HS), located some eight km east of the middle segment of Coyote Creek, is situated at the southern end of Jackass Flat above upper Rockhouse Canyon north of Clark Valley.¹

¹ The Tule Spring, Horse Canyon, Parks Canyon and most of Fig Tree Valley Targeted Areas fall just inside the southern boundary of central Riverside County; southern Fig Tree Valley and the Salvador Canyon, Monkey Hill, and Hidden Spring Targeted Areas are in northeastern San Diego County.

Targeted Areas range from 89 acres (Monkey Hill) to 1038 acres (Fig Tree Valley) in size; six of the Targeted Areas are parcels of 148 to 494 acres (Table 1). Inventory of all eight totaled 12.93 km² (3196 acres).

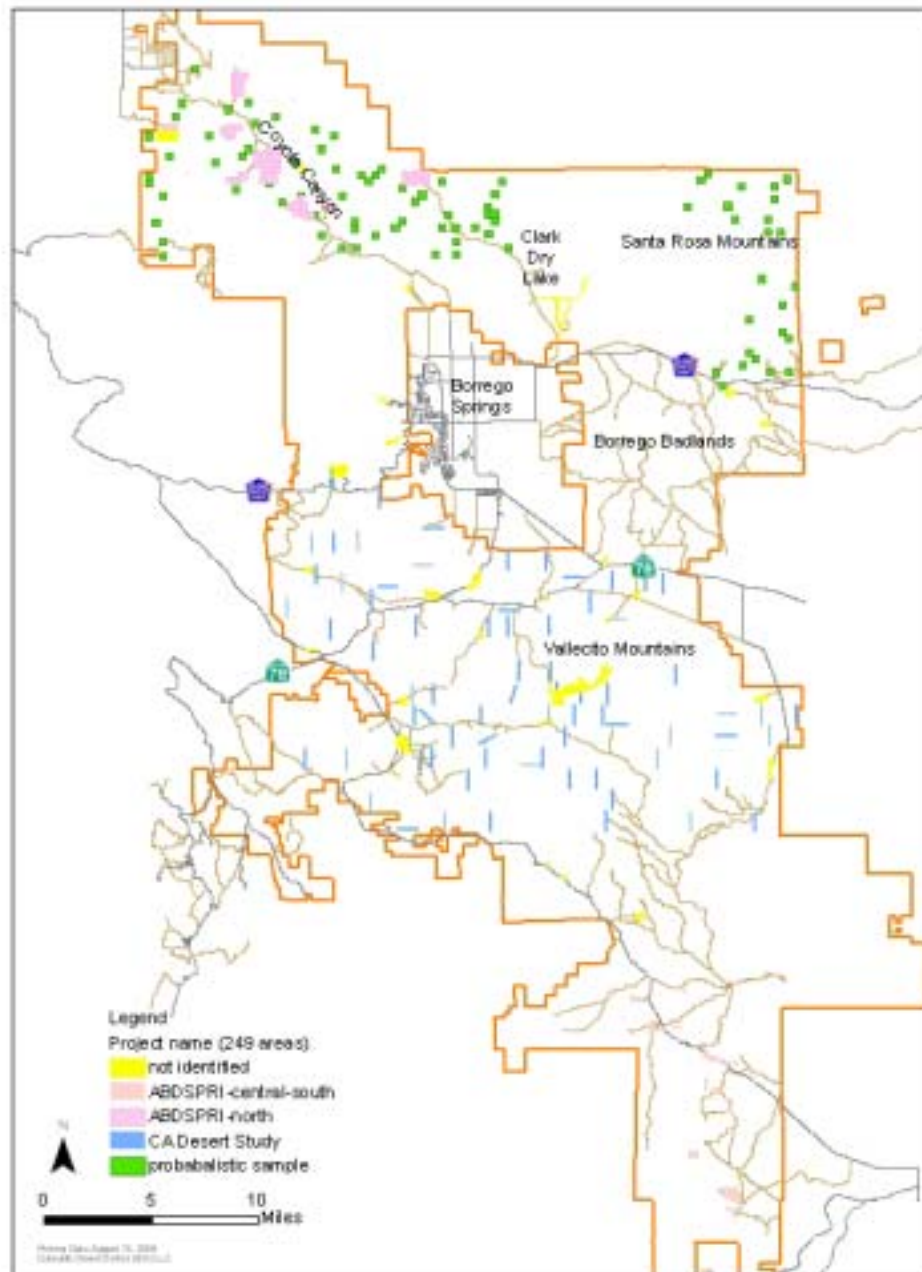


Fig. 3. Areas within ABDSP that have been inventoried. UCR-ARU Targeted Areas are represented in pink; UCR-ARU Probabilistic Sample blocks in North ABDSP are represented in green; BLM Desert Survey transects are represented in blue; yellow areas are other that are not identified. Map by Louise Jee.

PROBABILISTIC SAMPLING DESIGN

One objective of the UCR-ARU studies in ABDSP was to generate information amenable to modeling distributions of cultural resources in different parts of the Park. The prohibitive costs and physical parameters of the optimal case of a complete archaeological inventory of a diverse land mass the size of ABDSP was clearly impractical. It followed, then, that this project objective required a sampling strategy which could yield data suitable for estimating, with statistically measurable levels of confidence, what a total inventory (using the same field and recordation procedures) would reveal as far as the nature and dispersal of cultural resources (cf. Kish 1965; Mueller 1974; Read 1975; Cochran 1977; Rogge and Fuller 1977). Such a sampling program has an inherent probabilistic function, its ideal outcome being a set of controlled, predictive assessments useful in addressing archaeological research topics and land and resource management policy planning.

A square-shaped Probabilistic Sample unit measuring 500 m on each side (i.e., 500 x 500 m square) was, for various reasons, selected as the most efficient size and shape (see Appendix A). The original goal was 90 Probabilistic Sample units in the northern part of ABDSP.

All of the northern part of ABDSP, however, was not included in the sampling universe because (1) sizeable sections of this part of the Park are not accessible on foot; (2) little if any recreational or development activity occurs in these localities; and (3) accessing these very remote locations would consume too much of the project time and financial budget for logistical reasons.

Within the area included in the sampling universe, four sampling domains were defined. These were named for their major landmarks:

- Pacific Crest Trail, a narrow corridor along the mountain crestline border of northwestern ABDSP from Coombs Peak north to Tule Spring (24.23 km² [5990 acres]);
- Coyote Creek Drainage, central and upper portions of the Coyote Creek watershed (140.00 km² [34,600 acres]);
- Jackass Flat/Rockhouse Canyon/Butler Canyon, a foothill zone below the central-western escarpment of the Santa Rosa Mountains situated between Buck Ridge on the northeast and Clark Valley on the southeast (63.46 km² [15,690 acres]);
- and Eastern Santa Rosa Mountains, lower slopes, canyons, and alluvial fans on the southeastern side and around the southern end of the Santa Rosa Mountains immediately inside northeastern ABDSP (90.77 km² [22,440 acres]).

Collectively, the four sampling domains encompass 78,720 acres (318.43 km²), or about 60% of northern ABDSP.

The sample structure for the northern ABDSP probabilistic survey program was deliberately generalized (i.e., there was no stratification of the random sample except by domains), with the intent of applying post-stratification procedures and parametric and nonparametric statistical techniques to track trends in the nature and disposition of archaeological properties (see

Appendix A). This approach also allows for future re-analysis of survey findings as location-exact biological, hydrological, and geological information accumulate for the Park.

Since probabilistic analysis of the density, dispersion, and composition of archaeological phenomena is predicated upon critical assumptions connected with simple random sampling, numbering all potential 500 x 500 m sample units and drawing a random sample of these units to examine in each domain was chosen as the method for the northern ABDSP probabilistic inventory (see Appendix A).

With the size, configuration, and random sample elements decided, the remaining task was to determine the number of sample units to be drawn randomly in each of the four domains, within the confines of the limitations of the project. Statistical precision is always lost when sample size is reduced. (For example, although it may be less expensive to inventory five 1000 x 1000 m units, resulting statistical data will be more reliable if twenty 500 x 500 m units are inventoried.) Unfortunately, limitations of the project necessitated reducing the optimal minimum number of sample units for the four domains. After due consideration (see Appendix A), the field plan called for a random draw of 10 sample units in the Pacific Crest Trail domain; 30 in the Coyote Creek Drainage domain; 25 in the Eastern Santa Rosa Mountains domain, and 25 in the Jackass Flat/Rockhouse Canyon/ Butler Flat domain.

Creating the Sampling Universe and Selecting the Sample Units

A 500 x 500 m grid was superimposed over the four defined sampling domains, creating 1228 potential sampling units. Each of these potential sample units was labeled with the domain name (a three-letter code) and a unique number; for example, ESR-353 was the 353rd unit in the East Santa Rosa Mountains domain. A Table of Random Numbers (Blalock 1972) was used to select the 90 sample units (see above) for survey in the four sampling domains (Table 5).

Fieldwork and Operationalizing the Random Sample Unit Selection

The ARU Targeted Area and Probabilistic Sample surveys in northern ABDSP were especially arduous due to the rugged landscape and consequent difficulty of access to many localities. As a result, nine of the 90 sample units could not be accessed. The inability to inventory nine of the designated sample units due to access constraints compromises the statistical integrity of the samples drawn for the three domains in which these units are located (Pacific Crest Trail [two], Coyote Creek Drainage [two], Jackass Flat/Rockhouse Canyon/Butler Canyon [five]).

Table 5
Number of Probabilistic Sample Blocks Selected for Each Domain in the Northern Portion of ABDSP; Sample Blocks Actually Inventoried

Domain	Planned No. of Blocks	Actual No. of Blocks Inventoried
Pacific Crest Trail	10	8
Coyote Canyon Drainage	30	28
Jackass Flat/Rockhouse Canyon/Butler Canyon	25	20
Eastern Santa Rosa Mountains	25	25
Total	90	81

FIELD SURVEY PROCEDURES

The objective of each field session was to examine Targeted Areas and/or sample units in specific vicinities. Led by the UCR-ARU Principal Investigator or either an UCR-ARU Project Director or Crew Chief, the five-person field team worked out of camps positioned as close as possible to the areas/units to be inventoried during a particular survey session. One corner of each survey block or unit was located employing compass bearings, topographic map references, and landmarks. Crew members were placed at 25-m intervals along one edge of the block/unit and then preceded to the opposite side, halting every 100 or 200 m to check and, as necessary, realign transect positions. Azimuth readings were used to hold individual surveyor transects to true north-south or east-west orientations, with transect provenience reference and surveyor spacing maintained by calibrated pace. Crew personnel noted locations of observed cultural resources on a surveyor transect recordation form; when an off-site (i.e., isolated or "other" [see definitions below]) archaeological property was encountered, this was marked at the surveyor's location on the recordation form.

Upon the discovery of a potential "site" property (see definition below), each crew member marked his/her individual transect position and moved to the location to assess the archaeological content of the "site" and engage in recordation tasks as appropriate. One (typically) or more temporary data points were established for provenience reference. Special effort was made to record, as feasible, types and quantities of artifacts by morphological class, material, and condition; temporally diagnostic artifact forms (ceramic wares, projectile points, certain glass bottle types, etc.) by number and kind; lithic varieties among flaked, ground, and battered stone tools and detritus; the character and dimensions of archaeological features or particular depositional loci; and site-specific environmental attributes and associations. Photographs were taken and roughly scaled sketch maps were made of archaeological site properties recorded during Targeted Area and probabilistic surveys. Noteworthy artifacts, features, and depositional loci were mapped, drawn, and photographed as needed. No archaeological materials were collected in the course of fieldwork.

Information available before the northern ABDSP inventory surveys commenced (site records on file at the Park; personal knowledge of Manfred Knaak regarding the prehistoric archaeology

of project localities) indicated extensive aboriginal use of the profuse granite/granitic bedrock outcrop boulders along drainages and lower canyon slopes throughout the study region as platforms for the processing of plant, animal, or possibly other materials. Anticipating an abundance of such facilities (many hundreds were indeed encountered), and with the project goal of realizing "full-coverage" survey of Targeted Areas and selected sample units a key concern, bedrock milling feature recordation was confined to classifying a feature into one of three general descriptive types (see below) and counting the number of each elements present on a platform.

Field Designations for Cultural Resources Encountered

Every archaeological property encountered was labeled with an alpha-numeric, three-part project designation.

For those encountered in *Targeted Areas*:

- the first component consists of a two-letter or three-letter code that refers to the subject Targeted Area (e.g., "TS" for Tule Spring, or "FTV" for Fig Tree Valley);
- the second component consists of a one-letter reference to the block within the Targeted Area (except for Monkey Hill Targeted Area which was not divided into blocks);
- the final component consists of either an "S" (site property) or an "T" (other property) followed by a number assigned sequentially.

For example, "SC-B-S2" would be Salvador Canyon Targeted Area, Block B, Site 2.

For those encountered in a *probabilistic sampling domain*:

- the first component consists of letter code that refers to the subject sampling domain (e.g., "PCT" for Pacific Coast Trail, or "CCD" for Coyote Creek Drainage);
- the second component refers to the number assigned to the randomly chosen probabilistic inventory block in that sampling domain;
- the final component consists of either an "S" (site property) or an "T" (other property) followed by a number assigned sequentially to that random sample block.

For example, "PCT-10-S1" would be Pacific Coast Trail Sampling Domain, grid randomly chosen square 10, Site 1.

Field Conditions and Inventory Methods

Under field conditions, severe topographic relief or dense vegetation (or both) at times precluded systematic transect survey. In these cases, crew members surveyed in a non-systematic manner and usually covered less than the entire targeted block or sample domain block. Of the eight Targeted Areas, 100% of Parks Canyon and Monkey Hill, and nearly all of Fig Tree Valley (97.5%), Alder Canyon (94.5%), and Horse Canyon (91.2%) localities were systematically inventoried (Table 6); small sections (2.5% to 8.8%) of the latter were examined in non-systematic manner. Due primarily to precipitous canyon or mountain slopes in the other Targeted Areas, systematic inventory was more restricted: in Tule Spring (85.2%), Hidden Spring (70.8%), and Salvador Canyon (59.5%). Coverage of the remaining parts (14.8% to

40.5%) of these Targeted Areas was accomplished with non-systematic inventory. In aggregate, 87% (2770.6 acres) of the land encompassed by the northern ABDSP Targeted Areas received systematic survey, 13% (425.7 acres) non-systematic inventory (Table 6).

Table 6
Targeted Areas: Percentages Surveyed by Method as Compared to Probabilistic Sample

Domain	Targeted Areas (percentages)			Probabilistic Sample (percentages)		
	<i>Systematic</i>	<i>Non-systematic</i>	<i>No coverage</i>	<i>Systematic</i>	<i>Non-systematic</i>	<i>No coverage</i>
Parks Canyon	100	--	--			
Monkey Hill	100	--	--			
Fig Tree Valley	97.5	2.5	--			
Alder Canyon	94.5	5.5	--			
Horse Canyon	91.2	2.5-8.8	--			
Tule Spring	85.2	14.8	--			
Hidden Spring	70.8	29.2	--			
Salvador Canyon	59.5	40.5	--			
Total	87	13	--	61	35	4

As compared to the eight Targeted Areas where 87% was surveyed systematically, only 61% (3069.9 acres) of the land encompassed by the 81 randomly selected Probabilistic Sample units was systematically surveyed. This was a direct consequence of the harsh terrain typifying more than half the tracts (Table 5). Non-systematic inventory, though, could be accomplished for 35% (1748.0 acres) of the sample. Extreme topographic relief and/or dense vegetation prevented any survey at all of the remaining four percent (187.9 acres). The problem of access was most acute in the Pacific Crest Trail and Eastern Santa Rosa Mountains sampling domains, where less than half of the acreage in the sample drawn could be surveyed in systematic transect fashion (respectively, 47.1% and 43.7%). Heavy montane scrub and chaparral cover was the main factor preventing access along the Pacific Crest Trail corridor; steep slopes and cliffs were the main factors in the eastern Santa Rosa Mountains.

For all of the northern portion of the ABDSP inventory, 7719 acres (98% of planned coverage) was surveyed at some level: 5550 acres (72%) systematically and 2169 acres (28%) non-systematically (adjusted to overlapping coverage—see below).

Overlap of Targeted Areas and Probabilistic Sample Blocks

Seven of the 81 randomly selected 500x500-m sample units comprising the probabilistic phase of the northern ABDSP surveys overlap in five of the eight Targeted Areas (representing 295.3 [5.9%] of the 5005.8 acres contained within the 81 units [Table 2]). In brief, if a random-sample block fell within a Targeted Area, the data acquired from the 500 x 500 m Probabilistic Sample block was used for statistical purposes, although the area was not resurveyed. The rationale for the manner in which these overlapping areas were handled statistically is explained in Appendix A).

ARCHAEOLOGICAL SITE and OTHER PROPERTY DEFINITIONS

Although arbitrary, for reasons discussed in Appendix A, a distinction is drawn here between archaeological "site" and "other" archaeological properties (the latter equating to "off-site" or "non-site" locations, and oftentimes referred to as "isolates"). Because of policy implications associated historically with the term "site" in government-regulated cultural resources management practice, this separation reflects an effort to ensure that "site" properties, so identified here, receive maximum consideration in management decisions. It is expressly not a dismissal of the obvious analytical value of "other" archaeological properties as indicators of past human activity and settlement patterns.

Criteria for Identification as a "Site"

The criteria for identification of a cultural property as a "site" were revised from those originally proposed in the Research Design for this project. The primary change was the exclusion as "sites" those properties characterized by one or more milling features on a single bedrock or boulder platform; fire-altered sediment or rock remains of a possible hearth or roasting pit; a single rock cairn; clusters of fragments from a single ceramic vessel (or larger sherd[s] thereof); or an assayed toolstone cobble --- *all of which lack any additional archaeological materials*. In this report, locations in the Northern portion of ABDSP failing to meet at least one of the criteria (see below) are regarded as "other" archaeological properties (the synonym "off-site" also appears in the following text). With few special exceptions (noted below where appropriate), these criteria were applied systematically in documenting results of the Northern ABDSP survey work and, in most ways, were also applied to the UCR-ARU program in the Central and Southern portions of the Park.

Criteria for designation as a "site" property (at least one must be met):²

1. Presence of midden and other archaeological materials or features produced by past human occupation;
2. Presence of at least three classes of artifacts with a minimum density of 1 per 3 m² within an area measuring no less than 10 m² in extent;
3. Presence of one or more artifacts within 5 m of an archaeological feature;
4. Presence of two or more artifacts of whatever class per 3 m² in an area measuring no less than 10 m² in extent (does not apply to the case of concentration of fragments from a single ceramic vessel or sherd or fragments from a single assayed toolstone cobble; and
5. Where "sites" are within 25 m of each other, they are collapsed into one multi-locus site to allow for the possibility that there is a continuous debris scatter obscured by natural processes.

² See Appendix C for a more definitive discussion of the types of artifacts and features that would be included in the "site" classification.

Criteria for designation as an "other" property:

Any cultural resource property that did not meet at least one of the criteria, above, is regarded as "other" (or "non-site").

ARTIFACT AND ARCHAEOLOGICAL FEATURE NOMENCLATURE

The most numerous artifactual items encountered in the region are prehistoric ceramic-vessel fragments (coded SHD in this report) and flaked-stone debitage (coded DEB in this report). Identified flaked-stone tools found during the ARU surveys are small in number and can be grouped into five main categories.

- (1) Projectile points (coded PRO in this report) are bifacially flaked implements, essentially triangular in outline (broad or narrow), exhibiting morphological traits (lower lateral notches, bifurcated stem, tangs, etc.) consistent with their attachment ("hafting") to a spear, dart, or arrow shaft (or foreshaft).
- (2) Bifaces (coded BIF in this report) are bifacially flaked artifacts that display evidence of intentional thinning and shaping.
- (3) Flake tools (coded FKT in this report) are flakes that show margins modified through implement use, intentionally to create a working edge, or both.
- (4) Cores (coded COR in this report) are cobbles, nodules, or chunks used as a source of flakes for the production of formed artifacts and expedient (casual) tools (bifaces no doubt served in the same function as well).
- (5) Core-cobble tools (coded CCT in this report) are cores and cobbles exhibiting margins flaked and/or battered as a result of their heavy-duty use in scraping or pulping of dense plant (fibrous or woody) or animal matter.

Four basic kinds of ground stone artifacts, nearly all of granite/granitic materials, were identified during survey:

- (1) Handstones ["manos" and "mullers"] (coded HND in this report) are shaped or unshaped, bifacially or unifacially ground cobbles employed in the milling of seeds or other substances.
- (2) Millingstones ["metates"] (coded MIL in this report) are the portable platforms or slabs upon which vegetal or other matter is milled with a handstone. Millingstones can also be shaped or unshaped, bifacially or unifacially ground.

- (3) Pestles (coded PST in this report) are elongate, cylindrical implements with one or both ends used to pound and/or mill substances on a hard platform; longitudinal faces can also show grinding wear accrued in the same manner as handstones.
- (4) Battered stone artifacts (coded BAT in this report) were noted at a handful of recorded properties and include hammerstones (coded HAM in this report), devices used in the production and maintenance of flaked and ground stone tools, along with cobbles employed to pound/crush plant parts or bone.

Granite/granitic bedrock outcrops and boulders possessing milling features are abundant throughout many of the northern ABDSP project localities (and across the Park). These features were classified into one of three simple descriptive categories in order to expedite their recordation and enumeration:

- (1) Flat grinding facets typically referred to as "slicks" (also "rubs") in the vernacular of California archaeologists (coded BMS in this report);
- (2) Trough-shaped, non-circular concavities or "basins" greater than one centimeter in depth with a basined cross-section (coded BMB in this report); and
- (3) Circular concavities greater than one centimeter in depth with a cylindrical or bowl-shaped cross-section, "mortars" in standard parlance (BMM).

"Rock art" located on boulders at a few of the northern ABDSP properties include:

- (1) cupules (coded CUP in this report) are ground, golfball-sized diameter, shallow (<1-2 cm depth) concavities;
- (2) petroglyphs (coded PTG in this report) are engraved or scratched rectilinear or curvilinear motifs; and
- (3) pictographs (coded PIC in this report) are pigment-applied designs .

A number of recorded site properties contain possible remnants of hearths (cf. "roasting pits" or "fire pits" in the idiom of archaeologists) characterized by fire-darkened, usually ash-rich/charcoal-laden sediments and/or fire-altered rock. Over three dozen of the "other" properties identified, however, comprise small patches of such thermally-affected materials, but lack any reported, additional, archaeological evidence (i.e., artifactual debris) as physical residues of previous human activity. Although these accumulations were recorded formally, some may be of natural origin (e.g., remains of wildfires or lightning strikes).

Other features observed during the Northern ABDSP surveys include potential remnants of prehistoric domestic (cf. "house") structures consisting of shallow, sometimes rock-ringed ground depressions enclosing or surrounded by varying combinations of midden, artifacts, or bone; small one-course rock rings and "cleared circles" (circular areas swept clean of larger clasts); and rockshelters (simple bedrock overhangs as opposed to caves).

Among the historical (cf. Euroamerican) artifacts and features found are residential and personal objects and debris (refuse dumps, tin/steel cans, glass bottle sherds, ceramic plate and pot fragments, pieces of cloth, button, bedsprings, etc.); ranching/livestock facilities (barbed wire fences, wells, corrals, water tanks and troughs, rainwater catches, etc.); a standing cabin; structure remains (foundations, bricks, stove parts, sections of roofing, milled wood, etc.); mining prospects and adits; and miscellaneous items (muleshoe, horseshoe, bullet cartridges, surveyor monument, etc.). More than two dozen rock cairns were also encountered. Although several are clearly mine claim-markers, and others may be as well, most cannot be definitively ascribed a historical or prehistoric age.

PROPERTY RECORDS PROCESSING

Targeted Area and Probabilistic Sample surveys in Northern ABDSP resulted in the identification of 590 "site" and "other" properties (see Table 1, above). Of these, 61 are "site" and 529 "other" properties.

The vast majority (57; 93.4%) of the "sites" consist of assemblages of prehistoric artifacts and/or features; two (3.3%) consist of historical materials, and two (3.3%) include prehistoric and historical archaeological elements. One of the latter and one of the prehistoric sites occur within overlapping portions of specific Targeted Area survey blocks and inventoried Probabilistic Sample units. Forty-three (72.9%) of the remaining 59 site properties are found in Targeted Areas (41 prehistoric, two historical), 16 (27.1%) in surveyed sample units (15 prehistoric, one prehistoric/historical).

The 529 "other" properties include 420 prehistoric (79.4% of total) and 44 historical (8.3% of total) locations (see Table 1, above). One (0.2% of total) exhibits prehistoric and possible historical elements, and another (0.2% of total) could be of historical age. Forty-one of the "other" properties (7.8% of total) may be of prehistoric origin, though most consist of isolated, small accumulations of fire-altered sediments and/or rock lacking any additional archaeological materials and might be, as discussed above, natural phenomena. Even general ages of the last 22 other properties (4.2% of total) cannot be determined, and the cultural status of several is problematic (burnt animal bones, a cluster of unmodified chunks of quartz, a possible rock wall or alignment, etc.). Twenty-four "other" properties fall within overlapping portions of Targeted Area survey blocks and inventoried sample units (20 prehistoric, two historical, one with prehistoric and possible historical elements, one of unknown age). Sixty percent (304) of the remaining 505 "other" properties occur in Targeted Areas (263 prehistoric, six potential prehistoric, 30 historical, one potential historical, four of unknown age); 40% (201) in surveyed Probabilistic Sample units (137 prehistoric, 35 potential prehistoric, 17 of unknown age).

Each of the above properties was recorded using appropriate CHRIS-mandated forms and locations were mapped on applicable USGS topographic quadrangles using UCR-ARU field designations. A photolog of all photographs taken during the project is attached as Appendix D.

Chapter 5

PROJECT METHODS, OPERATIONS, AND RESULTS FOR CENTRAL AND SOUTHERN ABDSP

by Joan S. Schneider and Matthew C. Hall

The UCR-ARU Targeted Area and Probabilistic Sample surveys in Central and Southern ABDSP began in 1996 and continued through 1998. The field effort involved a crew of five people (on several field rotations, two teams of five operated simultaneously). Data were to be gathered in the same manner as for the Northern portion of ABDSP, but in this case, the study area was from the eastern edge of ABDSP on the west of the Salton Trough to the bases of the mountain foothills of the Peninsular Range province on the western boundary of the Park. Most of this area consists of desert terrain at comparatively low altitudes. During the course of this portion of the Project, the focus of the Research Design was changed so that Targeted Areas known to contain cultural resources were given the highest priority for survey. Consequently, fewer Probabilistic Sample areas were surveyed (see below). Most Targeted Areas were located closer to roads and places of visitor use than the randomly selected sample units. For this reason, there was less time spent accessing survey areas because most survey was conducted in Targeted Areas. In spite of this, survey sessions were sometimes physically challenging because of the number and density of cultural resources. CSP leadership for the Project, in addition, changed the recording techniques and asked for a higher level of detail in recording. Thus, the original procedures designed explicitly for this study in order to maximize field recordation efficiency and minimize post-field records processing were modified, and more crew time was necessary.

The planning, including the sampling domains, Targeted Areas, and Probabilistic Sample units were derived in the same general manner as those in the Northern portion of ABDSP (see above). In actuality, however, only a small proportion of the Probabilistic Sample units were inventoried and time limitations prevented inventory in all the Targeted Areas.

In order to compensate for the greatly reduced number of Probabilistic Sample units surveyed in the Central and Southern areas of the Park, Schneider devised a means of providing somewhat comparable data for the Central portion of ABDSP derived from the 1970s Bureau of Land Management (BLM) Desert Survey (see detailed explanation elsewhere in this report). By using the BLM data, some projections and comparisons could be made for the Central area of ABDSP in spite of the fact that the Probabilistic Sample was confined to one domain. No comparable statistical sample is currently available for the Southern portion of ABDSP.

TARGETED AREAS

Three sampling domains were identified for the Central portion of ABDSP: Borrego Badlands, Vallecito Drainage, and Pinyon Mountains. Within these domains, 18 Targeted Areas were identified for survey; 11 were actually subject to inventory (see Tables 2, 7). In all, about 61 percent of the Targeted Areas received attention in the Central portion of the Park (for actual acreage and percentages, see Table 7). One sampling domain was identified for the Southern portion of ABDSP: Jacumba Mountains. Within this domain, 12 Targeted Areas were identified for survey; 9 were actually subject to inventory, 75 percent (see Tables 3 and 7 for actual acreages). The Targeted Areas were chosen for inventory because they are subject to a considerable amount of Park visitor use (a source of possible adverse impact to cultural resources) and/or because of the potential significance and/or evident fragility of cultural resources present. These "Targeted Areas" were named for local landforms or springs. In all, 30 Targeted Areas were identified within the Central and Southern portions of ABDSP and 20 received inventory to some extent.

As contrasted with the work in the Northern portion of ABDSP, Geographic Positioning System (GPS) technology was used in the survey of Central and Southern portions of the Park. In the North, more traditional methods of locating cultural resources were used (see above). In most other ways, recording methods were similar, but somewhat more definitive (see above).

Field Conditions and Inventory Methods

Terrain was less extreme in the Central and Southern portions of ABDSP than in the Northern portion. In addition, most Targeted Areas were easily accessible by vehicle or could be reached by short hikes from vehicular access points. Vegetation was less on the desert floor than in the mountainous terrain of the North, so that better coverage of Targeted Areas was possible

Field Designations for Cultural Resources Encountered

Every archaeological property encountered was labeled with an alpha-numeric, three-part project designation, as had been used in the Northern portion work (see above).

Table 7
Planned Targeted Areas for the Central and Southern Portions of
ABDSP; Number of Acres in Domains; Number of Acres Actually Inventoried

Domain	Targeted Area	Acres Surveyed	Percentage of Total Acreage
Borrego Badlands (Central)	Arroyo Salada	62	
52,480 Acres	Seventeen Palms	62	
	Hawk Canyon	155	
	The Slot	31	
	Harper Canyon	62	
	Borrego Springs	--	
Sub-Total		372	0.71%
Pinyon Mountains (Central)	Culp Valley	--	
64,000	Grapevine Canyon	62	
	Yaqui Well	--	
	Central Earthquake Valley	62	
	Southern Earthquake Valley	185	
	S. Little Blair Valley	--	
	Upper Hapahah Flat	--	
	Split Rock	--	
	Lower Hapahah Flat	--	
Sub-Total		309	0.84%
Vallecito Drainage (Central)	Indian Valley	93	
56,320	Mountain Palm Springs	93	
	Palm Spring	62	
Sub-Total		248	0.44%
Jacumba Mountains (Southern)	Bow Willow Ranger Station	92	
160,000	Carrizo Wash	155	
	South Carrizo Wash	46	
	Sweeney Pass Road	216	
	Indian Hill	93	
	Piedras Grandes	325	
	Mortero Palms Camp	31	
	Dos Cabezas Spring	32	
	Syd Hayden Spring Road	46	
Sub-Total		1036	0.65%
TOTAL: 332,800		1965	0.59%

PROBABILISTIC SAMPLE

It had been the original plan that within the three sampling domains in the Central part of the Park, 75 Probabilistic Sample units would be selected randomly, 25 in each of the three domains and that in the Southern portion of the Park, 25 Probabilistic Sample units would be selected, a total of 100 sample units (Table 8).

Fieldwork and Operation of the Random Sample Unit Selection

During the fieldwork in the Southern and Central portions of ABDSP, only a small portion of the proposed Probabilistic Sample was completed (i.e., 27 of the planned 100 Probabilistic Sample units; 27 percent). As a result of the inadequate sampling (except for the Borrego Badlands domain) the UCR-ARU random sample data cannot be used to make any predictions regarding distribution of cultural resources on the Central or Southern ABDSP landscape (but see below for substitute sample parameters for the Central portion).

Table 8
Planned Probabilistic Sample Units for the Central and Southern Portions of ABDSP; Number of Acres; Number of Sample Units Actually Inventoried

Sampling Domain	No. of Acres	No. of Planned Sample Units	No. of Inventoried Sample Units
Borrego Badlands (Central)	52,480	25	25
Pinyon Mountains (Central)	160,000	25	--
Vallecito Drainage (Central)	56,320	25	1
Jacumba Mountains (Southern)	64,000	25	1
<i>Total</i>	<i>332,800</i>	<i>100</i>	<i>27</i>

ARCHAEOLOGICAL SITE and OTHER PROPERTY DEFINITIONS

The same distinction between “site” and “other” archaeological properties was used in the Central and Southern portions of ABDSP as had been used in the work in the Northern portion (see explanation above).

ARTIFACT AND ARCHAEOLOGICAL FEATURE NOMENCLATURE

Identical terminology as that used in the work in the Northern portion of ABDSP was used during the inventory in the Southern and Central portions (see above section on work in Northern ABDSP). Uniform nomenclature was used to describe artifacts and features throughout the project.

RESULTS OF THE TARGETED AREA AND PROBABILISTIC SAMPLE UNITS INVENTORIES

Targeted Area surveys in Central and Southern parts of ABDSP resulted in the identification of 83 "site" and 51 "other" properties. (For the purposes of this report, the probabilistic data in the Southern and Central portions of ABDSP will be considered in a separate section below; here, we consider only the data from Targeted Areas.) Tables 9 and 10 (as well as Tables 2 and 3, previously presented) show the "site" and "other" cultural properties from Targeted Areas by domain in both the Central and Southern portions of ABDSP.

The majority (30; 90.9%) of the "sites" in the Targeted Areas of the Central portion of ABDSP consists of assemblages of prehistoric artifacts and/or features; two sites (6.1%) consist of historical materials, and one site (3.0%) includes prehistoric and historical archaeological elements. The Vallecito Drainage and the Pinyon Mountains domains had the greatest numbers of sites overall within the Targeted Areas.

In the Targeted Areas within the Central portion of ABDSP, there were 38 "other" properties. Of these, 23 (60.5%) were prehistoric, 7 (18.4%) were historic, and 8 (21.1%) were judged to be of prehistoric/historic origin.

Each of the above properties was recorded using appropriate CHRIS-mandated forms and locations were mapped on applicable USGS topographic quadrangles using UCR-ARU field designations.

The majority (43; 86 %) of the "sites" in the Targeted Areas of the Southern part of ABDSP (Jacumba Mountains domain) consists of assemblages of prehistoric artifacts and/or features; one (2 percent) consists of historical materials, and six (12 percent) include prehistoric and historical archaeological elements (see Table 10).

The 13 "other" properties in the Jacumba Mountains domain are all (100%) judged to be of the prehistoric period.

Each of the above properties was recorded using appropriate CHRIS-mandated forms and locations were mapped on applicable USGS topographic quadrangles using UCR-ARU field designations.

At the time of this report, it is evident that the originally proposed Probabilistic Sampling for the entire Park will not be completed as outlined in the Research Design. The results of the 27 units that were completed in the Central and Southern portions of ABDSP (mostly in the Borrego Badlands domain) are presented in Table 11, below. These data are insufficient to allow any extrapolations or projections. In order to allow projections of site types and numbers from the Central and Southern areas and to compare these with those from the North, therefore, it is necessary to create a substitute comparative sample for these areas (see elsewhere in this report).

Table 9
Central Anza-Borrego Desert State Park:
Survey Parameters and Numbers and Types of Properties Recorded

<i>Sampling Domain</i>	<i>Targeted Area</i>	Site Properties Recorded						Other Properties Recorded			
		<i>Units</i>	<i>Acres</i>	<i>PRE</i>	<i>HIS</i>	<i>P/H</i>	<i>Total</i>	<i>PRE</i>	<i>HIS</i>	<i>P/H</i>	<i>Total</i>
Borrego Badlands	Arroyo Salado	1	62	--	--	--	--	--	--	--	--
	Seventeen Palms	2	62	--	--	--	--	1	1	--	2
	Hawk Canyon	3	155	1	--	--	1	1	1	--	2
	The Slot	1	31	--	--	--	--	--	--	--	--
	Harper Canyon	2	62	2	--	--	2	2	--	1	3
<i>Subtotal</i>		<u>9</u>	<u>372</u>	<u>3</u>	<u>--</u>	<u>--</u>	<u>3</u>	<u>4</u>	<u>2</u>	<u>1</u>	<u>7</u>
Pinyon Mts	Central Earthquake Valley	1	62	5	--	--	5	2	--	--	2
	Southern Earthquake Valley	3	185	6	--	--	6	--	--	--	--
	Grapevine Canyon	1	62	3	1	1	5	2	2	--	4
<i>Subtotal</i>		<u>5</u>	<u>309</u>	<u>14</u>	<u>1</u>	<u>1</u>	<u>16</u>	<u>4</u>	<u>2</u>	<u>--</u>	<u>6</u>
Vallecito Drainage	Palm Spring	1	62	2	--	--	2	1	--	--	1
	Indian Valley	2	93	3	--	--	3	2	--	--	2
	Mt. Palm Springs	2	93	6	--	--	6	10	--	--	10
<i>Subtotal</i>		<u>6</u>	<u>310</u>	<u>12</u>	<u>1</u>	<u>-</u>	<u>13</u>	<u>15</u>	<u>-</u>	<u>-</u>	<u>15</u>
TOTAL		45	2536	30	2	1	33	23	7	8	38

Table 10
Southern Anza-Borrego Desert State Park:
Survey Parameters and Numbers and Types of Properties Recorded

<i>Sampling Domain</i>	<i>Targeted Area</i>	Site Properties Recorded						Other Properties Recorded			
		<i>Units</i>	<i>Acres</i>	<i>PRE</i>	<i>HIS</i>	<i>P/H</i>	<i>Total</i>	<i>PRE</i>	<i>HIS</i>	<i>P/H</i>	<i>Total</i>
Jacumba Mts.	Bow Willow Ranger Station	1	92	1	-	1	2	-	-	-	-
	Carrizo Wash	4	155	5	-	-	5	3	-	-	3
	S.Carrizo Wash	1	46	1	-	-	1	-	-	-	-
	Sweeney Pass Rd.	5	216	4	-	-	4	-	-	-	-
	Indian Hill	2	93	6	1	2	9	1	-	-	1
	Piedras Grandes	7	325	22	-	1	23	8	-	-	8
	Mortero Palms Camp	1	31	1	-	1	2	-	-	-	-
	Dos Cabezas Sp	1	32	-	-	1	1	1	-	-	-
	Syd Hayden Sp. Rd	1	46	3	-	-	3	-	-	-	-
TOTAL		23	1036	43	1	6	50	13	-	-	13

Table 11
Results of the Limited Probabilistic Sampling
in the Central and Southern Portions of Anza-Borrego Desert State Park

<i>Sampling Domain</i>	<i>Probabilistic Sample Units</i>	<u>Site Properties Recorded</u>				<u>Other Properties Recorded</u>				
		<i>Acres</i>	<i>PRE</i>	<i>HIS</i>	<i>P/H</i>	<i>Total</i>	<i>PRE</i>	<i>HIS</i>	<i>P/H</i>	<i>Total</i>
Borrego Badlands	25	1545	1	--	--	1-	--	3	7	10
Pinyon Mts	--	--	--	--	--	--	--	--	--	--
Vallecito Drainage	1	62	1	1	--	2	--	--	--	--
Jacumba Mts	1	62	--	--	--	--	--	--	--	--
TOTAL	27	1669	2	1	--	3	--	3	7	10

Each of the above properties was recorded using appropriate CHRIS-mandated forms and locations were mapped on applicable USGS topographic quadrangles using UCR-ARU field designations.

Chapter 6

SUMMARY OF INVENTORY RESULTS: NORTHERN ABDSP

by Matthew C. Hall and Heather Tompson

The following sections describe, in general, the results of the inventory of Northern ABDSP. First, the Targeted Areas are discussed, in general, and then by “site” and then “other” cultural resources. Following is a section focused on the results of the randomly selected samples for each sample domain. Dr. Hall partially completed this section of the report on the Northern portion of ABDSP before the end of the UCR-ARU participation. In addition, he had developed many extensive tables presenting the data from the North of ABDSP as well as beginning the analyses of the data tables. These tables, while not a part of this report, are stored with all available materials in the UCR-ARU Inventory Project Boxes at the Begole Archaeological Research Center at Colorado Desert District Headquarters (as well as in the UCR-ARU files).

The following summary of the Targeted Areas findings in the North, was written by Hall. Heather Tompson, California State Parks Archeological Specialist at the time the present report was compiled, drew from the UCR data in form of site records and tables, to develop a short (rather than extensive) description of each of the properties recorded during the entire project, as well as presenting more concise information in tabular format. Her work is contained in Appendix B.

TARGETED AREAS SUMMARY

Archaeological inventory of the eight Targeted Areas in Northern ABDSP encompassed 11.21 km² (2770.6 acres) of systematic survey and 1.72 km² (425.7 acres) of non-systematic examination. Forty-five “site” and 328 “other” properties were recorded.

Each Targeted Area contains a *minimum* of three “site” or 17 “other” properties. The Hidden Spring locality in southern Jackass Flat possesses the most of each: 12 “site” and 114 “other” properties. All but three of the “site” properties (42 of 45, or 93.3%) are of prehistoric (cf. aboriginal) origin. One “site” in the Hidden Spring area has both prehistoric and historical elements”. There is one “site” property with only historical materials in both the Fig Tree Valley and Alder Canyon localities.

Of the “other” properties identified in the eight Targeted Areas, 283 (86.2%) are prehistoric. Historical artifacts or features are represented at 32 “other” properties (9.8%). The remaining 4% of the “other” properties are six that may be prehistoric (1.8%), one that includes prehistoric and possible historical materials (0.3%), another that could reflect historical human activity (0.3%), and five that are of unknown age and problematic archaeological relevance (1.5%).

Time-diagnostic artifact types observed during Targeted Area inventory include: the ubiquitous sherds of "buffware" or "brownware" ceramic vessels (see above notes about their field recordation) and Cottonwood Triangular series projectile points, suggesting that the extant prehistoric surface archaeological record of these northern ABDSP localities was formed over the last 1500 years, if not the within the past millennium. As will be discussed later in this report, geological factors might be an important factor in the *apparent* absence on the surface of more ancient prehistoric remains, though other considerations need to be taken into account. The historical properties recorded appear to date to the early and middle 20th century, with a few of the historical objects perhaps dating to the late 19th century.

PROBABILISTIC SAMPLE SUMMARY

Eighty-one Probabilistic Sample units were inventoried in the four domains of the Northern portion of ABDSP, a total of 20.26 km² (5005 acres) (see Table 1 and Fig. 3). Systematic survey was accomplished for 61% of the area (3053 acres [12.36 km²]) of the Probabilistic Sample, while 35% (1752 acres [7.1 km²]) was surveyed non-systematically, and 4% (about 200 acres [less than one km²]) could not be surveyed due to inaccessibility (see Table 6).

A total of 16 "site" properties and 201 "non-site" (or "other") properties were recorded within the total of the sample areas inventoried. Fifteen of the 16 (93.7%) "site" properties were prehistoric; the other was a combined prehistoric/historic property (in the Coyote Creek Drainage domain). Of the 201 "non-site" properties, 172 (85.6%) were prehistoric, 12 (5.97%) were historic, and for 17 others (8.46%) chronological placement could not be determined or are of problematic archaeological relevance.

Table 12
Probabilistic Sample Inventory Results in the Northern Portion of ABDSP:

<i>Sampling Domain</i>	<i>No. Probabilistic Sample Units</i>	<i>Acreage</i>	<i>No. PRE Sites</i>	<i>No. HIS Sites</i>	<i>No. P/H Sites</i>	<i>No. PRE "Other"</i>	<i>No. HIS "Other"</i>	<i>No. P?H</i>
Pacific Crest Trail	8	494	2	-	-	8	1	-
Coyote Cny Drainage	28	1730	6	-	2	74	8	5
Jackass Flat/Rockhouse Cyn/Butler Cny	20	1236	5	-	-	71	3	1
Eastern Santa Rosa	25	1545	2	-	-	19	-	11
Total	81	5005	15	-	2	172	12	17

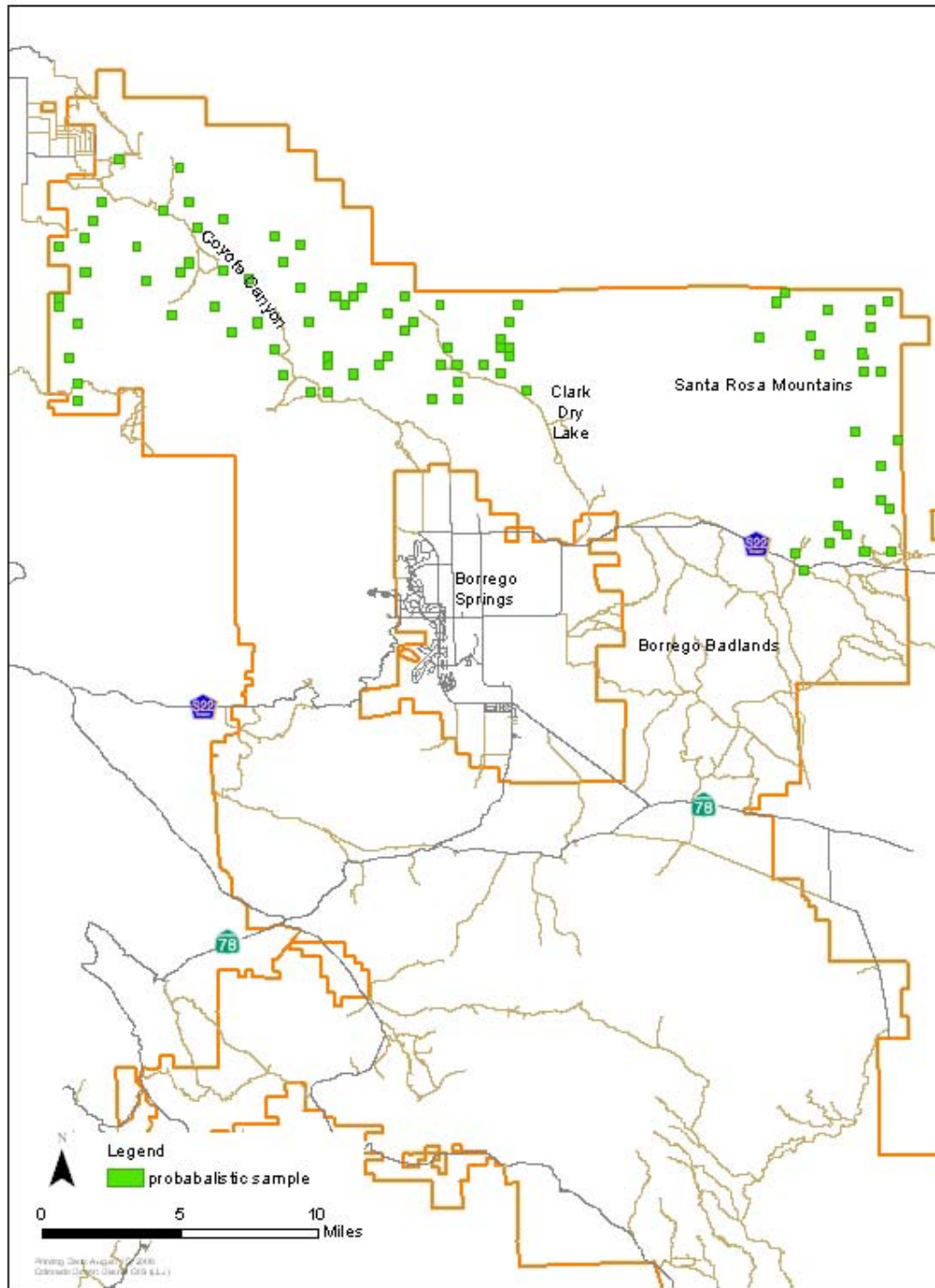


Fig. 4. Northern and Central portions of ABDSP showing major landmarks. Green squares indicate locations of Probabilistic Sample units for the North. Map by Llouise Jee.

Table 13
Probabilistic Sample Inventory Results in the Northern Portion of ABDSP:
Cultural Properties per Acre

<i>Sampling Domain</i>	<i>Acreage</i>	<i>PRE Sites per Acre</i>	<i>P/H Sites per Acre</i>	<i>No. PRE "Other" per Acre</i>	<i>No. HIS "Other" per Acre</i>	<i>No. P?H "Other" per Acre</i>
Pacific Crest Trail	494	.0041	-	.0162	.0020	-
Coyote Cny Drainage	1730	.0035	.0012	.0428	.0046	.0029
Jackass Flat/Rockhouse Cyn/Butler Cny	1236	.0040	-	.0574	.0024	.0008
Eastern Santa Rosa	1545	.0013	-	.0123	-	.0071
Total	5005	.0030	.0004	.0344	.0024	.0034

VIEWING SITE FREQUENCY IN THE NORTH AND BORREGO BADLANDS AREA BY SQUARE MILE

To normalize the number of sites and "other" properties expected per mi² in each of the four domains in the North and the Borrego Badlands area¹, we have taken the per-acre numbers and multiplied that number by 640 (the number of acres in a mi²). Therefore, in each mi² in the Pacific Crest Trail environment, we would expect to find 2.6 prehistoric sites, 10.4 prehistoric "other" properties, and 1.3 historic 'other properties. In each mi² of the Coyote Canyon Drainage environment, we would expect to find approximately 2.2 prehistoric sites, somewhat less than one site with combined prehistoric and historic components, 27.4 prehistoric "other" properties, 2.7 historic other properties, and 1.9 "other" properties for which an age determination could not be made. In each mi² of the Jackass Flat/Rockhouse Canyon/Butler Canyon environmental area we would expect 2.6 prehistoric sites, no historic sites, 36.7 prehistoric "other" properties, 1.5 historic other properties, and less than one "other" property for which an age determination could not be made. In each mi² of the Eastern Santa Rosa environmental zone, we would expect only less than one prehistoric site, no historic sites, 7.9 prehistoric "other" properties, and 4.5 "other" properties for which an age determination could not be made. Overall, in every mi² of the entire Northern portion of ABDSP, we would expect 1.92 prehistoric sites, 0.3 historic sites, 22 prehistoric "other" properties, 1.5 historic "other" properties, and 4.5 "other" properties for which age could not be determined.

¹ The reader should be reminded that the definitions and the criteria used to distinguish "site" from "other" properties is specific to the UCR-ARU study. Many of the "other" properties are bedrock milling features or roasting pits, features that would, according to the OHP criteria be considered sites. Therefore, when we express number of sites per area, there is a bias in that there are probably more sites (in the official sense) and fewer "other" properties (i.e., isolated cultural resources) than appear in our estimates.

In addition, we do not pretend that the estimates made here are statistically valid because they have not been subject to statistical testing and are not expressed with standard deviations (i.e., probability error factors), as would be correct in making predictions based on a random sample.

Chapter 7

PROBABILISTIC SAMPLE FROM THE CENTRAL AND SOUTHERN PORTIONS OF ANZA-BORREGO DESERT STATE PARK

by Joan S. Schneider

The methodology employed in this section of the report differs from that of the Probabilistic Sample from the Northern portion of the Park. The research design for the entire project called for a random sample survey of 500 x 500 meter (62-acre) blocks selected from a grid that was overlain on each of the three portions of the Park. The research design for the Probabilistic Sample was implemented for the North portion of the Park, but, aside from the Borrego Badlands sample (see below), was only minimally implemented in the Central and Southern portions due to a change in the focus of the project. Consequently, it was only from the Borrego Badlands Sampling Domain in the “Central” (*sensu* UCR-ARU) portion that a random sample of 25 probabilistic survey blocks were selected and surveyed although there were, in total, 100 Probabilistic Sample units proposed for the combined Central and Southern portions. Only one probabilistic survey block was actually surveyed in the Vallecito Drainage Sampling Domain in the Central portion and one probabilistic survey block was actually surveyed in the Jacumba Mountains Sampling Domain of the Southern portion of the Park. No Probabilistic Sample blocks were surveyed in the Pinyon Mountains Sampling Domain. Table 14 shows the result of limited probabilistic sampling from the Central and Southern portions of ABDSP.

Table 14
Results of The Limited Probabilistic Sampling
In The Central And Southern Portions Of Anza-Borrego Desert State Park

<i>Sampling Domain</i>	<i>Probabilistic Sample Units</i>	<i>Acres</i>	Site Properties Recorded				Other Properties Recorded			
			<i>PRE</i>	<i>HIS</i>	<i>P/H</i>	<i>Total</i>	<i>PRE</i>	<i>HIS</i>	<i>P/H</i>	<i>Total</i>
Borrego Badlands	25	1545	1	--	--	1-	--	3	7	10
Pinyon Mts	--	--	--	--	--	--	--	--	--	--
Vallecito Drainage	1	62	1	1	--	2	--	--	--	--
Jacumba Mts	1	62	--	--	--	--	--	--	--	--
TOTAL		1669	2	1	--	3	--	3	7	10

At the time of this report, it is evident that the originally proposed Probabilistic Sampling for the entire Park will not be completed as outlined in the Research Design. In order to allow projections of site types and numbers for the Central area of ABDSP it was necessary to use another dataset generated by the BLM in the late 1970s (see next chapter).

We plan to use the 25 Probabilistic Sample units surveyed in the Borrego Badlands as part of the UCR-ARU project as a stand-alone sample of the Borrego Badlands area (Tables 14 and 15).

Table 15
Probabilistic Sample Inventory Results from the ABDSP Borrego Badlands Area:
Cultural Properties per Acre

<i>Sampling Domain</i>	<i>Acreage Surveyed</i>	<i>PRE Sites Per Acre</i>	<i>P/H Sites per Acre</i>	<i>No. PRE "Other" per Acre</i>	<i>No. HIS "Other" per Acre</i>	<i>No. P?H "Other" per Acre</i>
Borrego Badlands	1545	.00065	0	0	.00194	.00453

The UCR-ARU study delineated 52,480 acres in the Borrego Badlands area. Using the per-acre figures from the results of the 25 randomly selected transects in the Borrego Badlands area, we might expect to find 34 prehistoric sites but no other sites in the Borrego Badlands area. Moreover, we might expect not to find any prehistoric isolates, but might expect 101.8 historic isolates ("other") and 237.7 isolates ("other" items, mostly rock cairns) for which chronological placement could not be determined.

To normalize the number of sites and "other" properties expected per mi² in the Borrego Badlands area, we can take the per-acre numbers and multiply those numbers by 640 (the number of acres in a mi²). For the sample from Borrego Badlands, we would expect to find 2.6 prehistoric sites, 9.1 prehistoric isolates, and 1.3 historic isolates per mi². Other major categories of sites and isolates would be absent.

The remainder of the Probabilistic Sample Transects that were completed – one other in Central and one in Southern ABDSP --are too small a sample to make any statements about.

No statistical determinations were made to assign probability to these rudimentary projections based on the random sample transects.

Chapter 8

CREATING A RANDOM SAMPLE FROM CENTRAL ABDSP: PROBABILISTIC SAMPLING RESULTS FROM BUREAU OF LAND MANAGEMENT 1970s DESERT STUDY

by Joan S. Schneider

The purpose of this chapter is to extend a random-sample approach to understanding the archaeology of greater portions of ABDSP. Three goals were set: (1) to have comparison data for the random-sample data from Northern ABDSP; (2) to develop a statistically valid database for Central ABDSP; and (3) to make some predictions about the numbers and types of cultural resources present in all of ABDSP in the present situation where less than 20 percent of Park lands have been inventoried.

According to the UCR-ARU Research Design for the ABDSP Inventory project (Appendix A), random samples were to be drawn from each of the three major divisions of ABDSP: North, Central, and South. Previous chapters have described the results from the Northern area and the Borrego Badlands area. In order to develop a comparative random sample for the Central ABDSP area, Schneider researched the results of a late-1970s large-scale random sample of Central ABDSP, hoping to be able to use those data for comparative purposes as well as to make projections of site frequencies. This chapter provides the background and the rationale for doing so. In addition, it touches on the problematic nature of the 1970s dataset.

Between 1978 and 1979, as part of the United States Department of the Interior, Bureau of Land Management (BLM) regional land-use planning efforts, a random-sample inventory of BLM desert lands was carried out in the western United States. One study area of this larger inventory encompassed portions of ABDSP (Fig. 5). Although the results of the random-sample inventory were known in the form of site records and the locations of survey transects, little information was readily available about the Research Design and the analyses of the collected data except for one short publication (Ritter and Coombs 1990).

According to the BLM effort to understand their desert lands, and in advance of actual BLM field inventory, cultural resources overviews were to be developed that drew together all the known information for delineated areas. In actuality, sometimes the cultural resources overviews were written while the field inventory was in progress or were even completed afterward. This was the case for the Colorado Desert overview (Warren et al. 1980).

Schneider, as part of the present work, inquired of all agencies regarding the availability of analyses of the data; apparently no agency knew if such information existed and, if it did, did not know its whereabouts. In 2007, a short report by Gary Coombs (1978b) on the analysis of the data from the ABDSP portion of the larger Desert Survey was discovered among other papers in old cardboard box files at the Stout Research Center at Colorado Desert District Headquarters; included in that report was a copy of the Research Design (1978a) for the BLM random-sample survey. The following text draws heavily from the Coombs 1978 documents.

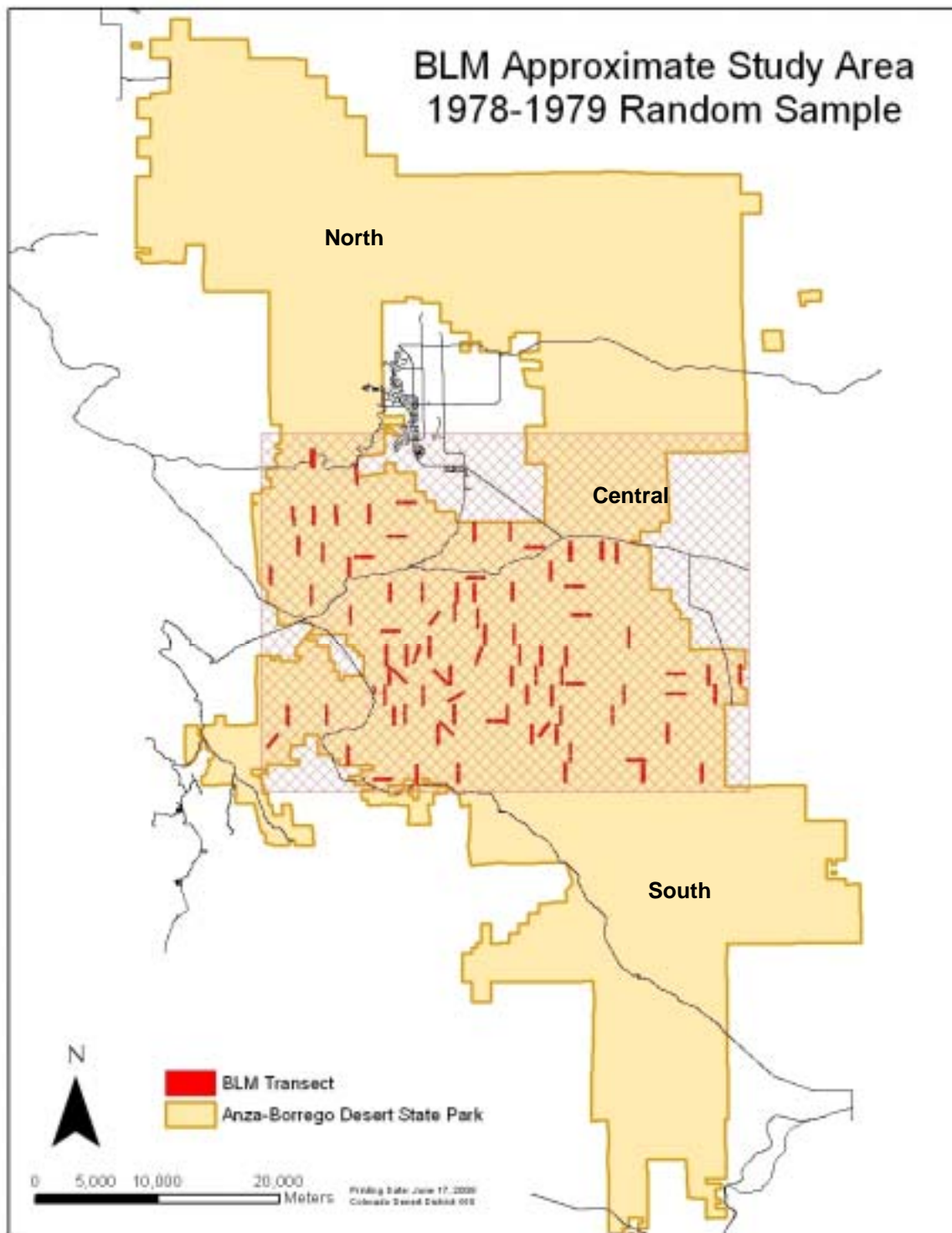


Fig. 5. ABDSP showing the locations of the 1978-1979 BLM random-sample transects in Central ABDSP. Map by Llouise Jee.

Ritter and Coombs (1990:26) stated that all the fieldwork for the BLM Desert Study was carried out between 1974 and the winter of 1978-79; the field inventory for ABDSP was carried out in the spring and summer of 1978, as well as during the winter of 1979 (as indicated on transect records) under a separate contract with Jan Moore (Moore 1979 and field notes), assisted by Nancy Grusheck and Priscilla Lyons (funded through the federal CETA program).

The Research Design (Coombs 1978a), developed by Gary Coombs and Eric Ritter, states that the study area was 327 square miles within the central portion of ABDSP. The study was to be carried out in three (3) stages and, when completed, would yield a five percent (5%) sample of the study area. Stage I of the inventory was to comprise a two percent (2%) random sample (52 transects) “without regard for previously recorded sites or hypotheses concerning geomorphic, biologic, or hydrologic determinants of aboriginal and historic sites” (Coombs 1978a). The one-mile-long by 1/8th-mile-wide transects were randomly chosen from one-square-mile Township/Range sections¹ and were designed to yield a representative sample on which to develop the stratification for Stage II of the inventory. Stage II was also to comprise a two percent (2%) sample (52 transects) but that sample would be a stratified random sample stratified in “(t)hose areas which show correlations between geologic, biologic, and hydrologic factors with the presence of archaeological sites...” (Coombs 1978a). Examples of geomorphic units might be bajadas or mountain valleys; vegetation zones, agave, mesquite, or pinyon; hydrologic factors, springs and water courses. Coombs (1978a) wrote that “(a)dditional areas which may not have been covered in the first sample cut could also be selected at this stage.” Stage III of the inventory was to be composed of 26 transects (one percent [1%]) which would allow for sampling of areas not previously sampled by the random-sample methods described above for Stages I and II, such as known springs or other areas known or suspected to contain concentrations of cultural resources. “This stage could also serve as a test of hypotheses generated by the previous data in selected areas outside the original study area” (Coombs 1978a:3).

SELECTION METHODS FOR STAGE 1 RANDOM TRANSECTS FOR THE BLM INVENTORY

According to Coombs (1978a), a records search on the 15' USGS topographical quadrangles was carried out for all of ABDSP. The central area of ABDSP was selected for the study area because (1) it had received less attention in previous studies of ABDSP; (2) it contained a representation of all the environmental variables; and (3) it was easily accessed from Borrego Springs (Coombs 1978a:3). The study area outline was drawn on the appropriate USGS 15' topographic quadrangle maps. “The four corners of the study area include Culp Valley (NW corner), Ocotillo Wells State Vehicular Recreation Area (NE), Granite Mountain (SW) and Fish Creek (SE)” (Coombs 1978a:3). There were 327 square miles within the study area (see Fig. 5).

¹Where land was unsectioned, approximate section lines were drawn on the USGS topographic quadrangle maps for the areas.

There were two random draws: (1) 1-327 to select the section number within which the transect was to be walked, and (2) 1-8 to determine where the transect was to be walked within that section. Transects were then located on USGS 7.5' topographic quadrangle maps.

Randomly selected transects were walked at 55-yard intervals, with orientation guided by compasses and topographic features. All information on flora and fauna, geology and geomorphology, and hydrology of each transect was recorded. Every site encountered was recorded on standardized forms (Coombs 1978a:4).²

ABDSP staff has never clearly understood the results of the BLM survey because time and funding had not been allotted to this effort. As part of the UCR Inventory Report, Schneider undertook a study of the original site records and transect field notes generated by Moore et al. during the inventory work.

From ABDSP existing BLM survey areas outlined on USGS quadrangle maps by Southern Service Center, we counted 77 one-mile by one-eighth-mile transects within the Central portion of ABDSP. However, on the CDD database, there are 88 transects outlined (see Fig. 5). This is somewhat confusing because part of the BLM inventory encompassed lands of the Ocotillo Wells State Recreational Vehicle Area (OWSRVA). Further archival research in July and August of 2008 by Schneider, determined that there were actually 123 transects inventoried in the BLM study area. When Schneider studied the original field records on file at CDD, however, she found records for 52 transects completed: 40 Stage I transects and 12 Stage II transects. It seemed apparent that the larger portion of the Stage I transects were completed, i.e., 40 of the 52 suggested in the Research Design. Apparently, Stage II of the study was started in advance of the completion of Stage I. Furthermore, it seemed apparent that a smaller number of the Stage II transects were completed, i.e., only 12 of the 52 suggested by the Research Design. This was further confused after a reading of the Moore 1978 field notes where she stated that only 17 Phase I transects were completed before Phase II was started because there was little data being generated and a great deal of field time was being expended. In all, Schneider used several archival sources because no single source was complete. She was able to account for 123 transects within the BLM study area; it is likely that some of these were outside the boundary of ABDSP and therefore do not appear on the ABDSP GIS layer. These data that were retrieved from the archival research are presented in Appendix E of this report.

According to Ritter and Coombs (1990), most transects were oriented in cardinal directions. Further information from Moore's field notes informed us that N-S transects were numbered 1-8 and E-W transects were numbered 9-16. Ritter and Coombs (1990) stated that the survey interval (i.e., the distance between individuals on the survey team) was 50 m. The Stage II transect locations were selected by stratified random sampling based on "biogeographic" domain (Ritter and Coombs 1990:26, 28) and ABDSP portion of the BLM Desert Survey project was unique for two reasons: (1) a greater percentage of the sampling domain was inventoried (2.8%) and (2) there were more sites recorded (509) than in any of the other 14 sampling domains in the BLM western desert lands (see Ritter and Coombs 1990: 28 [Table 1]).

² ABDSP is in possession of these transect field records and site forms in several three-ring binders housed at the Begole Archeological Research Center in Borrego Springs. However, one of the binders is missing and efforts are being made to locate it. Some of the data used here were retrieved from the ABDSP 1990 Access database and original field notes on transects by Moore and her co-workers.

According to the survey GIS layer of ABDSP, 77 (or 75) BLM transects were outlined, but we are uncertain about the number completed. A 2% sample is equal 52 1/8th square-mile transects. If 52 transects were completed for Stage I of the BLM random sample inventory, perhaps the remaining transects that are mapped were for the Stage II sample. We are unable to reconcile these discrepancies, although Schneider has made attempts (see extant data in Appendix E). It may be that records held by CDD only show those transects completed in ABDSP and not those completed in OWSRVA or in other areas outside the Park boundaries.

It is known that the BLM Desert Cultural Resources Survey project was subject to funding difficulties and that some of the planned samples of various regions were never completed. We suggest that Coombs based his report on the results of 52 completed transects, but according to the data we have available, only 40 of those can be attributed to Phase I of the BLM study and the Moore field notes reported that only 17 Phase I transects were completed before the study moved on to Phase II. We are making the assumption Coombs combined the results of those 40 transects with 12 transects that were completed in the Stage II sample and used those data in his 1978 report (Coombs 1978b). Here, we will treat all 52 transects completed during the BLM work, as reported by Coombs (1978b) in a like manner and they will form the basis of one of the comparative samples (see below). Moreover, data from 123 transects will form an additional dataset for comparison.³

We also call the reader's attention to the number of sites recorded as stated by the 1978b Coombs report: 509. Our counts of the site records filed by Jan Moore and Nancy Gruschek during the period of 1978-1979 are greater: 648.⁴ Here we will present both datasets for our comparisons with the UCR-ARU Northern data (see Table 12) and the UCR-ARU data from the Borrego Badlands area random sample (Table 11).

Schneider found, in the 2000 ABDSP digital database, 648 site records attributed to Moore or Gruschek (or filed by both) during the period when the BLM work was progressing in ABDSP. However, since we do not know which of the 648 sites that composed the sample of 509 that Coombs included in his 1978b report, we will address the comparisons with the UCR-ARU data using (1) the *BLM 52 transect/502-site* analysis (BLM Dataset A); (2) our own analysis of the *BLM 77 transect/648 site* data (BLM Dataset B); (3) the data retrieved from existing data in

³ Previous efforts to fully understand the BLM work have been made by California State Parks staff, only to result in unsolved dilemmas. Marla Mealey of the Southern Service Center attributed 90 1/8 square mile transects to the BLM work; Louise Jee mapped 74 BLM transects on a GIS layer. It is not known which of the mapped transects were completed. These data contradict those in a report by Coombs (1978b) and the archival records retrieved by Schneider from several sources.

⁴ The number of cultural resources number 979 (although one binder with field notes and site records is missing) in the BLM three-ring binders of original records kept at CDD Begole Archeological Research Center. Whether this much larger number represents resources that were later combined into one site or whether those records represent other areas outside the random sample area is not known. Reconciling this discrepancy is beyond the scope of the present project. However, it is evident from scanning the BLM site records that single features were considered as sites and trinomials were assigned. In addition, sites were recorded that bordered the selected random transects and were not actually within the transect boundaries – a point made clear by the Moore et al. field notes.

CDD files (BLM Dataset C); and (4) the compiled data retrieved from Moore field notes (BLM Dataset D).

It is beyond the scope of the present project to reanalyze the site-type data as well as the elevation parameters as reported in the Coombs report due to time and funding limitations. The four datasets, however, are presented here below and could be used in the future for further analyses of results.

1978 SYNOPSIS OF THE ANALYSIS OF DATA FROM THE ABDSP PORTION OF THE BLM INVENTORY BY GARY COOMBS

In the section below, we abstract and quote the document authored by Gary Coombs in 1978 (Coombs 1978b). To the current cultural resources staff in ABDSP, this document is new information; we are presenting it here (in synopsis) so that all concerned parties will be aware of its existence. Here we rely on the data in the Coombs report for our comparison, although there are discrepancies in numbers (see footnote 3 and paragraphs above).

The report is based on inventory data gathered by Jan Moore and her team in the spring and summer of 1978.⁵ The results of the Coombs analysis is significant because “a number of the archaeological characteristics of this area stand in sharp contrast with (*sic*) others examined in this series” (Coombs 1978b), i.e., the other regions of the Desert West encompassing the BLM inventory project. The major analytical findings for the ABDSP sample include:

- Over 70% of all sample units contained prehistoric sites (a success rate seldom matched elsewhere)
- A mean number of 7.5 prehistoric sites per sample unit were recorded (a much higher average than even the considerably larger quadrant samples)
- Data indicate the highest site densities anywhere in the California Deserts
- Water resources, which have proven to be key site predictors in many other regions, are apparently not significant determinants of site locations in ABDSP
- A significantly higher frequency of prehistoric sites were found in “mountain” or “hill” sample units than in units described as “fans” (as is the usual condition for other regions)
- ABDSP data are unique because of the representation of various site types
 - Roasting pits represent 192 (50%) of the sites recorded (most BLM units in other areas contain none)
 - Milling stations represent 93 (24%) of the sites recorded (matched in only a few other cases)

(Coombs 1978b:1)

⁵ From subsequent review of the Moore field notes, although Coombs did not say so, the 52 transects from which he drew his data for his analysis are likely from both Phase I and Phase II subsamples. Moore noted that after 17 Phase I transects, it was decided to move on to Phase II (see elsewhere, this chapter).

It is suggested that the higher frequency of roasting pits in the mountain/hill domain reflects “the obvious spatial associations of roasting pits with agave and agave with sloping terrain of moderate desert elevation (Coombs 1978b:4). Since Coombs did not have access to vegetation-layer GIS data, he used elevation as a proxy for agave zones. The post-sampling statistical manipulation of the data showed that there was a very strong positive correlation between frequency of roasting pits and elevation, peaking within the 2500-3000 ft elevation category. The conclusion that Coombs drew was that site density was a function of elevation within ABDSP and that landform is a predictor only to the extent that it is related to elevation. For example, there was little variation between fan and mountain/hill domains, but it was the elevation, rather than the landform that was the predictor (Coombs 1978b:4). Coombs went on to test the results using several statistical methods including discrete multivariable analysis and two-way analysis of variance (the reader is referred to the original Coombs report for explanations and results).

Coombs also found that there was a “definite tendency for prehistoric sites to cluster and for different site types to co-occur, at the higher elevation levels” (Coombs 1978b:5-6). Moreover, he found that:

- Sample units below 1500 ft mean elevation had a paucity of sites
- Almost sample units above 1500 ft-mean-elevation had more than one site type
- There are strong correlations between roasting pits and milling stations
- There are strong correlations between milling stations and habitation sites
- There are strong correlations between pottery loci and habitation
- All of the correlations are particularly strong between 1500 and 3000 ft elevations and the correlations do not exist below 1500 ft elevation
- There was no “spring effect.” That is, when elevation was controlled, there was no particular tendency for any site types to be located near springs, even habitation sites (i.e., this does not infer that sites were not frequent near springs, but that they were no more frequent near springs than in any other area).

This suggests that there are two types of high elevation areas: (1) those that are void of sites and (2) those that contain numbers of sites of more than one site type (Coombs 1978b:7). After statistically testing these results, Coombs (1978b:7) concluded that the results are not a result of differential preservation. Moreover, Coombs suggested that when several resources (rather than a single resource such as a spring) are located in an area, this does result in high site frequency (Coombs 1978b:9). It is noted that, for ABDSP, this may result from a sort of “saturation” of sites because site density, overall, is so great.

DESCRIBING THE PRESENTLY EXISTING BLM DATA

This section describes four datasets for the BLM study area, gleaned from current records and archives. *Dataset A* reflects the findings in the Coombs (1978b) report. *Dataset B* uses the data from CSP topographic quadrangles with transects outlined on them and a digital database

developed in 2000 by ABDSP.⁶ *Dataset C* was developed from data contained in a series of three-ring binders with Transect Records and Site Records that are in the possession of CDD. Within these binders are data for slightly more than 52 completed transects. Apparently, 39 Phase I transects were completed and 258 sites were recorded, a mean of 6.62 sites per transect. Apparently, 14 transects were completed within the Phase II sample and 128 sites were recorded; a mean of 9.14 sites per transect. If both the random sample Phases are combined, a mean of 7.28 sites per transect was the result. *Dataset D* is a combined and expanded dataset that Schneider was able to derive from Moore's original field notes and other information in CDD archives stored at the Begole Archeological Research Center (BARC).

We have not provided narrative descriptions of sites and isolates for the BLM study as are provided in the UCR-ARU portion of this report (see Appendix B) for a number of reasons : (1) because the data were collected by others; (2) because for comparative extrapolative purposes, we have sufficient information in the tables above to make comparisons; (3) because these sites have already been described on site records and in the Moore's 1978 and 1979 documents.

Table 16
Summary of BLM Data Derived From Four Different Datasets

	<i>Coombs Report (1978b)</i>	<i>Purported by CSP maps and database(2000)</i>	<i>Data from Moore 3-ring binders and transect field notes</i>	<i>Existing BLM Dataset (2008)</i>
Number of Phase I Transects	unknown	unknown	17	39
Number of Phase II Transects	unknown	unknown	35	unknown
Total Number of Transects	52	77 (or 88)	52	123
Number of Sites	509	648	386	976 site records filed and assigned trinomials
Number of Sites per Transect	9.789	8.415	7.423	7.935

COMPARING THE UCR-ARU DATA WITH FOUR EXTANT BLM DATASETS

The UCR-ARU project did not result in acquiring adequate data for a valid Probabilistic Sample of the Central and Southern portions of ABDSP.⁷ For this reason, here the 1978-79 BLM data are used (Table 16 and Appendix E) to compare site frequency to the Northern Probabilistic Sample (as developed by UCR-ARU) and the Borrego Badlands Sample (Table 15). None of

⁶ To derive Dataset B, we located all the BLM sample transects on USGS quadrangles. We then systematically went through the CSP 2000 digital database for sites to determine all sites recorded by Jan Moore or by Nancy Gruschek during the period 1978-1979.

⁷ With the exception of the Borrego Badlands area of the "Central" portion of ABDSP [*sensu* UCR-ARU]; this area more correctly should be described as the northeastern portion of ABDSP.

the area designated by UCR-ARU as the Southern portion of the Park contained any BLM transects (see Fig. 5). Up through 2008, virtually no systematic random sample inventory has been accomplished in the Southern portion of ABDSP.

Because the UCR-ARU cultural properties definitions differed from those of the BLM (BLM used the standard California State OHP definitions), it was first necessary to go back to the results of the UCR-ARU random samples for the North and the Borrego Badlands area and convert all archaeological cultural features that were called “Other” properties to “Sites.” (in order to have comparable data). This information was presented in the previous chapter in Tables 13 and 14; all data using concordant definitions for cultural properties are combined below in Table 17.

Table 17
Probabilistic Sample Inventory Results for Northern and Borrego Badlands
areas of ABDSP:
Cultural Properties per Acre (using standard OHP definitions of properties)

<i>Sampling Domain</i>	<i>Acreage</i>	<i>PRE Sites per Acre</i>	<i>P/H Sites per Acre</i>	<i>No. PRE “Other” per Acre</i>	<i>No. HIS “Other” per Acre</i>	<i>No. P?H “Other” per Acre</i>
Borrego Badlands	494	.0041	-	.0162	.0020	-
Coyote Cny Drainage	1730	.0035	.0012	.0428	.0046	.0029
Jackass Flat/Rockhouse Cyn/Butler Cny	1236	.0040	-	.0574	.0024	.0008
Eastern Santa Rosa	1545	.0013	-	.0123	-	.0071
Total	5005	.0030	.0004	.0344	.0024	.0034

Below, in Table 18, we present all available findings from random-sample surveys in ABDSP using concordant definitions for cultural resources. BLM *Dataset A* represents the findings reported in the Coombs (1978b) report; BLM *Dataset B* represents the findings reported on CSP maps and in the 2000 digital database; BLM *Dataset C* represents the present incomplete records for the BLM project that are archived at the BARC at CDD in Borrego Springs; BLM *Dataset D* represents the data that Schneider retrieved from transect field notes by Moore and others (see Appendix E).

Table 18
Comparable Probabilistic Sample Inventory Results in Northern and Central ABDSP
using Northern and Borrego Badlands UCR-ARU Sample and Four BLM Data Sets

<i>Sampling Domain</i>	<i>No. Probabilistic Sample Units</i>	<i>Acreage</i>	<i>No. PRE Sites</i>	<i>No. HIS Sites</i>	<i>No. P/H Sites</i>	<i>Total Sites</i>	<i>No. PRE "Other"</i>	<i>No. HIS "Other"</i>	<i>No. P?H "Other"</i>
Northern ABDSP	81	5005	15	--	2	17	172	12	17
Borrego Badlands**	25	1545	1	1	4	6	--	2	--
BLM dataset A	52	4160	390	119†		509	N/A	N/A	N/A
BLM dataset B	77	6160	642	6		648	N/A	N/A	N/A
BLM dataset C	53	4240	384	3 (?4)		387	N/A	N/A	N/A
BLM dataset D	123	9,840	970	6		976	N/A	N/A	N/A

** Most "other" properties (as per UCR-ARU definition) that have been enumerated here as "sites" are rock cairns and a rock circle, that were originally recorded as "other" properties. The term "other" (i.e., isolated cultural properties) has been retained for individual artifacts and for small groups (i.e., 2-5) of artifacts of the same type. More than 5 artifacts are termed "sites" within these parameters.

† Coombs (1978) gives us the figures that 509 sites were recorded and of these, there are 390 prehistoric sites. We make the assumption here that the rest of the sites were historic sites or sites for which chronological placement could not be determined.

MAKING COMPARISONS BETWEEN AREAS OF ABDSP AND AVAILABLE RANDOM-SAMPLE INVENTORY DATA FROM ALL SOURCES

At this point, we return to the original purpose of this section of the report: to use the random-sample data generated by UCR-ARU in the 1990s and the random-sample data generated by the BLM in the 1970s to make some comparisons between areas of ABDSP. The comparisons take the form of observed differences in frequencies of sites per acre and per square mile. Furthermore, we then use the data to make some projections about numbers of sites in the entire Northern and Central portions of ABDSP. Table 19, below, presents a synthesis of available data in terms of sites and isolates *per acre*. Table 20 presents a synthesis of available data in terms of sites and isolates *per square mile*. Both are based on the results of random-sample surveys.

We recognize that the results of simple-random and stratified-random sampling would likely be different. Using the data we have available, we are unable to determine which of the BLM transects were chosen using criteria for Phases I-III of that study. In our judgment, however, we believe that most were chosen using Phase II criteria, but have lumped them together. This, of course somewhat limits their comparability with the UCR-ARU Probabilistic Sample which was a simple-random sample.

Statistical tests of the validity of the data presented in Tables 19 and 20 are beyond the scope of this report. Statistical validity for random-sample data is dependent on a number of variables including, but not limited to, the size of the randomly selected sample as related to

the size of the universe from which the sample was taken; the homogeneity/heterogeneity of that universe; the range of resulting data and how these differ from the mean values for the results; as well as other criteria and considerations. The results of statistical studies such as this should always be presented along with \pm values and statements of degrees of validity of the results. For these reasons, the reader is cautioned about using the results of the mathematical projections presented below without statistical tests of probability and validity.

Below, we use the results of the two random samples (the UCR-ARU random sample and the BLM random sample) for predictive modeling. To make this very clear, we repeat that we are using only the UCR-ARU Probabilistic Sampling data and have put aside the data from the Targeted Areas. The reader should again be made aware that because of the difficulties of access to the randomly selected sample units in the North, many of which were in severe terrain, only 61% (3,069.9 acres) of the planned random sample in the Northern area was completed in a systematic fashion. This is because: (1) the Uplands of the Pacific Crest Trail, directly along the Coyote Creek Drainage were covered with heavy vegetation, limiting access and visibility; (2) the slopes of some of the randomly selected sample units within the Eastern Santa Rosa and Jackass Flat/RockhouseCanyon/Butler Canyon areas were too steep to systematically walk survey transects. Consequently, 4% (187.9 acres) of the randomly selected sample units could not be inventoried at all and 35% (1748.0 acres) were inventoried non-systematically (see Chapter 4).

The author has taken some liberties in making the data from the UCR and BLM random-sample populations concordant so that they can be compared and contrasted. First, UCR-ARU nomenclature, especially at the outset of the project, used project-specific terms and criteria. For example, single or multiple bedrock processing features on a single bedrock outcrop were considered *isolates* (i.e., “other” in UCR terms) unless some other features or artifact classes were also present (see Chapter 4 and Appendices). In the tables above, we have considered these features as *sites* (rather than *isolates*; even if they have only a Primary designation, rather than an assigned trinomial) so that all data will be in the same nomenclature framework. This is also true for other circumstances: for a scatter of ceramic sherds; when there are more than five (sherds), we have called this a *site* for purely comparative purposes, although there may not be a trinomial assigned.

MAKING PROJECTIONS FOR NORTH AND CENTRAL ABDSP BASED ON AVAILABLE DATA FROM RANDOM-SAMPLE STUDIES OF ABDSP

For purposes of obtaining some idea of the actual numbers of cultural resources within ABDSP, we use our data presented in Tables 17 and 18 to project possible numbers within the area of ABDSP. Unfortunately, the Southern Portion of the Park must remain without projections because it has never been sampled using systematic random-sample methods.

We have used GIS technology to approximate the number of acres within each of four divisions of ABDSP, as set forth in both the UCR-ARU and BLM studies (see Fig. 5). These are presented in Table 21.

Table 19
Comparable Results of Probabilistic Sample Inventory in North and Central ABDSP,
Borrego Badlands UCR-ARU Sample, and Four BLM Datasets:
Sites per Acre

<i>Sampling Domain</i>	<i>No. Probabilistic Sample Units</i>	<i>Acreage</i>	<i>No. PRE Sites per acre</i>	<i>No. HIS Sites per acre</i>	<i>No. P/H Sites per acre</i>	<i>Total No Sites per acre</i>	<i>No. PRE "Other" per acre</i>	<i>No. HIS "Other" per acre</i>	<i>No. P?H "Other" per acre</i>
Northern ABDSP	81	5005	0.0030	0	0.0004	0.0034	0.0344	0.0030	0.0034
Borrego Badlands**	25	1545	0.0006	0.0006	0.0026	0.0039	0	0.0013	0
Central BLM dataset A	52	4160	0.0937	0.0286†		0.1224	N/A	N/A	N/A
Central BLM dataset B	77	6160	0.1042	0.0010†		0.1052	N/A	N/A	N/A
Central BLM dataset C	53	4240	0.0906	0.0007		0.0913	N/A	N/A	N/A
Central BLM dataset D	123	9,840	0.0986	0.0006		0.0992	N/A	N/A	N/A

Table 20
Comparable Results of Probabilistic Sample Inventory in North and Central ABDSP,
Borrego Badlands UCR-ARU Samples, and Four BLM Datasets:
Sites per Square Mile

<i>Sampling Domain</i>	<i>No. Probabilistic Sample Units</i>	<i>Acreage</i>	<i>No. PRE Sites per mi²</i>	<i>No. HIS Sites per mi²</i>	<i>No. P/H Sites per mi²</i>	<i>Total No Sites per mi²</i>	<i>No. PRE "Other" per mi²</i>	<i>No. HIS "Other" per in²</i>	<i>No. P?H "Other" per mi²</i>
Northern ABDSP	81	5005	1.92	0	0.256	2.176	22.016	1.92	2.176
Borrego Badlands**	25	1545	0.384		0.0026	2.496	0	0.832	0
Central BLM dataset A	52	4160	59.968	18.304†		78.336	N/A	N/A	N/A
Central BLM dataset B	77	6160	66.688	0.640†		67.328	N/A	N/A	N/A
Central BLM dataset C	53	4240	57.984	0.448		58.432	N/A	N/A	N/A
Central BLM dataset D	123	9,840	63.104	0.384		63.488	N/A	N/A	N/A

Table 21
Projected Numbers of Cultural Resources Existing in Four Areas of ABDSP

<i>Area</i>	<i>Approx. Acres</i>	<i>Approx Square Miles</i>	<i>Projected Approximate Number of Cultural Sites</i>	<i>Projected Approximate Number of Prehistoric Isolates</i>
Northern Mountain ABDSP	78,720	123	268	2708
Borrego Badlands	52,480	82	205	0
<i>Total of All Northern ABDSP</i>	<i>261,600</i>	<i>409</i>	<i>Based on mean of 0.00365/acre 955</i>	<i>Based on mean of 0.0172/acre 4,500</i>
Central ABDSP based on Dataset A	329,171	514	40,290	N/A
Central ABDSP based on Dataset B	329,171	514	34,628	N/A
Central ABDSP based on Dataset C	329,171	514	30,053	N/A
Central ABDSP based on Dataset D	329,171	514	32,654	
<i>Total of Central based on Mean Value</i>	<i>329,171</i>	<i>514</i>	<i>(Based on mean value of 0.1045/acre) 34,398</i>	<i>N/A</i>
Southern ABDSP	151,629	237	unknown	unknown

DISCUSSION

It is apparent from the data presented in the three preceding tables that the random-sample data demonstrate that the Northern portion of ABDSP has far fewer sites per acre than Central ABDSP – in fact, cultural resource sites density in Central ABDSP is more than 30 times greater than in the North. This is borne out by the UCR-ARU random-sample data from Borrego Badlands (that we consider here in the Northern area, although UCR-ARU sampled it as part of the Central area)

We might hazard a guess on the number of cultural sites in all of ABDSP (although no direct random-sample data are available for the South) by using the mean values of sites per acre from the total Northern and Central areas based on random-sample data from those areas (i.e., 0.0541 cultural sites per acre). In this case, for a total acreage of approximately 742,400 acres in ABDSP, we might approximate that there are, by conservative estimate, about 40,164 cultural sites.⁸ It is likely that this figure is an underestimation because it is known that Southern ABDSP is particularly rich in cultural resources and the mean value used factors-in the relatively fewer sites per acre in the Northern portion of ABDSP.

⁸ ABDSP uses 600,000 acres as its size. If this were the case, the guesstimate on the number of cultural sites would be 32,460.

Chapter 9

SUMMARY AND CRITIQUE OF THE DATA PRESENTED; DISCUSSION; COMMENTS; SUBJECTS FOR FURTHER STUDY; RECOMENDATIONS

by Joan S. Schneider, Marla Mealey, and Matthew C. Hall

This final chapter contains four segments. First, we synthesize the findings that have been presented here. Second, we critique the work reported here and then discuss the problem areas that we have identified. Third, we comment on the results of the UCR-ARU and BLM random sample inventories and how the data presented in this report might be used for research and management purposes. Finally, we suggest subjects for further study. All the authors have participated in the critiques of the work.

SUMMARY AND SYNTHESIS OF ABDSP UCR-ARU INVENTORY

The UCR-ARU Cultural Resources Inventory is the first systematic effort by CSP toward obtaining a full understanding of the surface archaeological record in ABDSP. The approach detailed in the Research Design (Appendix A) was intended to be comprehensive in order to (1) address questions about cultural resources densities and cultural resource types in the Northern, Central, and Southern portions of ABDSP, especially in regions where little information was available as well as to (2) obtain a clearer understanding of areas that were known to contain significant cultural resources which had not yet been fully recorded or were recordation was not sufficient for present-day management purposes. The first goal was to be obtained through a Probabilistic Sample method whereby a random-sample was selected from specific domains. The second goal was to be obtained through surveying sample blocks in Targeted Areas. The methods proposed to reach both goals were well-founded in scientific method and theory.

In the course of carrying out the Research Design in the Northern portion of ABDSP (see Chapter 4), it became evident that the goals were too ambitious, given the time, personnel, and funding allotted for this project. Extensive time was required to reach some of the survey blocks selected. In some areas, access was extremely limited by steep, rugged terrain and heavy vegetation cover. In other areas, far more cultural resources were encountered than expected, necessitating both extended field time and laboratory time, both recording sites and documenting what was recorded in site-record format. Nonetheless, in Northern ABDSP, where the Research Design was fully carried out, extremely important data resulted, data that allow Parks staff to more fully understand both the quantity and type of the Cultural Resources that are its management responsibility in that area. Those data are presented in this report (see Chapters 6, 7, 8).

Selected results include documentation of cultural resources in eight Targeted Areas: seven of these within the Coyote Canyon drainage system and one at Jackass Flat on the southern side

of the Santa Rosa Mountains. In all, 590 cultural resources were documented: 61 cultural sites and 529 cultural properties that did not meet the requirements set forth in the Research Design to be considered sites (“other” properties, in UCR-ARU parlance). Short descriptions of all these properties are presented within Appendix B of this report and more complete descriptions are available in site records now on file at ABDSP and at the appropriate Archaeological Information Centers (Riverside and South Coastal). Even more valuable to researchers and managers are the results of the Probabilistic Sample in the North. Statistical sampling allows projections to be made for a larger area based on a sample of the larger sample universe – in this case 81 Probabilistic Sample Units were surveyed, resulting in the recordation of 17 cultural sites and 201 “other” cultural properties (see Chapter 6). More important is the fact that the manner in which the sample was drawn allows us to use these data and apply them to portions of Northern ABDSP that were not inventoried (see Chapter 8) and construct a statistical predictive model including number of cultural resources per acre and per square mile for the entire area of the North: 0.0034 cultural sites per acre; 2.176 cultural sites per square mile. One merely has to determine the number of acres or square miles in the North to predict how many cultural sites would be present.

In Central and Southern ABDSP, the application of the UCR-ARU Research Design was limited. An adequate Probabilistic Sample was completed only for the Borrego Badlands domain in the Central area (see Chapters 5 and 7). Almost exclusively, all other field inventory was of Targeted Areas for the reasons mentioned above. In the course of the field inventory of 45 Targeted-Area blocks in Central ABDSP, 33 cultural sites and 39 other cultural properties were recorded (see Appendix B for short descriptions). In Southern ABDSP, 23 Targeted-Area blocks were inventoried; 50 cultural sites and 13 other cultural properties were recorded (see Appendix B for short descriptions). Although documentation of cultural resources within the Targeted Areas was considered important to accomplish,¹ the discard of the Probabilistic Sampling portion of the Research Design in both the major portion of Central and all the South portion of ABDSP does not allow any statistical projections using UCR-ARU data for the whole of ABDSP lands in these regions.²

A CRITIQUE OF THE CONDUCT AND RESULTS OF THE INVENTORY

Below, the authors critique various portions of the Research Design, the Methods and Operations in the field and laboratory, and the results of the UCR-ARU work.

¹ At the time, efforts were underway to develop information for the ABDSP General Plan document; Southern Service Center staff made the decision to concentrate efforts on the Targeted Area part of the Research Design.

² See Chapter 8, this report, for a creative effort by Schneider to substitute BLM random-sample data for Central ABDSP to develop a statistical base on which to build a predictive model for this area.

Terminology

The detailed and elaborate Research Design (see Appendices A, C and Chapter 4) promoted the use of terminology that would enable researchers and managers to more definitively identify cultural resources; the terminology proposed recognized that in the past, a variety of terms were used to describe the same features and artifacts and that there was a need for consistency in descriptive terms as well recognition of variation in what was being described. One of the goals of proposing the terminology was that it would be adopted for all future work in ABDSP. This was not the case.

Hall (Appendices A and C) saw the new terminology as facilitating data analysis for research purposes; CSP staff saw the proposed terminology and acronyms as directly conflicting with the definitions and terms used by the California State Office of Historic Preservation (SHPO) regarding what was a “site” and what was not. Certainly, the main opposition was to the use of Hall’s term “other” for a wide variety of cultural properties including archaeological isolates, bedrock milling features with few or no associated materials, roasting pit or hearth features that were not associated with other archaeological materials, and so forth. Within this report, we have had to struggle with this problem in order to make comparative statements. Field personnel have found the acronyms that Hall proposed and used to be cumbersome. Schneider (in Appendix E) had to accept generalized terms in order to create a comparable database for the BLM 1970s inventory of Central ABDSP (see Fig. 6).



Fig. 6. UCR-ARU crew member examining a bedrock mortar and an associated cobble pestle in place. In UCR-ARU terminology, this feature, if not associated with other types of archaeological materials, would not be considered a site, but would have been assigned the “other” designation. Photo by UCR-ARU, site CA-SDI-1465.

Moreover, in this digital age, CSP is centralizing all its data and having its largest and most cultural-resource-rich park, ABDSP, using a different terminology than that of the SHPO was an impossible situation. Although, from the view of a researcher, the system proposed by Hall might answer some of the long-sought-after questions about the archaeological record in southern California, the terminology was not considered as operable by CSP staff, since it did not concur with SHPO, its overarching administrative organization.

An additional related problem was that of site-record filing. Mealey noted that the UCR-ARU protocol that used “other” for “non-site” cultural properties resulted in a situation where appropriate site record forms were not completed for archaeological features on the landscape, since these were not termed “sites.” Eventually, Southern Service Center staff asked UCR-ARU to go back and file site records for these features; this task was not fully completed during the course of the inventory project and afterward. A folder containing correspondence related to these issues is stored with the archival materials for the project at the BARG.

Field Methods

At the time the UCR-ARU Cultural Resources Inventory was initiated, Geographic Information Systems (GIS) and Global Positioning System (GPS) technology was coming to the forefront in the recording of locations of cultural resources. UCR-ARU did not anticipate using this technology, while CSP had already started to benefit from it. Consequently, almost all the fieldwork carried out by UCR-ARU in the Northern portion of ABDSP used traditional methods of establishing locations: point position on USGS topographical quadrangles was established using field observations, triangulation, site datum point, and pacing and tape distances. The UCR-ARU methods were criticized by Southern Service Center staff and GIS personnel who recognized that the traditional methods were not as accurate as the GPS/GIS system. While this may have been so, the traditional methods had served archaeological field workers well for many years and the new technology was in its infancy at the time. Southern Service Center made its GPS/GIS technology available to the UCR-ARU during the fieldwork in part of the Central and all of the Southern portions of ABDSP.

While studying the documents available for reporting the fieldwork, Schneider noted that there was a paucity of photographic documentation (see Appendix D). The black-and-white photographs that are available are of poor quality. Photography is a traditional means of documenting cultural resources in the field (especially in the case where resources are in remote locations that cannot be easily accessed by others) and it seems an inappropriate economy to not obtain a complete photo record. Digital photography had not yet come into common use at the time the project was initiated, but a lack of sufficient photo-documentation is one of the major criticisms of the fieldwork.

Inaccurate and Incomplete Documentation

Over a period of years, from the latter part of the fieldwork until about 2002, Michael Sampson and Marla Mealey, Southern Service Center staff who had been assigned to the

UCR-ARU project after the departure of Manfred Knaak (see Chapter 1), expressed concern regarding inaccuracies in field data as reported on site record forms, as well as the incompleteness of the UCR-ARU recording efforts; this concern was manifest as recently as 2005. A folder containing correspondence between UCR-ARU personnel, Southern Service Center staff, and UCR administration is available in the project box for the UCR-ARU work that is stored in the BARC archives. As recently as June 2006, during a helicopter visit to some of the areas where UCR-ARU had visited and reported possible human remains (Jackass Flat, Tule Spring, Fig Tree Valley, Monkey Hill) efforts were made to correct site record forms for these areas (Fig. 7.). All corrections were entered into site records and are available in the project box stored in BARC archives.



Fig. 7. Team embarking on helicopter flight to Fig Tree Valley to gather information to update and correct UCR-ARU data on archaeological site records.
Photo by Joan Schneider, June 2006.

UCR-ARU did have trouble completing the work it set out to do for a number of reasons. Those problems encountered by UCR-ARU during the course of the inventory project are described above in Chapter 1 and above in this chapter and will not be repeated here. CSP refused to further fund the project and UCR-ARU was unable to complete all items to CSP satisfaction without additional funding, thus items were left incomplete, the most important being a report on the project. The present report attempts to present the inventory findings that were available; it was funded to CDD directly by CSP.

Deviation from the Research Design

Schneider and Hall here decry the fact that CSP and, in particular SSC staff, abandoned the Probabilistic Sample portion of the Research Design after the work in the North portion of ABDSP. The opportunity to secure statistical sample data for management purposes would have been invaluable, especially in the Southern portion of ABDSP. Although the circumstances whereby the sampling design was abandoned are understood and well-founded, it remains unfortunate. Schneider, in this report, has used the data that were available to attempt to fill in the data that are missing, but the attempt is crude and not optimal (see Chapter 8).

APPLICATION OF INVENTORY FINDINGS FOR RESEARCH AND CULTURAL RESOURCES MANAGEMENT

Survey-level data are weak in analytical usefulness. Parks management should not expect other than a simple presence-absence statement in terms of artifacts, site descriptions, and chronological placement. Survey recordation without collection limits artifact analysis to the rudimentary and most obvious descriptions, e.g., projectile point shape, type of stone, color of ceramic sherds, presence of rim sherds, presence of animal bone, and approximate size of animal (certainly not any determination of animal species). Survey data, however, are very useful for management purposes in that they can be used to infer where sites are, and are likely to be, on the landscape; project site densities, and correlate sites with variables such as water sources, vegetation zones, elevation, or others. In Appendix F, Hall has presented some of his analytical findings regarding the ceramics, flaked stone, and ground stone assemblages in Northern ABDSP. The reader is encouraged to read this and imagine how our knowledge might be further extended if comparable data were available from the Central and Southern areas of the Park.

It should also be repeated here that survey-level data are also compromised by vegetation cover that, in many areas, limits visibility of the ground surface. This was especially prominent in areas of Coyote Canyon, and its tributary canyons, as well as the areas surveyed in the region of the Pacific Coast Trail. Since heavy vegetation often occurs where there is a water table competent to sustain heavy plant growth, it is also likely to have been a place of human occupation. However, the vegetation probably conceals many sites. This fact was emphasized recently when, in the course of the Cedar Fire of 2003, much of the surface vegetation of Cuyamaca Rancho State Park burned. In the aftermath of that fire, numerous sites were discovered in areas that had been well-surveyed in the past. In addition, a number of sites that had been recorded as being of relatively limited size, were found to be much larger than originally thought. In other cases, loss of vegetation cover revealed an artifact scatter that connected two or more sites that were originally recorded as segregated sites.

In this report, the authors have presented the framework under which the UCR-ARU Cultural Resources Inventory project took place, as well as what went right and what went wrong

about the project. Furthermore, without further analytical efforts focused on archaeological associations, we have presented a good amount of raw data for the use of others. Collected data, particularly from the Northern region of ABDSP is archived at the BARC. There are possibilities for the post-stratification of the Probabilistic Sample from the Northern and Borrego Badlands regions and endless possibilities for researchers to manipulate the archaeological data. The entire project has resulted in a substantial database that previously did not exist; a database of sites and their contents, as well as isolated occurrences of cultural resources.

SUBJECTS SUGGESTED FOR FURTHER STUDY

The following items were proposed by Dr. Matthew Hall to be of priority for further study. Parks staff should take these suggestions into account when project proposal lists are developed. In the view of the UCR-ARU, there are several pressing needs for archaeological information in order to better manage cultural resources in the Park.

- **Rockshelters should be investigated.** A number of large formerly inhabited rockshelters exist in upper Coyote Canyon. Further surface investigations and collections, as well as archaeological test excavations, would greatly enhance our knowledge of prehistoric and contact periods in ABDSP.
- **Ceramic Typology should be developed.** An up-to-date ceramic typology is needed. Modern typologies are based less on vessel shape and size than on questions regarding where vessels were made, where the clay originated, what types of temper were either introduced or contained naturally in the clay, how various types of vessels were used, how far were vessels transported, and other functional questions. Thin-section comparative collections are now used to classify types of clay and temper. Protein and starch residue analyses can provide insights into what was stored or carried in vessels; radiocarbon determinations on residues or fire-produced soot on vessels can aid in chronological placement. From these types of information, more intricate questions can be posed such as: do ceramic vessel types represent different social groups? Did people import clay or temper from distant sources? Were vessel styles and firing methods consistent with social groups? Did clay type vary with whatever was locally available?³
- **A Comparative Lithic Collection, with Consistent Nomenclature, and an Identification Key should be developed.** There is a need to develop a comparative

³ At the time that this report was written, substantial steps have been taken toward the goal that Dr. Hall suggested. CDD is developing a thin-section collection of ceramic sherds under the leadership of Sue Wade, Associate State Archeologist for the CDD. In addition, independent researchers have been conducting some of the research that Hall recommended and there are on-going projects funded by the Begole Archaeological Research Grant program and by academic institutions.

lithic collection and an accompanying key to identifying lithics so that Park cultural resources management staff has a reliable method of identifying materials.⁴

- **Full Recordation of Bailey's Cabin should be accomplished.** Hall evidently saw the need to fully document the historic structure known as Bailey's Cabin within the Coyote Creek drainage.
- **Special Status should be assigned to Sites with Human Remains.** Hall thought that archaeological sites that were known or suspected to contain human remains should be afforded some means of both recognition and protection.⁵

RECOMMENDATIONS

The following recommendations are made by the authors. Some of the recommendations are obvious, based on the experiences gained during the UCR-ARU Cultural Inventory Project and its aftermath. Others are precautionary recommendations about the archaeological record in ABDSP.

The first obvious recommendation is that the Probabilistic Sample inventory should be completed for Central and Southern ABDSP, following the original UCR-ARU Research Design. This recommendation is qualified because of the archival research work that Schneider carried out as part of this report in order to make some comparative statements about the data from the North (see Chapter 8). Whether or not the BLM data is a valid statistical comparative dataset should be determined by a qualified statistician.

Second, it is recommended that ABDSP cultural resources staff and administration understand that there are significant buried archaeological deposits in many areas of the Park and that these resources need to be identified and investigated in order to protect and preserve them. While excavation, even test excavation, is rarely seen as part of the cultural resources management mission, and because funding for such work is limited (or rare), it is recommended that area academic institutions and qualified researchers be allowed and

⁴ A substantive comparative lithic collection is housed at the BARC. This is a collection of hand samples. The collection was developed during the Begole era in ABDSP. A thin-section preparation of each of these samples with a description and name assigned by a qualified geologist would be advantageous. Consistent nomenclature has always been a problem in identifying geological materials in southern California archaeology.

⁵ Since the years of the UCR-ARU inventory, a Sacred Sites list has been developed by the Native American Heritage Commission. CDD is actively participating in nominating sites with human remains to this list, as well as nominating other site types that are considered sacred to area Native American communities.

encouraged to carry out this work on a priority basis, with the priorities set by ABDSP archaeologists and administrators.

Third, all outstanding corrections to site records and maps generated in the UCR-ARU Cultural Resources Inventory project should be completed. This should include the assignment of trinomial designations to those archaeological features for which they have not been received, entering site locations and survey areas on GIS cultural resources layer (as well as hard-copy USGS topographic quadrangles in the BARC).⁶

Fourth, it is recommended that the findings presented in this report be used to acquire the funds to properly track, manage, protect, and preserve extremely rich archaeological and historical record within ABDSP. In one case, this has been accomplished with the closure of the Piedras Grandes area to vehicular traffic in 2008. In the near future, a number of Cultural Preserves within ABDSP will be set aside. The data presented here and the projections for numbers of cultural resources in all three regions of the Park can provide the numerical “ammunition” on which to request and obtain the funding and staff to better manage this unique landscape.

⁶ As part of the current project, Heather Tompson rechecked all site records filed by the UCR-ARU and found that many of the additions and corrections to records had been carried out and trinomial designations assigned. There remain a few items that need attention.

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APPENDIX A

RESEARCH DESIGN
PARTS I & 2

by Matthew C. Hall

**PROPOSED CULTURAL RESOURCES SURVEY AND STUDY OF DESIGNATED AREAS
WITHIN THE NORTHERN PORTION OF ANZA-BORREGO DESERT STATE PARK,
SAN DIEGO AND RIVERSIDE COUNTIES, CALIFORNIA**

Project Sponsored by:

California Department of Parks and Recreation

under Interagency Agreement with:

The Regents of the University of California

UC Representative:

**Archaeological Research Unit
University of California, Riverside**

M. C. Hall, Ph.D.

Director and Principal Investigator

May 2, 1994

Described herein are basic elements of a proposed cultural resources survey and study of designated areas in the northern portion of Anza-Borrego Desert State Park (ABDSP), San Diego and Riverside counties, California. The investigation will be conducted by the Archaeological Research Unit (ARU) at the University of California, Riverside (UCR), under interagency agreement between the California Department of Parks and Recreation (DPR) and The Regents of the University of California. Objectives of the general study are fourfold: (1) summarize extant knowledge about regional human history and prehistory; (2) compile and evaluate existing locational and compositional information relating to cultural resources in the designated areas; (3) generate new inventory data on cultural resources within these areas; and (4) use the latter to analyze and project patterns in the nature, distribution, and culture-historical affiliation of cultural resources across northern ABDSP from the eastern slopes of the Santa Rosa Mountains to the Pacific Crest Trail corridor on the northwestern Park boundary. Results of the records assessment and survey program are essential to development of the state legislature-mandated ABDSP General Plan. The UCR project team will be headed by Dr. M. C. Hall, ARU Director and Principal Investigator.

Research Setting

Despite archival evidence and implicit academic recognition of a dynamic history and prehistory, the physical archaeology of Anza-Borrego Desert State Park, even greater southeastern California, remains poorly elucidated. This circumstance holds notwithstanding the important contributions of scholars oriented toward a variety of subject matter and reflects infrequent, directed, field investigations of substantive scope. The proposed ABDSP cultural resources study falls in the latter category, presenting an opportunity to significantly augment and examine information concerning the archaeological record of a sizable sector of interior southern California. Beyond providing key cultural resources management data on northern ABDSP surface archaeology, the study will produce findings pertinent to three broad domains of research.

One involves what might be referred to as the regional archaeological landscape. In this realm of inquiry the principal focus lies with understanding fundamental geographic attributes of archaeological phenomena. Questions address the distribution of different kinds of sites and materials and the extent to which apparent patterns in their occurrence can or *cannot* be explicated in terms of environmental variables (e.g., biotic community, geomorphic context, and hydrologic regime). While primarily atemporal in aspect, there is a distinct chronological component to such locational analysis given past natural environment changes (introduction or elimination of certain plants or animals, formation or desiccation of basin lakes, tectonic shifts in groundwater discharge loci, etc.) and ongoing geologic processes (land erosion, alluvial sedimentation) which differentially affect the structure of the archaeological record and present visibility of its constituent segments.

An obvious, basal, research thrust of the proposed ABDSP study revolves around

what it can reveal about cultural evolution in southeastern California from the time of initial human occupation perhaps twelve or more millennia ago through the 20th century. At issue are not only the archaeological signatures and behavioral implications of indigenous transformations in demography, socioeconomic organization, and technology, but also the role of aboriginal, then euroamerican cultural developments elsewhere (e.g., coastal southern California, the Southwest, Mexico, and across the continent) in shaping the form and trajectory of regional human history. Chronological control over the archaeological data amassed for this investigation will, however, be limited to that afforded by archival documentation and identified time-sensitive objects associated with specific cultural resource properties. Nevertheless, cursory appraisal of potential temporal indicators available in the ABDSP archaeological record suggests consequential diachronic reconstruction of human land-use activities is viable even with simple inventory.

The third general research facet of the proposed ABDSP study concerns material linkage between archaeological sites found in the various survey areas and known historic inhabitants of the project region. Of special interest is tying native american ethnohistoric accounts to particular archaeological properties. This will prove beneficial in supplying direct historical context for certain cultural resources and enhancing explanation of past aboriginal lifeways based on indirect archaeological evidence (by their very nature, the latter "proxy" data offering only a narrow window on the full spectrum of human behavioral processes). The same investigative approach applies to interpretation of euroamerican material culture remains, though they comprise a much smaller part of the northern ABDSP archaeological record.

Field Operations

Archaeological fieldwork for the proposed ABDSP cultural resources study will be performed in two phases (see below) with five-person crews working out of camps positioned near survey areas. Each crew will include and be led by either the Principal Investigator (M. C. Hall) or an ARU project director. A maximum 25 m spacing between individual surveyor transects will be maintained. Recordation procedures and data forms employed shall conform with *Instructions for Recording Historical Resources* (Office of Historic Preservation, December, 1993). Special emphasis will be given to recording types and quantities of artifacts by morphological class, toolstone varieties, temporally diagnostic artifact forms (e.g., projectile points, ceramic wares, shell beads, and particular glass bottle and tin can types), number, kind, and general dimensions of archaeological features (structures, hearths, bedrock/boulder milling platforms, etc.), and site-specific environmental characteristics and associations. Photographs will be taken and roughly scaled maps made of all cultural resource sites encountered. Noteworthy artifacts and features will be drawn or photographed as appropriate. Collection of archaeological materials is not anticipated. Major historic and prehistoric archaeological sites will be flagged, temporarily, to enable DPR personnel to re-locate these properties and acquire Geographic Positioning System input data.

Site and Isolate Definition

In a purely epistemological sense, a cultural resources "site" is simply a place or location where material residues of previous human activity have accumulated. The term encompasses single, isolated artifacts or features, as well as surface/ subsurface deposits harboring hundreds or thousands of objects. It is, however, recognized that a pervasive definition of a site as a point in space with one or more archaeological items ill-suits management constraints, especially those on the logistical and financial feasibility of protecting any and all sites and the heritage information therein contained. A necessarily arbitrary distinction is therefore drawn between a "site" and an "isolate" (the latter being a lesser form of site from a management perspective), and serves to set apart sites for further management consideration or action. Even so, within the framework of archaeological science, isolates constitute important sources of data on prehistoric and historic cultural behavior. Hence, an effort will be made in the proposed ABDSP cultural resources study to exploit the analytical potential of isolates as land-use pattern indicators.

Acknowledging a variety of concerns represented in operationally defining sites and isolates, the specific criteria given below were developed as guidelines for the proposed ABDSP cultural resources survey. These need to be delineated here because some researchers might view them as too conservative (i.e., possibly significant sites were not so identified, and should have been), while others might see them as too liberal (i.e., possibly insignificant "non-sites" were identified as sites and could receive more management consideration than they should). As a safeguard against the vagaries of geomorphic circumstance and vegetative cover which can affect the visibility of archaeological phenomena, the criteria are intentionally polytypic (avoids excessively conservative recordation) but designed to take into account the potentially ubiquitous occurrence of material culture objects (e.g., pieces of flaked stone debitage, pottery fragments, tin cans, and glass bottle shards) in project areas (avoids excessively liberal recordation). Thus, it is proposed that for a place or location to qualify as a "site" at least one of the following criteria must be met:

- (1) presence of midden (cf. unnaturally dark, organic-rich, or charcoal-laden sediments, indications of subsurface archaeological remains, and/or evidence of vertical archaeological stratigraphy); midden can include hearths or their remnants (cf. spatially discrete concentrations of fire-affected rock and/or charcoal or charcoal-stained or burnt sediments);
- (2) presence of at least three artifact classes with a minimum item (of whatever class) density of $1/3 \text{ m}^2$ in an area measuring no less than 10 m^2 in extent; prehistoric (cf. aboriginal) artifact classes consist of, for example, flaked stone debitage, categories of flaked (biface, projectile point, flake tool, etc.), ground (handstone, millingstone, mortar, etc.), or battered (cobble

hammers, pounders, etc.) stone tools, or ceramic sherds; historic (cf. euroamerican) artifact classes include, for example, cans of assorted sizes and manufacturing types, variously colored glass vessel shards, crockery fragments, mining and construction tools, transportation equipment debris, or miscellaneous pieces of milled wood or post-fabrication modified or unmodified metal;

- (3) presence of two or more archaeological features no more than 25 m apart (at prehistoric sites these consist of, for example, bedrock/ boulder milling platforms, structure depressions, hearths, or rock art panels, at historic sites these include, for example, building foundations, wells, corrals, or mining adits), or one feature within 10 m of at least one item of a non-feature artifact class;
- (4) presence of two or more items, of whatever artifact class (e.g., all can consist of flaked stone debitage pieces or tin cans) per 3 m² in an area measuring no less than 10 m² in extent; and
- (5) if two or more "sites" are found within 25 m of each other, they are collapsed into a single site "complex" -- the intent is to allow for the possibility of otherwise continuous surface debris scatters that have been broken up by localized natural processes (alluvial or colluvial sedimentation, erosional channel dissection, etc.), or modern land modifications (e.g., road, pipeline, or building construction).

The above criteria are hardly exhaustive, but they do provide a reasonable and explicit basis for delimiting cultural resources sites. Archaeological phenomena observed in the course of the ABDSP survey that do not meet one of the criteria will be assigned an isolate designation.

Phase I Survey and Report

Phase I of the proposed ABDSP cultural resources inventory study will involve an intensive archaeological survey of eight selected localities covering 3480 total acres: Tule Spring (140 acres), lower and middle Horse Canyon (510), lower Park Canyon (280), Fig Tree Valley (1160), upper Alder Canyon (260), Salvador Canyon (500), Monkey Hill (110), and Hidden Spring (520). Demarcated by the DPR State Representative, Manfred Knaak, these areas are targeted for complete inventory due to the high levels of recreational land use they receive and the potential significance and demonstrable fragility of cultural resources in each locality. Prior to initiating Phase I fieldwork, existing cultural resource site records and associated survey documentation for the eight selected areas will be compiled from DPR files and, as necessary, regional information centers of the California Archaeological Inventory. It is estimated that Phase I fieldwork will require seven deployments of the project-standard five-person survey crew, or fewer overall deployments if schedules permit two separate crews to operate simultaneously. Phase I

fieldwork should be accomplished by October 31, 1994 (see attached work plan/cost estimate sheets).

The report on Phase I of the proposed ABDSP study is scheduled for completion by the end of 1994 and will include chapters or sections devoted to the following: project introduction; comprehensive overviews of regional natural (present and past) and cultural (history, ethnohistory, prehistory) environments; review of earlier archaeological research within the designated survey areas and elsewhere at the Park; assessment of previously compiled cultural resources records for the designated survey areas; discussions of project-specific research goals, methodology, and field procedures; detailed descriptions of archaeological properties encountered during Phase I survey; general and particular research findings; and recommendations regarding the significance and management of cultural resources within the eight evaluated Phase I survey localities. A thorough bibliography of regional reference documents and materials, plus appropriate appendices (site and isolate records, photograph logs, etc.) will accompany the report. Budgeted funds not expended on the Phase I survey and report will be re-allocated to Phase II in order to boost sample sizes for the second, probabilistic phase of field survey (see below).

Phase II Survey and Report

Phase II of the proposed investigation is intended to yield, as evaluated against and developed together with Phase I results, reliable expectations about both the nature and dispersion of cultural resources across much of northern ABDSP based on sample survey of four separate geographic zones. This objective requires a sampling strategy that generates data suitable for estimating, with statistically measurable confidence, what complete survey of each zone (using identical field examination/recordation procedures) would reveal as far as quantitative and qualitative parameters of archaeological distributions. Such a sampling program must have an inherent probabilistic function, its ideal outcome a set of controlled, predictive assessments applicable to broader research topics along with land-use and resource management needs.

The four geographic zones, demarcated by the DPR Representative, comprise 78,720 total acres and will serve as independent sampling domains that from east to west include: lower slopes and alluvial fans on the eastern site and at the southern end of the Santa Rosa Mountains (22,400 acres); general vicinity of upper Butler Canyon (15,690); upper portion of the Coyote Creek drainage catchment (34,600); and the Pacific Crest Trail corridor on the northwestern ABDSP boundary (5990). Elemental aspects of the Phase II sampling design addressed here are sample unit configuration, sample structure, and sample size. Among factors to consider are the: (1) effect of differing sample unit configurations on archaeological site discovery frequencies; (2) utility of sampling domain stratification; (3) degree of detail sought in elucidating archaeological patterns and its consequences for determining sample sizes and acceptable confidence levels in statistical

analyses of certain kinds of survey data; and (4) available field-time budget. No single factor overrides all others, reflecting the intrinsic compromise which must be struck in constructing a sample survey of multipurpose scope, like Phase II of the proposed ABDSP study where information is pursued relating to the prehistoric and historic archaeological records.

Although a wide variety of survey sample unit shapes are conceivable, logistical efficiency prescribes a rectangular configuration ranging between transects and squares. This rule-of-thumb appears most applicable when the number of units to inventory may be fairly large, selected units are well dispersed, and the field schedule confining. In contrast, non-rectangular or curvilinear units demand far more field time to maintain consistent orientation, length, and spacing of the lines walked by individual surveyors. Both transects and squares have been used in archaeological surveys in western North America, examples including 0.25x0.25-km, 0.4x0.4-km, 0.5x0.5-km, 0.55x0.55-km, 0.6x0.6-km, 0.5x1.0-km, 1.0x1.0-km, and 0.125x1.0-mi units. Experiments suggest transects are the better alternative for population (e.g., total site) estimates and squares for associational (e.g., site locational attribute) analyses. On a *priori* grounds squares may be preferable in that it is easier to adjust population estimates derived with survey data from this unit type by careful weighting techniques than it is to adjust associational correlations (and related estimates) developed with transect-based information where environmental variation among widespread units might be less controllable. Thus, because particular features of the project landscape (spatially divergent floral communities, riparian strips, complex, older geomorphic surfaces, natural travel corridors, etc.) could well prove instrumental in distinguishing specific archaeological distributions, a square sample unit configuration seems the most appropriate for the ABDSP Phase II survey.

Setting actual sample unit dimensions, meanwhile, involves a balancing of field-time budget limits, logistics, and intended survey procedures. Pertinent factors in the present case include: approximately 40 five-person crew work days, a 25 m survey spacing interval, four different sampling domains, and a desired minimum sample size, if achievable, of 30 units per domain (see below). Without lengthy elaboration, as compared against various options, a sample unit measuring 500 m on a side appears to provide the most effective square-shaped unit configuration. At 25 m surveyor spacing, a five-person crew can examine a unit in four sweeps of 125 m width each, affording a tactical advantage. The same spacing interval in sample units of slightly greater or lesser size would require either an extra sweep (ending inefficiently on the opposite side of a unit from the initial survey baseline) or fewer than five persons to complete the final sweep (inefficient deployment of personnel). Given the estimated available crew work days (40), a minimum of 90 sample units are expected to be surveyed for Phase II of the ABDSP survey. Albeit less than the preferred total of 120 units needed to realize 30 units per each of the four sampling domains, much smaller (hence more numerous) units would impose prohibitive logistic costs in terms of the fieldwork time lost (cf. wasted) with crew travel between units. Also, one sampling domain, Pacific Crest Trail corridor, is quite small relative to the

others (5990 acres [7.6% of the combined survey area versus 20 to 44%]). An allocation of 30 500x500 m units to this domain equates to a 31% sampling rate far in excess of the 5-12% rates possible with equivalent sample unit allocations to the three remaining domains. It is therefore proposed that no more than 10 sample units be surveyed within the Pacific Crest Trail corridor domain (ca. 10% sampling rate), leaving at least 80 units to be allocated among the Santa Rosa Mountains, Butler Canyon, and Coyote Creek domains.

Two primary structural issues affect the Phase II survey design: subdivision of individual sampling domains into discrete sampling strata differentiated on the basis of landscape characteristics that may have contributed to variability in archaeological site formation and content between strata; and use of some form of random or systematic sampling to select sample units for inventory. In the first regard, stratification can markedly improve the accuracy and precision of statistical evaluations. However, as noted above, at question in the ABDSP study is the spatial patterning of both prehistoric and historic cultural resources in the northern portion of the Park. The problem this poses for sample design construction arises from the oftentimes mutually exclusive locational and behavioral variables underlying deposition of aboriginal or euroamerican material culture remains at a given place. To be sure, spatial convergences of prehistoric and historic archaeological debris are not uncommon, at contact-period sites or near springs, along perennial streams, around prominent landmarks, and so on. But it is equally evident that an attempt to incorporate the disparate variables, which influenced prehistoric and historic site formation, into a complex stratification scheme for each sampling domain could result in strata so numerous as to prevent the sampling of any one stratum at a statistically effectual rate. Consequently, the proposed Phase II survey sample structure is deliberately generalized (i.e., no stratification of domains), with the intention of applying post-stratification procedures and an array of parametric and nonparametric statistical techniques to track significant trends in the geographic disposition of particular types of archaeological phenomena.

As for the issue to employ random or systematic sampling to select survey units, several reasons favor the former. A systematic strategy (even one beginning with a "random" start) runs the risk of producing survey data falling either in or out of phase with hidden geographic periodicities (e.g., comparatively evenly-spaced drainage course along a mountain front) that affect archaeological distributions. Further, conditions under which systematic sampling can be implemented properly are probably not characteristic of most archaeological surveys. Lastly, since probabilistic analysis of site density, dispersion, and composition is predicated closely upon a series of key assumptions connected with simple random sampling, it is nearly impossible to ensure that any or all of these could be satisfied with a systematic sampling program. Enumerating potential sample units in each domain and a random draw of those units to survey in each is thus the preferred sampling method for Phase II of the ABDSP study.

Finally, sample size (number of sample units examined) in a probabilistic

survey for cultural resources is critical whether analysis centers on survey data for whole sample units or for their individual constituents (sites, isolates). Both levels of data treatment are relevant to the ABDSP investigation. An important consideration is the large-sample requirement to control sample variances in unequal cluster* sampling when information is desired on *specific attributes of the items of interest*; for example, interest might focus on the number or diversity of artifacts (attributes) at certain kinds of archaeological loci/sites (items) within and across sampling domains, or mean areal extent (attribute) of surface debris at said places (items). Survey sampling theory suggests control of sample variances is most practicable with a coefficient of variation of less than 10-20% in the attribute of concern. This, in turn, necessitates a sample size usually exceeding 30 survey units. On the other hand, there is no large-sample requirement when information sought relates to *sample unit characteristics*, for example, average site density (by type or group [parametric]) or, given repeated random sampling, the probability of drawing in "hit" or "miss" fashion (nonparametric) a sample unit containing a prehistoric residential site or historic mining camp. Statistical precision is always lost, though, when sample size is reduced. Surveying 20 500-acre units might be cheaper and quicker than inventorying 100 100-acre tracts, yet data from the latter permit more reliable population estimates and environment-associational correlations. For such reasons, and excepting the Pacific Crest Trail corridor area in light of its special circumstances discussed earlier, sample sizes of at least 30 500x500 m survey units each would be ideally realized for the Santa Rosa Mountains, Butler Canyon, and Coyote Creek sampling domains.

Unfortunately, the minimum 80 sample units estimated as available to allocate to these three sampling domains falls ten short of the 90 total needed to accomplish the stipulated 30 units per domain statistics standard. Because of paramount DPR management concern for cultural resources in the Coyote Creek drainage catchment,

*A basic distinction holds between items of interest and the sample units used in an archaeological survey. The former comprise "sites" identified by single artifacts (cf. "isolates"), accumulations of occupational debris, structural remains, and/or human modifications of the physical landscape. Directed regional sampling to find sites necessarily involves sample units with definite spatial configurations and qualifies as cluster sampling, the sites situated inside and on the border of a unit forming a cluster. Invariably unequal in size (number of sites varies between sample units), it is nonetheless imperative to recognize that even in the improbable event of clusters of equal size a random sample of m clusters (sample units), each containing n sites, represents m independent choices and not $m \times n$. In a controlled sample survey, then, the sample unit/cluster constitutes the sampling element, sites themselves cannot be listed as statistically independent elements of observation. Viewed another way, that sites are found in a sample survey is due solely to their occurrence in the sample units selected for examination.

it is proposed that 30 of the allocable units be assigned to this sampling domain locality, with the other 50 split evenly between Santa Rosa Mountains and Butler Canyon domains. There are two possibilities whereby sample sizes

might increase for the latter domains. First, since the areas designated for inventory in Phase I occur in three of the four sampling domains (Butler Canyon [one], Coyote Creek [six], Pacific Crest Trail corridor [one]), it is not inconceivable that one or more of the Phase II sample units selected randomly for these domains will fall within an already surveyed tract. Such instances would, in effect, free up Phase II sample units that could be re-assigned to one of the two domains originally allocated a 25 unit sample. A second means of enlarging sample sizes might come about with a more rapid completion of Phase I work than expected presently, which could allow use of excess Phase I field time to augment Phase II sample unit allocations.

Prior to initiating the Phase II survey, existing cultural resource site records and associated survey documentation for each of the four sampling domains will be compiled from DPR files and, as necessary, regional information centers of the California Archaeological Inventory. It is anticipated that Phase II fieldwork will require approximately ten deployments of the project-standard five-person survey crew, or fewer overall deployments if schedules permit two separate crews to operate simultaneously. Phase II fieldwork should be completed by the end of March, 1995 (see attached work plan/cost estimate sheets). The report on Phase II of the proposed ABDSP study is scheduled for submission by September 30, 1995, and will offer chapters/sections devoted to the following: project introduction; review of Phase I work; revised (as appropriate) background overviews from the Phase I report on natural and cultural environments, and earlier archaeological research in the project region; discussions of Phase II-specific research goals, methodology (including sampling design), and field procedures; detailed descriptions of archaeological properties observed during Phase II survey; statistical analysis of Phase II survey data, incorporating relevant Phase I results to both evaluate and refine the analysis; final, general and particular, project research findings; and recommendations regarding management of ABDSP cultural resources. An updated (from Phase I), thorough bibliography of regional reference documents and materials, plus assorted appendices (site and isolate records, tables showing compositional attributes of cultural resources recorded/re-recorded, photograph logs, etc.) will accompany the report.

**Work Plan/Cost Estimate Sheets for Proposed
Anza-Borrego Desert State Park Cultural Resources Survey and Study**

Presented in the next three pages are estimated work schedules and fiscal costs for the proposed ABDSP cultural resources survey and study. Assumed in the calculations are a 25 m spacing between individual surveyor transects and field camp per diem rate. (References in following sheets: PI = Principal

Investigator; PD = Project Director; CP = Crew Person; AA = Administrative Assistant)

<u>Phase I Intensive Survey Areas (100%)</u>		<u>Acreage</u>
A	Tule Spring	140
B	(lower/middle) Horse Canyon	510
C	(lower) Parks Canyon	280
D	Fig Tree Valley	1160
E	(upper) Alder Canyon	260
F	Salvador Canyon	500
G	Monkey Hill	110
H	Hidden Spring	<u>520</u>
Total		3480

Phase I Field Schedule Parameters

May-June, 1994: expect 2000 acres accomplished (areas A, B, C, D [2090 actual acres]) -- more will be done if possible

four separate deployments of a 5-person crew (first with PI + PD + 3 CP, 1 with PI + 4 CP, and 2 with PD + 4 CP) for 5 days (includes 1 travel day for each deployment)

PI	10 days	80 hours	20 days vehicle use	
PD	15 days	120 hours	16 days vehicle 40 mi/day	640 mi
CP	75 days	600 hours	4 vehicle rndtrps 325 mi @	1300 mi
(100 person days)				(1940 mi)

September-October, 1994: expect 1500 acres accomplished (= areas E, F, G, H [1390 actual acres]) -- more will be done if possible (cf. initiation of probabilistic Phase II survey)

three separate deployments of a 5-person crew (1 with PI + 4 CP and 2 with PD + 4 CP) for 5 days (includes 1 travel day for each deployment)

PI	5 days	40 hours	15 days vehicle use	
PD	10 days	80 hours	12 days vehicle 40 mi/day	480 mi
CP	60 days	480 hours	3 vehicle rndtrps 325 mi @	975 mi
(75 person days)				(1455 mi)

Summary:

PI	15 days	120 hours	35 days vehicle use	
PD	25 days	200 hours	28 days vehicle 40 mi/day	1120 mi
CP	135 days	1080 hours	7 vehicle rndtrps 325 mi @	2275 mi

(175 person days)

(3395 mi)

Phase I Laboratory/Report Parameters (report due 12/31/94)

PI 23 days 184 hours (project introduction; environmental, prehistoric backgrounds; survey methods; research findings; recommendations)

PD 30 days 240 hours (site records; individual site descriptions for report text; ethnohistory, post-contact history backgrounds)

AA 12 days 96 hours (project coordination; assistance in site records compilation; report production)

estimate necessary additional costs (supplies, communication, photography, photocopy, postage, etc.) at: \$2000

NOTE: EXCESS FIELD FUNDS FROM PHASE I USED TO INCREASE PHASE II FIELD TIME

Phase II Probabilistic Survey (100% per 500x500-m Sample Unit [61.8 acres @])

Sampling Domain*	Total Acres	%	Survey			
			Units	Acres	% Total	% Sample
Pacific Crest Trail	5990	7.6	10	618	10.3	11.1
Coyote Creek	34600	44.0	30	1854	5.4	33.3
Butler Canyon	15690	19.9	25	1545	9.8	27.8
Santa Rosa Mtns	22440	28.5	25	1545	6.9	27.8
Total	78720	100.0	90	5562	---	100.0

*Phase I survey areas included in sampling domains (see proposal text)

Phase II Field Schedule Parameters

October, 1994 through March, 1995: approximately ten separate deployments of a 5-person crew (4 with PI + 4 CP and 6 with PD + 4 CP) for 5 days (includes 1 travel day for each deployment); expect 9 to 10 sample units surveyed per rotation (556-618 acres); total number of deployments may decrease if simultaneous crew deployments each for more than 5 days can be accomplished over end-of-1994 holiday break; if latter does happen, savings in deployment travel costs will be converted into larger sample unit allocations in Santa Rosa Mountains and Butler Canyon sampling domains

Summary:

PI 20 days 160 hours 50 days vehicle use

PD	30 days	240 hours	40 days vehicle	40 mi/day	1600 mi
CP	200 days	1600 hours	10 vehicle rndtrps	325 mi @	3250 mi
		(250 person days)			(4850 mi)

Phase II Laboratory/Report Parameters (report due 9/30/95)

PI	25 days	200 hours	(project introduction/overview of previous study; revised [as appropriate] background sections from first phase report; sampling design and survey methods; statistical analysis; research findings; recommendations)
PD	23 days	184 hours	(site records; individual site descriptions for report text [sites recorded during sample phase]; appendix listing attribute, compositional data [table form] for all sites recorded/re-recorded)
AA	12 days	96 hours	(project coordination; assistance in site records compilation; appendix table; report production)

estimate necessary additional costs (supplies, communication, photography, photocopy, postage, etc.) at: \$1500

BUDGET ESTIMATES

Phase I: Intensive Survey of Eight Specific Areas

Field:	PI	120 hours	@	25.09	3010.80
	PD	200 hours	@	17.30	3460.00
	CP	1080 hours	@	12.08	13046.40
	per diem	175 days	@	50.00	8750.00
	vehicle use	35 days	@	28.03	981.05
	vehicle mileage	3395 miles	@	0.30	1018.50
	Subtotal				30266.75
Report:	PI	184 hours	@	25.09	4616.56
	PD	240 hours	@	17.30	4152.00
	AA	96 hours	@	14.17	1360.32
	Subtotal				10128.88
	Supplies/Expendables				2000.00
	Grand Subtotal				42395.63

10% On-Campus Overhead	4239.56
Phase I Total	46635.19

Phase II: Probabilistic Survey of Four General Areas

Field:	PI	160 hours	@	25.09	4014.40
	PD	240 hours	@	17.30	4152.00
	CP	1600 hours	@	12.08	19328.00
	per diem	250 days	@	50.00	12500.00
	vehicle use	50 days	@	28.03	1401.50
	vehicle mileage	4850 miles	@	0.30	1455.00
	Subtotal				42850.90
Report:	PI	200 hours	@	25.09	5018.00
	PD	184 hours	@	17.30	3183.20
	AA	96 hours	@	14.17	1360.32
	Subtotal				9561.52
Supplies/Expendables					1500.00
Grand Subtotal					53912.42
10% On-Campus Overhead					5391.24
Phase II Total					59303.66
PROJECT TOTAL BUDGET					105938.85

Corrections to Draft DPR/UC Regents Interagency Agreement for ABDSP Survey/Study

(Draft Faxed to ARU on 4/20/94 by M. Knaak)

Delete "at Riverside" in all references to "The Regents of the University of

California"

Page 2, 5th paragraph, 2nd sentence, should read: "The UCR Representative is Dr. Matthew C. Hall, Director/Principal Investigator, Archaeological Research Unit, University of California, Riverside, California 92521-0418, phone (909) 787-7369."

Page 3, under Task 1, 4th sentence, should read: "A bibliography of these subjects will be prepared for DPR."

Page 3, under Task 1: 5th sentence should be deleted ("Encoded site ...").

Page 3, under Task 2: 1st sentence should be deleted ("The UCR Representative shall ...").

Page 7, section I, 4th sentence: change "WordPerfect 6.0" to "WordPerfect 5.1"

Page 7, section II.A.2 and section II.B.2, should both read: "Photographs or color slides of each archaeological/historical site (including artifacts) appropriately mounted and labeled, and included as an addendum. Photographs to be 4" by 6" format."

Page 9, Exhibit B, under "Rate": vehicle mileage 0.30 not 0.24 (UC Riverside Transportation Services sets rates, see accompanying copy of their rates)

Page 9, Exhibit B, under "Amount": vehicle mileage 1,018.50 not 814.80

Field Work
Subtotal 30,266.75 not 30,063.05

Grand
Subtotal 42,395.63 not 42,193.93

10% On-
Campus Overhead 4,239.56 not 4,219.39

Intensive
Survey Total 46,635.19 not 46,413.32

Page 10, Exhibit B, under "Rate": vehicle mileage 0.30 not 0.24

Page 10, Exhibit B, under "Amount": vehicle mileage 1,455.00 not 1,401.50

Field Work
Subtotal 42,850.90 not 42,559.90

Grand

Subtotal 53,912.42 not 53,621.42

10% On-
Campus Overhead 5,391.24 not 5,362.14

Probabilistic Survey Total 59,303.66
not 58,983.56

Grand Total
105,938.85 not 105,396.88

**Corrections to Draft DPR/UC Regents Interagency Agreement for ABDSP
Survey/Study**

(continued, page 2 of 2)

Page 10, Payment Schedule, should read:

<u>Percent</u>	<u>Payment</u>	<u>Requirement Terms</u>
<u>Complete</u>	<u>Amount</u>	
33.0%	\$34,940.18	Upon acceptance of the first progress report
11.0%	\$11,695.01	Upon acceptance of the Intensive survey report
45.8%	\$48,487.93	Upon acceptance of the second progress report
10.2%	\$10,815.73	Upon acceptance of the Probabilistic survey report

APPENDIX B

CULTURAL PROPERTIES RECORDED DURING THE UCR-ARU CULTURAL RESOURCES INVENTORY OF ABDSP

Compiled by Heather Tompson

The following short descriptions of sites and “non-site” or “other” Cultural Resource properties are drawn from Primary Records and Site Records developed by UCR-ARU. At the heading of each property description are, reading from left-to-right, informative designations. (1) The UCR-ARU field designation for the property, elements of which provide information about the area, the sample block, and whether the property is a site or a “non-site” (i.e., if it is an isolated feature or a single artifact or very small group of artifacts (see text of report for further explanation). (2) Next, the Primary Number for the property, assigned by the South Coastal Archaeological Information Center. (3) Finally, the Trinomial designation for a site property (see text of the report for further explanation of what properties received Trinomials and what properties did not and how this changed over the course of the project).

As an example, the first entry would tell us that this property was in the Alder Canyon Targeted Area A and was the first “non-site” property recorded. Its Primary Number was 37-016695. At a later date, the trinomial (i.e., the SDI- number was assigned after this was requested by CSP.

In another example, the designation , CCD-477-I1 37-016903 SDI-15200 would tell us that this property was in the Coyote Canyon Drainage district, in Probabilistic Sample block 477, and was the first “non-site” property recorded in this sample block. The assigned Primary Number was 37-016903; it was later assigned a site trinomial: CA-SDI-15200.

NORTHERN PORTION OF ABDSP

ALDER CANYON

AC-A-I1 37-016695 SDI-15263
Located on the Bucksnot Mt. USGS quad, the property is situated in middle Alder Canyon, on the edge of the canyon floor at an elevation of 1510'. Vegetation consists of upland desert scrub. The isolate consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

AC-A-I2 37-016696 SDI-15264
Located on the Bucksnot Mt. USGS quad, the property is situated in middle Alder Canyon, on the edge of the canyon floor at an elevation of 2510'. Vegetation consists of upland desert scrub. The property consists of a milling platform (PLT) with 1 milling feature flat in cross-section.

AC-A-I3 37-016697 SDI-15265
Located on the Bucksnot Mt. USGS quad, middle Alder Canyon, on the edge of the canyon floor at an elevation of 2540'. Vegetation consists of upland desert scrub. The property consists of a milling platform (PLT) with 1 milling feature flat in cross-section.

AC-A-I4 37-016698 SDI-15266
Located on the Bucksnot Mt. USGS quad, the property is situated in middle Alder Canyon, on the edge of the canyon floor at an elevation of 2510'. Vegetation consists of upland desert scrub. The property consists of a bedrock milling platform (PLT) with 4 milling features (3 m2 area) flat in cross-section (cf. "milling slicks").

- AC-A-I5 37-016699 SDI-15267
Located on the Bucksnot Mt. USGS quad, the property is situated in middle Alder Canyon, on the edge of the canyon floor at an elevation of 2550'. Vegetation consists of upland desert scrub. One milling platform (PLT) with 2 milling features (2 m2 area) comprising circular concavities (>1 cm depth) cylindrical to bowl-shaped cross-section.
- AC-A-I6 37-016700 SDI-15268
Located on the Bucksnot Mt. USGS quad, the property is situated in middle Alder Canyon, on the edge of the canyon floor at an elevation of 2560'. Vegetation consists of upland desert scrub. The isolate consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- AC-A-I7 37-016701
Located on the Bucksnot Mt. USGS quad, the property is situated in middle Alder Canyon on a lower south slope at an elevation of 2680'. Vegetation consists of upland desert scrub. The property consists of 1 brownware pottery sherd.
- AC-A-I8 37-016702
Located on the Bucksnot Mt. USGS quad, the property is situated in middle Alder Canyon on a lower canyon slope at an elevation of 2650'. Vegetation consists of upland desert scrub. The property consists of a 10 m2 mining prospect in quartz vein.
- AC-A-I9 37-016703
Located on the Bucksnot Mt. USGS quad, the property is situated in middle Alder Canyon on a lower canyon slope at an elevation of 2700'. Vegetation consists of upland desert scrub. The property consists of a rock cairn mining claim marker.
- AC-A-I10 37-016704
Located on the Bucksnot Mt. USGS quad, the property is situated in middle Alder Canyon on a lower canyon slope at an elevation of 2720'. Vegetation consists of upland desert scrub. The property consists of a cairn mining claim marker and clear glass bottle in 2 m2 area.
- AC-C-I1 37-016705 SDI-15269
Located on the Bucksnot Mt. USGS quad, upper Alder Canyon, at the mouth of North Fork, on a lower east slope at an elevation of 2750'. Vegetation consists of upland desert scrub. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.
- AC-C-I2 37-016706 SDI-15270
Located on the Bucksnot Mt. USGS quad, on a lower north slope, in upper Alder Canyon at an elevation of 838 meters. The resource consists of brownware pottery sherds (including 2 large vessel rim fragments) in 1x2-m area (2 m2) -- apparent pieces of single wide-mouthed vessel.
- AC-C-I3 37-016707
Located on the Bucksnot Mt. USGS quad, on a lower north slope, in upper Alder Canyon at an elevation of 845 meters. The resource consists of a 1x1-m (1 m2) scatter of charcoal at base of large granite monolith on steep slope, no artifactual or faunal debris, probable natural burn.
- AC-C-I4 37-016708
Located on the Bucksnot Mt. USGS quad, in upper Alder Canyon at an elevation of 811 meters. The resource consists of (1) 50 m-long strand of rusted barbed wire oriented north-south.
- AC-C-I5 37-016709 SDI-15272
Located on the Bucksnot Mt. USGS quad, in upper Alder Canyon at an elevation of 817 meters. The resource consists of (1) 14 mm-diameter painted red circle on vertical south face of large granite boulder on steep slope (Presumably prehistoric).
- AC-C-I6 37-016710 SDI-15273
Located on the Bucksnot Mt. USGS quad. The property is situated in upper Alder Canyon at an elevation of 808 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- AC-C-I7 37-016711 SDI-15256
Located on the Bucksnot Mt. USGS quad. The property is situated in upper Alder Canyon at an elevation of 808 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- AC-C-I8 37-016712
Located on the Bucksnot Mt. USGS quad, in upper Alder Canyon at an elevation of 817 meters. The resource consists of (1) 50 m-long strand of (1) 10 m-long strand of rusted barbed wire oriented east- west.
- AC-C-I9 37-016713
Located on the Bucksnot Mt. USGS quad, in upper Alder Canyon at an elevation of 817 meters. The resource consists of 1 burnt animal bone.
- AC-C-I10 37-016714
Located on the Bucksnot Mt. USGS quad, The property is situated in upper Alder Canyon, at the bottom, north edge of the canyon floor at an elevation of 2630'. Vegetation consists of upland desert scrub. The isolate consists of a handstone.

- AC-C-I11 37-016715 SDI-15274
Located on the Bucksnot Mt. USGS quad, the property is situated in upper Alder Canyon at an elevation of 835 meters. The property consists of a bedrock milling platform (PLT) with 2 milling features (1 m² area) flat in cross-section.
- AC-C-I12 37-016716 SDI-15275
Located on the Bucksnot Mt. USGS quad, the property is situated in upper Alder Canyon at an elevation of 805 meters. The property consists of a milling platform (PLT) with 1 milling feature comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped in cross-section.
- AC-C-I13 37-016717 SDI-15276
Located on the Bucksnot Mt. USGS quad, the property is situated in upper Alder Canyon at an elevation of 805 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- AC-C-I14 37-016718 SDI-15277
Located on the Bucksnot Mt. USGS quad. The property is situated in upper Alder Canyon at an elevation of 803 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- AC-C-I15 37-016722 SDI-15278
Located on the Bucksnot Mt. USGS quad. The property is situated in upper Alder Canyon at an elevation of 826 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- AC-C-I16 37-016723 SDI-15261
Located on the Bucksnot Mt. USGS quad. The property is situated in upper Alder Canyon at an elevation of 799 meters. The property consists of a 5x5-m (20 m²) scatter of probable post-World War II debris: 1 quart oil can, 1 gallon pail missing wire handle, 14 sanitary and beverage cans (including 1 quart grapefruit juice, 1 evaporated milk, 1 knife-opened).
- AC-C-I17 37-016724 SDI-15280
Located on the Bucksnot Mt. USGS quad. The property is situated in upper Alder Canyon at an elevation of 848 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.
- AC-C-I18 37-016725 SDI-15281
Located on the Bucksnot Mt. USGS quad. The property is situated in upper Alder Canyon at an elevation of 817 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped in cross-section.
- AC-C-I19 37-016726 SDI-15282
Located on the Bucksnot Mt. USGS quad. The property is situated in upper Alder Canyon at an elevation of 817 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped in cross-section.
- AC-C-I20 37-016727 SDI-15283
Located on the Bucksnot Mt. USGS quad. The property is situated in upper Alder Canyon at an elevation of 817 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- AC-C-I21 37-016728 SDI-15284
Located on the Bucksnot Mt. USGS quad. The property is situated in upper Alder Canyon at an elevation of 817 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- AC-C-I22 37-016729
Located on the Bucksnot Mt. USGS quad. The property is situated in upper Alder Canyon at an elevation of 848 meters. The property consists of a 20 m² mining prospect in thick vein of quartz with 3 adits on steep slope, 7 m-wide, 3-4 m-deep.
- AC-C-I23 37-016730 SDI-15285
Located on the Bucksnot Mt. USGS quad. The property is situated in upper Alder Canyon at an elevation of 823 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section and 1 granite handstone.
- AC-C-S1 37-016671 SDI-15043
Located on the Bucksnot Mt. USGS quad, in upper Alder Canyon at an elevation of 790 meters. The resource consists of a small cluster of bedrock milling features, flaked stone artifacts, and pottery sherds adjacent to canyon-floor drainage.
- AC-C-S2 37-017274 SDI-15253
Located on the Bucksnot Mt. USGS quad, in upper Alder Canyon at an elevation of 814-832 meters. The resource consists of concentrations of and dispersed flaked, ground, and battered stone artifacts, pottery sherds, numerous bedrock milling features, possible rockshelter, and rock art amidst large granite/ granitic boulders/bedrock outcrops along north edge of canyon floor pottery sherds suggest property occupation(s) within past 1000 years. There are multiple episodes of milling activity at/residential use of property represented. This is potentially major habitation property.

AC-C-S3 37-017266 SDI-15250
 Located on the Bucksnot Mt. USGS quad, in upper Alder Canyon at an elevation of 820 meters. The resource consists of a small scatter of obsidian flaked stone debitage on low terrace.

AC-C-S4 37-017267 SDI-15252
 Located on the Bucksnot Mt. USGS quad, in upper Alder Canyon at an elevation of 811 meters. This historic property consists of a structure foundation remnant, and trash dump.

COYOTE CREEK DRAINAGE

CCD-076-I1 33-8589
 Located on the Bucksnot Mtn. USGS quad, in the upper end of Coyote Canyon at an elevation of 1014 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-076-I2 33-8590
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon at an elevation of 1024 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment and 25+ fire-altered rocks in 24 m² area; no additional archaeological materials reported.

CCD-076-I3 33-8591
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon at an elevation of 1056 meters. The property consists of a rock cairn (1 m² area).

CCD-076-I4 33-8592
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon at an elevation of 1061 meters. The property consists of 1 rusted .42 caliber bullet cartridge.

CCD-076-I5 33-8593
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon at an elevation of 1067 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 3 m² area; no fire-altered rock or additional archaeological materials reported.

CCD-086-I1 33-8594
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 841 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-086-I2 33-8595
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 854 meters. The property consists of (1) pottery sherd.

CCD-086-I3 33-8596
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 841 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.

CCD-086-I4 33-8597
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 854 meters. The property consists of (3) rusted tin/steel cans in 1 m² area.

CCD-086-I5 33-8598
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 823 meters. The property consists of 2 pieces of quartz/quartzite flaked stone debitage in <1 m² area.

CCD-086-I6 33-8599
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 823 meters. The property consists of (1) pottery sherd.

CCD-086-I7 33-8600
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 823 meters. The property consists of 1 large mammal bone, tibia distal fragment, unmodified.

CCD-086-I8 33-8601
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 851 meters. The property consists of 3 pottery sherds in 1 m² area.

CCD-086-I9 33-8602
 Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 823 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-086-I10 33-8603

Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 823 meters. The property consists of (1) potsherd.

CCD-086-I11 33-8604

Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 823 meters. The property consists of 1 piece of cryptocrystalline flaked stone debitage.

CCD-086-I12 33-8605

Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 814 meters. The property consists of (21) pottery sherds in 44 m2 area.

CCD-086-I13 33-8606

Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 823 meters. The property consists of 1 rusted tin/steel can.

CCD-086-I14 33-8607

Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon in the "Turkey Track" area at an elevation of 841 meters. The property consists of 1 rock ring with 1 rusted tin/steel can in 3 m2 area.

CCD-086-S1 33-8898 RIV-6325

Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon, lower North Slope; toe of ridge between confluence of Tule and Nance canyons in Turkey Track area. The property consists of an accumulation of flaked and ground stone artifacts and pottery sherds amidst a half-dozen bedrock milling platforms.

CCD-086-S2 33-8899 RIV-6326

Located on the Bucksnot Mtn. USGS quad in the upper end of Coyote Canyon, lower north slope; toe of ridge between confluence of Tule and Nance canyons in Turkey Track area. The property consists of an extensive area containing flaked and ground stone artifacts and pottery sherds amidst dozens of bedrock milling platforms and several areas of apparent/possible hearth remnants at confluence of tributary canyon (Horse, Nance, and Tule) drainages at upper end of Coyote Canyon.

CCD-108-I1 33-8608

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1166 meters. The property consists of milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-108-I2 33-8609

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1168 meters. The property consists of milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-108-I3 33-8610

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1174 meters. The property consists of 1 burnished peach-colored pottery sherd.

CCD-108-I4 33-8611

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1174 meters. The property consists of remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment and 40+ fire altered rock in 39m2 area; no additional archaeological materials reported.

CCD-108-I5 33-8612

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1174 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment and 40+ fire-altered rocks in 39 m2 area; no additional archaeological materials reported.

CCD-108-I6 33-8613

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1165 meters. The property consists of: bedrock milling platform (PLT) with 2 milling features flat in cross-section (cf. "milling basins" [BMS]) and 2 handstones (lithic material not identified) on PLT (2 m2 area).

CCD-108-I7 33-8614

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1171 meters. The property consists of bedrock milling platform (PLT) with 2 milling features flat in cross-section (cf. "milling basins" [BMS]) and 2 possible handstones (lithic material not identified) on PLT (3 m2 area).

CCD-108-I8 33-8615

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1171 meters. The property consists of bedrock milling platform (PLT) with 2 milling features (2 m2 area) flat in cross-section (cf. "milling basins").

CCD-108-I9 33-8616

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1163 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-108-I10 33-8617

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1165 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section (cf. "milling basin" [BMB]) with 1 possible handstone.

CCD-108-I11 33-8618

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1137 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 49 m² area; no fire-altered rock or additional archaeological materials reported.

CCD-108-I12 33-8619

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of meters. The property consists of bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section (cf. "milling basin" [BMB]) with 1 possible handstone.

CCD-108-I13 33-8620

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1137 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 49 m² area; no fire-altered rock or additional archaeological materials reported.

CCD-108-I14 33-8621

Located on the Bucksnot Mtn. USGS quad, on the mountain slopes of Upper Coyote Canyon, at an elevation of 1143 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 2 m² area; no fire-altered rock or additional archaeological materials reported.

CCD-122-I1 33-8622

Located on the Bucksnot Mtn. USGS quad, on the east mountain slopes of Upper Coyote Canyon, north-northeast of Fig Tree Valley; at an elevation of 1119 meters. The property consists of bedrock milling platform (PLT) with 2 milling features (2 m² area) flat in cross-section.

CCD-122-I2 33-8623

Located on the Bucksnot Mtn. USGS quad, in Upper Coyote Canyon, north at an elevation of 915 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 28 m² area; no fire-altered rock or additional archaeological materials reported.

CCD-122-I3 33-8624

Located on the Bucksnot Mtn. USGS quad, in Upper Coyote Canyon, at an elevation of 899 meters. The property consists of remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 20 m² area; no fire-altered rock or additional archaeological materials reported.

CCD-122-I4 33-8625

Located on the Bucksnot Mtn. USGS quad, in Upper Coyote Canyon, at an elevation of 939 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment and fire-altered rock in 7 m² area; no additional archaeological materials reported.

CCD-122-I5 33-8626

Located on the Bucksnot Mtn. USGS quad, in Upper Coyote Canyon, at an elevation of 887 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.

CCD-122-I6 33-8627

Located on the Bucksnot Mtn. USGS quad, on the lower east slope of Upper Coyote Canyon; at an elevation of 887 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.

CCD-122-I7 33-8628

Located on the Bucksnot Mtn. USGS quad, on the lower east slope of Upper Coyote Canyon; at an elevation of 892 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 1 m² area; no fire-altered rock or additional archaeological materials reported.

CCD-122-I8 33-8629

Located on the Bucksnot Mtn. USGS quad, on the lower east slope of Upper Coyote Canyon; at an elevation of 881 meters. The property consists of: bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-122-I9 33-8630

Located on the Bucksnot Mtn. USGS quad, on the lower east slope of Upper Coyote Canyon; at an elevation of 860 meters. The property consists of bedrock milling platform (PLT) with (in 2 m² area) 1 milling feature flat in cross-section (cf. "milling slick" [BMS]) and 1 milling feature comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped in cross-section.

CCD-122-I10 33-8631

Located on the Bucksnot Mtn. USGS quad, on the lower east slope of Upper Coyote Canyon; at an elevation of 890 meters. The property consists of 1 m2 cluster of olla fragments (number of sherds not reported).

CCD-151-I1 33-8632

Located on the Bucksnot Mtn. USGS quad, on the middle north slope, upper end of Parks Canyon at an elevation of meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-151-I2 33-8633

Located on the Bucksnot Mtn. USGS quad, on the middle north slope, upper end of Parks Canyon at an elevation of 1102 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment and fire-altered rock in 16 m2 area; no additional archaeological materials reported.

CCD-151-I3 33-8634

Located on the Bucksnot Mtn. USGS quad, on the middle north slope, upper end of Parks Canyon at an elevation of 1107 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment and fire-altered rock in 14 m2 area; no additional archaeological materials reported.

CCD-151-I4 33-8635

Located on the Bucksnot Mtn. USGS quad, on the middle north slope, upper end of Parks Canyon at an elevation of 1104 meters. The property consists of remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment and fire-altered rock in 5 m2 area; no additional archaeological materials reported.

CCD-151-I5 33-8636

Located on the Bucksnot Mtn. USGS quad, on the middle north slope, upper end of Parks Canyon at an elevation of 1104 meters. The property consists of: possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment and a "fire ring" of 8 "small stones" in 9 m2 area; no specifically fire-altered rock or additional archaeological materials reported.

CCD-151-I6 33-8637

Located on the Bucksnot Mtn. USGS quad, on the middle north slope, upper end of Parks Canyon at an elevation of 1146 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 7 m2 area; no fire-altered rock or additional archaeological materials reported.

CCD-151-S1 33-8900 RIV-6327

Located on the Bucksnot Mtn. USGS quad, in the upper end of Parks Canyon, middle north slope at an elevation of 1110 meters. The property consists of scattered flaked stone artifacts and pottery sherds, several bedrock milling platforms and areas of possible hearth remnants, some midden, and a small rockshelter situated in narrow drainage channel on north slope of upper Parks Canyon.

CCD-197-I1 33-8638

Located on the Bucksnot Mtn. USGS quad, on the middle north slope, upper end of Parks Canyon at an elevation of 738 meters. The property consists of 1 cryptocrystalline biface fragment.

CCD-197-I2 33-8639

Located on the Bucksnot Mtn. USGS quad, on the middle north slope, upper end of Parks Canyon at an elevation of 1110 meters. The property consists of scattered flaked stone artifacts and pottery sherds, several bedrock milling platforms and areas of possible hearth remnants, some midden, and a small rockshelter situated in narrow drainage channel on north slope of upper Parks Canyon.

CCD-237-I1 33-8640

Located on the Bucksnot Mtn. USGS quad, in upper Coyote Canyon, western Fig Tree Valley at an elevation of 738 meters. The property consists of 1 cryptocrystalline biface fragment.

CCD-237-I2 33-8641

Located on the Bucksnot Mtn. USGS quad, in upper Coyote Canyon, western Fig Tree Valley at an elevation of 738 meters. The property consists of (1) 4 m southwest-northeast x 5 m northwest-southeast cement "quail guzzler" (16 m2).

CCD-237-S1 33-8901 RIV-6328

Located on the Bucksnot Mtn. USGS quad, in a drainage on mountain slopes above lower North Fork of Alder Canyon; at an elevation of 1052 meters. The property consists of an accumulation of flaked and ground stone artifacts and pottery sherds, with several bedrock milling platforms and areas of apparent and possible hearth remnants, along narrow drainage on remote mountain slopes above lower North Fork of Alder Canyon.

CCD-237-S2 33-8902 RIV-6329

Located on the Bucksnot Mtn. USGS quad, in a drainage on mountain slopes above lower North Fork of Alder Canyon; at an elevation of 1102 meters. The property consists of two bedrock milling platforms and two areas of apparent hearth remnants in narrow drainage on remote mountain slopes above lower North Fork of Alder Canyon

CCD-249-I1 33-8642

Located on the Bucksnot Mtn. USGS quad, on the lower north slope in middle Coyote Canyon at an elevation of 726 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in probably <25 m2 area (specific size not reported); no fire-altered rock or additional archaeological materials reported.

CCD-279-I1 33-8643

Located on the Collins Valley USGS quad, on the mountain slopes east of middle Coyote Canyon, north of Monkey Hill; at an elevation of 857 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 13 m2 area; no fire-altered rock or additional archaeological materials reported.

CCD-279-I2 33-8644

Located on the Collins Valley USGS quad, on the mountain slopes east of middle Coyote Canyon, north of Monkey Hill; at an elevation of 924 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 20 m2 area; no fire-altered rock or additional archaeological materials reported.

CCD-279-I3 33-8645

Located on the Collins Valley USGS quad, on the mountain slopes east of middle Coyote Canyon, north of Monkey Hill; at an elevation of 991 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 13 m2 area; no fire-altered rock or additional archaeological materials reported.

CCD-279-I4 33-8646

Located on the Collins Valley USGS quad, on the mountain slopes east of middle Coyote Canyon, north of Monkey Hill; at an elevation of 982 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 7 m2 area; no fire-altered rock or additional archaeological materials reported.

CCD-279-I5 33-8647

Located on the Collins Valley USGS quad, on the mountain slopes east of middle Coyote Canyon, north of Monkey Hill; at an elevation of 965 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section (cf. "milling basin").

CCD-279-I6 33-8648

Located on the Collins Valley USGS quad, on the mountain slopes east of middle Coyote Canyon, north of Monkey Hill; at an elevation of 951 meters. The property consists of: (1) m-diameter rock cairn.

CCD-279-I7 33-8649

Located on the Collins Valley USGS quad, on the mountain slopes east of middle Coyote Canyon, north of Monkey Hill; at an elevation of 939 meters. The property consists of (1) biface (condition and lithic material not reported).

CCD-307-I1 37-016884 SDI-15192

Located on the Collins Valley USGS quad, on the lower west slope, upper west fork of Box Canyon at an elevation of 771 meters. The property consists of: a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.

CCD-307-I2 37-016885 SDI-15193

Located on the Collins Valley USGS quad, on the lower west slope, upper west fork of Box Canyon at an elevation of 770 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-307-I3 37-016886 SDI-15194

Located on the Collins Valley USGS quad, on the lower west slope, upper west fork of Box Canyon at an elevation of 770 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-307-I4 37-016887 SDI-15195

Located on the Collins Valley USGS quad, on the lower west slope, upper west fork of Box Canyon at an elevation of 770 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-317-I2 37-016890

Located on the Bucksnot Mtn. USGS quad, on the lower southeast slope of Fig Tree Valley at an elevation of 854 meters. The property consists of 1 rusted tin/steel can.

CCD-332-I1 37-016889

Located on the Bucksnot Mtn. USGS quad, on the lower southeast slope of Fig Tree Valley at an elevation of 854 meters. The property consists of 1 rusted tin/steel can.

CCD-338-I1 37-017628 SDI-15271

Located on the Bucksnot Mtn. USGS quad, on the upper east slope, lower South Fork of Alder Canyon at an elevation of 963 meters. The property consists of rock cairn (1 m2 area).

CCD-338-I2 37-016890

Located on the Bucksnot Mtn. USGS quad, on the upper east slope, lower South Fork of Alder Canyon at an elevation of 867 meters. The property consists of (1) cryptocrystalline core.

CCD-338-I3 37-016891

Located on the Bucksnot Mtn. USGS quad, on the lower east slope, lower South Fork of Alder Canyon at an elevation of 872 meters. The property consists of 2 pottery sherds in <1 m2 area.

CCD-338-I4 37-016892 SDI-15199
Located on the Bucksnot Mtn. USGS quad, on the lower east slope, lower South Fork of Alder Canyon at an elevation of 857 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-338-I5 37-016893
Located on the Bucksnot Mtn. USGS quad, on the lower east slope, lower South Fork of Alder Canyon at an elevation of 860 meters. The property consists of 2 pottery sherds in <1 m² area.

CCD-338-I6 37-016894
Located on the Bucksnot Mtn. USGS quad, on the upper east slope, lower South Fork of Alder Canyon at an elevation of 867 meters. The property consists of 3 pottery sherds in 1 m² area.

CCD-338-I7 37-016895 SDI-15535
Located on the Bucksnot Mtn. USGS quad, on the upper east slope, lower South Fork of Alder Canyon at an elevation of 867 meters. The property consists of: possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediments in probably <25 m² area (specific size not reported); no fire-altered rock or additional archaeological materials reported.

CCD-338-I8 37-016896 SDI-15536
Located on the Bucksnot Mtn. USGS quad, on the lower east slope, lower South Fork of Alder Canyon at an elevation of 970 meters. The property consists of rock cairn (1 m² area).

CCD-338-S1 37-017821 SDI-15386
Located on the Bucksnot Mtn. USGS quad, on the lower west slope, lower South Fork of Alder Canyon at an elevation of 854-878 meters. The property consists of an accumulation of flaked and ground stone artifacts and pottery sherds amidst ten bedrock milling platforms, with one major concentration of artifacts and features, along lower west slope of South Fork of Alder Canyon.

CCD-374-I2 37-016897 SDI-15196
Located on the Collins Valley USGS quad, on the south edge, Yucca Valley at an elevation of 689 meters. The property consists of: bedrock milling platform (PLT) with (2 m² area) 1 milling feature flat in cross-section (cf. "milling slick" [BMS]) and 1 milling feature comprising non-circular concavity.

CCD-380-I1 37-016898 SDI-15197
Located on the Collins Valley USGS quad in middle Coyote Canyon, on the upper east slope at an elevation of 884 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

CCD-380-I2 37-016899 SDI-15198
Located on the Collins Valley USGS quad in middle Coyote Canyon, on the upper east slope at an elevation of 854 meters. The property consists of bedrock milling platform (PLT) with 1 possible milling feature flat in cross-section.

CCD-443-I1 37-016900
Located on the Collins Valley USGS quad, in the mouth of Salvador Canyon, at an elevation of 500 meters. The property consists of 2 brownware pottery sherds in <1 m² area.

CCD-443-I2 37-016901
Located on the Collins Valley USGS quad, in the mouth of Salvador Canyon, at an elevation of 483 meters. The property consists of 1 pottery sherd.

CCD-465-I1 37-016902 SDI-15530
Located on the Collins Valley USGS quad; in middle Coyote Canyon, upper east slope of eastern Collins Valley; at an elevation of 652 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediments in probably <50 m² area (specific size not reported); no fire-altered rock or additional archaeological materials reported.

CCD-477-I1 37-016903 SDI-15200
Located on the Collins Valley USGS quad; in middle Coyote Canyon, upper east slope of eastern Collins Valley at an elevation of 683 meters. The property consists of 10 redware pottery sherds (olla fragments) in <10 m² area.

CCD-477-I2 37-016904
Located on the Collins Valley USGS quad; in middle Coyote Canyon, upper east slope of eastern Collins Valley at an elevation of 602 meters. The property consists of 1 orangeware pottery sherd.

CCD-486-I1 37-016905 SDI-15331
Located on the Collins Valley USGS quad; in middle Coyote Canyon, western Collins Valley; at an elevation of 441 meters. The property consists of: 7 pottery sherds in 3 m² area.

CCD-486-I2 37-016906
Located on the Collins Valley USGS quad; in middle Coyote Canyon, western Collins Valley; at an elevation of 439 meters. The property consists of 1 brownware pottery sherd.

CCD-486-I3 37-016907

Located on the Collins Valley USGS quad; in middle Coyote Canyon, western Collins Valley; at an elevation of 441 meters. The property consists of 7 pottery sherds in 3 m² area.

CCD-514-I1 37-016908

Located on the Collins Valley USGS quad; in southern Collins Valley, middle Coyote Canyon at an elevation of 425 meters. The property consists of (1) rusted tin/steel can.

CCD-516-S1 37-000331 SDI-331 (update)

Located on the Borrego Palm Canyon USGS quad; middle Coyote Canyon, southern Collins Valley; low terrace(s) between Coyote Creek (to the north) and Indian Creek (to the south) at an elevation of 405 meters. The property consists of an extensive accumulation of prehistoric flaked, ground, and battered stone artifacts, pottery sherds, possible prehistoric structure depression, historic artifacts, and burnt/unburnt animal bone situated on series of 2-3 low, sandy, terraces between converging intermittent drainages (flowing at time of property recordation) near perennial spring.

EASTERN SANTA ROSA MOUNTAINS

ESR-004-I1 37-016983 SDI-15238

Located on the Rabbit Peak, USGS quad. It lies in the eastern Santa Rosa Mountains, on the lower east slope; at an elevation of 402 meters. The property consists of milling platform (PLT) with 2 milling features (1 m² area) flat in cross-section.

ESR-004-I2 37-016984

Located on the Rabbit Peak, USGS quad. It lies in the eastern Santa Rosa Mountains, on the lower east slope; at an elevation of 402 meters. The property consists of 1 millingstone.

ESR-004-I3 37-016985

Located on the Rabbit Peak, USGS quad. It lies in the eastern Santa Rosa Mountains, on the lower east slope; at an elevation of 402 meters. The property consists of 1 millingstone.

ESR-004-I4 37-016986 SDI-15239

Located on the Rabbit Peak, USGS quad. It lies in the eastern Santa Rosa Mountains, on the lower east slope; at an elevation of 396 meters. The property consists of 1 rock cairn (1 m² area).

ESR-008-I1 37-016987 SDI-15240

Located on the Rabbit Peak, USGS quad. It lies in the eastern Santa Rosa Mountains, on the lower east slope; at an elevation of 582 Meters. The property consists of remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 13 m² area; no fire-altered rock or additional archaeological materials reported.

ESR-008-I2 37-017826 SDI-15391

Located on the Rabbit Peak, USGS quad. It lies in the eastern Santa Rosa Mountains, on the lower east slope; at an elevation of 576 meters. The property consists of one bedrock milling feature, an area of apparent hearth remnants, and a concentration of flaked stone debitage.

ESR-036-I1 37-016988 SDI-15247

Located on the Oasis, Calif. USGS quad. It lies on lower alluvial fans flanking eastern Santa Rosa Mountains at an elevation of 91 meters. The property consists of bedrock milling platform (PLT) with 1 possible milling feature flat in cross-section.

ESR-080-I1 37-016989 SDI-15241

Located on the Rabbit Peak, USGS quad. The property is situated in the eastern Santa Rosa Mountains, on the lower east slope at an elevation of 381 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

ESR-080-I2 37-016990

Located on the Rabbit Peak, USGS quad. The property is situated in the eastern Santa Rosa Mountains, on the lower east slope at an elevation of 381 meters. The property consists of 1 handstone (condition and lithic material not reported).

ESR-080-I3 37-016991

Located on the Rabbit Peak, USGS quad. The property is situated in the eastern Santa Rosa Mountains, on the lower east slope at an elevation of 402 meters. The property consists of 1 pottery sherd.

ESR-115-I1 37-016992

Located on the Rabbit Peak, USGS quad. The property is situated on the upper portion of alluvial fans flanking eastern Santa Rosa Mountains; at an elevation of 393 meters. The property consists of 1 pottery sherd.

ESR-115-I2 37-016993 SDI-15242

Located on the Rabbit Peak, USGS quad. The property is situated on the upper portion of alluvial fans flanking eastern Santa Rosa Mountains; at an elevation of 390 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

ESR-115-S1 37-017827 SDI-15392

Located on the Rabbit Peak, USGS quad. The property is situated on the upper portion of alluvial fans flanking eastern Santa Rosa Mountains; at an elevation of 393 meters. The property consists of: a modest accumulation of flaked, ground, and

battered stone artifacts with one bedrock milling platform, a rock ring/cleared circle, and two burnt animal bone fragments on upper alluvial fan(s) between two northeast-trending washes.

ESR-120-I1 37-016994 SDI-15551

Located on the Oasis, CA, USGS quad. The property is situated in middle Travertine Palms Wash canyon, on the lower west slope at an elevation of 247 meters. The property consists of 1 rock cairn (1 m2 area).

ESR-145-I1 37-016995 SDI-15552

Located on the Oasis, CA, USGS quad. The property is situated in middle Travertine Palms Wash canyon, on the upper east slope; at an elevation of 290 meters. The property consists of 3 rock cairns, each 4 courses/70-90 cm-tall, in probably <100 m2 area (specific dimensions of "small" area of occurrence not reported).

ESR-200-I1 37-016996 SDI-15243

Located on the Seventeen Palms, CA USGS quad, the property is situated on the upper north slope of upper Wonderstone Wash Canyon at an elevation of 442 meters. The property consists of 5 pottery sherds in 2 m2 area.

ESR-200-I2 37-016997

Located on the Seventeen Palms, CA USGS quad, the property is situated on the upper north slope of upper Wonderstone Wash Canyon at an elevation of 454 meters. The property consists of 1 piece of flaked stone debitage (lithic material not identified).

ESR-235-I1 37-016998 SDI-15244

Located on the Seventeen Palms, CA USGS quad, the property is situated in the upper end of alluvial fan between two major washes south of middle Wonderstone Wash; at an elevation of 271 meters. The property consists of 1 small scatter of 30+ brownware pottery sherds in probably <25 m2 area (specific dimensions of scatter not reported).

ESR-235-I2 37-016999 SDI-15537

Located on the Seventeen Palms, CA USGS quad, the property is situated in the upper end of alluvial fan between two major washes south of middle Wonderstone Wash; at an elevation of 270 meters. The property consists of 1 small, probably <3 m2 circular area (specific dimensions not reported) cleared of larger gravels/cobbles, minimal berm around edge (cf. "cleared circle").

ESR-235-I3 37-017000

Located on the Seventeen Palms, CA USGS quad, the property is situated in the upper end of alluvial fan between two major washes south of middle Wonderstone Wash; at an elevation of 271 meters. The property consists of one piece of flaked stone debitage (lithic material not identified).

ESR-235-I4 37-017001

Located on the Seventeen Palms, CA USGS quad, the property is situated in the upper end of alluvial fan between two major washes south of middle Wonderstone Wash; at an elevation of 259 meters. The property consists of 1 small, battered, bedrock boulder (BLD) naturally or possibly intentionally split horizontally just above ground surface; 2 stones inserted ("wedged") into fracture on opposite sides of BLD, 1 of which is fragment of possible battered stone of quartz observed on ground next to lower (embedded) section of split boulder; apparently "knocked off" pieces of BLD on scattered on ground around BLD; 3 m2 overall; 1 similarly battered, split BLD located ca. 25-30 m to east (outside ESR-235 survey sample unit).

ESR-235-I5 37-017002

Located on the Seventeen Palms, CA USGS quad, the property is situated in the upper end of alluvial fan between two major washes south of middle Wonderstone Wash; at an elevation of 261 meters. The property consists of a piece of flaked stone debitage (lithic material not identified).

ESR-235-I6 37-017003 SDI-15538

Located on the Seventeen Palms, CA USGS quad, the property is situated in the upper end of alluvial fan between two major washes south of middle Wonderstone Wash; at an elevation of 268 meters. The property consists of 1 rock cairn (1 m2 area).

ESR-235-I7 37-017004 SDI-15539

Located on the Seventeen Palms USGS quad. The property is situated in the upper end of alluvial fan between two major washes south of middle Wonderstone Wash; at an elevation of 268 meters. The property consists of: 1 rock cairn (1 m2 area).

ESR-235-I8 37-017005 SDI-15540

Located on the Seventeen Palms USGS quad. The property is situated in the upper end of alluvial fan between two major washes south of middle Wonderstone Wash; at an elevation of 258 meters. The property consists of: 1 rock cairn (1 m2 area).

ESR-235-I9 37-017006 SDI-15541

Located on the Seventeen Palms USGS quad. The property is situated in the upper end of alluvial fan between two major washes south of middle Wonderstone Wash; at an elevation of 255 meters. The property consists of 1 rock cairn (1 m2 area).

ESR-235-I10 37-017007 SDI-15542

Located on the Seventeen Palms, CA USGS quad, the property is situated in the upper end of alluvial fan between two major washes south of middle Wonderstone Wash; at an elevation of 255 meters. The property consists of 1 rock cairn (1 m2 area).

ESR-246-I1 37-017009 SDI-15550

Located on the Fonts Point, Calif. USGS quad, the property is situated on the middle north slope of upper Big Wash canyon, at an elevation of 564 meters. The property consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment in 7 m² area; no fire-altered rock or additional archaeological materials reported.

ESR-267-I1 37-017010 SDI-15322

Located on the Seventeen Palms, Calif. USGS quad, the property is situated on the upper north slope of middle Big Wash canyon, at an elevation of 277 meters. The property consists of 1 rock cairn (1 m² area).

ESR-267-I2 37-017011 SDI-15245

Located on the Seventeen Palms, Calif. USGS quad, the property is situated on the upper north slope of middle Big Wash canyon, at an elevation of 300 meters. The property consists of 4 rock cairns and 1 rusted tin/steel can in probably <100 m² area (specific dimensions of "small" area of occurrence not reported).

ESR-267-I3 37-017012 SDI-15246

Located on the Seventeen Palms, Calif. USGS quad, the property is situated on the upper north slope of middle Big Wash canyon, at an elevation of 271 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

ESR-323-I1 37-017013 SDI-15543

Located on the Seventeen Palms, Calif. USGS quad, the property is situated on the lower south slope of upper South Fork in Palm Wash canyon, at an elevation of 238 meters. The property consists of 1 rock cairn (1 m² area).

FIG TREE VALLEY

FTV-A-I1 33-8531

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley The property consists of 5 milled wood boards showing green paint

FTV-B-I1 33-8532

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 704 meters. The resource consists of a 0.8 m-diameter rock cairn consisting of 9 stones.

FTV-B-I2 33-8533

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 704 meters. The resource consists of 1 unifacial granite handstone.

FTV-B-I3 33-8534

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 704 meters. The resource consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-B-I4 33-8535

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 704 meters. The resource consists of a rusted tin/steel can

FTV-B-I5 33-8536

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 701 meters. The resource consists of a fragment of graniteware pot.

FTV-C-I1 33-8537

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 704 meters. The resource consists of (1) piece of quartz flaked stone debitage.

FTV-C-I2 33-8538

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 698 meters. The resource consists of (1) granite/granitic handstone.

FTV-C-I3 33-8539

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 692 meters. The resource consists of a fragment of ceramic plate.

FTV-C-I4 33-8540

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 692 meters. The resource consists of (2) red brick fragments in <1 m² area.

FTV-C-S1 33-8444 RIV-6163

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 692 meters. The resource consists of a stone cabin, water tank tower, cinder-block well head, corrals, trash dump, dirt roads, wood post/barbed wire fence lines. Bailey's Cabin (ca. 15x25 ft, cement slab floor, rock/mortar walls, wood roof, steel drum wood stove, wood table, 2 steel mattress frames); 6 ft-diameter metal water tank on wood platform surrounded by 3 ft-high rock/mortar moat wall; 5x5-ft cinder block well head; 50 ft-diameter circular corral, wood post/barbed wire; 1 larger, triangular wood post/barbed wire corral next to circular corral; 1 55 m² trash dump; several dirt roads and wood post/barbed wire fence lines both inside and outside restricted property

boundary. Archival research is needed to document property history, along with more comprehensive field recordation of architectural/engineering data about cabin, water tank/moat wall, and well head, of specific refuse dump contents, of barbed wire types, in addition to photographic documentation of the property and more detailed mapping of property features and outlying roads and fence lines.

FTV-C-S2

FTV-D-I1 33-8541

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 686 meters. The resource consists of a single pottery sherd.

FTV-D-I2 33-8542

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 686 meters. The resource consists of a single pottery sherd.

FTV-D-I3 33-8543

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 677 meters. The resource consists of a single pottery sherd.

FTV-D-S1 33-8891 RIV-6318

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 692 meters. The resource consists of concentrations of and scattered flaked and ground stone artifacts and pottery sherds, two bedrock milling features, possible structure depression, burnt animal bone, and possible human cremation remains on north side of Coyote Creek in eastern Fig Tree Valley.

FTV-D-S2 33-8892 RIV-6319

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 677 meters. The resource consists of concentrations of and scattered flaked and ground stone artifacts and pottery sherds, three possible structure depressions, and burnt animal bone on terrace on east bank of and 2 m above Coyote Creek in eastern Fig Tree Valley

FTV-D-S3 33-8893 RIV-6320

Located on the Bucksnot Mt. USGS quad upper Coyote Canyon, east edge of Fig Tree Valley, east slope of low granitic ridge around which Coyote Creek flows east for a short distance then resumes its southerly course down Coyote Canyon at elevations ranging from 674-692 meters. The resource consists of concentrations of and scattered flaked stone artifacts, pottery sherds, and fragments of burnt animal bone, along with bedrock milling features and possible structure depressions, immediately west/south of Coyote Creek.

FTV-D-S4 33-8894 RIV-6321

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 692 meters. The resource consists of concentrations of and dispersed flaked and ground stone artifacts, pottery sherds, and burnt/unburnt animal bone fragments, along with one bedrock milling feature, areas of midden, and a partial rock ring, situated between main Coyote Creek drainage channel and outwash channel of lower Alder Canyon in eastern Fig Tree Valley.

FTV-D-S5 33-8895 RIV-6322

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 692-702 meters. The resource consists of scattered flaked stone artifacts and pottery sherds, several bedrock milling features, and two rock shelters (one with midden) at base of west slope of low granitic ridge around which Coyote Creek flows east then south in eastern Fig Tree Valley.

FTV-F-I1 33-8544

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 704 meters. The resource consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-F-I2 33-8545

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 707 meters. The resource consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-F-S1 33-8445 RIV-6164

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 707 meters. The resource consists of a cluster of bedrock milling features, pottery sherds, and possible pestle on/around outcrop of granite/granitic boulders on south bank of northeast-trending wash emanating from Alder Canyon to southwest.

FTV-F-S2 33-8446 RIV-6165

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 720 meters. The resource consists of rockshelter in boulder outcrop at western base of prominent, 70+ m-tall, valley-floor granite/granodiorite ridge; fire-darkened shelter ceiling/walls with flaked and ground stone artifacts, pottery sherds, bedrock milling features, scattered burnt animal bone, evidence of modern camper use, abundant charcoal, fire-altered rock; natural rock fall covers portions of prehistoric deposit(s).

FTV-G-I1 33-8546

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 704 meters. The resource consists of 1 pottery sherd under small rock overhang.

FTV-G-I2 33-8547

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, central Fig Tree Valley at an elevation of 704 meters. The resource consists of 1 pottery sherd.

FTV-H-I1 33-8548

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 720 meters. The resource consists of 1 partially buried, apparently intact pottery vessel under small rock overhang (vessel contents, if any, unknown).

FTV-H-I2 33-8549

Located on the Bucksnot Mt. USGS quad, on the southeast edge of Fig Tree Valley at an elevation of 713 meters. The resource consists of 1 piece of quartz flaked stone debitage.

FTV-H-I3 33-8550

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 695 meters. The resource consists of milling platform (PLT) with 2 milling features (1 m² area) flat in cross-section.

FTV-H-I4 33-8551

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 692 meters. The resource consists of 1 unifacial granite/granitic handstone.

FTV-H-I5 33-8552

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 716 meters. The resource consists of 2 pottery sherds in 1 m² area

FTV-H-I6 33-8553

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon at an elevation of 683 meters. The resource consists of (1) pottery sherd.

FTV-H-I7 33-8554

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 732 meters. The resource consists of 1 pottery sherd.

FTV-H-I8 33-8555

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon, on the east edge of Fig Tree Valley at an elevation of 726 meters. The resource consists of (5) pottery sherds in 1 m² area; likely fragments of single vessel apparently washed into rocky ridge slope crevice.

FTV-H-I9 33-8556

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon at an elevation of 744 meters. The resource consists of 80-100 pottery sherds and 1 possible stacked rock wall remnant under ridgecrest rock overhang measuring 55 m long (northeast-southwest) and 3 m deep (130 m² total); sherds primarily brownware with at least 4 brownware and 2+ buffware vessels represented; association between sherds and possible rock wall remnant highly problematic.

FTV-H-I10 33-8557

Located on the Bucksnot Mt. USGS quad, in upper Coyote Canyon at an elevation of 677 meters. The resource consists of 1 pottery sherd under small rock overhang.

FTV-I-I1 33-8558

Located on the Bucksnot Mt. USGS quad, in southwestern Fig Tree Valley at an elevation of 720 meters. The resource consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-I-I2 33-8559

Located on the Bucksnot Mt. USGS quad, in southwestern Fig Tree Valley at an elevation of 723 meters. The resource consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-I-I3 33-8560

Located on the Bucksnot Mt. USGS quad, in southwestern Fig Tree Valley at an elevation of 726 meters. The resource consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-I-I4 33-8561

Located on the Bucksnot Mt. USGS quad, in southwestern Fig Tree Valley at an elevation of 723 meters. The resource consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-I-I5 33-8562

Located on the Bucksnot Mt. USGS quad, in southwestern Fig Tree Valley at an elevation of 723 meters. The resource consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-I-I6 33-8563

Located on the Bucksnot Mt. USGS quad, in southwestern Fig Tree Valley at an elevation of 726 meters. The resource consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-I-I7 33-8564

Located on the Bucksnot Mt. USGS quad, in southwestern Fig Tree Valley at an elevation of 726 meters. The resource consists of a pottery sherd.

FTV-I-I8 33-8565

Located on the Bucksnot Mt. USGS quad, in southwestern Fig Tree Valley at an elevation of 726 meters. The resource consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-I-I9 33-8566

Located on the Bucksnot Mt. USGS quad, in southwestern Fig Tree Valley at an elevation of 726 meters. The resource consists of a bedrock milling platform (PLT) with 2 milling features (1 m² area) flat in cross-section

FTV-I-I10 33-8567

Located on the Bucksnot Mt. USGS quad, in southwestern Fig Tree Valley at an elevation of 726 meters. The resource consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-J-I1 33-8568

Located on the Bucksnot Mt. USGS quad, in southern Fig Tree Valley at an elevation of 726 meters. The resource consists of a milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-J-I2 33-8569

Located on the Bucksnot Mt. USGS quad, in southern Fig Tree Valley at an elevation of 726 meters. The resource consists of a milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-J-I3 33-8570

Located on the Bucksnot Mt. USGS quad, in southern Fig Tree Valley at an elevation of 735 meters. The resource consists of a milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-J-I4 33-8571

Located on the Bucksnot Mt. USGS quad, in southern Fig Tree Valley at an elevation of 744 meters. The resource consists of a historical/modern cement rainfall catch/cistern.

FTV-J-I5 33-8572

Located on the Bucksnot Mt. USGS quad, in southern Fig Tree Valley at an elevation of 716 meters. The resource consists of a brownware pottery sherd.

FTV-J-I6 33-8573

Located on the Bucksnot Mt. USGS quad, in southern Fig Tree Valley at an elevation of 743 meters. The resource consists of bedrock milling platform (PLT) with 1 milling feature comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped in cross-section (cf. "mortar" [BMM]) and 1 possible pestle (PST) of granitic material.

FTV-K-I1 33-8574

Located on the Bucksnot Mt. USGS quad, in southeastern Fig Tree Valley at an elevation of 756 meters. The resource consists of a bedrock milling platform (PLT) with 3 milling features (2 m² area) comprising circular concavities (>1 cm depth) cylindrical to bowl-shaped in cross-section.

FTV-L-I1 33-8575

Located on the Bucksnot Mt. USGS quad, in southeastern Fig Tree Valley at an elevation of 732 meters. The resource consists of 1 bifacial granite/granitic handstone

FTV-M-I1 33-8576

Located on the Bucksnot Mt. USGS quad, in southern Fig Tree Valley at an elevation of 738 meters. The resource consists of bedrock milling platform (PLT) with 1 milling feature comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped cross-section.

FTV-M-S1 33-8896 RIV-6323

Located on the Bucksnot Mt. USGS quad, on a small, isolated, granitic knoll on floor of southern Fig Tree Valley; at an elevation of 738 meters. The resource consists of flaked, ground, and battered stone artifacts, pottery sherds, scattered burnt animal bone, bedrock milling features, and small rockshelter situated on/around small, isolated, granitic knoll in southern Fig Tree Valley

FTV-N-I1 33-8577

Located on the Bucksnot Mt. USGS quad, on the upper southeast slope of Fig Tree Valley at an elevation of 750 meters. The resource consists of a rectangular iron horseshoe.

FTV-O-I1 37-016686
 Located on the Bucksnot Mt. USGS quad, in southern Fig Tree Valley at an elevation of 747 meters. The resource consists of (2) rusted tin/steel can lids in 1 m2 area.

FTV-O-I2 37-016687 SDI-15257
 Located on the Bucksnot Mt. USGS quad, in southern Fig Tree Valley at an elevation of 762 meters. The resource consists of: bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-O-I3 37-016688 SDI-15258
 Located on the Bucksnot Mt. USGS quad, in southern Fig Tree Valley at an elevation of 762 meters. The resource consists of: bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

FTV-O-I4 37-016689
 Located on the Bucksnot Mt. USGS quad, in southern Fig Tree Valley at an elevation of 765 meters. The resource consists of 1 brownware pottery sherd.

FTV-O-I5 37-016690 SDI-15259
 Located on the Bucksnot Mt. USGS quad, on the southern edge of Fig Tree Valley at an elevation of 790 meters. The resource consists of bedrock milling platform (PLT) with 2 milling features (1 m2 area) flat in cross- section.

FTV-O-I6 37-016691 SDI-15260
 Located on the Bucksnot Mt. USGS quad, on the southern edge of Fig Tree Valley at an elevation of 777 meters. The resource consists of bedrock milling platform (PLT) with 3 milling features (2 m2 area) flat in cross-section.

FTV-O-I7 37-016692
 Located on the Bucksnot Mt. USGS quad, on the southern edge of Fig Tree Valley at an elevation of 799 meters. The resource consists of fragmented, near-complete, wide-mouth pottery vessel in rock crevice.

FTV-O-I8 37-016693 SDI-15262
 Located on the Bucksnot Mt. USGS quad, on the southern edge of Fig Tree Valley at an elevation of 799 meters. The resource consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-

FTV-P-I1 37-016694
 Located on the Bucksnot Mt. USGS quad, on the lower southeast slope of Fig Tree Valley; at an elevation of 805 meters. The resource consists of 2 brownware pottery sherds (1 m2 area).

FTV-P-I2 37-017265
 Located on the Bucksnot Mt. USGS quad, on the lower southeast slope of Fig Tree Valley; at an elevation of 774 meters. The resource consists of 1 piece of cryptocrystalline flaked stone debitage (possible Wonderstone lithic material).

HIDDEN SPRINGS

HS-A-I1 37-016770
 The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 680 meters. The property consists of 3 pottery sherds in 1 m2 area.

HS-A-I10 37-016779 SDI-15527
 The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in central Jackass Flat at an elevation of 668 meters. The property consists of 7 brownware pottery sherds in 2 m2 area.

HS-A-I11 37-016780
 The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 677 meters. The property consists of 1 brownware pottery sherd.

HS-A-I12 37-016781
 The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 674 meters. The property consists of 2 pottery sherds in 1 m2 area.

HS-A-I13 37-016782
 The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 674 meters. The property consists of pottery sherd.

HS-A-I14 37-016783
 The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 677 meters. The property consists of 1 orange-colored pottery sherd.

HS-A-I15 37-016784
 The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 674 meters. The property consists of 2 buffware pottery sherds in 1 m2 area.

HS-A-I16 37-016785

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 674 meters. The property consists of 2 pottery sherds in 1 m² area.

HS-A-I17 37-016786

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 668 meters. The property consists of 1 pottery sherd.

HS-A-I18 37-016787

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 665 meters. The property consists of 2 rusted tin/steel cans in 1 m² area.

HS-A-I19 37-016788

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 665 meters. The property consists of 2 pottery sherds in 1 m² area.

HS-A-I2 37-016771

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 674 meters. The property consists of 2 pottery sherds in 1 m² area.

HS-A-I20 37-016789

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 674 meters. The property consists of 2 pottery sherds in 1 m² area.

HS-A-I21 37-016790

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 674 meters. The property consists of 2 pieces of quartz/quartzite flaked stone debitage in 1 m² area.

HS-A-I22 37-016791

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 668 meters. The property consists of 1 pottery sherd.

HS-A-I23 37-016792SDI-15528

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 668 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.

HS-A-I24 37-016793

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 668 meters. The property consists of 2 pieces of quartz/quartzite flaked stone debitage in 1 m² area.

HS-A-I25 37-016794

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 665 meters. The property consists of 1 pottery sherd.

HS-A-I26 37-016795

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 665 meters. The property consists of 1 piece of quartz/quartzite flaked stone debitage.

HS-A-I27 37-016796

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 665 meters. The property consists of 1 pottery sherd in Central Jackass Flat.

HS-A-I28 37-016797

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 668 meters. The property consists of 1 pottery sherd.

HS-A-I29 37-016798

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 668 meters. The property consists of piece of quartz/quartzite flaked stone debitage.

HS-A-I3 37-016772

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 677 meters. The property consists of 1 pottery sherd.

HS-A-I30 37-016799

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 665 meters. The property consists of 1 brownware pottery sherd.

HS-A-I31 37-016800

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 665 meters. The property consists of 2 pottery sherds in 1 m² area.

HS-A-I32 37-016801

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 665 meters. The property consists of 2 pottery sherds in 1 m² area.

HS-A-I4 37-016773

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 674 meters. The property consists of 2 pottery sherds in 1 m² area.

HS-A-I5 37-016774

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 668 meters. The property consists of 1 bifacial granitic handstone fragment.

HS-A-I6 37-016775

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 677 meters. The property consists of 1 brownware pottery sherd.

HS-A-I7 37-016776

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 668 meters. The property consists of 1 brownware pottery sherd.

HS-A-I8 37-016777

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 677 meters. The property consists of 3 brownware pottery sherds in 1 m² area.

HS-A-I9 37-016778

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 677 meters. The property consists of 1 brownware pottery sherd.

HS-A-S1 37-017818 SDI-15383

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in central Jackass Flat, amidst braided, intermittent drainages flowing south into upper Butler Canyon; at an elevation of 674 meters. The property consists of a modest accumulation of flaked stone artifacts and pottery sherds on floor of small upland valley.

HS-A-S2 37-017819 SDI-15384

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in central Jackass Flat, amidst braided, intermittent drainages flowing south into upper Butler Canyon at an elevation of 674 meters. The property consists of minor accumulation of flaked and ground stone artifacts and pottery sherds on floor of small upland valley.

HS-A-S3 37-017820 SDI-15385

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in central Jackass Flat, amidst braided, intermittent drainages flowing south into upper Butler Canyon at an elevation of 663 meters. The property consists of an accumulation of flaked and ground stone artifacts, pottery sherds, burnt animal bone, and fire-altered rock on floor of small upland valley.

HS-B-I1 37-016802

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 677 meters. The property consists of 1 pottery sherd.

HS-B-I2 37-016803 SDI-15286

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in central Jackass Flat, at an elevation of 668 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

HS-B-I3 37-016804

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 668 meters. The property consists of 1 brownware pottery sherd.

HS-B-I4 37-016805 SDI-15287

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in central Jackass Flat, at an elevation of 665 meters. The property consists of a bedrock milling platform (PLT) with 2 milling features (1 m² area) flat in cross-section.

HS-B-I5 37-016806

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 668 meters. The property consists of 1 blue glass bottle fragment.

HS-B-I6 37-016807

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 668 meters. The property consists of 1 pottery sherd.

HS-C-I1 37-016808

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 704 meters. The property consists of 1 piece of cryptocrystalline flaked stone debitage.

HS-C-I2 37-016809 SDI-15288

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the north edge of southern Jackass Flat; at an elevation of 689 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

HS-C-I3 37-016810

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 686 meters. The property consists of 1 piece of quartz/quartzite flaked stone debitage.

HS-C-I4 37-016811 SDI-15289

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the north edge of southern Jackass Flat; at an elevation of 680 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

HS-C-I5 37-016812

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 683 meters. The property consists of 1 pottery sherd.

HS-C-I6 37-016813 SDI-15290

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the north edge of southern Jackass Flat; at an elevation of 692 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

HS-E-I1 37-016814 SDI-15291

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the south edge of southern Jackass Flat; at an elevation of 655 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

HS-E-I2 37-016815 SDI-15292

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the south edge of southern Jackass Flat; at an elevation of 655 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.

HS-E-I3 37-016816

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the south edge in Central Jackass Flat at an elevation of 655 meters. The property consists of 1 rusted tin/steel can.

HS-E-I4 37-016817

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the south edge in Central Jackass Flat at an elevation of 671 meters. The property consists of 1 rusted tin/steel can.

HS-E-S1 37-016674 SDI-15046

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in central Jackass Flat, amidst braided, intermittent drainages flowing south into upper Butler Canyon; at an elevation of 659 meters. The property consists of an accumulation of flaked and ground stone artifacts, pottery sherds, and scattered unburnt animal bone on floor of small upland valley.

HS-E-S2 37-016675 SDI-15047

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in central Jackass Flat, amidst braided, intermittent drainages flowing south into upper Butler Canyon; at an elevation of 665 meters. The property consists of concentration of flaked and ground stone artifacts, pottery sherds, structure depression (with midden), possible hearth feature on floor of small upland valley.

HS-E-S3 37-016676 SDI-15048

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in central Jackass Flat, amidst braided, intermittent drainages flowing south into upper Butler Canyon; at an elevation of 659 meters. The property consists of accumulation of flaked stone artifacts and pottery sherds, with 1 bedrock milling feature, cluster of fire-altered rock, scattered fire-altered rock and unburnt animal bone, cluster of bird eggshell (probably modern) on floor of small upland valley.

HS-F-I1 37-016818

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 665 meters. The property consists of 1 brownware pottery sherd.

HS-F-I10 37-016827

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated at an elevation of 668 meters. The property consists of 1 piece of cryptocrystalline flaked stone debitage (possibly Wonderstone lithic material).

HS-F-I11 37-016828

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated at an elevation of 665 meters. The property consists of 2 brownware pottery sherds in 1 m² area.

- HS-F-I12 37-016829 SDI-15293
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 668 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- HS-F-I13 37-016830
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated at an elevation of 704 meters. The property consists of 2 brownware pottery sherds in 1 m2 area.
- HS-F-I14 37-016831
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated at an elevation of meters. The property consists of 1 piece of obsidian flaked stone debitage.
- HS-F-I15 37-016832 SDI-15294
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated upper slope of mountain ridges on south side of Jackass Flat at an elevation of 732 meters. The property consists of possible remnants of 2 hearths (e.g., "roasting pits") with fire-altered, darkened sediment and fire-altered rock; remnants encompass areas of 2 m2 and 5 m2 (2 m apart in overall area of 12 m2); no additional archaeological materials present.
- HS-F-I2 37-016819 SDI-15310
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 662 meters. The property consists of (5) brownware pottery sherds in 3 m2 area.
- HS-F-I3 37-016820
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in Central Jackass Flat at an elevation of 659 meters. The property consists of 1 brownware pottery sherd.
- HS-F-I4 37-016821
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat, at an elevation of 659 meters. The property consists of 1 buffware pottery sherd.
- HS-F-I5 37-016822
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat, at an elevation of 659 meters. The property consists of 1 brownware pottery sherd.
- HS-F-I6 37-016823
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat, at an elevation of meters. The property consists of 3 buffware pottery sherds in 1 m2 area.
- HS-F-I7 37-016824
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat, at an elevation of 665 meters. The property consists of 1 brownware pottery sherd.
- HS-F-I8 37-016825
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat, at an elevation of 665 meters. The property consists of 2 pieces of quartz flaked stone debitage in 1 m2 area.
- HS-F-I9 37-016826
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat, at an elevation of 665 meters. The property consists of 1 brownware pottery sherd.
- HS-F-S1 37-016677 SDI-15049
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat, amidst braided, intermittent drainages flowing southwest into upper Butler Canyon at an elevation of 662 meters. The property consists of an accumulation of flaked and battered stone artifacts, pottery sherds, and scattered fire-altered rock and burnt and unburnt animal bone on floor of small upland valley.
- HS-F-S2 37-016678 SDI-15050
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat, east of main, intermittent drainages flowing southwest into upper Butler Canyon; at an elevation of 665 meters. The property consists of a concentration of flaked stone debitage, pottery sherds, and scattered unburnt animal bone on floor of small upland valley.
- HS-G-I1 37-016833
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 668 meters. The property consists of 1 brownware pottery sherd.
- HS-G-I10 37-016842
The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of meters. The property consists of 3 pottery sherds in 1 m2 area.
- HS-G-I11 37-016843

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 668 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

HS-G-I28 37-016860

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 668 meters. The property consists of 1 piece of obsidian flaked stone debitage.

HS-G-I29 37-016861 SDI-15303

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 671 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

HS-G-I3 37-016835

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated at an elevation of meters. The property consists of 1 brownware pottery sherd.

HS-G-I30 37-016862

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 668 meters. The property consists of 1 pottery sherd.

HS-G-I31 37-016863

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 668 meters. The property consists of 1 pottery sherd.

HS-G-I32 37-016864

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 668 meters. The property consists of 1 pottery sherd.

HS-G-I33 37-016865 SDI-15304

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 668 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

HS-G-I34 37-016866

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 671 meters. The property consists of 1 m² cluster of fire-altered rock.

HS-G-I35 37-016867

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 671 meters. The property consists of 1 m² cluster of fire-altered rock.

HS-G-I36 37-016868

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 671 meters. The property consists of 1 pottery sherd.

HS-G-I37 37-016869

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 671 meters. The property consists of 1 pottery sherd.

HS-G-I38 37-016870

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 671 meters. The property consists of 1 pottery sherd.

HS-G-I39 37-016871

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on lower slope of mountain ridges on south side of in southern Jackass Flat at an elevation of 683 meters. The property consists of bedrock milling platform (PLT) with 2 milling features (1 m² area) flat in cross-section (cf. "milling slicks).

HS-G-I4 37-016836

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated at an elevation of meters. The property consists of 1 brownware pottery sherd.

HS-G-I40 37-016872 SDI-15306

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 671 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

HS-G-I41 37-016873 SDI-15307

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the lower slope of mountain ridges on south side of southern Jackass Flat at an elevation of 683 meters. The property consists of a bedrock milling platform (PLT) with 2 milling features (1 m² area) flat in cross-section.

HS-G-I42 37-016874

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 671 meters. The property consists of 1 buffware pottery sherds.

HS-G-I43 37-016875 SDI-15308

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 671 meters. The property consists of (6) brownware pottery sherds in 2 m2 area.

HS-G-I44 37-016876

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 671 meters. The property consists of: 1 brownware pottery sherds.

HS-G-I45 37-016877

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 671 meters. The property consists of 1 pottery sherds.

HS-G-I46 37-016878 SDI-15309

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 671 meters. The property consists of (7) brownware pottery sherds in 3 m2 area.

HS-G-I47 37-016879

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat, southeast edge above upper Rockhouse Canyon at an elevation of 680 meters. The property consists of 2 pottery sherds in 1 m2 area.

HS-G-I48 37-016880

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat, southeast edge above upper Rockhouse Canyon at an elevation of 671 meters. The property consists of 1 pottery sherds.

HS-G-I49 37-016881 SDI-15529

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat, southeast edge above upper Rockhouse Canyon; at an elevation of 671 meters. The property consists of (5) brownware pottery sherds in 2 m2 area.

HS-G-I5 37-016837 SDI-345

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat. According to South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS), current project (see P11) "other" resources property HS-G-I5 falls within boundaries of previously recorded property CA-SDI-345.

HS-G-I50 37-016882

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat, southeast edge above upper Rockhouse Canyon at an elevation of 671 meters. The property consists of 2 pieces of cryptocrystalline flaked stone debitage (possibly Wonderstone lithic material) in 1 m2 area.

HS-G-I6 37-016838

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated at an elevation of meters. The property consists of 1 brownware pottery sherds.

HS-G-I7 37-016839

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated at an elevation of meters. The property consists of 1 brownware pottery sherds.

HS-G-I8 37-016840 SDI-15296

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass Flat at an elevation of 668 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

HS-G-I9 37-016841 SDI-15297

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in southern Jackass at an elevation of 671 meters. The property consists of 5 brownware pottery sherds in 3 m2 area.

HS-G-S1 37-016679 SDI-15051

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated at the southern end of Jackass Flat 140 m west of western rim of upper Rockhouse Canyon; at an elevation of 671 meters. The property consists of concentration of flaked and ground stone artifacts, pottery sherds, bedrock milling feature, possible structure depressions, and scattered burnt human and animal bone fragments on floor of small upland valley.

HS-G-S2 37-001465 SDI-1465

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated southern end of Jackass Flat, western rim of upper Rockhouse Canyon at an elevation of 668-747 meters. According to South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS), as recorded for current study (see P11) project property HS-G-S2 includes and surrounds previously recorded property CA-SDI-1465 The property consists of a massive accumulation of flaked, ground, and battered stone artifacts, pottery sherds, multiple bedrock milling features and apparent structure depressions, numerous historical

artifacts, and scattered burnt/unburnt animal bone on floor of lower end of small upland valley and along rim of bordering mountain canyon.

HS-H-II 37-016883 SDI-15191

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated upper Rockhouse Canyon, terrace on lower west slope; at an elevation of 616 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped in cross-section.

HS-H-S1 37-017835 SDI-15400

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in middle Rockhouse Canyon, on five terraces on middle east slope at an elevation of 680-698 meters. The property consists of a series of five descending terraces on east slope of middle Rockhouse Canyon containing flaked and ground stone artifacts, pottery sherds, and half-dozen bedrock milling platforms.

HS-H-S2 37-016681 SDI-15053

The property is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in middle Rockhouse Canyon, sloping terrace on lower west slope; at an elevation of 622-634 meters. The property consists of a concentration of bedrock milling features on canyon-slope terrace.

HORSE CANYON

HC-B-II 33-8465

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the upper east slope, lower Horse Canyon, at an elevation of 997 meters. The property consists of apparent or possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment (20 m² area); fire-altered rock not present (or presence not indicated on surveyor transect recordation form); no additional archaeological materials reported.

HC-B-I2 33-8466

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the upper east slope, lower Horse Canyon at an elevation of 909 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

HC-B-S1 33-8883 RIV-6310

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated in lower Horse Canyon, bottom, east side of main drainage; the property consists of small concentrations of flaked stone debitage and pottery sherds, and a couple of ground and battered stone artifacts, amidst several bedrock milling features along east side of axial drainage through lower Horse Canyon.

HC-C-II 33-8467

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the Lower west slope, lower Horse Canyon, at an elevation of 933 meters. The property consists of 4 pottery sherds in 1 m² area.

HC-C-I2 33-8468

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the lower west slope of lower Horse Canyon, at an elevation of 915 meters. The property consists of 1 pottery sherd.

HC-D-II 33-8469

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, east edge, lower Horse Canyon, at an elevation of 899 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

HC-D-I2 33-8470

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, east edge, lower Horse Canyon, at an elevation of 896 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped in cross-section.

HC-D-I3 33-8471

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, east edge, lower Horse Canyon, at an elevation of 902 meters. The property consists of 1 pottery sherd.

HC-D-I4 33-8472

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, east edge, lower Horse Canyon, at an elevation of 915 meters. The property consists of 2 pottery sherds in 1 m² area.

HC-D-I5 33-8473

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, east edge, lower Horse Canyon, at an elevation of 918 meters. The property consists of 3 pottery sherds in 1 m² area.

HC-D-I6 33-8474

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, east edge, lower Horse Canyon, at an elevation of 921 meters. The property consists of 30+ pottery sherds in 5 m² area.

HC-D-I7 33-8475

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, west edge, lower Horse Canyon, at an elevation of 915 meters. The property consists of rusted rectangular meat tin, key opened, imitation solder drop.

HC-E-II 33-8476

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, west edge, lower Horse Canyon, at an elevation of 905 meters. The property consists of bedrock milling platform (PLT) with 2 milling features (1 m2 area) flat in cross-section.

HC-F-II 33-8477

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, west edge, lower Horse Canyon, at an elevation of 909 meters. The property consists of 1 pottery sherd.

HC-F-I2 33-8478

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, west edge, lower Horse Canyon, at an elevation of 866 meters. The property consists of 2 pottery sherds in 1 m2 area.

HC-F-I3 33-8479

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, lower Horse Canyon, at an elevation of 866 meters. The property consists of 10 pottery sherds in 3 m2 area.

HC-F-I4 33-8480

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, east edge, lower Horse Canyon, at an elevation of 909 meters. The property consists of 1 15 m-long possible rock wall/alignment.

HC-F-I5 33-8481

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, west edge, lower Horse Canyon, at an elevation of 899 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity.

HC-F-I6 33-8482

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, west edge, lower Horse Canyon, at an elevation of 899 meters. The property consists of bedrock milling platform (PLT) with 2 milling features (1 m2 area) flat in cross-section.

HC-F-S1 33-8884 RIV-6311

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated in lower Horse Canyon, bottom, east side of main drainage at an elevation of 896 meters. The property consists of a small concentration of flaked stone debitage and pottery sherds, and apparent remnants of a hearth, amidst several bedrock milling features along east side of axial drainage through lower Horse Canyon.

HC-G-II 33-8483

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, east edge, lower Horse Canyon, at an elevation of 927 meters. The property consists of iron muleshoe.

HC-G-I2 33-8484

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, east edge, lower Horse Canyon, at an elevation of 921 meters. The property consists of 5 pottery sherds and 1 animal bone in 2 m2 area.

HC-G-I3 33-8485

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, east edge, lower Horse Canyon, at an elevation of 921 meters. The property consists of 4 pottery sherds and 1 burnt animal bone in 2 m2 area.

HC-G-I4 33-8486

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, east edge, lower Horse Canyon, at an elevation of 921 meters. The property consists of olive-green glass bottle base fragment.

HC-G-I5 33-8487

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated on the bottom, east edge, lower Horse Canyon, at an elevation of 912 meters. The property consists of 3 pottery sherds in 1 m2 area.

HC-G-S1 33-8885 RIV-6312

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated in lower Horse Canyon, bottom, east edge; north bank of tributary drainage at an elevation of 921 meters. The property consists of three millingstones, one piece of flaked stone debitage, three small concentrations of pottery sherds, and apparent remnants of a hearth.

HC-G-S2 33-8886 RIV-6313

The property is located on the Bucksnot Mtn. CA, USGS quad. It is situated in lower Horse Canyon, bottom, east edge; north bank of tributary drainage at an elevation of 921 meters. The property consists of one millingstone, two pieces of flaked stone debitage, and two small concentrations of pottery sherds.

JACKASS FLAT

- JRB-095-S1 37-017264 SDI-15249
 The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on a small terrace along east edge of upper Butler Canyon, bottom, at an elevation of 637 meters. The site consists of 2 bedrock milling features, 1 bedrock boulder with possible cupules on small terrace along edge of canyon-floor wash; no other archaeological materials observed during recordation.
- JRB-177-S1 37-017829 SDI-15394
 The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in the mouth of Rockhouse Canyon, at an elevation of 415-439 meters. The site consists of large but dispersed accumulation and concentrations of flaked stone debitage, ground stone tools, pottery sherds, burnt/unburnt animal bone, with a couple of bedrock milling platforms and four areas of apparent hearth remnants.
- JRB-184-S1 37-017828 SDI-15393
 The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 274-280 meters. The site consists of scattered pottery sherds, 14 bedrock milling platforms, and seven bedrock boulders each displaying one or more petroglyphs at mouth of steep, short canyon.
- JRB-212-S1 37-016684 SDI-15056
 The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated mouth of Butler Canyon immediately west of confluence of Butler and Rockhouse canyons at an elevation of 370 meters. The site consists of small scatter of flaked stone debitage and burnt/unburnt animal bone atop low, stable dune in canyon-floor wash.
- JRB-212-S2 37-016685 SDI-15057
 The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on shallow alluvial fan at mouth of Rockhouse Canyon immediately north of confluence of Butler and Rockhouse canyons at an elevation of 381 meters. The site consists of modest accumulation of flaked stone artifacts, pottery sherds, and scattered burnt animal bone on shallow alluvial fan at mouth of mountain canyon
- JRB-053-I1 37-016909 SDI-15532
 The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the mountain slopes above the east fork of Box Canyon at an elevation of 840 meters. The site consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediments in 24 m2 area; no fire-altered rock or additional archaeological materials reported
- JRB-053-I2 37-016910 SDI-15207
 The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the mountain slopes above the east fork of Box Canyon at an elevation of 843 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section (cf. "milling basin").
- JRB-053-I3 37-016911 SDI-15208
 The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the mountain slopes above the east fork of Box Canyon at an elevation of 832 meters. The site consists of small scatter of 30+ chunks of quartz -- possibly flaked stone debitage pieces or natural outcrop -- in <25 m2 area (specific dimensions of scatter not reported).
- JRB-059-I1 HS-C-II
 The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the lower west slope of upper Butler Canyon at an elevation of 662 meters. The site consists of a bedrock milling platform (PLT) with 3 milling features (2 m2 area) comprising circular concavities (>1 cm depth) cylindrical to bowl-shaped in cross-section.
- JRB-059-I2 HS-B-II
 The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the lower west slope of upper Butler Canyon at an elevation of 643 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-059-I3 HS-B-I6
 The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the lower east slope of upper Butler Canyon at an elevation of 643 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-059-I4 HS-G-II
 The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the lower east slope of upper Butler Canyon at an elevation of 643 meters. The site consists of: bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-059-I5 HS-G-I2 SDI-15295
 The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the lower east slope of upper Butler Canyon at an elevation of 643 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section
- JRB-095-I1 37-016912 SDI-15209
 The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the lower west slope of upper Butler Canyon, at an elevation of 662 meters. The site consists of bedrock milling platform (PLT) with 3 milling features (2 m2 area) comprising circular concavities (>1 cm depth) cylindrical to bowl-shaped in cross-section.

- JRB-095-I2 37-016913 SDI-15210
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the lower east slope of upper Butler Canyon, at an elevation of 643 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-095-I3 37-016914 SDI-15211
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the lower east slope of upper Butler Canyon, at an elevation of 643 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-095-I4 37-016915 SDI-15212
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the lower east slope of upper Butler Canyon, at an elevation of 643 meters.
The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-095-I5 37-016916 SDI-15213
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on the lower east slope of upper Butler Canyon, at an elevation of 643 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-116-I1 37-016917 SDI-15533
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated on a ridgecrest between upper Butler and Rockhouse canyons; at an elevation of 744 meters. The site consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediments in 4 m2 area; no fire-altered rock or additional archaeological materials reported.
- JRB-134-I1 37-016918 SDI-15534
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in middle Butler Canyon, on the upper west slope, at an elevation of 683 meters. The site consists of possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediments in 7 m2 area; no fire-altered rock or additional archaeological materials reported.
- JRB-177-I1 37-016919
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in the mouth of Rockhouse Canyon, at an elevation of 439 meters. The site consists of 1 pottery sherd.
- JRB-177-I2 37-016920 SDI-15214
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in the mouth of Rockhouse Canyon, at an elevation of 438 meters. The site consists of 4 pottery sherds in 2 m2 area.
- JRB-177-I3 37-016921
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in the mouth of Rockhouse Canyon, at an elevation of 438 meters. The site consists of 1 pottery sherd.
- JRB-177-I4 37-016922 SDI-15237
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in the mouth of Rockhouse Canyon, at an elevation of 425 meters. The site consists of possible remnant(s) of small hearth (e.g., roasting pit) with fire-altered, darkened sediments in probably <25 m2 area (specific size not reported); no fire-altered rock or additional archaeological materials reported.
- JRB-177-I5 37-016923
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in the mouth of Rockhouse Canyon, at an elevation of 425 meters. The site consists of 1 pottery sherd.
- JRB-177-I6 37-016924
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in the mouth of Rockhouse Canyon, at an elevation of 418 meters. The site consists of 2 pottery sherds in 1 m2 area.
- JRB-177-I7 37-016925
The site is located on the Collins Valley, Calif. 7.5' USGS quad. It is situated in the mouth of Rockhouse Canyon, at an elevation of 488 meters. The site consists of 2 pottery sherds in 1 m2 area.
- JRB-183-I1 37-016926 SDI-15255
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 290 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-183-I2 37-016927
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 279 meters. The site consists of 3 pottery sherds in 1 m2 area.
- JRB-183-I3 37-016928 SDI-15215
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 279 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-183-I4 37-016929

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 279 meters. The site consists of 3 rusted tin/steel cans in 2 m² area.

JRB-183-I5 37-016930 SDI-15216

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 280 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

JRB-183-I6 37-016931

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 279 meters. The site consists of (1) pottery sherds.

JRB-183-I7 37-016932 SDI-15217

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 280 meters. The site consists of 1 small scatter of 50+ pottery sherds in probably <25 m² area (specific dimensions of scatter not reported).

JRB-183-I8 37-016933

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 280 meters. The site consists of 1 piece of flaked stone debitage (lithic material not identified).

JRB-183-I9 37-016934

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 280 meters. The site consists of 1 possible projectile point (lithic material not identified).

JRB-183-I10 37-016935 SDI-15218

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley; at an elevation of 280 meters. The site consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

JRB-183-I11 37-016936

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 268 meters. The site consists of 1 pottery sherd.

JRB-183-I12 37-016937

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 268 meters. The site consists of 1 pottery sherd.

JRB-183-I13 37-016938 SDI-15219

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 268 meters. The site consists of 4 pottery sherds in 2 m² area.

JRB-183-I14 37-016939 SDI-15220

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 267 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

JRB-183-I15 37-016940 SDI-15221

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 287 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

JRB-183-I16 37-016941 SDI-15222

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 287 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

JRB-183-I17 37-016942

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 280 meters. The site consists of 2 pottery sherds in 1 m² area.

JRB-183-I18 37-016943

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 280 meters. The site consists of 1 burnt mammal bone (non-human).

JRB-183-I19 37-016944

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 268 meters. The site consists of 2 pottery sherds in 1 m² area.

JRB-183-I20 37-016945

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 268 meters. The site consists of 1 piece of flaked stone debitage (lithic material not identified).

JRB-183-I21 37-016946

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 271 meters. The site consists of 2 pottery sherds in 1 m² area.

JRB-183-I22 37-016947

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 267 meters. The site consists of 2 pottery sherds in 1 m² area.

JRB-183-I23 37-016948

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 265 meters. The site consists of 1 pottery sherd.

JRB-183-I24 37-016949

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 265 meters. The site consists of 1 pottery sherd.

JRB-183-I25 37-016950 SDI-15223

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 265 meters. The site consists of 3+ pottery sherds in 2 m² area.

JRB-183-I26 37-016951

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 265 meters. The site consists of 1 pottery sherd.

JRB-183-I27 37-016952 SDI-15224

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 277 meters. The site consists of 1 small scatter of 6+ pottery sherds in probably <5 m² area (specific dimensions of scatter not reported).

JRB-183-I28 37-016953

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 277 meters. The site consists of 1 small scatter of 14+ pottery sherds in probably <10 m² area (specific dimensions of scatter not reported).

JRB-183-I29 37-016954

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 277 meters. The site consists of 1 pottery sherd.

JRB-183-I30 37-016955

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 277 meters. The site consists of 2 pottery sherds in 1 m² area.

JRB-183-I31 37-016956 SDI-15226

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 277 meters. The site consists of 6 pottery sherds in 1 m² area.

JRB-184-I1 37-016957

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 277 meters. The site consists of 2 pottery sherds in 1 m² area.

JRB-184-I2 37-016958

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 267 meters. The site consists of 1 pottery sherd.

JRB-184-I3 37-016959 SDI-15227

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 268 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

JRB-184-I4 37-016960

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 268 meters. The site consists of 1 pottery sherd.

JRB-184-I5 37-016961 SDI-15228

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 274 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

JRB-184-I6 37-016962

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 268 meters. The site consists of 1 pottery sherd.

- JRB-184-I7 37-016963 SDI-15229
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 268 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-184-I8 37-016964
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 259 meters. The site consists of 1 pottery sherd.
- JRB-184-I9 37-016965
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 255 meters. The site consists of 2 pottery sherds in 1 m2 area.
- JRB-184-I10 37-016966
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 253 meters. The site consists of 2 pottery sherds in 1 m2 area.
- JRB-184-I11 37-016967
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated on the northwestern edge of Clark Valley at an elevation of 253 meters. The site consists of 1 pottery sherd.
- JRB-210-I1 37-016968
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated at the bottom of lower Butler Canyon at an elevation of 398 meters. The site consists of 1 pottery sherd.
- JRB-210-I2 37-016969 SDI-15344
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated at the bottom of lower Butler Canyon at an elevation of 402 meters. The site consists of small scatter (<10 m2) of 3 brown and 9 glass bottle shards (specific scatter dimensions not reported).
- JRB-210-I3 37-017269
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated at the bottom of lower Butler Canyon at an elevation of 383 meters. The site consists of 1 24x30-in flat metal sheet.
- JRB-212-I1 37-016970 SDI-15230
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated at the confluence of Butler and Rockhouse canyons at an elevation of 381 meters. The site consists of : 30+ pottery sherds in 20 m2 area (possibly fragments of 1 vessel).
- JRB-212-I2 37-016971 SDI-15553
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated at the confluence of Butler and Rockhouse canyons at an elevation of 389 meters. The site consists of 1 small (2 m2) circular area cleared of larger gravels/cobbles, minimal berm around edge (cf. "cleared circle").
- JRB-212-I3 37-016972
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated at the confluence of Butler and Rockhouse canyons at an elevation of 392 meters. The site consists of 1 pottery sherd.
- JRB-212-I4 37-016973
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated at the confluence of Butler and Rockhouse canyons at an elevation of 375 meters. The site consists of 1 brownware pottery sherd.
- JRB-212-I5 37-016974 SDI-15231
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated at the confluence of Butler and Rockhouse canyons at an elevation of 375 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-212-I6 37-016975 SDI-15232
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated at the confluence of Butler and Rockhouse canyons at an elevation of 372 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-215-I1 37-016976 SDI-15233
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated in northwestern Clark Valley below confluence of Butler and Rockhouse canyons; at an elevation of 323 meters. The site consists of bedrock milling platform (PLT) with 2 milling features (1 m2 area) flat in cross-section (cf. "milling slicks").
- JRB-215-I2 37-016977 SDI-15234
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated in northwestern Clark Valley below confluence of Butler and Rockhouse canyons; at an elevation of 322 meters. The site consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.
- JRB-261-I1 37-016978

The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated in northern Clark Valley northwest of Clark Lake and north of Coyote Mountain at an elevation of 233 meters. The site consists of 1 pottery sherd.

JRB-261-I2 37-016979 SDI-15235
The site is located on the Clark Lake NE, Calif. 7.5' USGS quad. It is situated in northern Clark Valley northwest of Clark Lake and north of Coyote Mountain at an elevation of 235 meters. The site consists of 5 pottery sherds in 3 m2 area.

JRB-262-I1 37-016980 SDI-15236
The site is located on the Borrego Palm Canyon, Calif. 7.5' USGS quad. It is situated in lower Coyote Canyon, upper east slope north of Alcoholic Pass and east of Ocotillo Flat at an elevation of 585 meters. The site consists of 1 small scatter of 12+ pottery sherds in probably <10 m2 area (specific dimensions of scatter not reported).

JRB-262-I2 37-016981
The site is located on the Borrego Palm Canyon, Calif. 7.5' USGS quad. It is situated in lower Coyote Canyon, upper east slope north of Alcoholic Pass and east of Ocotillo Flat at an elevation of 619 meters. The site consists of 1 large millstone fragment (lithic material not identified).

JRB-265-I1 37-016982
The site is located on the Clark Lake, Calif. 7.5' USGS quad. It is situated on the southwestern edge of northwestern Clark Valley, at an elevation of 396 meters. The site consists of 1 pottery sherd with painted zig-zag ("V") pattern (color of pottery and decoration not identified).

MONKEY HILL

MH-I1 37-016747 SDI-15506
The property is located on the Collins Valley USGS quad. It is situated in middle Coyote Canyon, east of Monkey Hill at an elevation of 491 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

MH-I2 37-016748 SDI-15507
The property is located on the Collins Valley USGS quad. It is situated in middle Coyote Canyon, east of Monkey Hill at an elevation of 491 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

MH-I3 37-016749 SDI-15508
The property is located on the Collins Valley USGS quad. It is situated in middle Coyote Canyon, east of Monkey Hill at an elevation of 503 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

MH-I4 37-016750 SDI-15509
The property is located on the Collins Valley USGS quad. It is situated in middle Coyote Canyon, east of Monkey Hill at an elevation of 500 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

MH-I5 37-016751 SDI-15510
The property is located on the Collins Valley USGS quad. It is situated in middle Coyote Canyon, east of Monkey Hill at an elevation of 485 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

MH-I6 37-016752 SDI-15511
The property is located on the Collins Valley USGS quad. It is situated in middle Coyote Canyon, east of Monkey Hill at an elevation of 491 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

MH-I7 37-016753 SDI-15512
The property is located on the Collins Valley USGS quad. It is situated in middle Coyote Canyon, east of Monkey Hill at an elevation of meters. The property consists of

MH-I8 37-016754 SDI-15513
The property is located on the Collins Valley USGS quad. It is situated in middle Coyote Canyon, east of Monkey Hill at an elevation of 491 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

MH-I9 37-016755 SDI-15514
The property is located on the Collins Valley USGS quad. It is situated in middle Coyote Canyon, east of Monkey Hill at an elevation of 500 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

MH-I10 37-016756 SDI-15515
The property is located on the Collins Valley USGS quad. It is situated in middle Coyote Canyon, east of Monkey Hill at an elevation of 500 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

MH-I11 37-016757 SDI-15516

The property is located on the Collins Valley USGS quad. It is situated in middle Coyote Canyon, southern edge of Monkey Hill ridge at an elevation of 476 meters. The property consists of concentration of flaked stone debitage atop toe of low hill/ridge on canyon floor.

PACIFIC CREST TRAIL

PCT-03-I1 33-8582

The property is located on the Bucksnot Mt. USGS quad. It lies on the upper north rim, in middle Tule Canyon; at an elevation of 1120 meters. The property consists of a bedrock milling platform (PLT) with (in 1 m² area) 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section (cf. "milling basin" [BMB]) and 1 milling feature comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped in cross-section.

PCT-08-I4 33-8581

The property is located on the Bucksnot Mt. USGS quad. It is situated on the upper south slope, of middle Tule Canyon at an elevation of 1076 meters. The property consists of 9 large brownware pottery sherds in 2 m² area.

PCT-10-I1 33-8582

The property is located on the Bucksnot Mt. USGS quad. It is situated on the south slope, of middle Tule Canyon at an elevation of 1169 meters. The property consists of 1 buffware pottery sherd.

PCT-10-I2 33-8583

The property is located on the Bucksnot Mt. USGS quad. It is situated on the south slope, of middle Tule Canyon at an elevation of 1161 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section (cf. "milling basin").

PCT-10-I3 33-8584

The property is located on the Bucksnot Mt. USGS quad. It is situated on the west slope, of middle Tule Canyon at an elevation of 1183 meters. The property consists of 1 rock cairn mining claim marker, center wood post with attached Prince Albert tobacco tin containing claim document (not removed and examined).

PCT-10-I4 33-8585

The property is located on the Bucksnot Mt. USGS quad. It is situated on the south slope, of middle Tule Canyon at an elevation of 1186 meters. The property consists of: 50+ brownware pottery sherds (including 4 vessel rim fragments) in 157 m² area (possibly 1 or 2 ollas represented).

PCT-10-S1 33-8897 RIV-6324

The property is located on the Bucksnot Mt. USGS quad. It is situated on the south slope, of middle Tule Canyon at an elevation of 1174 meters. The property consists of an accumulation of pottery sherds, 1 millstone, midden area, fire-altered rock, and scattered burnt animal bone at base of low, north-trending ridge at conjunction of southwest-to-northeast swale and small east-trending drainage.

PCT-29-I1 37-017825 SDI-15390

The property is located on the Bucksnot Mt. USGS quad. It is situated on the north middle slope, Bucksnot Mountain; bottom of tributary drainage, upper Tule Canyon. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section

PCT-29-I2 37-017824 SDI-15389

The property is located on the Bucksnot Mt. USGS quad. It is situated on the north middle slope, Bucksnot Mountain; bottom of tributary drainage, upper Tule Canyon. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PCT-29-I3 37-017823

The property is located on the Bucksnot Mt. USGS quad. It is situated on the north middle slope, Bucksnot Mountain; bottom of tributary drainage, upper Tule Canyon. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section

PCT-29-S1 37-017822 SDI-15387

The property is located on the Bucksnot Mt. USGS quad. It is situated on the middle north slope, Bucksnot Mountain; lower east tributary drainage in upper Tule Canyon. The property consists of numerous accumulations of flaked and ground stone artifacts and pottery sherds, with several bedrock milling platforms, on low ridges covered with dense montane scrub/chaparral vegetation adjacent to intermittent drainages.

PARKS CANYON

PC-A-I1 33-8488

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower north slope, in lower Parks Canyon at an elevation of 823 meters. The property consists of 1 pottery sherd.

PC-A-I2 33-8489

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the north edge, mouth of Parks Canyon at an elevation of 799 meters. The property consists of a bedrock milling platform (PLT) with 3 milling features (2 m² area) flat in cross-section.

PC-A-I3 33-8490

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the north edge, mouth of Parks Canyon at an elevation of 799 meters. The property consists of 2 pottery sherds.

PC-A-I4 33-8491

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the north edge, mouth of Parks Canyon at an elevation of 792 meters. The property consists of a bedrock milling platform (PLT) with 2 milling features (1 m² area) flat in cross-section.

PC-A-I5 33-8492

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the north edge, mouth of Parks Canyon at an elevation of 796 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-A-I6 33-8493

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the north edge, mouth of Parks Canyon at an elevation of 790 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-A-I7 33-8494

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the north edge, mouth of Parks Canyon at an elevation of 796 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.

PC-A-I8 33-8495

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the north edge, mouth of Parks Canyon at an elevation of 796 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.

PC-A-I9 33-8496

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the north edge, mouth of Parks Canyon at an elevation of 796 meters. The property consists of 4 pottery sherds in 1 m² area.

PC-A-I10 33-8497

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the bottom, mouth of Parks Canyon; at an elevation of 784 meters. The property consists of 10+ pottery sherds in 2 m² area.

PC-A-I11 33-8498

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the bottom, mouth of Parks Canyon; at an elevation of 777 meters. The property consists of 4 pottery sherds in 1 m² area.

PC-A-I12 33-8499

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the bottom, mouth of Parks Canyon; at an elevation of 790 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-A-I13 33-8500

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the bottom, mouth of Parks Canyon; at an elevation of 790 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-A-I14 33-8501

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the bottom, mouth of Parks Canyon; at an elevation of 790 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-A-I15 33-8502

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the bottom, mouth of Parks Canyon; at an elevation of 787 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-A-S1 33-8887 RIV-6314

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the mouth of Parks Canyon, bottom, north side of axial drainage; 780 meters. The property consists of seven concentrations of pottery sherds, a couple of ground stone artifacts, a bedrock milling feature, and two areas of apparent hearth remnants along axial drainage through broad mouth of Parks Canyon.

PC-B-I1 33-8505

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower north slope; lower Parks Canyon at an elevation of 841 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-B-I2 33-8506

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower north slope; lower Parks Canyon at an elevation of 829 meters. The property consists of: a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.

PC-B-I3 33-8507

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower north slope; lower Parks Canyon at an elevation of 835 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-B-I4 33-8508

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower north slope; lower Parks Canyon at an elevation of 838 meters. The property consists of bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-B-I5 33-8509

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower north slope; lower Parks Canyon at an elevation of 832 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.

PC-B-I6 33-8510

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower north slope; lower Parks Canyon at an elevation of 832 meters. The property consists of a bedrock milling platform (PLT) with 2 milling features (1 m² area) flat in cross-section.

PC-B-I7 33-8511

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower north slope; lower Parks Canyon at an elevation of 832 meters. The property consists of 1 granite handstone.

PC-B-I8 33-8512

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower north slope; lower Parks Canyon at an elevation of 832 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-B-I9 33-8513

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower north slope; lower Parks Canyon at an elevation of 832 meters. The property consists of: a bedrock milling platform (PLT) with 3 milling features (2 m² area) -- 2 flat in cross-section (cf. "milling slicks" [BMS]) and 1 comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped in cross-section.

PC-B-I10 33-8514

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the bottom of lower Parks Canyon at an elevation of 811 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-B-I11 33-8515

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the bottom of lower Parks Canyon at an elevation of 826 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-B-I12 33-8516

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the bottom of lower Parks Canyon at an elevation of 826 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-B-I13 33-8517

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the bottom of lower Parks Canyon at an elevation of 826 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-B-I14 33-8518

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the bottom, lower Parks Canyon at an elevation of 826 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-B-I15 33-8519

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the bottom, lower Parks Canyon at an elevation of 832 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.

PC-B-I16 33-8520

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the lower North Slope; lower Parks Canyon at an elevation of 832 meters. The property consists of a wood-framed, galvanized steel livestock trough.

PC-B-I17 33-8521

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the bottom, lower Parks Canyon; at an elevation of 8018 meters. The property consists of 1 possible biface fragment made of quartz.

PC-B-S1 33-8888 RIV-6315

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the lower Parks Canyon, north edge, base of granite/granitic outcrop/ boulder-covered slope; at an elevation of 823-841 meters. The property consists of: numerous bedrock milling features, scattered pottery sherds, area of midden, and small rockshelter at base of north slope of lower Parks Canyon.

PC-B-S2 33-8889 RIV-6316

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated at the lower Parks Canyon, bottom, mouth of main drainage entering lower canyon; at an elevation of 829 meters. The property consists of a scattered flaked and ground stone artifacts and pottery sherds, and apparent remnants of a hearth, amidst numerous bedrock milling features at mouth of main drainage entering lower Parks Canyon.

PC-B-S3 33-8890 RIV-6317

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated in lower Parks Canyon, bottom, gently east-sloping flat dissected by braided drainages flowing into Coyote Canyon at an elevation of 802-820 meters. The property consists of two ground stone artifacts, scattered pottery sherds, and two areas of possible hearth remnants amidst numerous bedrock milling features on floor of lower Parks Canyon.

PC-C-I1 33-8522

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower North Slope; lower Parks Canyon at an elevation of 860 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

PC-C-I2 33-8523

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower North Slope; lower Parks Canyon at an elevation of 902 meters. The property consists of rock cairn (mining claim marker?).

PC-C-I3 33-8524

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower North Slope; lower Parks Canyon at an elevation of 843 meters. The property consists of mining prospect, rock cairn mining claim marker in 10 m2 area.

PC-C-I4 33-8525

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower North Slope; lower Parks Canyon at an elevation of 866 meters. The property consists of 2 barrel livestock troughs, pipe spring in 5 m2 area.

PC-C-I5 33-8526

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower south slope; lower Parks Canyon at an elevation of 869 meters. The property consists of apparent or possible remnant(s) of hearth (e.g., "roasting pit") with fire-altered, darkened sediment (total area not reported); fire-altered rock not present (or presence not indicated on surveyor transect recordation form); no additional archaeological materials reported.

PC-C-I6 33-8527

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower south slope; lower Parks Canyon at an elevation of 896 meters. The property consists of apparent or possible remnant(s) of hearth (e.g., "roasting pit") with fire altered, darkened sediment (total area not reported); fire-altered rock not present (or presence not indicated on surveyor transect recordation form); no additional archaeological materials reported.

PC-D-I1 33-8528

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the lower south slope; lower Parks Canyon at an elevation of 826 meters. The property consists of rock cairn mining claim marker (2 m2 area).

PC-E-I1 33-8529

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the south edge, mouth of Parks Canyon at an elevation of 826 meters. The property consists of a bedrock milling platform (PLT) with 2 milling features (1 m2 area) flat in cross-section (cf. "milling slicks").

PC-E-I2 33-8530

The property is located on the Bucksnot Mtn., Calif. USGS quad. It is situated on the south edge, mouth of Parks Canyon at an elevation of 826 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped in cross-section.

SALVADOR CANYON

SC-A-I1 37-017263 SDI-15248

The property is located on the Collins Valley USGS quad. It is situated at the south edge of Yucca Valley at an elevation of 668 meters. The property consists of 15+ pottery sherds in 2 m2 area (likely fragments of single vessel or of single large sherd).

SC-A-S1 37-017830 SDI-15395

The property is located on the Collins Valley USGS quad. It is situated on the south

The property is located on the Collins Valley USGS quad. It is situated in upper Salvador Canyon at the mouth of South Fork at an elevation of 695 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising non-circular concavity (>1 cm depth) basined in cross-section.

SC-E-S1 37-017834 SDI-15399

The property is located on the Collins Valley USGS quad. It is situated at the confluence of South Fork and main Salvador Canyon drainages at an elevation of 573 meters. The property consists of one ground stone artifact, small concentration of pottery sherds, and four areas of possible hearth remnants and/or structure remains amidst numerous bedrock milling platforms at confluence of South Fork drainage with main drainage in upper Salvador Canyon.

SC-F-I1 37-016743 SDI-15504

The property is located on the Collins Valley USGS quad. It is situated at the bottom of middle Salvador Canyon at an elevation of 540 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

SC-G-I1 37-016744

The property is located on the Collins Valley USGS quad. It is situated on the lower south slope of middle Salvador Canyon at an elevation of 549 meters. The property consists of burnt animal bone under rock overhang; likely natural phenomenon (wildfire-caused burning), human (historical or prehistoric) factor highly problematic.

SC-G-I2 37-016745

The property is located on the Collins Valley USGS quad. It is situated on the lower south slope of middle Salvador Canyon at an elevation of 561 meters. The property consists of 1 obsidian projectile point fragment (indeterminate morphology).

SC-H-I1 37-016746 SDI-15505

The property is located on the Collins Valley USGS quad. It is situated at the mouth of Salvador Canyon at an elevation of 506 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

TULE SPRING

TS-A-S1 33-8441 RIV-6160

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1073 meters. The property consists of a concentration of flaked and ground stone artifacts, pottery sherds, bedrock milling features, midden sediments, human and animal bone fragments, fire-altered rock on hillside flat.

TS-A-S2 33-8442 RIV-6161

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1072 meters. The property consists of a concentration of flaked and ground stone artifacts, pottery sherds, midden sediments on gentle crest of small ridge immediately above Tule Spring.

TS-A-S3 33-8443 RIV-6162

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1058 meters. The property consists of a prominent granitic bedrock boulder outcrop with approximately 60 cupules.

TS-A-I1 33-8447

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1082 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

TS-A-I2 33-8448

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1062 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

TS-A-I3 33-8449

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1067 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

TS-A-I4 33-8450

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1047 meters. The property consists of a bedrock milling platform (PLT) with 2 milling features (3 m² area) flat in cross-section.

TS-A-I5 33-8451

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1043 meters. The property consists of bedrock milling platform (PLT) with 8 milling features (6 m² area) comprising circular concavities (>1 cm depth) cylindrical to bowl-shaped in cross-section.

TS-A-I6 33-8452

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1073 meters. The property consists of 2 buffware pottery sherds in 1 m2 area.

TS-A-I7 33-8453

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1067 meters. The property consists of a bedrock milling platform (PLT) with 7 milling features (5 m2 area) comprising circular concavities (>1 cm depth) cylindrical to bowl-shaped in cross-section.

TS-A-I8 33-8454

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1082 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped in cross-section.

TS-A-I9 33-8455

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1082 meters. The property consists of a bedrock milling platform (PLT) with 2 milling features (1 m2 area) comprising circular concavities (>1 cm depth) cylindrical to bowl-shaped in cross-section.

TS-A-I10 33-8456

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1049 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature comprising circular concavity (>1 cm depth) cylindrical to bowl-shaped in cross-section.

TS-A-I11 33-8457

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1049 meters. The property consists of 1 granite/granitic handstone fragment.

TS-A-I12 33-8458

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1067 meters. The property consists of a rusted tin/steel can.

TS-A-I13 33-8459

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1061 meters. The property consists of a large cement water tank, 15 ft diameter, 7 ft tall.

TS-A-I14 33-8460

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1073 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

TS-A-I15 33-8463

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1067 meters. The property consists of (1) granite/granitic millstone fragment.

TS-A-I16 33-8464

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1058 meters. The property consists of an intact, clear glass jar, 3-piece mold, 4 in tall, 2 in diameter, bottom embossed "G/7355/21".

TS-B-I1 33-8465

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1058 meters. The property consists of a bedrock milling platform (PLT) with 1 milling feature flat in cross-section.

TS-B-I2 33-8466

The property is located on the Bucksnot Mtn., Calif. 7.5' USGS quad. It is situated on the lower, north slope in middle Tule Canyon at an elevation of 1058 meters. The property consists of 4 brownware pottery sherds in 2 m2 area.

CENTRAL PORTION OF ABDSP

BORREGO BADLANDS

BBD-507-S1 37-018979 SDI-15797

Located on the Borrego Mountain 7.5 USGS quad, the isolate is located above Blow Sand Canyon in the Borrego Mountain region. The property is a rock shelter located above Blow Sand Canyon containing burned rodent bone, charcoal, midden, 1 handstone, cistern, and soot stained roof.

BBD-200-II 37-018974

The isolate is located approximately 500 m west of Palo Verde Wash, in the Borrego Badlands, south of the Santa Rosa Mountains. The isolate consist of 4, 0.43 caliber cartridges, in a 10 m² area.

BBD-289-I1 37-018980

Located on the Borrego Mountain 7.5 USGS quad, the isolate is located in Palo Verde Wash, in the Borrego Badlands, south of the Santa Rosa Mountains. The isolate consist of a single claim marker and unrecorded number of rock cairns.

BBD-299-I1 37-018977

Located on the Shell Reef 7.5 USGS quad, the isolate is located in Tule Wash, in the Borrego Badlands, south of the Santa Rosa Mountains. The isolate consist of ring of 4 rock cairns, in a 5 m diameter area

BBD-299-I2 37-019223

Located on the Shell Reef 7.5 USGS quad, the isolate is located in Tule Wash, in the Borrego Badlands, south of the Santa Rosa Mountains. The isolate consist of 2 rock cairns.

BBD-348-I1 37-018986

Located on the Shell Reef 7.5 USGS quad, the isolate is located in Tule Wash, in the Borrego Badlands, south of the Santa Rosa Mountains. The isolate consist of a single rock cairn.

BBD-517-I1 37-018985

Located on the Borrego Mountain 7.5 USGS quad, the isolate is located in a wash south of Borrego Mountain and southeast of Buttes Pass. The isolate consist of a single rock ring, 30 cm in diameter.

BBD-517-I2 37-018981

Located on the Borrego Mountain 7.5 USGS quad, the isolate is located in a wash south of Borrego Mountain and southeast of Buttes Pass. The isolate consist of 3 sections of iron pipe, in a 7 m diameter area.

CENTRAL EARTHQUAKE VALLEY

CEV-I1 37-017288 SDI-15324

Located on the Earthquake Valley 7.5 USGS quad, the isolate is located near a lone bouldery outcrop on the bajada above Earthquake Valley and flanking the Northern Pinyon Mountains. The property consists of 1 bedrock milling feature with 5 slicks.

CEV-I2 37-017289 SDI-15325

Located on the Earthquake Valley 7.5 USGS quad, the isolate is located near a lone bouldery outcrop on the bajada above Earthquake Valley and flanking the Northern Pinyon Mountains. The property consists of a single eroded bedrock milling feature with 4 slicks.

CEV-S1 37-018036 SDI-15464

Located on the Earthquake Valley 7.5 USGS quad, immediately west of a lone rock outcrop situated on the bajada along the southwestern margin of the North Pinyon Mountains and above Earthquake Valley. Located just west of an isolated rock outcrop on the bajada above Earthquake Valley, the property consist of 8 bedrock milling features (BMF1-8), flaked stone debitage scatter, numerous quartz reduction loci (see AC2, in A5), 1 m² area of exposed midden, 1 handstone, 5 hammerstones, and 13 pottery sherds.

CEV-S2 37-018156 SDI-15465

Located on the Earthquake Valley 7.5 USGS quad, immediately west of a lone rock outcrop situated on the bajada along the southwestern margin of the North Pinyon Mountains and above Earthquake Valley. The property is located along the base of a rock outcrop on the bajada flanking the eastern margin of Earthquake Valley and consists of 43 bedrock milling features (BMF1-43), 5 rock rings, 1 unidentified rock feature, 2 quartz quarries, 3 quartz reduction loci, flaked stone debitage, pottery sherds, biface fragments, hammerstones, cores, core/tools, a pestle fragment, and bone fragments.

CEV-23 37-018157 SDI-15466

Located on the Earthquake Valley 7.5 USGS quad, immediately west of a lone rock outcrop situated on the bajada along the southwestern margin of the North Pinyon Mountains and above Earthquake Valley. Situated at the base of at a rock outcrop on the bajada above Earthquake Valley, the property consists of 7 bedrock milling features (BMF1-7), 4 artifact concentrations (AC1-4) each composed of numerous quartz reduction loci and associated quartz flaked stone debitage, 6 quartz core/tools, 8 quartz cores, 2 milling slab fragments, 2 pottery sherds, and 1 yoni.

CEV-S4 37-012415 SDI-12415

Located on the Earthquake Valley 7.5 USGS quad, immediately west of a lone rock outcrop situated on the bajada along the southwestern margin of the North Pinyon Mountains and above Earthquake Valley. The property consist of 28 bedrock milling features (BMF1-28), 16 pottery sherds, and 2 quartz reduction loci with associated quartz flaked stone debitage scatter, hammerstones, and cores.

CEV-S5 37-018164 SDI-15473

Located on the Earthquake Valley 7.5 USGS quad, the property sits at the base of a rocky knob situated on the bajada that runs along the southwestern margin of the North Pinyon Mountains. CEV-S5 is an accumulation of 14 bedrock milling features (BMF1-14), 1 rock shelter, 3 pottery sherds, and 2 quartz reduction loci (RL1 and 2) with associated flaked stone debitage, hammerstones, and quartz cores.

GRAPEVINE CANYON

GVC-I1 37-017366

Located on the Tubb Canyon 7.5 USGS quad, the isolate is situated on the bajada at the base of the Grapevine Hills and it is located north of Grapevine Canyon Road and Angelina Spring in Grapevine Canyon. The isolate consist of 3 sections of a creosote covered power pole. Refer to the Illustration Sheet for dimensions of power pole sections. Two sections lie near one which stands upright in the ground. There are two other similar features in the vicinity, one located 210 m west of the isolate (feature A associated with GVC-S5) and isolate (GVC-I3) 80 m west of GVC-S5.

GVC-I2 37-017364 SDI-15348

Located on the Tubb Canyon 7.5 USGS quad, the isolate is situated in a wash tending north-south through a bajada at base of the Grapevine Hills. The property consists of a single bedrock milling feature.

GVC-I3 37-017367

Located on the Tubb Canyon 7.5 USGS quad, the isolate is situated in a wash tending north-south through a bajada at base of the Grapevine Hills. The isolate consist of 1 section of creosote covered power pole standing upright in the ground and one piece of milled lumber with 3, holes drilled through it. The milled lumber is likely the remains of a power pole cross beam (see Illustration Sheet for dimensions of power pole and cross beam). Two other similar isolates are located in the vicinity, one located 70 m east of the isolate (feature A associated with property GVC-S5) and another (GVC-I1) 210 m east of GVC-S5.

GVC-I4 37-017365 SDI-15349

Located on the Tubb Canyon 7.5 USGS quad, the isolate is situated in a wash tending north-south through a bajada at base of the Grapevine Hills. the property is single bedrock milling feature.

GVC-S1 37-018165 SDI-15474

Located on the Tubb Canyon 7.5 USGS quad, the property is situated on the bajada on the north side of Grapevine Canyon and positioned on a rise east of a north-south drainage that runs between the Grapevine Hills and Angelina Spring. A historic property with 2 adjacent rectangular wood frame foundations, 1 rectangular concrete foundation, jeep trail, and trash scatters. There is an old barbed wire fence, which may be associated with the property, located approximately 150 m south of the property and is a component of prehistoric property CA-SDI-438.

GVC-S2 37-000438 SDI-438

Located on the Tubb Canyon 7.5 USGS quad, GVC-S2 is an extensive property occupying the eastern entrance of Grapevine Canyon into a box canyon located south of the Grapevine Hills and north of the Grapevine Canyon drainage. The southern edge of the property sits perched on a precipice above a riparian section of the Grapevine Canyon drainage and extends west to within 50 m of Angelina Spring. The property commands a view of the entire box canyon, dominated by the bajada at the base of the Grapevine Hills. Property GVC-S2 is a prehistoric property situated above Angelina Spring and Grapevine Canyon and consists of 57 bedrock milling features, 12 rock rings (enclosures), 1 petroglyph panel, milling slab fragments, handstone fragments, hammerstones, flaked stone debitage (quartzite, quartz, porphyritic metavolcanic, basalt, and Obsidian Butte obsidian), pottery sherds, fire affected rock, 2 quartz biface fragments, extensive black midden soil throughout the property south of Grapevine Canyon Road, countless trails (whether the trails are prehistoric trails or contemporary animal trails is left to speculation), an old barbed wire fence near Angelina Spring, and 1 sanitary can (possibly associated with GVC-S1, a historic property immediately north of property).

GVC-S3 37-000453 SDI-453

Located on the Tubb Canyon 7.5 USGS quad, Located above the drainage running through Grapevine Canyon, property CA-SDI-453 rests at the foot of the bajada near the center of the mouth of the box canyon branching north from Grapevine Canyon, west of Yaqui flat. Property CA-SDI-453 is a prehistoric property spread across the mouth of a box canyon above the Grapevine Canyon drainage and within 100 m of Angelina spring. The property consists of 62 bedrock milling features, 1 rock ring, pot sherds, fire altered rock, 4 quartzite hammerstones, 2 milling slab fragments, and 2 handstones. The property may have been previously collected (see A14).

GVC-S4 37-018166 SDI-15475

Located on the Tubb Canyon 7.5 USGS quad, Property GVC-S4 is sits on the bajada in a box canyon north of Grapevine Canyon. Property GVC-S4 is a prehistoric property consisting of 4 bedrock milling features.

GVC-S5 37-018167 SDI-15476

Located on the Tubb Canyon 7.5 USGS quad, Property GVC-S5 lies in a drainage running north-south through a box canyon between the Grapevine Hills and Angelina Spring. GVC-S5 is a multicomponent property consisting of 2 bedrock milling features (BMF1 & 2); 1 unifacial regularized block granitic milling slab fragment; Historic feature (FA): 1 cut power pole with 3 associated pieces milled lumber; and 2 loci containing historic debris (broken insulator glass, bone fragments, and milled lumber).

HARPER CANYON

HRP-A-I1 37-019222

Located on the Harper Canyon 7.5 USGS quad, the property is located on a rocky terrace above Lower Borrego Valley. The property consists of 2 bedrock milling slicks on a single platform.

The isolate is situated on bouldery outcrop southwest of the head of a narrow canyon leading to North Grove in the Mountain Palm Springs area. The isolate is a petroglyph of a zoomorphic figure resembling a deer or perhaps ram.

MPS-A-I1 37-017317 SDI-15334

Located on the Sweeney Pass 7.5 USGS quad, the property is located on the margin of a wash in a narrow canyon in the Mountain Palm Springs area and 150 m due west of North Grove. The property consists of a single bedrock milling feature with one slick.

MPS-A-I2 37-017318 SDI-15335

Located on the Sweeney Pass 7.5 USGS quad, the property is located on the margin of a wash in a narrow canyon in the Mountain Palm Springs area and 110 m northeast of North Grove. The isolate consist of two bedrock milling features. One of the bedrock milling features has one slick and the other has three slicks.

MPS-A-I3 37-017319 SDI-15336

Located on the Sweeney Pass 7.5 USGS quad, the property situated on the southwestern slope of a bouldery outcrop near the head of a narrow canyon leading to North Grove in the Mountain Palm Springs area. The property consists of a single bedrock milling feature with one slick.

MPS-A-I5 37-017331

Located on the Sweeney Pass 7.5 USGS quad, the property situated on the southwestern slope of a bouldery outcrop near the head of a narrow canyon leading to North Grove in the Mountain Palm Springs area. The property consists of 1 burned pottery sherd.

MPS-A-I6 37-017321 SDI-15338

Located on the Sweeney Pass 7.5 USGS quad, the property situated on the southwestern slope of a bouldery outcrop near the head of a narrow canyon leading to North Grove in the Mountain Palm Springs area.): The isolate consists of one bedrock milling feature with one slick and three pottery sherds.

MPS-A-I7 37-017322 SDI-15339

Located on the Sweeney Pass 7.5 USGS quad, the isolate is situated on a bouldery outcrop between a narrow canyon, leading west towards North Grove, and a wash, headed southwest towards Southwest Grove, in the Mountain Palm Springs area. The property consists of 1 quartz reduction locus.

MPS-B-I1 37-017330 SDI-15347

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located on a bouldery outcrop forming the southern margin of the box canyon in the Mountain Palm Springs area. The property consists of a single rock ring of unknown age, one tier in height and approximately 1 m in diameter. No charcoal or burned wood were present inside the ring.

MPS-B-I2 37-017332

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located in a wash, in a box canyon, on the eastern edge of the Mountain Palm Springs area. The property consists of 1 pottery sherd.

MPS-B-I3 37-017333

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located on a terrace on a bouldery outcrop along the western margin of the box canyon in the Mountain Palm Springs area. The property consists of 1 obsidian flake and 1 pottery sherd.

MPS-B-I4 37-017334

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located in a wash, in a box canyon, in the Mountain Palm Springs area. The property consists of 1 pottery sherd.

MPS-B-I5 37-017335

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located in wash east of the Mountain Palm Springs area; isolate is 180 m northeast of the spring. The property consists of 2 pottery sherds.

MPS-A-S1 37-018353 SDI-15566

Located on the Sweeney Pass 7.5 USGS quad, The property is situated amongst mesquite and Desert Palms on the edge of a bouldery rock outcrop along the eastern margin of the Mountain Palm Springs Area. Property MPS-A-S1 is a prehistoric property and is located in a vegetated area along the margin of a bouldery outcrop and is composed of 7 bedrock milling features (BMFA-G) and one artifact concentration (AC1) containing 1 hammerstone and 5 pottery sherds.

MPS-A-S2 37-018359 SDI-15572

Located on the Sweeney Pass 7.5 USGS quad, the property is situated on a small terrace amid bouldery outcrops and is located approximately 145 m southeast of North Grove in the Mountain Palm Springs Area of Anza Borrego Desert State Park. MPS-A-S2 is a prehistoric property located on a small terrace amid bouldery outcrops and is composed of 7 bedrock milling features (BMFA-G); rock shelter; rock ring; and artifact concentration (AC)1, containing 1 biface fragment, 2 hammerstones, 2 cores, 2 handstone fragments, 1 milling slab, flaked stone debitage, pottery sherds, and bone fragments.

MPS-B-S1 37-018358 SDI-15571

Located on the Sweeney Pass 7.5 USGS quad, the property is situated in a wash at the mouth of the box canyon that forms the eastern margin of the Mountain Palm Springs Area in Anza-Borrego Desert State Park. Property MPS-B-S1 spreads across the northern half of the mouth of the box canyon located along the eastern margin of the Mountain Palm Springs Area and contains a rock

alignment, 1 biface fragment, 2 handstone fragments, pottery sherds, flaked stone debitage, burned bone fragments, and fire affected rock

MPS-B-S2 37-018352 SDI-15565

Located on the Sweeney Pass 7.5 USGS quad, the property is situated in a wash west of the mouth of the box canyon that forms the eastern margin of the Mountain Palm Springs Area in Anza-Borrego Desert State Park. Property MPS-B-S2 sits in a wash south of the bouldery outcrops along the margin of the box canyon. The property contains burned bone, 3 biface fragments (see Illustration Sheet), 1 milling slab fragment, pottery sherds, flaked stone debitage, and fire affected rock.

MPS-B-S3 37-000984 SDI-984

Located on the Sweeney Pass 7.5 USGS quad, The property is situated adjacent to the spring in the southwestern corner of the box canyon forming the eastern margin of the Mountain Palm Springs Area in Anza-Borrego Desert State Park. Property MPS-B-S3 lies amidst the bouldery rock outcrops north to the spring in the southwestern corner of the box canyon and consists of 8 bedrock milling features (BMFA-H), 3 rock features (RF1-3), 1 handstone, 1 milling slab fragment, pottery sherds, and flaked stone debitage.

MPS-B-S4 37-018361 SDI-15574

Located on the Sweeney Pass 7.5 USGS quad, the property is situated east of the spring in the southwestern corner of the box canyon forming the eastern margin of the Mountain Palm Springs Area in Anza-Borrego Desert State Park. The property lies at the interface of the sandy wash and bouldery rock outcrops near the spring in the southwestern corner of the box canyon. The property consists of 5 Bedrock milling features (BMFA-E), 1 rock ring (associated with BMFD), one small rock cairn, 1 red and white banded chert biface fragment, 7 pottery sherds, 3 porphyritic metavolcanic (pmv) flakes, and 1 red jasper flake.

PALM SPRING

PMS-II 37-017280 SDI-15316

Located on the Arroyo Tapiado 7.5 USGS quad, the isolate is located in a small sandy wash at the head of a narrow pass approximately 140 m due north of Palm Spring. single bedrock milling feature with one slick.

PMS-S1 37-018370 SDI-15581

Located on the Arroyo Tapiado 7.5 USGS quad, the property is located amidst a mesquite grove along the northern margin of the Vallecito Creek drainage and approximately 300 m southeast of Palm Spring and Mesquite Oasis. Situated on a sandy rise in a mesquite grove, property PMS-S1 is a prehistoric property consisting of four artifact concentrations collectively containing flaked stone debitage, cores, one handstone, fire altered rock, and pottery sherds.

PMS-S2 37-108369 SDI-15580

Located on the Arroyo Tapiado 7.5 USGS quad the property is located amidst a mesquite grove along the northern margin of the Vallecito Creek drainage and approximately 300 m southeast of Palm Spring and Mesquite Oasis. Property PMS-S1 is a prehistoric property situated on a sandy berm and consists four artifact concentrations collectively including flaked stone debitage, one core, bone fragments, one handstone fragment, broken rock (possibly fire altered), and pottery sherds.

SEVENTEEN PALMS

STP-A-II 37-018975

Located on the Seventeen Palms 7.5 USGS quad the isolate is located approximately 500 m west of Arroyo Salada, in the Borrego Badlands, south of the Santa Rosa Mountains. The isolate consist of 1 fragment of manganese glass.

STP-A-12 37-018976

Located on the Seventeen Palms 7.5 USGS quad The isolate is located approximately 500 m west of Arroyo Salada, in the Borrego Badlands, south of the Santa Rosa Mountains. The isolate consist of 9 brown ware pottery sherds and all appear to be from the same pot.

SOUTHERN EARTHQUAKE VALLEY

SEV-A-S1 37-018032 SDI-15460

Located on the Earthquake Valley 7.5 USGS quad, Strewn along drainage down the pediment of a rock outcrop west of Foot and Walker Pass, property SEV-A-S1 is situated in a small pass at the southern end of Earthquake Valley and within 20 m east of Hwy S-2. The property is situated along the lower slope of a saddle in a small pass between a rock outcrops and the eastern edge of the Granite Mountain, and consists of 25 bedrock milling features (BMF1-25), 2 quartz reduction loci, quartz flaked stone debitage, quartz hammerstones (many used as pecking tools), 1 handstone fragment, and 2 pottery sherds.

SEV-B-S1 37-018033 SDI-15461

Located on the Earthquake Valley 7.5 USGS quad the property is located at the foot of a rock outcrop, northwest of Foot and Walker Pass, and along the southern edge of Earthquake Valley. The property is situated along the margin of a large rock outcrop and consists of 6 bedrock milling features (BMF1 - 6).

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located on a bouldery outcrop forming the southern margin of the box canyon in the Mountain Palm Springs area. The property consists of a single rock ring of unknown age, one tier in height and approximately 1 m in diameter. No charcoal or burned wood were present inside the ring.

MPS-B-I2 37-017332

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located in a wash, in a box canyon, on the eastern edge of the Mountain Palm Springs area. The property consists of 1 pottery sherds.

MPS-B-I3 37-017333

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located on a terrace on a bouldery outcrop along the western margin of the box canyon in the Mountain Palm Springs area. The property consists of 1 obsidian flake and 1 pottery sherds.

MPS-B-I4 37-017334

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located in a wash, in a box canyon, in the Mountain Palm Springs area. 1 The property consists of pottery sherds.

MPS-B-I5 37-017335

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located in wash east of the Mountain Palm Springs area; isolate is 180 m northeast of the spring. The property consists of 2 pottery sherds.

MPS-A-S1 37-018353 SDI-15566

Located on the Sweeney Pass 7.5 USGS quad, The property is situated amongst mesquite and Desert Palms on the edge of a bouldery rock outcrop along the eastern margin of the Mountain Palm Springs Area. Property MPS-A-S1 is a prehistoric property is locate in a vegetated area along the margin of a bouldery outcrop and is composed of 7 bedrock milling features (BMFA-G) and one artifact concentration (AC1) containing 1 hammerstone and 5 pottery sherds.

MPS-A-S2 37-018359 SDI-15572

Located on the Sweeney Pass 7.5 USGS quad, the property is situated on a small terrace amid bouldery outcrops and is located approximately 145 m southeast of North Grove in the Mountain Palm Springs Area of Anza Borrego Desert State Park. MPS-A-S2 is a prehistoric property located on a small terrace amid bouldery outcrops and is composed of 7 bedrock milling features (BMFA-G); rock shelter; rock ring; and artifact concentration (AC)1, containing 1 biface fragment, 2 hammerstones, 2 cores, 2 handstone fragments, 1 milling slab, flaked stone debitage, pottery sherds, and bone fragments.

MPS-B-S1 37-018358 SDI-15571

Located on the Sweeney Pass 7.5 USGS quad, the property is situated in a wash at the mouth of the box canyon that forms the eastern margin of the Mountain Palm Springs Area in Anza-Borrego Desert State Park. Property MPS-B-S1 spreads across the northern half of the mouth of the box canyon located along the eastern margin of the Mountain Palm Springs Area and contains a rock alignment, 1 biface fragment, 2 handstone fragments, pottery sherds, flaked stone debitage, burned bone fragments, and fire affected rock.

MPS-B-S2 37-018352 SDI-15565

Located on the Sweeney Pass 7.5 USGS quad, the property is situated in a wash west of the mouth of the box canyon that forms the eastern margin of the Mountain Palm Springs Area in Anza-Borrego Desert State Park. Property MPS-B-S2 sits in a wash south of the bouldery outcrops along the margin of the box canyon. The property contains burned bone, 3 biface fragments (see Illustration Sheet), 1 milling slab fragment, pottery sherds, flaked stone debitage, and fire affected rock.

MPS-B-S3 37-000984 SDI-984

Located on the Sweeney Pass 7.5 USGS quad, The property is situated adjacent to the spring in the southwestern corner of the box canyon forming the eastern margin of the Mountain Palm Springs Area in Anza-Borrego Desert State Park. Property MPS-B-S3 lies amidst the bouldery rock outcrops north to the spring in the southwestern corner of the box canyon and consists of 8 bedrock milling features (BMFA-H), 3 rock features (RF1-3), 1 handstone, 1 milling slab fragment, pottery sherds, and flaked stone debitage.

MPS-B-S4 37-018361 SDI-15574

Located on the Sweeney Pass 7.5 USGS quad, the property is situated east of the spring in the southwestern corner of the box canyon forming the eastern margin of the Mountain Palm Springs Area in Anza-Borrego Desert State Park. The property lies at the interface of the sandy wash and bouldery rock outcrops near the spring in the southwestern corner of the box canyon. The property consists of 5 Bedrock milling features (BMFA-E), 1 rock ring (associated with BMFD), one small rock cairn, 1 red and white banded chert biface fragment, 7 pottery sherds, 3 porphyritic metavolcanic (pmv) flakes, and 1 red jasper flake.

PALM SPRING

PMS-II 37-017280 SDI-15316

Located on the Arroyo Tapiado 7.5 USGS quad, the isolate is located in a small sandy wash at the head of a narrow pass approximately 140 m due north of Palm Spring. The property consists of a single bedrock milling feature with one slick.

PMS-S1 37-018370 SDI-15581

CRW-C-S1 37-018973 SDI-15795

Located on the Sweeney Pass 7.5 USGS quad, the property is situated in a sandy wash at the intersection of Carrizo Canyon, Sweeney Canyon, and Carrizo Creek. The property consists of 1 porphyritic metavolcanic (pmv) reduction locus (associated with the prospecting of local tool stone nodules), 1 hammerstone, flaked stone debitage (obsidian, basalt, quartz, quartzite, pmv, rhyolite), 1 core/tool, 1 millstone fragment, and pottery sherds.

CRW-C-S2 SDI-1194, LOCUS B UPDATE

Located on the Sweeney Pass 7.5 USGS quad, the locus is situated on a cobbled terrace at the intersection of Carrizo Canyon, Sweeney Canyon, and Carrizo Creek. The locus consists of 2 bedrock milling features (BMF1 and BMF2), multiple reduction loci (associated with prospecting for local tool stone), and 1 core/tool.

CRW-D-I1 37-017324 SDI-15341

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located within 10 m of the west side of Highway S-2, at the head of Sweeney Canyon. The isolate consists of three porphyritic metavolcanic flakes in a sandy wash.

CRW-D-I2 37-017325 SDI-15342

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located on a cobbled terrace immediately east of Highway S-2, at the head of Sweeney Canyon. The isolate consists of three porphyritic metavolcanic flakes in a sandy wash.

CRW-D-I3 37-017341

Located on the Sweeney Pass 7.5 USGS quad, the isolate is located on the slope of cobbled terrace on the east side of Highway S-2, at the head of Sweeney Canyon. The isolate consists of one porphyritic metavolcanic hammerstone and 1 quartz core.

CRW-D-S1 37-001194 SDI-1194, LOCUS B UPDATE

Located on the Sweeney Pass 7.5 USGS quad, the property is situated in a sandy wash at the intersection of Carrizo Canyon, Sweeney Canyon, and Carrizo Creek. The locus consists of flaked stone debitage, reduction loci, cores, core/tools, hammerstones, bedrock milling features, and a rockshelter.

CRW-B-I1 37-017340

Located on the Sweeney Pass 7.5 USGS quad, the isolate is situated upon a cobbled terrace south of the head of Carrizo Canyon. The property consists of 1 porphyritic metavolcanic core.

DOS CABEZAS SPRINGS

DCS-S1 37-000183\008786 SDI-183/8786

Located on the Jacumba USGS Quad. The property is located in the box canyon surrounding Dos Cabezas Spring. DCS-S1 has prehistoric and historic components and is located in the box canyon enclosing Dos Cabezas Spring. The prehistoric component consist of the following: 4 rock shelters (RS); 2 rock rings (RR), one possibly a hunting blind; 33 bedrock milling features (BMF); 5 artifact concentrations (AC), with the exclusion of AC2, all contain prehistoric and historic artifacts); 3 bedrock tanks/cisterns (T). The historic component consist of the following: 1 rubble pile containing sections of historic steel water pipe (approximately 4 m long); 1 section of modern water pipe connected to spring which supplies potable water for the camping area; remnants of historic stone and concrete retaining wall, possibly part of a dam; 1 modern hearth, duration of use undetermined; AC1, 3, 4, 5 contain historic artifacts.

INDIAN HILL

IHL-A-I1 37-017313

Located on the Sweeney Pass USGS Quad, the isolate is located at the interface of a sandy wash and bouldery rock outcrop, east of the Jacumba Mountains and approximately 300 m southwest of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map). The isolate consists of a single bedrock milling feature with one slick, one mortar, and one basin. Refer to Milling Station Record and Illustration sheet for dimensions.

IHL-A-I2 37-017314

Located on the Sweeney Pass USGS Quad, the isolate is located east of the Jacumba Mountains in the vicinity of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map). The isolate consists of 3 pottery sherds (type unspecified).

IHL-A-I3 37-017359

Located on the Sweeney Pass USGS Quad, the isolate is located east of the Jacumba Mountains in the vicinity of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map). The isolate consists of 1 quartz assayed cobble and 1 quartz flake.

IHL-A-I4 37-017360

Located on the Sweeney Pass USGS Quad, the isolate is located east of the Jacumba Mountains in the vicinity of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map). The isolate consists of 2 obsidian flakes.

IHL-A-15 37-017361

Located on the Sweeney Pass USGS Quad, the isolate is located east of the Jacumba Mountains in the vicinity of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map).The isolate consists of 1 quartz flake.

IHL-A-16 37-017362

Located on the Sweeney Pass USGS Quad, the isolate is located east of the Jacumba Mountains in the vicinity of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map).The isolate consists of 1 pottery sherd (type unspecified).

IHL-B-11 37-017363

Located on the Sweeney Pass USGS Quad, the isolate is located east of the Jacumba Mountains in the vicinity of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map).The isolate consists of 1 quartz flake.

IHL-A-S1 37-018592 SDI-15621

Located on the Sweeney Pass USGS Quad. The property is located amongst bouldery rock outcrops east of the Jacumba Mountains and approximately 600 m north of Indian Hill Rockshelter (CA-SDI-2537). The property is situated among eroded bouldery outcrops of La Posta quartz diorite and consists of 3 yonis. There are no associated artifacts or habitation debris.

IHL-A-S2 37-018593 SDI-15622

Located on the Sweeney Pass USGS Quad. The property is located east of the Jacumba Mountains and immediately west of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map).The property is situated in a wash surrounded by bouldery outcrop and consists of 5 bedrock milling features, flaked stone debitage, and pottery sherds.

IHL-A-S3 37-018595 SDI-15624

Located on the Sweeney Pass USGS Quad. The property is located east of the Jacumba Mountains, approximately 200 m due west of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map), approximately 700 m northwest of Indian Hill Rockshelter (CA-SDI-2537). The west end of the property is located along the margin of a bouldery outcrop and the remainder of the property extends north and east into a wash. The property is likely prehistoric and consists of 17 bedrock milling features, portable milling equipment, 1 biface fragment, flaked stone debitage, 1 core/tool, pottery sherds, burned bone, 1 solder drop can, and 1 sanitary can.

IHL-A-S4 37-011076 SDI-11076

Located on the Sweeney Pass USGS Quad. According to the South Coastal Information Center (SCIC), IHL-A-S4 is part of previously recorded Locus 2 of CA-SDI-11076/H.The locus is situated in a sandy wash and consists of a historic debris scatter associated with the property of "China Camp", an early 1900s railway construction camp associated with the San Diego and Arizona Railway. The locus contains an accumulation of sanitary cans; solder drop cans, ring and drop cans, a blasting powder can, and fragments of Homer Laughlin hotel china. The majority of the debris scatter lies in an eroded linear culvert.

IHL-A-S5 37-011076 SDI-11076

Located on the Sweeney Pass USGS Quad. The property is located east of the Jacumba Mountains, approximately 300 m southwest of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map). According to the South Coastal Information Center (SCIC), IHL-A-S5 is part of previously recorded Locus 3 of CA-SDI-11076/H. The locus is situated in a wash and has both historic and prehistoric components. The prehistoric component consists of 1 bedrock milling feature, flaked stone debitage, a core, and pottery sherds. The historic component is a trash dump (locus 3) associated with the property of "China Camp", an early 1900s railway construction camp affiliated with the San Diego and Arizona Railway. The loci contains an accumulation of sanitary cans, solder drop cans, ring and drop cans, coffee cans, barrel hoops, various metal items, pieces of Homer Laughlin hotel china, butchery bone fragments, and milled lumber.

IHL-A-S6 37-018596 SDI-15625

Located on the Sweeney Pass USGS Quad. The property is located east of the Jacumba Mountains, approximately 300 m southwest of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map), approximately 500 m northwest of Indian Hill Rockshelter (CA-SDI-2537),The property is situated in a wash surrounded by bouldery outcrops and consists of 1 bedrock milling feature, 1 yoni, and flaked stone debitage.

IHL-B-S1 37-018594 SDI-15623

Located on the Sweeney Pass USGS Quad. The property is located at the base of the Jacumba Mountains along the southeastern margin of an eroded bouldery outcrop of La Posta quartz diorite designated Indian Hill on the USGS Sweeney Pass 7.5 minute topographic map. The property lies in a sandy wash next to the margin of a large rock outcrop and consists of an accumulation of habitation debris including bedrock milling features, property furniture associated with milling, small rockshelter with petroglyph, yonis, pottery sherds, burned bone, flaked stone artifacts, and flaked stone debitage

IHL-B-S2 37-018355 SDI-15568

Located on the Sweeney Pass USGS Quad. The property is located east of the Jacumba Mountains and approximately 160 m due north of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map). The property is multicomponent and situated in a wash surrounded by massive, eroded, bouldery, outcrops of La Posta quartz diorite. The property contains prehistoric milling equipment, 2 bifaces, flaked stone debitage, cores; prospected basalt cobbles, pottery sherds, and burned bone. The historic component consists of solder drop cans and sanitary cans.

IHL-B-S3 37-010230 SDI-10230A

Located on the Sweeney Pass USGS Quad. The property is located east of the Jacumba Mountains and approximately 160 m south of Indian Hill (as designated on the USGS Sweeney Pass 7.5 minute topographic map). The property lies in the vicinity of Indian Hill

Located on the Jacumba USGS Quad. From the Dos Cabezas siding on the San Diego and Arizona Eastern Railroad, take the dirt road south toward Dos Cabezas campground for approximately 1.1 mi. Turn right (west) onto the jeep trail and take this approximately 1.25 mi (to approximately 40 m due south of a high point (2440 ft elevation) on a ridge sloping toward the southeast. From this point in the jeep trail, walk 340 m at a bearing of 262 degrees. The northwestern most boundary of the property is approximately 270 m (at a bearing of 355 degrees) south of the peak in the Piedras Grandes hills, whose elevation is marked 2601 ft on the USGS Jacumba topographic quadrangle. Eastern edge of property is approximately 250 m south of 2601 ft elevation peak in Piedras Grandes hills. The property, roughly 65 m (NW/SE) X 25 m (at it's widest, NE/SW), consists of one bedrock milling platform with a single milling slick (designated as the property datum), a water catchment basin (tank), located on a large granite boulder, a relatively sparse scatter of pottery and a few lithic artifacts. The property is located in and around the braided- intermittent stream nearest and south of Piedras Grandes hills on USGS Jacumba topographic quadrangle.

PDG-A-S2 37-018598 SDI-15627

Located on the Jacumba USGS Quad, the property is located in the valley approximately 600 m due south of the peak in the Piedras Grandes hills marked 2601 ft elevation. The property is roughly 100 m E/W X 45 m N/S in the extreme limits of its boundaries. It consists of two bedrock milling features each with a single milling slick (the slick on BMF-1 has been designated property datum). The milling stations are part of a prominent N/S oriented bedrock outcrop that also contains a low rock shelter in which no cultural materials were discerned. A single porphyritic metavolcanic flake was recorded and marks the western property boundary. At the eastern-most boundary of the property, a single Salton Sea obsidian flake was recorded. In addition, a small locus (Locus-A) of four Tizon Brown sherds was recorded about 10 m SE of datum.

PDG-B-S1 37-018599 SDI-15628

Located on the Jacumba USGS Quad, the property is located 1.25 mi north of Dos Cabezas camp ground and 0.88 mi SW of Dos Cabezas water tank on San Diego and Arizona Eastern Railroad. This is a linear property consisting of 13 bedrock milling features and one water catchments tank. The property is situated at the edge of a sandy wash between a sand dune and the base of a steep hillside. Observed surface artifacts consist of <10 pieces of lithic debitage (quartz and obsidian), one obsidian biface mid-section, and one quartz biface mid-section, and four Tizon Brown pottery sherds.

PDG-B-S2 37-018368 SDI-15579

Located on the Jacumba USGS Quad, take the dirt road south from Dos Cabezas siding on the San Diego and Arizona Eastern Railroad for approximately 0.9 mi, then go west on jeep trail for approximately 0.5 mi. The southern boundary of the property is approximately 200 m north of this spot, situated on the eastern slope of an east/west tending sand dune. The property is approximately 60 m east/west X 60 m north/south, situated on the eastern slope of an east/west tending dune, approximately 40 ft in elevation above a drainage to the north that is at the southern base of a steep bouldery hill, of which the high point (300 m due north of property) is 2400 ft elevation. Property is approximately 45 m south of the southeastern perimeter of PDG-B-S1. Property has no milling features but consists of two primary loci of artifact concentrations. Locus 'A' is roughly 20 m N/S x 17 m E/W with 65+ potsherds and 10+ porphyritic metavolcanic flakes. Locus 'B' is much smaller in area, roughly 5 m N/S X 3 m E/W, with a concentration of 10+ potsherds. One hundred forty six potsherds were counted from within the entire property boundary, six of which were rim-sherds. Tizon Brownware predominates the pottery assemblage.

PDG-B-S3 37-018600 SDI-15629

Located on the Jacumba USGS Quad. From Dos Cabezas siding on San Diego and Arizona Eastern Railroad, take dirt road south toward Dos Cabezas campground for approximately 1.2 mi. Turn west on jeep trail and take this for 0.87 mi. From this spot walk 230 m due north to the yoni, which is the northern property boundary. The property consists of a yoni, one bedrock milling station, one distal section of an obsidian biface, and a single potsherd. The property, roughly 40 m N/S X <10 m E/W, is situated just off the eastern base of a prominent hill of large granite boulders.

PDG-C-S1 37-001290 SDI-1290

Located on the Jacumba USGS Quad, the property is located at the intersection of a wash and large bouldery outcrop southeast of Piedras Grandes near the west end of Palm Canyon Wash in the Jacumba Mountains. Property PDG-C-S1 is a prehistoric property along the margin of a bouldery outcrop in Palm Canyon Wash and consist of 1 rockshelter, 4 bedrock milling features (BMF1-4 and one of which is a cistern), 1 yoni, 1 pictograph (inside the rockshelter), 2 cores, 2 pottery sherds, and 1 artifact concentration (AC1) consisting of flaked stone debitage.

PDG-C-S2 37-108601 SDI-15630

Located on the Jacumba USGS Quad, the property is located at the intersection of a wash and large bouldery outcrop along the southeastern margin of Piedras Grandes, near the west end of Palm Canyon Wash, along the edge of the Jacumba Mountains. PDG-C-S2 is a prehistoric property positioned at the margin of a bouldery outcrop along the western edge of Palm Canyon Wash. The property consists of 2 bedrock milling features (BMF1&2), 7 pottery sherds, 1 quartz flake, and 2 areas of an exposed clay deposit.

PDG-C-S3 37-018602 SDI-15631

Located on the Jacumba USGS Quad, the property is located at the intersection of a wash and large bouldery outcrop, along the southeastern margin of Piedras Grandes, near the west end of Palm Canyon Wash in the Jacumba Mountains. Property PDG-C-S3 is a prehistoric property situated at the margin of a bouldery outcrop, along the western margin of Palm Canyon Wash, and consist of 1 bedrock milling feature (BMF1), 8 pottery sherds, 6 pieces of flaked stone debitage, and 1 handstone.

PDG-D-S1 37-108603 SDI-15632

Located on the Jacumba USGS Quad. Head south on the dirt road for 1.1 mi from Dos Cabezas siding on San Diego and Arizona Eastern Railroad line. Head west on the jeep trail for 0.75 mi and walk 360 m at 254 degrees (roughly west). A bedrock milling feature (designated property datum) is situated off the alluvial wash, southeast across a shallow drainage that courses along the base of the boulder hills. The property runs predominantly east/west (250 m); through the western end of a narrow (30 m) section of the

boundary juts 100 m toward the northwest. There are two bedrock milling features at the southern boundary of the property, with four milling slicks and a possible mortar between them. More than 120 ceramic sherds, at least two portable milling slabs, and relatively few lithic artifacts were recorded on property.

PDG-D-S2 37-001303\1304 SDI-1303\1304

Located on the Jacumba USGS Quad, to access property from Dos Cabezas siding on the San Diego and Arizona Eastern Railroad, take the dirt road south toward Dos Cabezas Spring/campground for 1.1 miles. Head west on the jeep trail for approximately 0.75 miles (to the end of the finger ridge of large boulders) and the property wraps around the finger ridge to the northeast, crosses the road to the south, and follows the basal contour of the ridge to the northwest. The property is large, U-shaped, and wraps around the southern end of a finger ridge of large granite boulders and spreads out toward the south, across the jeep trail. Along the base of the ridge, the property consists primarily of 22 bedrock milling features with nearly 100 milling surfaces combined, two rock art panels, and several caves. A distinct midden area is observable on the northwestern portion of the property beginning adjacent to the ridge and continues south and west across the jeep trail. Artifacts consist of 100+ metavolcanic flakes, 50+ potsherds. Some handstone fragments were also recorded.

PDG-E-S1 37-001302 SDI-1302

Located on the Jacumba USGS Quad, the property is situated on a boulder outcrop in the Piedras Grandes Region of Anza-Borrego Desert State Park. According to the locational information supplied for CA-SDI-1302, by the South Coastal Information Center, recorded archaeological property PDG-E-S1 appears to be an update of CA-SDI-1302. The property sits on an outcropping of very large boulders forming a rock shelter and a series of overhangs. Features at the property include, 6 bedrock milling features (see milling station record), 1 rock shelter, and possible rock art

PDG-E-S2 37-018605 SDI-15634

Located on the Jacumba USGS Quad, property sits at base of large boulder covered hill at edge of desert scrub plain between Piedras Grandes and Mortero Palms. Large property (185 meters N/S X 134 meters E/W) which runs along Southern and Eastern base of hill covered in large boulders and continues South onto desert plain. Property contains 3 rock shelters; 11 Bedrock milling features; water basins; 1 possible Yoni; and numerous other cultural constituents (see archaeological property record).

PDG-E-S3 37-018606 SDI-15635

Located on the Jacumba USGS Quad, the property is situated on a desert wash approximately 660 meters north of Mortero Palms and south of Piedras Grandes. The property is a small property (19 meters E/W X 40 meters N/S) with 2 milling slicks on one isolated boulder, 1 quartz core with 2 quartz flakes, and a light pottery scatter. The property is located on a desert wash, surrounded by large bouldery hills, between Piedras Grandes hills and Dos Cabezas Spring.

PDG-E-S4 37-018607 SDI-15636

Located on the Jacumba USGS Quad, the property is situated on a flood plain approximately 860 meters north of Mortero Palms. The property is a small property (25 meters N-S X 19 meters E-W) with 2 bedrock milling features (BMF# 1 and BMF #2), 1 handstone, and quartz flakes. The property is adjacent to a small outcrop of very large boulders on a desert scrub flood plain.

PDG-E-S5 37-018608 SDI-15637

Located on the Jacumba USGS Quad, the property is situated on a large boulder outcrop at edge of the desert scrub flood plain at the base of a hill with large boulders. The property is 32 meters N/S X 45 meters E/W and contains 1 bedrock milling feature with 7 milling surfaces (A-G), 1 rock shelter, 1 hammerstone located near the rock shelter, 1 pot-drop, and a light scattering of lithic debitage. The property is located on an outcrop of very large boulders which spill from a hill composed of these same boulders.

PDG-E-S6 37-018609 SDI-15638

Located on the Jacumba USGS Quad, Dos Cabezas Spring is 1.7 kilometers southeast of the property and Mortero Palms is 1.0 km to the southwest. This property (129 meters N/S X 75 meters E/W) consists of a small outcropping of large boulders on the desert plain surrounded by boulder covered hills. One bedrock milling feature with 6 milling surfaces is in the southwest portion of the property with one artifact concentration at the far northeastern boundary with sparsely scattered flaked stone and pottery sherds throughout property area. A heavily used jeep trail runs adjacent to the southeastern property boundary and jeopardizes property integrity.

PDG-E-S7 37-018610 SDI-15639

Located on the Jacumba USGS Quad, Dos Cabezas Spring is 1.7 kilometers southeast of the property and Mortero Palms is 1.04 kilometers to the southwest. The property is located at the base of a hill covered with large boulders. It extends onto the desert plain and also extends up the hill. There are 2 rock shelters with artifacts inside and carbon staining on the ceiling. There are several milling features, one of which has a handstone fragment on top of it. Artifacts include flaked stone, pottery, burned bone, and 1 mano fragment. The property is only a few meters south of a heavily used jeep trail and popular camping areas. The property has a modern fire ring and other signs of tourist impact.

PDG-F-S1 37-018614 SDI-15643

Located on the Jacumba USGS Quad, the property is located at the intersection of a wash and large bouldery outcrops south of Piedras Grandes near the west end of Palm Canyon Wash in the Jacumba Mountains. Property PDG-F-S1 is a prehistoric property that consists of 1 contemporary rockshelter, 2 bedrock milling features (BMF1 and BMF2), 2 (possible) yonis and 3 pottery sherds.

PDG-F-S2 37-001290 SDI-1290

Located on the Jacumba USGS Quad, the property is located at the intersection of a wash and large bouldery outcrops southeast of Piedras Grandes near the west end of Palm Canyon Wash in the Jacumba Mountains. Property PDG-F-S2 is a prehistoric property situated along the margin of a bouldery outcrop in Palm Canyon Wash. The property consists of 2 rock shelters (RSA and RSB), 1

rock overhang, 11 bedrock milling features (BMF1-11), 4 bedrock tanks/cisterns, 1 (possible) yoni, pottery sherds, flaked stone debitage, cores, burnt bone, and fire altered rock.

PDG-G-S1 37-018364 SDI-15577

Located on the Jacumba USGS Quad, the property is located near the west end of Palm Canyon Wash and 1.1 km northeast of Dos Cabezas Spring along the edge of the Jacumba Mountains. Property PDG-G-S1 is a Prehistoric property in a sandy wash and consists of 1 bedrock milling feature (BMF1), 1 bedrock tank (F1), extensive ceramic and flaked stone debitage scatter, 8 milling slab fragments, 1 handstone, 1 quartz biface fragment, and 1 (probable) clay pipe stem fragment.

PDG-G-S2 37-018613 SDI-15642

Located on the Jacumba USGS Quad, the property is located near the west end of Palm Canyon Wash and 900 m north of Dos Cabezas Spring along the edge of the Jacumba Mountains. Property PDG-G-S2 is a prehistoric property paralleling a drainage through a sandy wash and consists of 9 bedrock milling features (BMF1 - 9) and dense artifact scatter including, pottery sherds, flaked stone debitage, burned bone, and a quartz projectile point.

PDG-G-S3 37-108611 SDI-15640

Located on the Jacumba USGS Quad, the property is located near the west end of Palm Canyon Wash along the southeastern margin of a bouldery rock outcrop. Property PDG-G-S3 is a prehistoric property situated along the edge of a bouldery rock outcrop on the margin of a wash and consists of 7 bedrock milling features, 2 tanks/cisterns, 1 rock overhang (with rock art inside), pottery sherds, bunt bone, shell, fire altered rock, and flaked stone debitage.

PDG-G-S4 37-018612 SDI-15641

Located on the Jacumba USGS Quad, the property is located at the west end of Palm Canyon Wash near a bouldery outcrop southeast of Piedras Grandes. The property is predominantly a prehistoric property, with a historic component, and is situated in the wash near the lower fork in the dirt road and immediately southeast of the bouldery rock outcrop. The prehistoric component consist of 8 bedrock milling features, pottery sherds, bunt bone, fire altered rock, a handstone fragment, and flaked stone debitage. The historic component consist of several section of water pipe, historic glass fragments (manganese, aqua, olive, and purple), and 1 sanitary can.

MORTERO PALMS CAMP

MPC-S1 37-018365 SDI-15578

Located on the Jacumba USGS Quad, the property is located on an alluvial fan above the southern margin of Palm Canyon Wash, south of Piedras Grandes in the Jacumba Mountains. The property traverses a wash and a low bench above the wash, and extends into the mouth of Palm Canyon. The property has a prehistoric component which consists of 7 bedrock milling features (BMF), 1 large artifact concentration (AC1), thin veneer of flaked stone debitage, pottery sherds, and 1 milling stone fragment.

MPC-S2 37-018604 SDI-15633

Located on the Jacumba USGS Quad, the property is located on an alluvial fan above the southern margin of Palm Canyon Wash, south of Piedras Grandes in the Jacumba Mountains. The property is situated at the intersection of an alluvial fan and bouldery outcrop, is a multi-component property, and consists of 3 bedrock milling features (BMF1-3), 1 milling slab fragment, a thin veneer of prehistoric artifacts, 2 historic can scatters, and the remnants of a historic stone and concrete structure built into a crevice in the bouldery outcrop along the southern margin of the property.

SOUTH CARRIZO WASH

SCW-S1 37-001198 SDI-1198

Located on the Sweeney Pass USGS Quad, the property is situated along a ridge overlooking Carrizo Creek to the north and it lies east of the intersection of Carrizo and Sweeney Canyons. SCW-A-S1 is an extensive property with indeterminate boundaries. The southern and eastern boundaries were arbitrarily designated since they appeared to continue indefinitely beyond the designated survey boundaries. Within the area of recordation, the property consist of 5 Bedrock milling features (4 slicks, 1 basin), 2 rock rings, 2 trail sections, 1 cairn with weathered lath, 47 reduction loci, 81 Hammerstones, 33 core/tools, 62 cores, 1 basalt biface, and 2 flake tools. The overall flake density across the property was approximately 4 flakes per square meter.

SWEENEY PASS ROAD

SPR-A-I1 37-001211 SDI-1211

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2.1 quartz core and 4 quartz flakes according to South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS), current project (see P11) "other" resources property SPR-A-I1 falls within boundaries of previously recorded property CA-SDI-1211 (later property not specifically recognized during fieldwork for present study, SCIC-provided copies of CHRIS records for SDI-1211 included here following record sheets for SPR-A-I1).

SPR-A-I2 37-001211 SDI-1211

Located on the Sweeney Pass USGS Quad The isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2.4 porphyritic metavolcanic flakes in a 10 m diameter area according to South Coastal Information Center (SCIC) of the

California Historical Resources Information System (CHRIS), current project (see P11) "other" resources property SPR-A-I2 falls within boundaries of previously recorded property CA-SDI-1211 (later property not specifically recognized during fieldwork for present study, SCIC-provided copies of CHRIS records for SDI-1211 included here following record sheets for SPR-A-I2).

SPR-A-I3 37-017326 SDI-15343

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 8 porphyritic metavolcanic flakes in a 10 m diameter area.

SPR-A-I4 37-017342

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 basalt core.

SPR-A-I5 37-017343

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 porphyritic metavolcanic core.

SPR-A-I6 37-017344

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 porphyritic metavolcanic assayed cobble.

SPR-A-I7 37-017327 SDI-15344

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 porphyritic metavolcanic core/ tool, 1 porphyritic metavolcanic flake, 1 quartz assayed cobble.

SPR-A-I8 37-017328 SDI-15345

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 quartz reduction locus with 22+ flakes.

SPR-A-I9 37-017345

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 2 quartz flakes.

SPR-A-I10 37-017346

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 core and 1 flake (material type unspecified).

SPR-A-I11 37-001210 SDI-1210

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 quartz core, 1 quartz flake, and 1 hammerstone (material type unspecified) according to South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS), SPR-A-I11 located within boundary of previously recorded property CA-SDI-1210; during fieldwork for present study, SPR-A-I11 recorded as "other" (non-property) resources property located outside boundary of project "property" SPR-A-S1 recorded as SDI-1210 (copy of location map for SPR-A-S1/SDI-1210 and SCIC-provided copy of previous SDI-1210 record included here following recordation sheets for SPR-A-I11).

SPR-A-I12 37-001211 SDI-1211

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 2 cores, 14 flakes, 1 hammerstone (all material types unspecified) according to South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS), current project (see P11) "other" resources property SPR-A-I12 falls within boundaries of previously recorded property CA-SDI-1211 (later property not specifically recognized during fieldwork for present study, SCIC-provided copies of CHRIS records for SDI-1211 included here following record sheets for SPR-A-I12).

SPR-A-I13 37-017347

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 basalt flake.

SPR-A-I14 37-017329 SDI-15346

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 quartz core and 3 quartz flakes.

SPR-A-I15 37-001210 SDI-1210

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 quartz reduction locus with 20+ flakes according to South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS), SPR-A-I15 located within boundary of previously recorded property CA-SDI-1210; during fieldwork for present study, SPR-A-I15 recorded as "other" (non-property) resources property located outside boundary of project "property" SPR-A-S1 recorded as SDI-1210 (copy of location map for SPR-A-S1/SDI-1210 and SCIC-provided copy of previous SDI-1210 record included here following recordation sheets for SPR-A-I15).

SPR-A-I16 37-001210 SDI-1210

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 8 quartz flakes according to South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS), SPR-A-I16 located within boundary of previously recorded property CA-SDI-1210; during fieldwork for present study, SPR-A-I16 recorded as "other" (non-property) resources property located outside boundary of project "property" SPR-A-S1 recorded as SDI-1210 (copy of location map for SPR-A-S1/SDI-1210 and SCIC-provided copy of previous SDI-1210 record included here following recordation sheets for SPR-A-I16).

SPR-A-I17 37-017348

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 quartz flake and 1 porphyritic metavolcanic flake.

SPR-A-I18 37-001210 SDI-1210

Located on the Sweeney Pass USGS Quad, according to South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS), SPR-A-I18 located within boundary of previously recorded property CA-SDI-1210; during fieldwork for present study, SPR-A-I18 recorded as "other" (non-property) resources property located outside boundary of project "property" SPR-A-S1 recorded as SDI-1210 (copy of location map for SPR-A-S1/SDI-1210 and SCIC-provided copy of previous SDI-1210 record included here following recordation sheets for SPR-A-I18) The isolate consists of 1 reduction locus with 10+ flakes and 2 core/ tools (material types unspecified).

SPR-A-I19 37-017349

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 porphyritic metavolcanic flake.

SPR-A-I20 37-001211 SDI-1211

Located on the Sweeney Pass USGS Quad The isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. according to South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS), current project (see P11) "other" resources property SPR-A-I20 falls within boundaries of previously recorded property CA-SDI-1211 (later property not specifically recognized during fieldwork for present study, SCIC-provided copies of CHRIS records for SDI-1211 included here following record sheets for SPR-A-I20) The isolate consists of 2 porphyritic metavolcanic assayed cobbles, 1 porphyritic metavolcanic core, 4 porphyritic metavolcanic flakes.

SPR-A-I21 37-017350

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 2 flakes (material unspecified).

SPR-A-I22 37-017307 SDI-15092

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 core and 3 flakes (material types unspecified).

SPR-A-I23 37-017309 SDI-15279

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 porphyritic metavolcanic assayed cobble and 2 porphyritic metavolcanic flakes.

SPR-A-I24 37-017310 SDI-15327

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 2 porphyritic metavolcanic cores, 1 porphyritic metavolcanic flake, 2 quartz flakes.

SPR-A-I25 37-017351

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 2 porphyritic metavolcanic flakes.

SPR-A-I26 37-017352

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 porphyritic metavolcanic core.

SPR-B-I1 37-017353

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 porphyritic metavolcanic flake.

SPR-B-I2 37-017311 SDI-15328

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 quartz reduction locus and 8 quartz flakes.

SPR-B-I3 37-017312 SDI-15329

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 porphyritic metavolcanic core and 4 porphyritic metavolcanic assayed cobbles.

SPR-B-I4 37-017354

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 hammerstone (material type unspecified).

SPR-B-I5 37-017355

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 hammerstone (material type unspecified).

SPR-B-I6 37-017356

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 core (material type unspecified).

SPR-B-I7 37-017357

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 quartz assayed cobble.

SPR-B-I8 37-018358

Located on the Sweeney Pass USGS Quad, the isolate is situated on a cobbled terrace at the top of Sweeney Pass and south of Highway S-2. The isolate consists of 1 rhyolite assayed cobble.

SPR-B-S1 37-018375 SDI-15582

Located on the Sweeney Pass USGS Quad The property is situated along a cobbled terrace at the top of Sweeney Pass and traversing both sides of the Vallecito - Sweeney Pass Road (Hwy-S2). The property is a prospecting field for local tool stone, situated on a dissected cobbled terrace, and consists of cleared circles, numerous reduction loci, cores, core/tools, bifaces, assayed cobbles, milling slabs, and an extensive flaked stone debitage scatter. A jeep trail runs across the northern margin of the property and there is a fire ring which appears to be historic or modern.

SPR-B-S2 37-018354 SDI-15567

Located on the Sweeney Pass USGS Quad The property is situated along a cobbled terrace at the top of Sweeney Pass and 400 m due south of post mile marker 52 along the Vallecito - Sweeney Pass Road (Hwy S-2). The property is a prospecting field on a slight topographic rise on a dissected cobbled terrace overlooking a 90 ft deep dry wash to the south. The property consists of reduction loci, cores, core/tools, and flaked stone debitage.

SPR-D-S1 37-001213 SDI-1213

Located on the Sweeney Pass USGS Quad the property is situated upon a cobbled terrace along Sweeney Pass and extends across both sides of the Vallecito - Sweeney Pass Road (Hwy - S2) The property is situated on a dissected terrace and is a prospecting field for local tool stone. The property consists of a circular clusters of cobbles, a linear rock alignment, assayed cobbles, cores, a large flat cobble with a peaked circular indentation, cleared circles, core/tools, reduction loci, hammerstones, bifaces, and flaked stone debitage.

SYD HAYDEN SPRING

SHS-I1 37-017290 SDI-15326

Located on the In-Ko-Pah Gorge USGS Quad, the isolate is located at a spring in the bend of a narrow sandy wash near the interface of the southern edge of Palm Canyon Wash and the Jacumba Mountains. The isolate consists of a single bedrock milling feature with one slick and one basin and is located in a narrow sandy wash by a spring.

SHS-S1 37-019006 SDI-15800

Located on the In-Ko-Pah Gorge USGS Quad, the property is located on a sandy, boulder strewn, shelf above a spring, near the interface of the southern edge of Palm Canyon Wash and the Jacumba Mountains. Property SHS-S1 is a prehistoric property located on a sandy, boulder strewn, shelf above a spring and consists of the following: 6 bedrock milling features (BMF1-6); 2 milling slab fragments (MS); 3 portable milling artifacts, property furniture, small boulders with milling surfaces (PM); 1 handstone; 2 bedrock tank/cistern features; 2 yonis on a single boulder; 54 pottery sherds; 61 pieces of flaked stone debitage; 4 cores; and numerous bone fragments.

SHS-S2 37-019007 SDI-15801

Located on the In-Ko-Pah Gorge USGS Quad, the property is located on a sandy, boulder strewn, shelf above a spring, near the interface of the southern edge of Palm Canyon Wash and the Jacumba Mountains. Property SHS-S2 is a prehistoric property located on a sandy, boulder strewn, shelf above a spring and consists of the following: 3 bedrock milling features (BMF1-3); 1 tank/cistern (F1), BMF3 is a basin with a tank/cistern; 1 rock overhang; 1 handstone; 1 hammerstone; 3 quartz flakes; 2 quartz cores; 1 quartz biface fragment; 3 pottery sherds; and 2 bone fragments.

SHS-S3 37-018363 SDI-15576

Located on the In-Ko-Pah Gorge USGS Quad, the property is located on a sandy rise above a small wash about 310 m west of the spring, near the interface of the southern edge of Palm Canyon Wash and the Jacumba Mountains. SHS-S3 is a prehistoric property located on a sandy rise above a small narrow wash with a light scatter of flaked stone debitage, pottery sherds, and 1 porphyritic metavolcanic (pmv) core/tool.

APPENDIX C

RATIONALES FOR INVENTORY METHODS AND OPERATIONS

by Matthew C. Hall

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This appendix presents some of the reasoning behind the construction of the sample block areas, the proposed terminology, recording parameters, and other matters. Schneider, during the editing of text written by Hall, judged that the full text of these rationales would best be presented in an appendix and not with the main document.

SELECTION OF SURVEY BLOCK SHAPES AND SIZES IN TARGETED AREAS

To facilitate systematic deployment of field personnel, the seven larger targeted areas were subdivided into rectangular survey "blocks" labeled by sequential letter within each locality and measuring from 200x250-m (0.05 km² [12 acres]) to 625x750-m (0.47 km² [116 acres]). Twenty-eight (57.1%) of the 49 blocks delimited consist of 500 m-square tracts (0.25 km² [62 acres]). The smallest targeted area (600x600-m Monkey Hill [0.36 km²]) was not subdivided into survey blocks.

PROBABALISTIC SAMPLING DESIGN

Key considerations in designing a probabilistic inventory survey are sample unit configuration, sample structure, and sample size. Among critical factors to take into account are the: (1) effect of differing sample unit configurations on archaeological property discovery frequencies; (2) relative advantages and disadvantages of subdividing the inclusive project area into discrete sampling strata or, alternatively, into separate, selective sampling domains that do not incorporate all potential survey lands and which may or may not be internally stratified; (3) degree and amount of detail sought in elucidating archaeological patterns and its consequences for determining sample sizes and acceptable levels of confidence in statistical appraisals of certain kinds of survey data; and (4) available field-time budget. No single factor overrides all others, reflecting the intrinsic compromise which must be struck on constructing a sample survey of multipurpose scope and, in the case of ABDSP, where information is pursued relating to prehistoric and historical archaeological records.

One technical note to make before proceeding further with presentation of the northern ABDSP probabilistic sampling design concerns the basic distinction between the *items of primary interest* and the *sample units* used in an archaeological sample survey. Comprising the former are "sites" (for expository purposes here including locations procedurally referenced as "off-site" or [see below] "other" archaeological properties) identified by single artifacts, accumulations of occupational debris, structure remains, and/or human physical modifications

of the landscape. Directed regional sampling to find sites necessarily involves sample units with definite spatial configurations and thus qualifies as cluster sampling, sites inside and on the border of a unit forming a "cluster" (Mueller 1975; Read 1975; Thomas 1975). Although invariably unequal in size (i.e., the number of sites varies between sample units), it is essential to recognize that even in the improbable event of clusters of equal size a random sample of m clusters (sample units), each containing n sites, consists of m independent choices, and not $m \times n$. In controlled sample survey, then, the sample unit/site cluster constitutes the sampling element, sites themselves cannot be regarded as statistically independent elements of observation. Viewed another way, that sites are found in a sample survey is due solely to their occurrence in the sample units selected for examination. Ramifications of the sample unit/site cluster versus specific site dichotomy affect the analytical routes taken in profiling spatial, morphological, and possibly (cf. Whalen 1990) chronological characteristics of archaeological resources on a regional scale.

Albeit sample units can be of any shape, logistical efficiency prescribes a rectangular configuration ranging between transects and squares. This rule-of-thumb appears most applicable when the number of units to inventory may be fairly large, selected units are well dispersed, and the field schedule confining. Non-rectangular or curvilinear sample units, in contrast, demand far more field time to maintain consistent orientation, length, and spacing of the lines walked by individual surveyors. Both transects and squares have been used successfully in archaeological sample surveys in western North America, various examples including 0.25x0.25 km, 0.4x-0.4-km, 0.5x0.5-km, 0.55x0.55-km, 0.6x0.6-km, 0.5x1.0-km, 1.0x1.0-km and 0.125x1.0-mi units. Experimental studies suggest transects are probably the better alternative for population (e.g., total site) estimates and squares for associational (e.g., site locational) analyses (cf. Judge, Ebert, and Hitchcock 1975; Matson and Lipe 1975; S. Plog 1976). On *a priori* grounds squares may be preferable in that it is easier to adjust population estimates derived with survey data from this unit type by careful weighting techniques than it is to adjust associational correlations (and other related estimates) developed with transect-based information where environmental variation among widespread units might be less controllable. Because particular features of the project landscape (spatially divergent biotic communities, riparian zones, complex, older geomorphic surfaces, natural travel corridors, etc.) might emerge as instrumental in distinguishing specific archaeological distributions, a square sample-unit configuration seemed the most parsimonious for the northern ABDSP probabilistic inventory survey.

Size Of The Probabilistic Sample Units

Setting actual sample unit dimensions, meanwhile, involves a balancing of field-time budget limits, logistics, and intended survey procedures. Pertinent aspects of the present case included approximately 40 five-person crew work days, a 25 m survey spacing interval, and, as discussed below, four different sampling domains and a theoretically desired minimum sample size of 30 units per domain. Without lengthy elaboration, of feasible options, a sample unit measuring 500 m on a side appeared to provide the most effective square unit configuration. At 25-m surveyor spacing, a five-person team can examine a unit in four sweeps of 125 m width each, affording a tactical advantage as against units of slightly greater or lesser size. The latter would require

either an extra sweep (ending inefficiently on the opposite side of a unit from the initial survey baseline) or fewer than five persons to complete the final sweep (inefficient deployment of personnel). Given the projected available field time, it was estimated at the outset that 90 sample units could be examined in the four northern ABDSP sampling domains. While less than the preferable total of 120 units needed to realize 30 per domain, much smaller (hence more numerous) units would have imposed excessive logistic costs in the amount of field time spent (i.e., lost) in crew travel between units -- a problem which, as it turned out, was severe enough even with use of 0.5x0.5-km sample units.

Selection of the Sampling Domains for the Northern Portion of ABDSP

Two principal structural issues influenced design of the northern ABDSP sample survey program: subdivision of the project area into sampling strata or domains; and use of some form of either random or systematic sampling to select units for inventory. In the former regard, for three inter-related reasons all of northern ABDSP was not included in the sampling universe. First, sizable sections in this part of the Park are extremely remote and difficult to access on foot (e.g., higher slopes of the Santa Rosa Mountains). Second, because minimal, if any, current human activity (recreational or developmental) occurs in such localities, possible cultural resources in these settings are not a major management concern. Third, the effort required of field teams to reach selected sample units in such places would consume far more time than unit survey itself, thereby substantially reducing total survey coverage to a quite likely ineffectual quantity. There are, though, drawbacks to exclusion of portions of the project area from the sampling program. For one, no knowledge is gained of potentially significant resource properties in these localities. For another, exclusion of some localities introduces a clear risk of bias into attempts to tie archaeological distributions to particular attributes of the natural environment based on survey results for localities actually sample. While unavoidable, the latter problem is not mortal since such inferred correlations serve as hypotheses to be tested as circumstances permit additional survey of areas included in and excluded from the original sample inventory. As a compromise between the research and resource management ideals and the directly contradicting practical reality (prohibitive logistic costs) of an all-inclusive sampling universe, four independent sampling domains were defined, in consultation with DPR Representative Manfred Knaak, for the northern ABDSP survey project (Map 2).

Named for their main landmarks, the four sampling domains include: Pacific Crest Trail, a narrow corridor along the mountain crestline border of northwestern ABDSP from Coombs Peak north to Tule Spring (24.23 km² [5990 acres]); Coyote Creek Drainage, central and upper portions of the Coyote Creek watershed (140.00 km² [34,600 acres]); Jackass Flat/Rockhouse Canyon/Butler Canyon, a foothill zone below the central-western escarpment of the Santa Rosa Mountains situated between Buck Ridge on the northeast and Clark Valley on the southeast (63.46 km² [15,690 acres]); and Eastern Santa Rosa Mountains, lower slopes, canyons, and alluvial fans on the southeastern side and around the southern end of the Santa Rosa Mountains immediately inside northeastern ABDSP (90.77 km² [22,440 acres]). Collectively, the four sampling domains encompass 78,720 acres (318.43 km²), or about 60% of northern ABDSP (Map 2).

Stratification of the Sample

Findings of probabilistic sample surveys of interior desert and arid steppe regions in western North America suggest that the locations of particular prehistoric archaeological phenomena can be predicted by the distributions of certain biotic, hydrologic, and/or lithologic resources, or by specific geomorphological variables (Thomas 1971, 1988; Bettinger 1975, 1977; Matson and Lipe 1975; Thomas and Bettinger 1976; Coombs 1979; Hall 1980; Rhode 1987; Delacorte 1990; Mikkelsen and Hall 1990; Delacorte, Gilreath, and Hall 1992; Byrd 1998; Byrd and Pallette 1998). These results indicate that stratification of a given sampling universe or, in the present instance, sampling domain, according to demonstrably key environmental features can markedly improve the accuracy and precision of statistical evaluations. However, as noted, at question in the northern ABDSP study is the patterning of prehistoric and, potentially, historical archaeological resources. The problem this poses for sample design construction arises from the oftentimes mutually exclusive locational and behavioral factors that effected deposition of aboriginal or euroamerican material culture remains at a given place. Spatial convergence of prehistoric and historical archaeological debris are, of course, not uncommon, at contact-period sites, around prominent landmarks, near springs, along perennial streams, and so forth. But it is equally evident that an attempt to incorporate the disparate variables which influenced prehistoric and historical site formation into a complex stratification scheme for individual sampling domains could result in strata so numerous as to prevent sampling of any single stratum at a statistically effectual rate. Moreover, even if such rates could be anticipated, the kinds of geographically precise environmental data required to demarcate strata potentially sensitive to the formation of prehistoric (e.g., mapped distributions of plants and animals of known aboriginal subsistence significance) or historical (e.g., locations of mining ore bodies or premier livestock grazing pasture) archaeological deposits within the Park are currently not available.

Choice of Systematic or Random Sampling

As for the issue to employ random or systematic sampling to select survey units, several reasons favor the former. A systematic strategy (even one begun with a "random" start) runs the risk of producing inventory data falling in or out of phase with geographic periodicities (e.g., comparatively evenly-spaced transverse drainages along a mountain front) that affect archaeological distributions (cf. Cowgill 1975). Further, conditions under which systematic sampling can be conducted properly (Cochran 1977:220-230) are probably not characteristic of archaeological surveys (Matson and Lipe 1975:132). For example, the ordering of the population about which information is being collected must be essentially random -- definitely not the case in archaeological inventory survey where the targeted population (deposits of material culture remains) are quite unlikely to be randomly distributed across the landscape. Lastly, since probabilistic analysis of the density, dispersion, and composition of archaeological phenomena is predicated upon critical assumptions connected with simple random sampling, it is nearly impossible to ensure that any or all of these could be satisfied with a systematic sampling program (Asch 1975). Enumerating potential sample units and a random draw of

those units to examine in each domain therefore became the preferred sampling method for the northern ABDSP probabilistic inventory.

Number of Sample Units Selected

Finally, the sample size (number of sample units selected) in a probabilistic survey for archaeological resources is crucial whether analyses center on survey information for whole sample units or for their individual constituents (sites, features, artifacts, etc.). Both levels of data treatment are relevant to the northern ABDSP investigation. An important consideration is the large-sample requirement to control sample variances in unequal cluster sampling when the information sought applies to *specific attributes of the primary items of interest*; for example, the analytical focus might be the number or diversity of artifacts (attributes) at different kinds of archaeological locations (items) within and across sampling domains, or average areal extent (attribute) of surface debris at said places (items). Sampling theory suggests control of sample variances is most practicable with a coefficient of variation (cv) of less than 10-20% in the attribute of concern. This in turn necessitates a sample size usually exceeding 30 survey units (Kish 1965:187; Cochran 1977:153). On the other hand, there is no large-sample requirement when the information desired relates to *sample unit characteristics*; for example, mean site density (by type or group [parametric]) or, given repeated random sampling, the probability of drawing in "hit" or "miss" fashion (nonparametric) a sample unit containing a prehistoric residential site or historical mining camp. Statistical precision is always lost, though, when sample size is reduced. While surveying 20 500-acre units might be cheaper and quicker than inventorying an equivalent amount of land with 100 100-acre tracts, data from the latter permit measurably more reliable population estimates and environment-associational correlations.

Unfortunately, the originally estimated allocation of 90 500x500-m sample units to the northern ABDSP probabilistic survey program was 30 shy of the 120 total needed to achieve the stipulated 30 units per domain statistics standard. In mitigating this constraint as best possible, two factors were considered: (1) the small size of the Pacific Crest Trail sampling domain (7.6% of project area) relative to the other three domains (19.9 to 44.0% each); and (2) the paramount DPR concern for heritage resources in the Coyote Creek watershed. As adjusted accordingly, the field plan called for the survey of 10 sample units in the Pacific Crest Trail domain and 30 in the Coyote Creek Drainage domain, with the rest (50) divided evenly between the Jackass Flat/Rockhouse Canyon/Butler Canyon and Eastern Santa Rosa Mountains sampling domains.

Creating the Sampling Universe

With the foregoing decisions regarding sample unit configuration, sample structure, and sample size, it became possible to delineate the specific quantitative parameters of the northern ABDSP probabilistic inventory survey program. Imposing a 500-m grid over the four defined sampling domains yielded a total of 1228 potential 500x500-m sample units. This total consists of only those sample units falling entirely within sampling domain boundaries. Because they comprise partial survey units, 500x500-m grid squares straddling domain boundaries were not included in

sampling frames of potential sample units for individual sampling domains. Exclusion of these squares, coupled with straightening of the somewhat irregular borders of the four sampling domains as initially defined, reduced the overall size of the Pacific Crest Trail (24.23 to 17.75 km²), Coyote Creek Drainage (140.00 to 132.75 km²), and Eastern Santa Rosa Mountains (90.77 to 88.25 km²) domains, and an increase in the extent of the Jackass Flat/Rockhouse Canyon/Butler Canyon domain (63.46 to 68.25 km²).

Following the criteria established, of 1228 potential sample units (Table 2 and Map 3) 71 (5.8%) were assigned to the Pacific Crest Trail (PCT) domain, 531 (43.2%) to the Coyote Creek Drainage (CCD) domain, 273 (22.2%) to the Jackass Flat/Rockhouse Canyon/Butler Canyon (JRB) domain, and 353 (28.7%) to the Eastern Santa Rosa Mountains domain. These units were labeled by the above-referenced (in parentheses) three-letter code for each domain (PCT, CCD, JRB, ESR) attached to a two-digit or three-digit number obtained by enumerating potential sample units from west-to-east and then north-to-south across a domain (i.e., PCT-01 to PCT-71, CCD-001 to CCD-531, JRB-001 to JRB-273, and ESR-001 to ESR-353). A table of random numbers (Blalock 1972) was used to select 90 sample units for survey in the four sampling domains (Table 3).

THE ACTUALITIES OF OPERATIONALIZING THE RANDOM SAMPLE DESIGN IN THE FIELD

In spite of the dedicated exertions of survey personnel, nine of the 90 sample units slated for examination (Table 3) could not be reached within any logistically reasonable amount of field time because of varying combinations of three factors: (a) the great distance to a unit from its nearest point of access (i.e., a road); (b) extreme topographic relief along the access route; and to a lesser extent (c) extreme topographic relief within the unit. For example, whereas most selected sample units are located well away from available access points, it was still possible to survey these tracts since severe topographic relief does not impede access or can be avoided efficiently during foot travel. Conversely, in some cases, while the direct linear distance to a sample unit may be fairly minimal, terrain too dangerous to climb over occurs along this route and to walk around the obstacle(s) requires a prohibitive expenditure of actual field time. In situations where topographic relief within a chosen sample unit is considerable, but the travel distance and access route to the unit manageable, it was almost always possible to accomplish a measure of systematic or at least non-systematic survey. As addressed later, the inability to inventory nine of the designated sample units due to access constraints compromises the statistical integrity of the samples drawn for the three domains in which these units are located (Pacific Crest Trail [two], Coyote Creek Drainage [two], Jackass Flat/Rockhouse Canyon/Butler Canyon [five]). The possible bias this contributes to statistical appraisals of the nature, density, and distribution of archaeological sites and materials, however, can be overcome by the post-stratification of sample units into "accessible" and "non-accessible" categories using a standardized ratio computed from the direct linear distance to a given unit from its nearest point of access, the cumulative topographic relief along this access route, and the total relief within the unit itself.

Targeted area and probabilistic sample inventory surveys of northern ABDSP were initially planned to be performed in two phases, with the latter following the former. After the work began and problems of access/travel time to survey localities quickly became evident, the two-phase approach was abandoned for a simpler strategy.

Adjustments to Field Procedures for Recording Bedrock Milling Features

To save field and later records processing time, individual bedrock-milling feature dimensions and precise configurations were not recorded. Each element on each bedrock outcrop was assigned to a generalized class and the number of type was noted. Measuring the exact length, width, depth, volume, and shape of each feature, noting various attributes (polish, striations, pecking, etc.), compiling scaled maps of each platform, and preparing formal milling station recordation forms would have added an estimated (conservatively) 50-60 person-days to the overtaxed field and laboratory time budgets for the project.

Overlapping of Targeted Areas and Probabilistic Sample Blocks

Seven of the 81 randomly selected 500x500-m sample units comprising the probabilistic phase of the northern ABDSP surveys overlap in five of the eight targeted areas (representing 295.3 [5.9%] of the 5005.8 acres contained within the 81 units [Table 2]). In fact (Table 5), two of the seven tracts lie entirely inside a targeted area, Coyote Creek Drainage sampling domain unit CCD-223 in the Fig Tree Valley locality (survey blocks C [3.8%], D [20.2%], G [12.2%], and H [63.8%]), and Jackass Flat/Rockhouse Canyon/Butler Canyon domain unit JRB-059 in the Hidden Spring locality (survey blocks B [49.4%], C [45.6%], F [2.6%], and G [2.4%]). More than 99% of a third parcel, Coyote Creek Drainage domain unit CCD-023 falls within the Horse Canyon targeted area (survey blocks C [4.1%], F [58.9%], and G [36.1%]). Lesser portions of three other selected Coyote Creek Drainage sampling domain tracts overlap targeted areas, a little over one-half of CCD-317 in the Fig Tree Valley locality (survey blocks O [18.7%] and P [36.3%]), and around one-third of CCD-374 and CCD-443 in the Salvador Canyon locality (survey blocks A [35.2%] and H [28.5%], respectively). Last of the randomly chosen sample tracts sharing acreage with a targeted area, 60% of Pacific Crest Trail domain unit PCT-08 occurs inside the Tule Spring locality (survey blocks A [38.4%] and B [21.6%]). There was no reason, obviously, to re-survey selected sample units or sections thereof falling within previously inventoried targeted areas. For purposes of using results of the probabilistic surveys to generate statistical assessments of archaeological distributions, however, locational and compositional information about resource properties situated in both targeted area and sample tracts was assimilated into map and data assemblies for the latter (see below and appendices F-H) and treated procedurally as if acquired in the course of the sample unit inventories.

Field Conditions and Inventory Methods

Of the total coverage (7719 acres [98% of planned coverage]), 72% (5550 acres) was surveyed in systematic and 28% (2169 acres) in non-systematic modes (Tables 4-5). It should be noted also that dense vegetation in certain project localities, such as found on mountain terraces above Tule Spring and elsewhere in the Pacific Crest Trail sampling domain, and in places along the bottom of Alder and Coyote Creek canyons, likely obscures archaeological resources which escaped detection during non-systematic and even systematic survey.

ARCHAEOLOGICAL SITE and OTHER PROPERTY DEFINITIONS

In a purely epistemological sense, archaeological "sites" are simply places in space where tangible physical residues of past human actions or events can be observed. Irrefutable abstractly, this vantage incorporates lone artifacts and locations harboring thousands of artifacts, as well as other archaeological features; no limit is set on the areal extent of a site nor assumptions made that its constituents are in the same condition or place as deposited originally or (excepting fragments of a single object) of the same age. Arguments have been advanced that conventional notions of sites as clusters of archaeological materials distinguished relatively by their higher content densities from low-volume "non-site" properties are improper because they impose undemonstrated ontological order to the dispersion of artifacts and features across a landscape (cf. Dunnell 1992).

Yet to discard the idea of a site as consisting of physical remains of one or more prior human activities on one or more occasions at a location seems patently nugacious, the seminal scientific tasks to face being, rather, deciphering the structured relations (chronological, morphological, technological, functional, depositional, etc.) between material elements comprising and explaining the organizations of behaviors responsible for the formation of an archaeological record (cf. Binford 1972, 1979, 1980, 1982, 1992; Schiffer 1976, 1987). From the position taken here, the issue may be more a matter of scale of observation than anything else: whether the nature and distribution of individual artifacts and features, and their relationships to one and another, be evaluated first across a landscape and then consolidated into smaller, definable spatial units or sites, or the other way around, the archaeological imperative is still to understand how and why these artifacts and features came to be what and where they are.

Within the framework of archaeological inventory survey in support of land-use policy planning, however, it must also be recognized clearly that a pervasive definition of a site as any place possessing even only one archaeological item confronts undeniably insurmountable constraints on the logistical and financial feasibility of managing, much less protecting, all "sites" and the heritage and research information therein contained.

In ARU inventory surveys at the Park and elsewhere in recent years, essentially the same field observations have been routinely recorded for off-site/non-site "other" as for "site" properties, albeit only one as opposed to multiple recordation forms was filled out for a location (see

below). Similarly, in these studies, research and management assessments of the contents and distributions of site and other properties across a project landscape are integrated and concurrent.

Initial Criteria

Acknowledging the variety of concerns represented in operationally defining site and other archaeological properties, the first set of criteria listed below were developed and proposed initially as guidelines for the ARU targeted area and probabilistic sample survey program in northern ABDSP (Hall 1994). An explicit delineation of criteria was offered given that some researchers might view them as too conservative (i.e., possibly significant sites within a cultural resources management context are not so identified and should be), while others might see them as too liberal (i.e., possibly insignificant "isolates" or "non-sites" are identified as sites and might receive more management consideration than they should and at the cost of less attention being directed toward "truly important" [sic] sites). As a safeguard against the vagaries of geomorphic circumstance and vegetative cover which can affect the visibility of archaeological phenomena, the previous criteria were intentionally polytypic (to avoid excessively conservative recordation) but designed to take into account the potentially ubiquitous occurrence of certain and, in a relative sense, isolated artifacts and features (e.g., pottery sherds, pieces of flaked stone debitage, tin/steel cans, glass bottle fragments, bedrock grinding platforms, and piles of fire-altered rock) in project localities (to avoid excessively liberal recordation). It was thus proposed that for a place or location to qualify procedurally as a "site" property at least one of the following criteria had to be met:

- (1) presence of midden (cf. unnaturally dark, organic-rich, or charcoal-laden sediments, indications of subsurface archaeological remains, and/or evidence of vertical archaeological stratigraphy); midden can include hearths or their remnants (cf. spatially discrete concentrations of fire-altered rock and/or charcoal or charcoal-stained or burnt sediments);
- (2) presence of at least three artifact classes with a minimum item (of whatever class) density of $1/3 \text{ m}^2$ in an area measuring no less than 10 m^2 in extent; prehistoric (cf. aboriginal) artifact classes consist of, for example, flaked stone debitage, categories of flaked (biface, projectile point, flake tool, etc.), ground (handstone, millstone, mortar, etc.), or battered (cobble hammers, pounders, etc.) stone tools, or ceramic sherds; historical (cf. euroamerican) artifact classes include, for example, cans of assorted sizes and manufacturing types, variously colored glass vessel sherds, crockery fragments, mining and construction tools, transportation equipment debris, or miscellaneous pieces of milled wood or post-fabrication modified or unmodified metal;
- (3) presence of two or more archaeological features no more than 25 m apart (at prehistoric sites these consist of, for example, bedrock grinding platforms, structure depressions, hearths, or rock art panels, at historical sites these include,

for example, building foundations, wells, corrals, or mining adits), or one feature within 10 m of at least one item of a non-feature artifact class;

- (4) presence of two or more items, of whatever artifact class (e.g., all can consist of flaked stone debitage pieces or tin cans) per 3 m² in an area measuring no less than 10 m² in extent; and
- (5) if two or more "sites" are found within 25 m of each other, they are collapsed into a single site "complex" -- the intent is to allow for the possibility of otherwise continuous surface debris scatters that have been broken up by localized natural processes (alluvial or colluvial sedimentation, erosional channel dissection, etc.), or modern land modifications (e.g., road, pipeline, or building construction).

Revised Criteria

The above criteria were hardly exhaustive and not intended to anticipate all potential archaeological phenomena, but provided reasonable parameters with which to approach the problem of site versus other property definition at the outset of the ARU northern ABDSP survey effort. Even so, soon after fieldwork was underway it became evident that these original criteria, if applied strictly, would require recordation as "sites" of locations characterized *solely* by, among other examples, a small cluster of fragments of a single pottery vessel, a large ceramic sherd broken into multiple pieces, a couple of grinding features on the same boulder, a patch of fire-darkened sediments, or a pile of fire-altered rock. While such manifestations unquestionably qualify as archaeological sites in the broader context discussed and are sources of valuable information on prior human land-use activities, the labor expenditures attending their inventory documentation as "sites" (multiple recordation forms, detailed site maps, illustrations, photographs, etc.) have the practical consequence of reducing the overall amount of survey that can be accomplished given the limited field-time budget available. The initial site criteria were therefore revised in the course of the ARU northern ABDSP surveys in accordance with strategies to maximize survey coverage under extant project time, labor, and cost constraints, and to generate as much data as possible on archaeological distributions for purposes of research evaluation, predictive modeling, and cultural resources management. As modified, then, the site criteria applied during the northern ABDSP survey work and in most respects the ARU program in central and southern portions of the Park (Wenzell and Hall 1999) are as follows:

- (1) presence of midden (unnaturally dark, organic-rich, and/or charcoal-laden sediments) *and* other archaeological materials or features (no specific minimum density) produced by past human occupation(s); the latter can include artifacts, bedrock/boulder grinding platforms, structure remnants (rock walls, "house" depressions, roofing debris, etc.), or identifiable food residues (e.g., butchered or burnt bone, or burnt seeds); although meeting the general definition of midden, in the absence of other archaeological materials or such features as milling

platforms, concentrations of fire-altered sediments and/or rock (cf. possible "hearths" or "roasting pits") are not regarded procedurally as sites;

- (2) presence of at least three classes of artifacts with a minimum item (of whatever class) density of $1/3 \text{ m}^2$ in an area measuring no less than 10 m^2 in extent; prehistoric (cf. aboriginal) artifact classes consist of, for example, ceramic sherds, flaked stone debitage, and categories of flaked (projectile point, biface, flake tool, etc.), ground (handstone, millstone, pestle, etc.), or battered (cobble hammers, pounders, abraders, etc.) stone implements; historical (cf. euroamerican) artifact classes include, for example, tin/steel cans of assorted sizes and manufacturing types, variously colored glass container sherds, crockery fragments, mining and construction tools, transportation vehicle parts, or miscellaneous pieces of metal or milled wood;
- (3) presence of one or more artifacts within 5 m of an archaeological feature; prehistoric features consist of, for example, bedrock/boulder milling platforms, structure depressions, rock art panels, or hearth or roasting pit remnants; historical features include, for example, building foundations, wells, corrals, or mining prospects and adits;
- (4) presence of two or more artifacts of whatever class (e.g., all can consist of pieces of flaked stone debitage, or cans) per 3 m^2 in an area measuring no less than 10 m^2 in extent; in the absence of other archaeological materials or features this density criterion *does not* apply in the case of concentrations of fragments of a single pottery vessel or sherd, or of a single assayed toolstone cobble; and
- (5) "sites" within 25 m of each another are collapsed into one multiple-locus site to allow for the possibility of otherwise continuous surface debris scatters broken up by local, natural processes (alluvial or colluvial sedimentation, erosional channels, etc.) or modern land modifications (e.g., road, pipeline, or building construction, or agricultural development).

Principal changes from initial to revised criteria are exclusion as "sites" of those properties characterized by, for example, one or more milling features on a single bedrock or boulder platform, fire-altered sediment/rock remains of a possible hearth or roasting pit, a rock cairn, or clusters of fragments from a single ceramic vessel (or larger sherd[s] thereof) or assayed toolstone cobble -- *but which lack any additional archaeological materials*. Locations failing to meet at least one of the revised criteria are regarded as "other" archaeological properties (the synonym "off-site" also appears in the following text). With few special exceptions (noted below where appropriate), these criteria were applied systematically in documenting results of the northern ABDSP surveys. Again, they by no means envision the total range of archaeological phenomena within the Park and, of course, are subject to (and would likely merit) refinement in future, alternative treatments of inventory findings.

ARTIFACT AND ARCHAEOLOGICAL FEATURE NOMENCLATURE

Sundry descriptive terms or phrasing are used in this report and appended documents describing artifacts and features observed during the northern ABDSP targeted area and probabilistic sample surveys. For clarity of exposition, the most common of these (all familiar to researchers working in the greater region) are reviewed here briefly. Given the scope of the investigation -- thousands of acres and hundreds of resource properties inventoried, involving multiple field sessions and dozens of surveyors with varied levels of archaeological experience -- from the beginning no attempt was or could be made to record each and every artifact in exhaustive analytical detail (e.g., pottery sherds by precise color, paste, temper, and finish, flaked, ground, and battered stone tools by an array of specific morphological, technological, and functional attributes, or tin/steel cans by height, diameter, and manufacturing mode). Rather, the project thrust was to collect information sufficient to characterizing the general categories and quantities of archaeological objects at a location. Fairly fine-grained descriptive particulars were noted about an artifact in a few instances (stone tool fragment type, pottery or glass bottle sherd color, projectile point morphological form, etc.), less exact detail in others (see appendices).

These qualifications aside, the most numerous artifactual items encountered consist of prehistoric ceramic vessel fragments (coded SHD in summary data tables and appendices) and flaked stone debitage (DEB). Plain brownware/buffware sherds predominate (~99%) among the former, with occasional pieces of pale-gray, orange, red, and peach color reported. No special classificatory significance should be attached to the appellations "brownware" and "buffware" in documents and property records accompanying this report; the distinction, if even that, reflects merely a color gradation from darker (brown) to lighter (buff) hues judged by individual surveyors. Indeed, because many of the "brownware" sherds seen feature burnished exterior and interior surfaces, the reference "brownware" does not carry its traditional descriptive connotation in inland regions of southern California and the southwestern Great Basin north of the Park, and in the case of the present northern ABDSP surface inventory surveys has little analytical value beyond a generic color term. In fact, it is probably safe to surmise that laboratory examination would demonstrate that prehistoric ceramic sherds within the Park are dominated by the one or more of the various "buff" wares and types recognized for interior mountain and desert areas of southeastern California and the lower Colorado River region (cf. Rogers 1936, 1945; Schroeder 1958; May 1978; Van Camp 1979; Waters 1982a, 1982b, 1982c; Laylander 1994).

Most of the debitage (waste produced with the manufacture, use, and repair of flaked stone tools) reported at inventoried northern ABDSP properties is composed of quartzitic rock (~70-75% [primarily quartz, quartz crystal]). Assorted cryptocrystalline silicates are also well represented (~20-25% [pale, tan, gray, red, red/brown-ribbed, etc.]), some of which likely derive from the Wonderstone (chert) source locality in the eastern Santa Rosa Mountains. A minor fraction (<1-2%) of the debitage observed is made up of phenocryst-speckled obsidian from Obsidian Butte in the southern Salton Sea, and other igneous materials (basalt, metavolcanic).

PROPERTY RECORDS PROCESSING

Recordation forms were completed in accordance with *Instructions of Recording Historical Resources* (California Office of Historic Preservation 1995): the DPR 523A *Primary Record* and 523J *Location Map* templates for all properties; and, for each site property, the DPR 523C *Archaeological Site Record* and 523K *Sketch Map* templates and, as necessary, ARU *Feature Record* and *Illustration Sheet* forms (see Appendix A). To supply further locational and descriptive information regarding "other" properties, the DPR 523A template has been modified to include an entry (P3c) for environmental context data normally presented only with the DPR 523C form. This supplementary section does not appear on the Primary Record prepared for site properties. A concordance of project and CHRIS designations (Appendix B) and recordation forms for the 590 northern ABDSP properties inventoried during the ARU field investigation (appendices I-L) are provided in attachments to the present report. Individual surveyor transect records are housed at the ARU in ring-binders organized by targeted area/survey block and probabilistic sampling domain/sample unit.

APPENDIX D

PHOTOLOG

OF BLACK-AND-WHITE PROJECT PHOTOS

ABDSPI PHOTOGRAPH LOG

UCRARU #1242

Roll:		UCRARU 1242-R2 (Page 1 of 2)	
Camera (Lens):		Nikon (35 mm)	
Film Type (Speed):		Black/White Negatives (125) (30 Frames Exposed)	
Date	Frame	View	Subject Matter*
11/06/94	0	-	CA-RIV-6310 (HC-B-S1): 1 BMS/3 BMM PLT (lens cap for scale)
11/06/94	1	-	CA-RIV-6310 (HC-B-S1): 1 BMM PLT (lens cap for scale)
11/06/94	2	-	CA-RIV-6310 (HC-B-S1): HND (pencil for scale)
11/06/94	3	-	CA-RIV-6310 (HC-B-S1): 2 BMS PLT (lens cap for scale)
11/06/94	4	-	CA-RIV-6310 (HC-B-S1): flakes from debitage concentration (pencil for scale)
11/06/94	5	-	CA-RIV-6311 (HC-F-S1): 2 BMM PLT
11/06/94	6	-	CA-RIV-6311 (HC-F-S1): same 2 BMM PLT shown in Frame 5 (trowel for scale)
11/06/94	7	W	CA-RIV-6311 (HC-F-S1): 5 m ² area of apparent hearth remnants
11/06/94	8	S	CA-RIV-6311 (HC-F-S1): another view of area shown in Frame 7
11/06/94	9	?	CA-RIV-6315 (PC-B-S1): rockshelter
11/06/94	10	?	CA-RIV-6315 (PC-B-S1): another view of rockshelter
11/06/94	11	?	CA-RIV-6315 (PC-B-S1): BMS features around rockshelter
12/03/94	12	?	CA-RIV-6316 (PC-B-S2): 2 m ² pottery sherd concentration (at temporary recordation datum)
12/03/94	13	?	CA-RIV-6316 (PC-B-S2): 1 BMS PLT with 1 HND found on ground surface nearby placed on PLT for photograph
12/03/94	14	?	CA-RIV-6316 (PC-B-S2): 1 BMM PLT
12/03/94	15	?	CA-RIV-6317 (PC-B-S3): 1 BMM PLT
12/03/94	16	-	CA-RIV-6317 (PC-B-S3): shaped quartzite HND (trowel for scale)
12/03/94	17	N	CA-RIV-6314 (PC-A-S1): overview of site
12/03/94	18	S	CA-RIV-6314 (PC-A-S1): overview of site
01/16/95	19	WNW	CA-SDI-15396 (SC-B-S1): overview of site showing terrace, palm trees, and main canyon drainage
01/16/95	20	S	CA-SDI-15396 (SC-B-S1): overview of site from north edge of terrace

ABDSPI PHOTOGRAPH LOG

UCRARU #1242

Roll UCRARU 1242-R2 (Page 2 of 2)			
Date	Frame	View	Subject Matter*
01/16/95	21	N	CA-SDI-15398 (SC-B-S3): overview of site (looking down canyon)
01/16/95	22	S	CA-SDI-15398 (SC-B-S3): overview of site (looking up canyon)
01/16/95	23	E	CA-SDI-15397 (SC-B-S2): overview of site (looking down canyon)
01/16/95	24	-	CA-SDI-15397 (SC-B-S2): HND fragment (in situ)
01/16/95	25	-	CA-SDI-15397 (SC-B-S2): MIL fragment (in situ)
01/16/95	26	?	CA-SDI-15397 (SC-B-S2): easternmost of 2 PLT each with 1 BMM
01/16/95	27	-	miscellaneous
01/16/95	28	-	miscellaneous
01/16/95	29	-	miscellaneous
<p>Note: View, direction of view (N/north, E/east, S/south, W/west, NNW/west-northwest); Subject Matter, content(s) of photograph (PLT/bedrock milling platform, BMS/bedrock milling feature flat in cross-section [cf. "milling slick"], BMM/bedrock milling feature comprising circular concavity [>>1 cm depth] cylindrical to bowl-shaped in cross-section [cf. "mortar"], HND/handstone, MIL/millingstone); *CHRIS trinomial (CA-RIV-, CA-SDI-) designation for specific property followed by project designation (in parentheses).</p>			

ABDSPI PHOTOGRAPH LOG

UCRARU #1242

Roll:		UCRARU 1242-R3 (Page 1 of 3)	
Camera (Lens):		Canon (35 mm)	
Film Type (Speed):		Color Prints (100) (38 Frames Exposed)	
Date	Frame	View	Subject Matter*
12/16/94	0	-	miscellaneous
12/16/94	1	-	miscellaneous
12/16/94	2	N	33-8571 (FTV-J-I4): overview of rainfall catch/cistern
12/16/94	3	NW	33-8571 (FTV-J-I4): overview of rainfall catch/cistern showing raised runoff diversion rim and possible livestock ranching brands
12/16/94	4	S	33-8571 (FTV-J-I4): overview of rainfall catch/cistern
12/16/94	5	NE	CA-RIV-6164 (FTV-F-S1): overview of cluster of BLD at site
12/16/94	6	S	CA-RIV-6164 (FTV-F-S1): 3 BMM PLT (pencil for scale)
12/16/94	7	S	CA-RIV-6164 (FTV-F-S1): 5 BMS PLT (person for scale)
12/16/94	8	E	view across southern Fig Tree Valley; Bailey's Cabin at center, Coyote Creek drainage at base of mountains in rear
12/17/94	9	N	CA-RIV-6165 (FTV-F-S2): rockshelter (in shadow at left center with person standing in mouth of shelter) and large PLT with 5 BMS (2 people on PLT)
12/17/94	10	ENE	CA-RIV-6165 (FTV-F-S2): interior of rockshelter (note modern fire ring on left)
12/19/94	11	NNE	CA-RIV-6318 (FTV-D-S1): overview of site from south side of Coyote Creek drainage (foreground)
12/19/94	12	N	CA-RIV-6318 (FTV-D-S1): portion of 38 m ² possible structure depression (person for scale)
12/19/94	13	N	CA-RIV-6321 (FTV-D-S4): overview of site
12/19/94	14	N	CA-RIV-6319 (FTV-D-S2): 38 m ² possible structure depression
12/19/94	15	NNW	CA-RIV-6319 (FTV-D-S2): overview of site (foreground) with Coyote Creek drainage bounding site on west (background)
12/19/94	16	NW	CA-RIV-6320 (FTV-D-S3): overview of site (background) from east side of Coyote Creek drainage (foreground)
12/19/94	17	ESE	CA-RIV-6319 (FTV-D-S2): overview of site on opposite side of Coyote Creek drainage (foreground) [photograph taken from ridge above CA-RIV-6320]

ABDSPI PHOTOGRAPH LOG

UCRARU #1242

Roll UCRARU 1242-R3 (Page 2 of 3)			
Date	Frame	View	Subject Matter*
12/19/94	18	NE	CA-RIV-6320 (FTV-D-S3): overview of site
12/19/94	19	SE	CA-RIV-6322 (FTV-D-S5): mouth of north rockshelter
12/19/94	20	S	CA-RIV-6322 (FTV-D-S5): 5 BMS/2 BMB PLT immediately southwest of north rockshelter
12/19/94	21	E	CA-RIV-6322 (FTV-D-S5): mouth of south rockshelter (person for scale)
12/20/94	22	ESE	CA-SDI-15044 (MH-S1): overview of south half of site
12/20/94	23	ENE	CA-SDI-15044 (MH-S1): overview of north half of site
(Frames 24-25 = non-project [prints removed])			
02/10/95	26	SE	CA-RIV-6160 (TS-A-S1): overview of site (pack to left of person on left at temporary recordation datum)
02/10/95	27	-	CA-RIV-6160 (TS-A-S1): close-up of ground surface with burnt human cranial fragment and pottery sherds in midden area north of datum (flagging tape roll for scale)
02/10/95	28	NNW	CA-RIV-6160 (TS-A-S1): overview of site showing midden exposed in sidewall of erosional channel (foreground)
02/10/95	29	SE	CA-RIV-6161 (TS-A-S2): overview of site
02/10/95	30	NNE	CA-RIV-6162 (TS-A-S3): main west-facing BLD panel with ~40 cupules
02/13/95	31	SSW	CA-RIV-6324 (PCT-10-S1): overview of general site locality/site found in small clearing (not visible in photograph) near base of ridge in center of photograph
03/28/95	32	NW	CA-SDI-15051 (HS-G-S1): overview of site showing 2 possible structure depressions (not clearly visible in photograph [2 persons on left standing on southwest and northeast edges of western 16 m ² depression/2 persons on right on north and south edges of eastern 19 m ² depression])
03/28/95	33	W	CA-SDI-15051 (HS-G-S1): overview of site
03/28/95	34	-	37-016846 (HS-G-I14): copper (?) button (clipboard and Lietz compass for scale)
03/28/95	35	ESE	CA-SDI-15049 (HS-F-S1): overview of site
03/28/95	36	E	CA-SDI-15050 (HS-F-S2): overview of site

ABDSPI PHOTOGRAPH LOG

UCRARU #1242

Roll UCRARU 1242-R3 (Page 3 of 3)			
Date	Frame	View	Subject Matter*
03/28/95	37	NNE	CA-SDI-1465 (HS-G-S2); 16 m ² apparent structure depression at Locus 1W
<p>Note: View, direction of view (N/north, NNE/north-northeast, NE/northeast, ENE/east-northeast, E/east, ESE/east-southeast, SE/southeast, S/south, SSW/south-southwest, W/west, NW/northwest, NNW/north-northwest); Subject Matter, content(s) of photograph (BLD/boulder, FLT/bedrock milling platform, BMS/bedrock milling feature flat in cross-section [cf. "milling slick"], BMB/bedrock milling feature comprising non-circular concavity [>1 cm depth] basined in cross-section [cf. "milling basin"], BMM/bedrock milling feature comprising circular concavity [>1 cm depth] cylindrical to bowl-shaped in cross-section [cf. "mortar"]); *CHRIS trinomial (CA-RIV-, CA-SDI-) or Primary Record (33-, 37-) designation for specific property followed by project designation (in parentheses).</p>			
12/14/94	1	SE	CA-RIV-414 (RTV-F-S2); view of canyon at 250 m ASL
12/14/94	2	S	CA-RIV-414 (RTV-F-S2); view of canyon at 250 m ASL
12/14/94	3	S	CA-RIV-414 (RTV-F-S2); view of canyon at 250 m ASL
12/14/94	4	S	view across southern Big Tree Valley; Bailey's Cabin at center, Coyote Creek drainage at base of mountains in back
12/17/94	8	E	CA-RIV-4145 (RTV-F-S2); rockshelter (in shadow at left center with person standing in mouth of shelter) and large FLT with 5-6 people on FLT
12/17/94	10	ENE	CA-RIV-4145 (RTV-F-S2); entrance of rockshelter (large square fire ring on left)
12/17/94	11	NEE	CA-RIV-4145 (RTV-F-S2); overview of site from south side of Coyote Creek drainage (foreground)
12/17/94	12	N	CA-RIV-4145 (RTV-F-S2); portion of 20' of possible structure depression (ground for scale)
12/17/94	13	E	CA-RIV-4145 (RTV-F-S2); overview of site
12/17/94	14	S	CA-RIV-4145 (RTV-F-S2); 20' of possible structure depression
12/17/94	15	SW	CA-RIV-4145 (RTV-F-S2); overview of site (foreground) with Coyote Creek drainage bounding site on right (in background)
12/17/94	16	SW	CA-RIV-4145 (RTV-F-S2); overview of site (background) from west side of Coyote Creek drainage (foreground)
12/17/94	17	SW	CA-RIV-4145 (RTV-F-S2); overview of site on opposite side of Coyote Creek drainage (foreground) (photograph taken from ridge above CA-RIV-4145)

ARDESI PHOTOGRAPH LOG

UCRARU #1242

Roll:			UCRARU 1242-R4 (Page 1 of 2)
Camera (Lens):			Nikon (35 mm)
Film Type (Speed):			Black/White Negatives (125) (27 Frames Exposed)
Date	Frame	View	Subject Matter*
01/16/95	0	?	CA-SDI-15397 (SC-B-S2): second of 2 PLT each with 1 BMM
01/16/95	1	-	CA-SDI-15397 (SC-B-S2): granite MIL FRG found near 1 BMS PLT (1 of 17 total 1 BMS PLT)
01/16/95	2	?	CA-SDI-15397 (SC-B-S2): 5+ BMS/5 BMM PLT with 2 HND/1 PST/several other large stones on PLT
01/16/95	3	-	CA-SDI-15399 (SC-E-S1): 1 BMM PLT
01/16/95	4	E	CA-SDI-15399 (SC-E-S1): overview of site (looking down canyon)
01/16/95	5	W	CA-SDI-15399 (SC-E-S1): overview of site (looking up canyon)
01/17/95	6	E	CA-RIV-6328 (CCD-237-S1): 52 m ² area of apparent hearth remnants (19 m ² area of apparent hearth remnants in background)
01/17/95	7	SW	CA-RIV-6328 (CCD-237-S1): another view of 52 m ² area of apparent hearth remnants shown in Frame 6 (49 m ² area of possible hearth remnants in background)
01/17/95	8	?	CA-RIV-6328 (CCD-237-S1): overview of south edge of site with 2 separate 1 BMS PLT along intermittent drainage
01/17/95	9	E	CA-RIV-6329 (CCD-237-S2): overview of west portion of site (person standing next to 3 BMB PLT)
01/17/95	10	W	CA-RIV-6329 (CCD-237-S2): overview of east portion of site with 13 m ² area of apparent hearth remnants
01/17/95	11	?	CA-RIV-6329 (CCD-237-S2): 3 BMB PLT (photograph underexposed)
01/27/95	12	E	CA-RIV-6325 (CCD-086-S1): overview of site with 4 BMB/3 BMM PLT in foreground
01/27/95	13	?	CA-RIV-6325 (CCD-086-S1): close-up of PLT shown in Frame 12
01/27/95	14	?	CA-RIV-6325 (CCD-086-S1): 1 BMS/1 BMM PLT
01/27/95	15	?	CA-RIV-6325 (CCD-086-S1): another 1 BMS/1 BMM PLT
01/27/95	16	S	CA-RIV-6325 (CCD-086-S1): overview of site
01/28/95	17	-	CA-RIV-6326 (CCD-086-S2): marine shell FRG
01/28/95	18	-	CA-RIV-6326 (CCD-086-S2): another view of marine shell FRG

ANDSPI PHOTOGRAPH LOG

UCRARU #1242

Roll UCRARU 1242-R4 (Page 2 of 2)			
Date	Frame	View	Subject Matter*
01/28/95	19	-	CA-RIV-6326 (CCD-086-S2): MIL FRG
01/28/95	20	S	CA-RIV-6326 (CCD-086-S2): overview of site
01/28/95	21	N	CA-RIV-6326 (CCD-086-S2): overview of site
01/28/95	22	W	CA-RIV-6326 (CCD-086-S2): overview of site (Frame 20-22 photographs taken from knoll of small ridge)
01/28/95	23	?	CA-RIV-6326 (CCD-086-S2): one of multiple areas of possible hearth remnants cut by intermittent drainage emanating out of Horse Canyon north of site
01/28/95	24	N	CA-RIV-6326 (CCD-086-S2): overview of site from hillside south of site
01/28/95	25	?	33-8639 (CCD-197-I2): overview of "quail guzzler"
01/28/95	26	?	33-8639 (CCD-197-I2): another view of "quail guzzler"
<p>Note: View, direction of view (N/north, E/east, S/south, SW/southwest, W/west); Subject Matter, content(s) of photograph (PLT/bedrock milling platform, BMS/bedrock milling feature flat in cross-section [cf. "milling slick"], BMB/bedrock milling feature comprising non-circular concavity [>1 cm depth] basined in cross-section [cf. "milling basin"], BMM/bedrock milling feature comprising circular concavity [>1 cm depth] cylindrical to bowl-shaped in cross-section [cf. "mortar"], HND/handstone, PST/pestle, MIL/millingstone, FRG/fragment); *CHRIS trinomial (CA-RIV-, CA-SDI-) or Primary Record (33-) designation for specific property followed by project designation (in parentheses).</p>			

Roll:			UCRARU 1242-R5	
Camera (Lens):			Nikon (35 mm)	
Film Type (Speed):			Black/White Negatives (125)	(25 Frames Exposed)
Date	Frame	View	Property	Subject Matter*
01/28/95	1	?	33-8639	another view of "quail guzzler" shown in Roll UCRARU 1242-R4 Frames 25-26
01/29/95	2	-	33-8631	olla fragments
01/29/95	3	?	33-8631	another view of olla fragments
01/29/95	4	-	SDI-15386	PST preform
01/29/95	5	N	SDI-15386	overview of site
01/29/95	6	?	SDI-15386	1 BMS/1 BMB/1 BMM PLT
(Frames 7-8 = non-project)				
02/07/95	9	E	RIV-6327	rockshelter
02/07/95	10	E	RIV-6327	close-up of rockshelter
(Frames 11-14 = non-project)				
05/13/95	15	-	SDI-15394	portable mortar
05/13/95	16	?	SDI-15394	1 BMM PLT with 1 PST nearby
05/13/95	17	SE	SDI-15394	overview of site
05/14/95	18	NW	SDI-15393	overview of site
05/15/95	19	?	SDI-15393	PTG BLD #2
05/15/95	20	?	SDI-15393	PTG BLD #4
05/15/95	21	?	SDI-15393	PTG BLD #3
05/15/95	22	?	SDI-15393	PTG BLD #3
05/15/95	23	?	SDI-15393	PTG BLD #2
05/15/95	24	?	SDI-15393	PTG BLD #4
05/15/95	25	?	SDI-15393	PTG BLD #1

Roll:			UCRARU 1242-R6	
Camera (Lens):			Canon (35 mm)	
Film Type (Speed):			Color Prints (100) (37 Frames Exposed)	
Date	Frame	View	Property	Subject Matter*
03/28/95	0	-	-----	miscellaneous
03/28/95	1	SSE	SDI-1465	overview of Locus 3W
03/28/95	2	?	SDI-1465	2 BMM PLT with 1 PST on PLT at Locus 3W
03/28/95	3	N	SDI-1465	33 m ² apparent structure depression at Locus 2W
03/28/95	4	E	SDI-1465	28 m ² apparent structure depression at Locus 2W
03/28/95	5	-	-----	miscellaneous
03/29/95	6	NE	SDI-15048	overview of site
03/29/95	7	NW	SDI-15047	24 m ² rock-ringed structure depression
03/29/95	8	E	SDI-15047	overview of site
03/29/95	9	E	SDI-15046	overview of site
03/29/95	10	?	SDI-1465	BLD with 10+ cupules at Locus 1E
03/29/95	11	E	SDI-15053	2 BMS/1 BMB PLT and 5+ BMS PLT
03/30/95	12	-	-----	miscellaneous
03/31/95	13	ESE	SDI-15056	overview of site
03/31/95	14	-	SDI-15057	Pinto series PRO
03/31/95	15	ESE	SDI-15057	overview of site
03/31/95	16	-	-----	miscellaneous
(Frames 17-36 = non-project)				
Roll:			UCRARU 1242-R7	
Camera (Lens):			Nikon (35 mm)	
Film Type (Speed):			Black/White Negatives (125) (6 Frames Exposed)	
Date	Frame	View	Property	Subject Matter*
05/15/95	1	?	SDI-15393	PTG BLD #5
05/15/95	2	?	SDI-15393	PTG BLD #6
05/15/95	3	WSW	SDI-15393	overview of site
05/15/95	4	WSW	SDI-15393	overview of site
05/15/95	5	?	SDI-15393	PTG BLD #7
05/15/95	6	ENE	SDI-15393	overview of site

Roll:			UCRARU 1242-R8	
Camera (Lens):			Nikon (35 mm)	
Film Type (Speed):			Black/White Negatives (125) (8 Frames Exposed)	
Date	Frame	View	Property	Subject Matter*
07/23/95	0	N	SDI-15387	overview of Locus III
07/23/95	1	NE	SDI-15387	overview of Locus III
07/23/95	2	-	SDI-15387	multiple SHD (Locus III)
07/23/95	3	-	SDI-15387	Cottonwood Triangular series PRO (Locus III)
07/23/95	4	-	SDI-15387	another Cottonwood Triangular series PRO (Locus III)
07/23/95	5	-	SDI-15387	3 obsidian DEB (Locus III)
07/23/95	6	SSW	SDI-15387	overview of site
07/23/95	7	SW	SDI-15387	overview of site

Roll:			UCRARU 1242-R9	
Camera (Lens):			Nikon (35 mm)	
Film Type (Speed):			Black/White Negatives (125) (15 Frames Exposed)	
Date	Frame	View	Property	Subject Matter*
11/17/95	1	?	37-017001	battered BLD
11/17/95	2	?	37-017001	another view of BLD shown in Frame 1
11/17/95	3	?	37-017001	another view of BLD shown in Frames 1-2
11/17/95	4	?	-----	another battered BLD east of BLD shown in Frames 1-3 (located outside project survey tract)
11/17/95	5	?	-----	overview of locality with two battered BLD shown in Frames 1-4
(Frames 6-11 = non-project)				
12/21/95	12	-	SDI-15392	Cottonwood Triangular series PRO
12/21/95	13	?	SDI-15392	2.5 m-diameter rock ring/cleared circle
12/21/95	14	W	SDI-15392	overview of site
12/21/95	15	W	SDI-15392	cluster of ground stone artifacts

APPENDIX E

TABLE OF RAW DATA FROM BUREAU OF LAND MANAGEMENT INVENTORY IN CENTRAL ANZA- BORREGO DESERT STATE PARK

by Joan S. Schneider

APPENDIX E

SUMMARY OF BLM RAW DATA AVAILABLE

Random Transect No.	Elevation (ft AMSL)	Phase	Number of Sites	Description	USGS 7.5' Quad
44-6	-----	I	0		Shell Reef (OWSRA) 11S/8E/section 27 approx.
105-3	-----	I	0		Shell Reef (OWSRA) 12S/8E/section 12
85-2	-----	I	0		Shell Reef (OWSRA) 12S/8E/1
83-6	-----	I	1	Temporary camp on mesquite dune	Shell Reef (OWSRA) 12S/8E/section 3
43-1	-----	I	0		Borrego Mt (OWSRA) 11S/8E/section 28 approx.
26-2	-----	I	0		Borrego Mt (OWSRA) 11S/8E/section 21 approx.
10-4	-----	I	0		Borrego Mt (OWSRA) 11S/8E/section 17 approx.
13-8	-----	I	0		Shell Reef (OWSRA) 11S/8E/section 13 approx.
124-3	-----	I	1	Potsherds in drainage	Harper Canyon/Borrego Mt 12S/8E/section 18 approx.
326-7	----	I	0		Carrizo Mt NE (Elephant Trees/Fish Creek) 14S/8E/section 2
323-7	760-1000	I	2 AB3-4	1 Temporary camp; trail with sherd scatter	Arroyo Tapiado (Vallecito Mt) 14S/8E/section 5
287-1	920-1040	I	3 AB5	1 temp camp with hunting blind; 1 lithic scatter; 1 trail	Harper Cyn (Stone Wash/Vallecito Mts) 13S/8E/section 27 approx.
55-1	1240-1320	I	2 AB8-9	1 BRM with tool; 1 rock cairn (historic?)	Borrego Sink (Yaqui Meadows) 11S/6E/section 33
171-7	2080-2320	I	8	2 roasting pit sites (1 with tool; 5 roasting pit and BRM sites, some with tools); 1 rockshelter camp with hearth , milling tool;	Harper Canyon 12S/7E/section 36 approx.
50-1	3480-3560	I	3	1 roasting pit site; 2 BRM sites	Tubb Canyon 11S/5E/section 34 approx.
220-6	----	I	0		Borrego Mountain 13S/9E/section 7
87-6	2760	I	2	2 roasting pit sites	Tubb Canyon 12S/5E/section 8 approx.
319-8	1600-1840	I	9	5 roasting pit sites; 3 roasting pits and BRM; 1 BRM only	Arroyo Tapiado: 14S/7E/section 3
302-2	1680-1840	I	13	6 roasting pit sites; 4 roasting pit/BRM sites, some with milling tools; 3 BRM only sites, some with milling tools	Harper Canyon/Arroyo Tapiado 13S/7E/section 35 approx
75-4	1420	I	1	2 cairns	Borrego Sink 12S/6E/section 2 approx

Random Transect No.	Elevation (ft AMSL)	Phase	Number of Sites	Description	USGS 7.5' Quad
238-7	2760-3320	I	17	10 roasting pit only sites; 1 roasting pit/BRM site; 1 roasting pit with variety of tools; 3 BRM sites; 1 rockshelter; 1 temporary camp	Harper Canyon 13S/8E/section 18 approx
263-3	2400-2880	I	26	6 roasting pit sites; 9 roasting pit/BRM sites; 7 BRM sites, most with milling tools; 2 temporary camps; 1 lithic scatter; 1 trail	Harper Canyon 13S/8E/section 19 approx
23-6	----	I	0		Borrego Mt 11S/7E/section 24
7-6	----	I	0		Borrego Mt 11S/7E/section 14
252-3	2560-2920	I	20	3 roasting pit sites; 9 roasting pit/BRM sites (most with milling tools); 7 BRM sites; 1 trail	Earthquake Valley 13S/8E/section 20
103-3	500-520	I	3	3 temporary camps, all with rock rings	Borrego Mt (SE?) 12S/7E/section 12
219-2	320-400	I	3	1 BRM site; 1 trail; 1 ceramic scatter	Borrego Mt SE 13S/8E/section 12
243-5	----	I	0		Borrego Mt SE 13S/8E/section 13
12-2	----	I	0		Borrego Mt 11S/8E/section 15 approx
133-5	1380-1620	I	10	8 roasting pit sites; 1 roasting pit/BRM site; 1 BRM site	Whale Peak 12S/6E/section 22 approx
290-9	2120-2800	I	23	13 roasting pit sites; 3 roasting pit/BRM sites; 5 BRM sites (most with milling tools); 2 trails, 1 with cairns and BRM	Monument Peak/Earthquake Valley 13S/5E/section 35 (Mason Valley/Box Canyon area)
134-4	1280-1490	I	16	5 roasting pit sites; 7 roasting pit/BRM sites; 4 BRM sites (some with milling tools)	Whale Peak 12S/6E/section 23 (estimated)
275-5	3360-3400	I	22	21 roasting pit sites; 1 BRM site	Whale Peak 13S/6E/section 27
255-4	3820	I	22	19 roasting pit sites; 2 BRM sites; 1 rockshelter site	Whale Peak 13S/6E/section 23
248-7	2810	I	15	12 roasting pit sites; 1 BRM site; 1 trail; 1 ?	Earthquake Valley 13S/5E/section 22
206-2	3800-4120	I	8	5 roasting pit sites; 3 BRM sites	Whale Peak 13S/6E/section 11
312-4	2040	I	4	1 roasting pit site; 2 BRM sites; 1 historic site	Agua Caliente Springs 14S/6E/section 4
314-5	1720-ca. 2000	I	11	7 roasting pit sites; 4 BRM sites	Agua Caliente Springs 14S/6E/section 2
281-5	2200-3000	I	13	13 roasting pit sites	Harper Canyon 13S/7E/section 27 approx
280-3	3200-4200	II	14	8 roasting pit sites; 5 BRM sites; 1 temporary camp	Whale Peak 3S/7E/section 28 approx
258-1	4400-4820	II	7	3 roasting pit sites; 1 roasting pit/BRM site; 3 BRM sites with tools	Whale Peak 13S/7E/section 20
179-8	3087-3200	II	30	26 roasting pit sites; 3 BRM sites; 1 temporary camp	Earthquake Valley 13S/6E/section 5
228-7	3360-3450	II	16	8 roasting pit sites with other items; 6 BRM sites; 2 temporary camps	Whale Peak 13S/6E/section 16
246-7	2800-3600	II	8	4 roasting pit sites; 4 BRM sites	Earthquake Valley 13S/5E/section 20

Random Transect No.	Elevation (ft AMSL)	Phase	Number of Sites	Description	USGS 7.5' Quad
103-2	3000-3600	II	10	8 BRM sites (some with tools and sherds); 1 rockshelter/temporary camp; 1 historic site	Tubb Canyon 11S/5E/section 15 (Culp Valley near Pena Spring area)
106-6	2800-3800	II	15	15 roasting pit sites	Ranchita/Tubb Canyon 12S/5E/section 18 approx
143-6	2600-2800	II	11	11 roasting pit sites (1 with milling tool and trail)	Earthquake Valley 12S/5E/section 26
30-1	-----	II	2 AB 385-386	1 sherd scatter (too small to qualify as a site); 1 historic site (mine with open shaft) (SDI-6646)	Ranchita 1S/5E/section 30
234-1	3200-3400	II	14	7 roasting pit sites; 4 BRM sites; 1 ceramic scatter; 2 temporary camps	Whale Peak 13S/7E/section 16 approx near Split Rock, Hapahah Flat
2-6*	----	II?	0	<i>No transect sheet or site forms found</i>	
40-3	----	II	0		
166-3*		II?	Presumed 0	<i>No transect sheet or site forms found</i>	
100-7		II	0		Borrego Mt (San Felipe Creek/LBV) spring
101-3		II	1 AB 402	Ceramic locus	Borrego Mt (San Felipe Creek/LBV) spring 12S/7E/section 10
102-5		II	4 AB 403-406	3 temporary camps; 1 BRM	Borrego Mt (San Felipe Creek/LBV) spring 11S/7E/section 11 (SW corner)
120-3		II	2 AB584-585	1 trail, 1 historic cairn	Borrego Sink 12S/7E/section 16 (SW corner)
166-4		II	15 AB370-384	7 RP; 5 RP+tBRM (some with tools); 2BRM (1 with tool);1 trail	Whale Peak (foothills of Vallecito Mt Ranges) 12S/7E/section 31
154-12	Ca 2740	II	14 AB 700-713 (SDI-7802-7815)	1 temp camp; 4 RP; 4 RP+BRM (some with tools); 5 BRM (some with tools)	Harper Cyn 12S/7E/section 27 approx
318-8	1760-1800	II	7 AB 917-923	6 RP; 1 RP with ceramics	Agua Caliente 14S/7E/section 4
286-5	Ca 860	II	3 (AB 598-600)	1 rock structure (semi-circular alignment); 2 BRM (1 with tool)	Harper Cyn 13S/8E/section 4

Random Transect No.	Elevation (ft AMSL)	Phase	Number of Sites	Description	USGS 7.5' Quad
281-17	Ca 2740	II	17 SDI- 8005- 8018	1 temp camp; 10 RP (1 with ceramic scatter); 4 RP+BRM; 2 BRM	Whale Peak 13S/7E/section ??
71-?	---	II	15 SCI- 7400- 7414	3 RP; 3RP+BRM; 9 BRM with tools;	Tubb Canyon 12S/6E/section 6 approx
63-8	Ca 2290	II	13	1 temp camp; 1 RP; 2 RP+BRM; 9 BRM	Tubb Canyon 12S/5E/section 3 and 7 approx
241-3		II	4 AB 601- 604	2 temp camps; 2 ceramic loci	Harper Canyon (Elephant Trees) <i>cannot find on concordance table</i>
71-11		II	15	3 RP; 3 RP+BRM (with tools); 8 BRM with tools; 1 BRM with ceramics	Tubb Cyn (east Pinyon Ridge)
228-7		II	5 AB 605- 609	2 temp camps with rock structure; 1 RP (with semi-circular wall); 2 BRM with tools	Agua Caliente (Carrizo Valley)
91-11		II	19 AB 610- 628	2 temp camps; 2 RP; 3 RP+BRM; 4 BRM; 6 BRM with tools; 1 BRM with ceramics; 1 ceramic locus	Tubb Cyn (near Yaqui Flat) 12S/5E/section 12
66-9		II	12 AB 468- 479	2 temp camps; 1 RP+BRM; 6 BRM; 2 BRM with ceramics; 1 ceramic locus	Tubb Cyn (near Angelina Spring/Grapevine Cyn) 12S/5E/section 5 (incomplete on GIS layer)
98-10		II	0		Borrego Sink (San Felipe Creek near narrows)
185-6		II	16 AB 640- 655	4 temp camps; 5 RP; 4 RP+BRM; 2 BRM with ceramics; 1 other	Whale Peak (Harper Flat) 13S/7E/section 5 approx.
160-13		II	17 AB 664- 680	1 temp camp; 6 RP; 4RP+BRM; 5 BRM (some with tools); 1 ceramic locus	Earthquake Valley (north Pinyon Hills) 12S/6E/sections 31/32
9-4		II	5 AB 681- 685	2 RP; 2 BRM; 1 BRM with ceramics	Tubb Cyn (Grapevine Cyn/Yaqui Flat) 12S/5E/sections 11/14
77-3		II	1	BRM with tool	Borrego Sink (NE of Cactus Valley)

Random Transect No.	Elevation (ft AMSL)	Phase	Number of Sites	Description	USGS 7.5' Quad
170-1		II	9 AB 714-721	3 temp camps; 1 RP; 1 RP+BRM; 3 BRM with tools; 1 lithic scatter	Harper Canyon (E of Harper Flat) 12S/7E/section 35 approx
9-3		II	13 AB 687-699	1 temp camp; 1 RP; 2 RP+BRM; 9 BRM (1 with tools)	Tubb Canyon (Grapevine Cyn)
9-2		II	6 AB 739-744	2 temp camps; 1 RP; 1 RP+BRM; 2 BRM	Tubb Canyon (Grapevine Cyn)
6-1		II	4 AB 745-748	1 temp camp; 1 RP; 2 BRM	Tubb Canyon (Grapevine Cyn)
52-7		II	16 (14) AB 749-764	1 temp camp; 3 RP; 3 RP+BRM; 1 RP+BRM with ceramics; 3 BRM; 2 BRM with ceramics; 1 ceramic locuses; 2 isolates	Tubb Cyn (Pinyon Ridge)
260-7		II	12 AB 777-788	1 village site; 7 RP; 3 BRM (some with tools); 1 BRM with ceramics	Harper Canyon (Hapaha Flat)
259-2		II	10 AB 767-776	2 RP, 3 RP+BRM (2 with tools); 4 BRM with tools; 1 other	Whale Peak (Hapaha Flat)
213-5		II	7	1 temp camp; 3 RP+BRM with tools; 3 BRM with tools	Harper Canyon (unnamed upland flat east of Harper Flat)
149-5	Ca. 1600	II	14 AB 806-819	6 RP; 3 RP+BRM; 5 BRM (1 with ceramics)	Whale Peak (Mescal Bajada) 12S/6E/section 26 approx.
188-1		II	2 AB 737-738	2 RP	Harper Canyon (Harper Flat)
186-7		II	2 AB 733-734	2 BRM (1 with tools)	Whale Peak (Harper Flat)
210-5		II	2 AB 735-736	1 RP+BRM with tools; 1 BRM with tools	Whale Peak (Harper Flat)

Random Transect No.	Elevation (ft AMSL)	Phase	Number of Sites	Description	USGS 7.5' Quad
3-1		II	7 AB 407-413	1 temp camp; 4 BRM; 1 BRM with flakes and ceramics; 1 cairn with ceramics	Tubb Canyon (Culp Valley)
16-8		II	1 AB 414	1 ceramic locus	Tubb Canyon (Culp Valley)
47-1		II	0		Ranchita (Grapevine Hills)
2-1		II	0		Tubb Canyon (west of Culp Valley, northwest of Hellhole Cyn)
116-10		II	4 AB 852-855	1 temp camp; 1 RP; 1 RP+BRM with tools; 1 historic cairn	Borrogo Sink (Round Granite Hill)
116-14		II	0		Borrogo Sink (San Felipe Creek, south of Yaqui Bridge)
99-14		II	1 AB 639	1 BRM	Borrogo Sink (San Felipe Creek near Narrows)
235-3		II	17 AB 881-897	2 temp camp; 3 RP; 6 RP+BRM; 5 BRM; 1 ceramic locus	Whale Peak (Hapaha Flat/Vallecito Mts)
272-6		II	5 AB 845-849	5 RP	Earthquake Valley (Blair Valley)
250-6		II	2 AB 850-851	1 RP+BRM with trail; 1 ceramic locus	Earthquake Valley (Blair Valley)
201-3		II	0		Earthquake Valley (Earthquake Valley)
212-9		II	15 AB 453-467	1 temp camp; 1 RP; 6 RP+BRM; 6 BRM with tools; 1 ceramic locus	Harper Canyon (near Dave McCain Spring)
305-10		II	6 AB 862-867	1 BRM with tools; 2 trails; 1 cairn; 1 conc FAR	Arroyo Tapiado (se corner Vallecito Mts)
176-6		II	19 AB 491-509	4 RP; 2 RP+BRM; 11 BRM; 2 ceramic loci	Earthquake Valley (Earthquake Valley)

Random Transect No.	Elevation (ft AMSL)	Phase	Number of Sites	Description	USGS 7.5' Quad
136-2.5		II	10 AB 629-638	1 temp camp with rockshelters; 2 RP; 2 RP+BRM; 5 BRM (some with tools)	Whale Peak (Quartz View Wash, Vallecito Mts)
130-6		II	12 AB 586-597	9 RP; 1 RP and trail; 2 cairns	Earthquake Valley (west fork Lizard Cyn)
183-?		II	11 AB 546-556	1 temp camp; 3 RP; 3 RP+BRM; 3 BRM with tools and ceramics; 1 ceramic locus	Whale Peak (Nolina Wash area)
164-8		II	16 AB 530-545	2 RP; 3 RP+BRM; 8 BRM (most with tools); 3 BRM with ceramics	Whale Peak (Nolina Wash area)
276-4		II	22 AB 958-979	3 temp camps; 6 RP; 4 RP+BRM; 6 BRM; 2 BRM with ceramics; 1 BRM with rockart	Whale Peak (Smuggler Cyn)
81-1		II	4 AB 877-880	4 cleared circle sites	Borrego Mt (Lower Borrego Valley)
23-1		II	2 AB 915-916	2 ceramic loci	Borrego Mt (Benson Dry Lake)
56-2		II	0		Borrego Mt
37 (NW/SE)		II	3 AB 580-583	2 BRM; 1 ceramic isolate	Whale Peak (Yaqui Meadows)
226-1		II	1 AB 835	1 temp camp with 21 rock rings, BRM, trails, hearths	Earthquake Valley (Earthquake Valley/Blair Valley)
217-13		II	2 AB 765-766	1 BRM; 1 BRM with flakes and ceramics	Harper Canyon (Elephant Trees)
53-16		II	7 AB 572-579	1 temp camp with rockshelter, sherds, BRM; 5 BRM (most with tools); 1 ceramic locus	Borrego Sink/Tubb Canyon (Yaqui Meadows)
131-7		II	9 AB 868-876	5 RP; 4 BRM (some with tools)	Whale Peak (Mescal Bajada/Chuckwalla Wash)

Random Transect No.	Elevation (ft AMSL)	Phase	Number of Sites	Description	USGS 7.5' Quad
139-15		II	5 AB 510-514	2 BRM; 1 BRM with flakes and ceramics; 1 trail; 1 cleared circle	Harper Canyon (near mouth of Harper Cyn)
310-11		II	6 AB 856-861	1 temp camp; 3 BRM; 1 BRM with flakes, ceramics, and hammerstone; 1 ceramic locus	Monument Peak (north Vallecito Valley)
147-?		II	6 AB 836-841	2 temp camps; 1 RP; 2 RP+BRM; 1 BRM	Whale Peak (Mine Wash area)
148-4		II	10 AB 796-805	2 temp camps; 4 RP; 1 RP+BRM with tools; 2 BRM (1 with ceramics); 1 BRM with flakes, ceramics, tools	Whale Peak (Mescal Bajada)
203-?		II	15 AB 515-529	1 RP; 11 BRM (most with tools); 2 BRM with ceramics; 1 other (2 pounding tools)	Earthquake Valley (Earthquake Valley)
176-12		II	10 (9) AB 948-957	3 RP; 6 BRM (most with tools); 1 isolate (ceramics)	Earthquake Valley (NW Earthquake Valley)
281-?		II	17 AB 898-914	1 temp camp; 9 RP; 4 RP+BRM; 1 RP with ceramics; 1 BRM with ceramics	Whale Peak (Hapaha Flat/Vallecito Mts)
126-6		II	15 AB 820-834	6 RP; 6 RP+BRM; 2 BRM (1 with tool); 1 ceramic locus	Earthquake Valley (Grapevine Mt)
230-?		II	10 AB 931-940	6 RP; 1 RP+BRM; 2 BRM; 1 ceramic locus	Whale Peak (between Whale Peak and Pinyon Mt Valley)
51-?		II	3 AB 842-844	1 temp camp with rockshelter; 1 RP; 1 BRM with tools	Tubb Canyon (Pinyon Ridge)
4-11		II	0		Tubb Canyon (NE of Culp Valley)

* These transects were listed as being completed on an inventory list inside the cover of the 3-ring binder, but no data sheets or site forms could be located in the same binder or in our site record inventory

APPENDIX F

PROJECT FINDINGS: ADDITIONAL

by Matthew C. Hall

Appendix F

PROJECT FINDINGS: ADDITIONAL COMMENTS

by Matthew C. Hall

This appendix includes comments by Dr. Mathew Hall that are an expansion of the discussion of some of the findings from the inventory in the Northern part of ABDSP.

CERAMICS

Most, if not all, of the pottery sherds encountered during the northern ABDSP inventory surveys probably fall into one or several of the "buff" wares and types recognized for the project region. Of the fifty prehistoric site components with ceramics, 21 (42.0%) exhibit relatively "low" (<50), seventeen (34.0%) "moderate" (50-300), and a dozen (24.0%) "high" (300-1000+) numbers of sherds. Overall sherd quantity generally increases with site size; for example, low counts (or estimates) were recorded for 60% of the properties under 2000 m² and high counts for 83% of those exceeding 10,000 m² (Tables 16, 24). Averaged across the total area of each site, however, sherd densities do not differ widely between these locations (typically less than 1/m² and rarely above 1-2/m² outside particular concentrations). Because archaeological remains are so common in many ABDSP localities, the measurement effect of site size is scalar; *ceteris paribus*, artifact amounts rise as property recordation boundaries expand. Apart from this consideration, the volume of ceramics at a location is a cumulative product of various factors, including the number of vessels brought to the site on any given occasion, the frequency, duration, and nature of activities involving pottery use (vessel repair, breakage/discard patterns, etc.), caching of vessels or their removal by departing site inhabitants, re-cycling of sherds for other purposes, and erosional processes (initially larger fragments breaking down into smaller pieces subject to dispersal or elimination due to natural [and human] agencies). Also, though not discerned in fieldwork for the current study, archaeological evidence of prehistoric pottery manufacture in northern ABDSP seems likely to exist.

FLAKED STONE

Three prehistoric sites are characterized by flaked stone debitage alone, a scatter of cryptocrystalline debris atop a finger ridge off the south side of Monkey Hill in central Coyote Canyon (MH-S4) and another of quartz (and quartz crystal) material at the confluence of Butler and Rockhouse canyons on the northwestern margin of Clark Valley (JRB-212-S1). Located in Alder Canyon southwest of Fig Tree Valley and upper Coyote Creek, the third property (AC-C-S3) is enigmatic because it contains only obsidian debitage, principally late-

stage thinning flakes apparently detached from a single bifacial core, and the glass does not display the phenocryst inclusions common to Obsidian Butte material. To be sure, this obsidian may well have originated at the latter source and merely lacks the signature phenocrysts. It is also possible that the glass comes from an unidentified volcanic formation within the Park or surrounding areas, or from distant localities in northern Baja and eastern California (the smoky translucency of the obsidian resembles material found in the Coso Volcanic Field over 300 km north of ABDSP). More puzzling, though, is that the assemblage here consists solely of debitage of a rare toolstone which occurs at less than 20% of the prehistoric sites examined and even then in but scarce quantities. In any case, the Alder Canyon obsidian site looks to represent an isolated depositional event whose behavioral context beyond the lithic reduction activity itself cannot be surmised.

A final commentary about flaked stone in northern ABDSP based on findings of this investigation is purely impressionistic. Namely, the incidence of flaked stone artifacts, especially formal tools, observed during the ARU surveys seems low compared to their reported frequencies in many adjacent regions. If not an outright misperception or one stemming from the constraints of surface inventory (limited time for close ground inspection, plant cover, invisibility of buried remains, etc.), this tenuously appraised disparity might be explained as a result of three mutually non-exclusive and possibly inter-related factors. One is that potentially few sources of lithic material suitable for fashioning bifaces, projectile points, flake tools, drills, burins, and similar sharp-edged implements exist within or around the northern area of the Park, a circumstance which may have restricted local manufacture and use of such artifacts. A second considers the marked decline in production of bifacially flaked tool blanks after ca. 2000-1500 B.P. evidenced throughout western North America (a partial or perhaps direct consequence of the introduction of bow-and-arrow weaponry), and an apparent, corresponding reduction in the amount of flaked stone entering the archaeological record. This trend could help account for the perceived, comparative infrequency of flaked stone in northern ABDSP inasmuch as available survey data suggest that most prehistoric properties in project localities date to the past thousand or 1500 years or so (see below), the aggregate incidence of flaked stone artifacts elsewhere appearing to be higher because of the greater time-depth of the extant archaeological record in these places. Lastly, whether indicative or independent of a general lack of sources of suitable toolstone locally, use of durable, non-lithic materials (e.g., bone or hard wood) in cutting, scraping, or other actions requiring a sharp-edge instrument might also be a factor in the relatively lesser occurrence of flaked stone speculated for the northern ABDSP region.

GROUND STONE

Seven sites with battered stone artifacts contain one or two examples, the eighth, 13 (an Alder Canyon targeted area property [AC-C-S2] at which multiple handstones, pestles, and battered stone tools sit atop and on the ground adjacent to several bedrock milling platforms). Including the latter, bedrock milling features are present at all but one of the sites with battered stone implements (Tables 16, 24), suggesting the use of these devices to pound/crush

vegetal (and animal?) matter on bedrock platforms. Some of the battered stone artifacts no doubt served as hammerstones employed in cobble/core reduction and flaked stone tool manufacture, others possibly in shaping milling implements or sharpening grinding surfaces.

Over half (19 [54.3%]) of the sites with ground stone tools contain one or two specimens, one in seven (five [8.5%]) three to five, and nearly a third (11 [31.4%]) a half-dozen to more than 45 (Tables 16, 24). The 204 artifacts specifically identified include 98 millingstones (48.0%), 78 handstones (38.2%), 26 pestles (12.7%), and two portable stone mortars (1.0%).

Handstones were observed at 28 of the site properties with prehistoric components (47.5%), millingstones at 24 (40.7%), pestles at eight (13.6%), and portable mortars at two (3.4%). Not unexpectedly, 93% of the sites bearing handstones possess millingstones (64.3%) and/or bedrock outcrops displaying flat (75.0%) or basin (53.6%) grinding facets (Tables 15-16, 23-24), the milling slabs and features serving as platforms upon which handstones were employed to grind vegetal foods, ostensibly primarily grass seeds, into meal. Similarly, 88% of the sites with pestles have bedrock mortars, the former used to pound and mill plant resources, such as acorns and other large or hard nuts and seeds, in these deep, cylindrical/bowl-shaped cavities (pestles sit inside or next to mortars at several locations). Only two properties where handstones were found lack millingstones or bedrock grinding features, one also being the lone recorded site containing a pestle but no mortar (either bedrock or portable). Both of these are located, though, in proximity to an immense site (HS-G-S2) in southern Jackass Flat (Hidden Spring targeted area) characterized by scores of grinding slabs and bedrock milling facilities. Two-thirds of the properties with millingstones possess flat (58.3%) and/or basin (45.8%) bedrock milling features, most (87.5%) of the rest consisting of fairly small (<2000 m²), sparse scatters of artifacts situated in places where few bedrock outcrops occur. One or multiple bedrock mortars occur at each of the two sites bearing a portable stone mortar.

Granite/granitic bedrock and boulder surfaces exhibiting milling facilities were observed at 41 (69.5%) of the 59 sites with prehistoric components. At these 41 sites minimum totals of 384 platforms and 580 individual grinding features were represented (Tables 15, 23). Several of these properties contain a solitary platform (seven [17.1%]), but the vast majority from two to ten (24 [58.5%]) or a dozen or more (10 [24.4%]), perhaps indicative of repeated and/or extended episodes of resource processing activity at many of the latter sites. Almost three-fourths (74.2%) of the identified platforms display a single grinding feature, the others divide roughly equally between those with two (13.3%) or three or more (12.5%). A few platforms possess flat/mortar (2.9%), flat/basin (2.3%), flat/basin/mortar (0.8%), or basin/mortar (0.5%) feature combinations. Overall, flat grinding facets are by far the most common, found on 73% of the platforms and accounting for 68% of the individual features recorded. Mortars and basins were noted, respectively, on 17% and 16% of the platforms, the former comprising 20% and the latter 12% of the delineated features. In the cases of multiple-feature platforms, flat facets most often occur with additional flat facets (82.5%), basins with flat facets (75.0%), and mortars with additional mortars (77.4%).

**CULTURAL RESOURCES INVENTORY
OF CAMPBELL-VALLECITO RANCH ACQUISITION
IN PREPARATION FOR OPENING IN FALL 2009**

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with contributions by

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July 2009

In 2004, Anza-Borrego Desert State Park (ABDSP) of the Colorado Desert District (CDD) of California State Parks (CSP) acquired from a private party, through the efforts of the Anza-Borrego Foundation (ABF) an approximately 3400-acre property known as the Campbell-Vallecito Ranch.¹ The area has long been known to have been an extremely important node on travel routes between the Colorado River, inland deserts, and the mountains and coastal regions to the south, west, and north (Fig. 1). A substantial literature exists that attests to Vallecito's importance in providing water and plant resources to travelers in ancient times through the historical periods as well as having encouraged long-term residence in the immediate area. With the 2004 acquisition, CSP not only accepted the responsibility for a unique desert ranching and residential complex, but also the stewardship of extremely significant prehistoric and contact-period cultural resources associated with the indigenous peoples of the region.

As plans have progressed toward opening the new Vallecito Acquisition for public use, in accordance with the Mission Statement of CSP, it became apparent that the depth and breadth of the cultural resources contained within the Acquisition² called for a Cultural Resources Inventory and Protection Plan before the Acquisition lands could be opened to the public. This report contains information collected during a (1) records and collections review, (2) a selected cultural resources inventory of routes proposed to be used by the public, (3) the results of a tamarisk removal project along Vallecito Creek, and (4) input from Native Americans, Bureau of Land Management archaeologists, historical societies, and local residents, all of whom have a special interest in the Acquisition lands. The adoption of the ABDSP General Plan in 2005, while not including a complete Cultural Resources Management Plan, did include some specific directions for use of the Vallecito Acquisition, although it had just recently become Park property. Keeping all requests and interests in mind, this report first presents what is known about the varied and unique

¹ At the time of the adoption of the ABDSP General Plan in 2005, the Acquisition was new, but there were some recommendations and land-use designations made for the area within the General Plan.

² A number of the cultural resources extend beyond the boundaries of the Acquisition onto Bureau of Land Management-owned lands.

resources of Vallecito and then makes specific recommendations regarding public access and public uses of areas within the Acquisition.

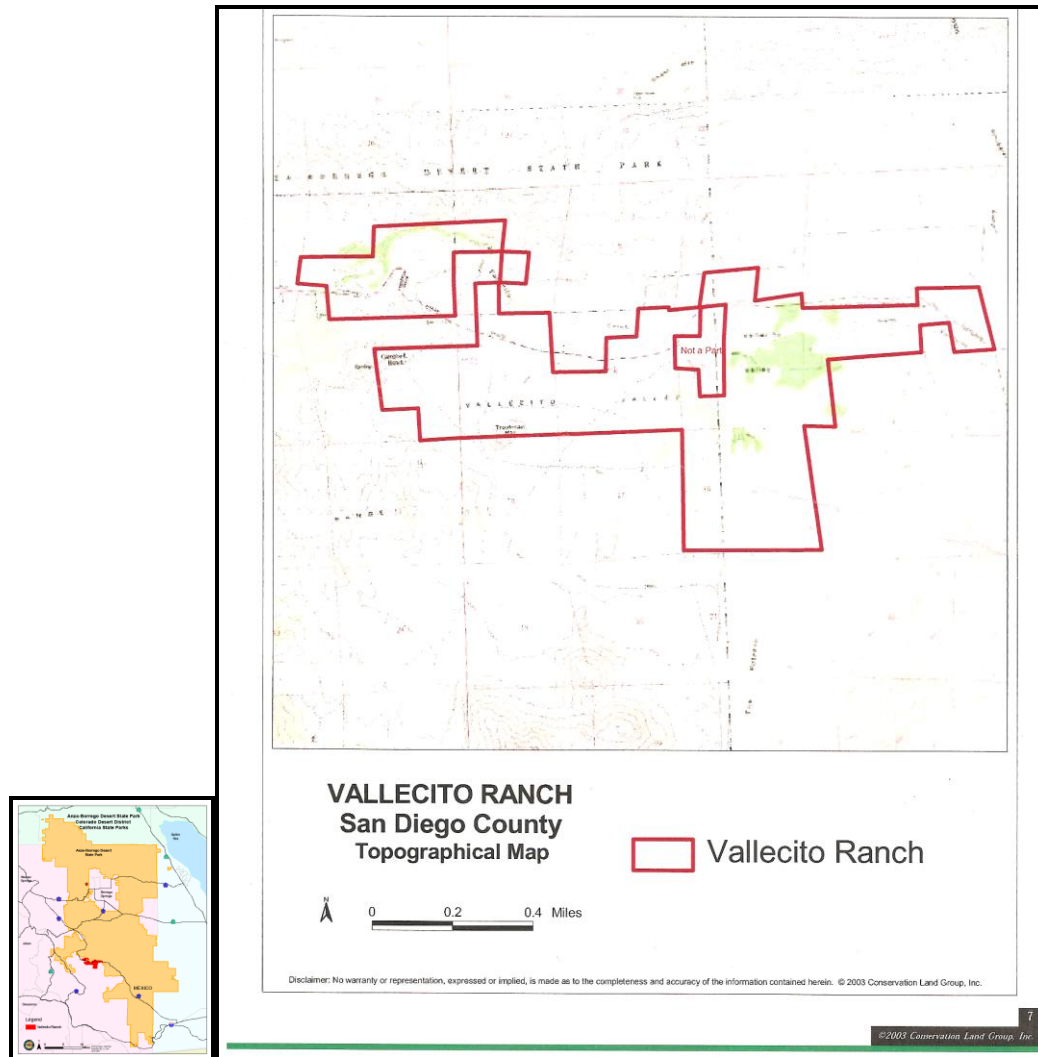


Fig. 1. Location of the Campbell-Vallecito Acquisition along Highway 2, Township 14 S, Range 6E, SBBM [adapted from Agua Caliente and Monument Peak 7.5' USGS topographic quadrangles]. General location map on left. Red area is Vallecito Acquisition. Maps by L. Jee.

PREHISTORIC AND HISTORIC CULTURAL RESOURCES

From historical records and archives, as well as from site records, field notes, photographs, and collections, and other materials at the San Diego Museum of Man and the South Coastal Archaeological Information Center, we recognized, even before the Acquisition, that Vallecito included:

- at least three extensive and highly sensitive Native American Village complexes, associated with Yuman-speaking Kumeyaay people, that were occupied from prehistoric times into the late 19th century;

- the remains of the 19th century homestead of James E. Mason;
- an historic ranch and residential complex of the early and mid 20th century that is known as the Campbell Ranch and later the Spencer Ranch³ (Wade et al. 2009); and
- an early 20th century rammed-earth house known as the Olin Bailey Cabin (Schneider and Thomson 2006).

Moreover, the San Diego County-owned San Antonio and San Diego Mail/Butterfield Stage Station, directly adjacent to the Acquisition land along State Highway 2, as well as sensitive prehistoric cultural resources recorded on BLM lands adjacent to the Acquisition on the north, west, east, and south are other components of what should be viewed as an important Cultural Landscape in the Vallecito region. Systematic cultural resources inventory had not yet been conducted within the Acquisition lands; therefore, at the time of the Acquisition, the complete picture of the number and extent of other cultural resources was uncertain.

The abundant and extensive natural resources of Vallecito Creek and the Vallecito *Cienega* would have attracted humans, as well as other animals. It was anticipated that additional cultural resources (both prehistoric and historic), other than those already known, would be present. From written accounts, we know that the *Cienega* contained pools of water and attracted first, Native Americans, and later Europeans, Mexicans, and Americans to the location. Even today, tules (*Scirpus* sp.), an aquatic plant, grow within the *Cienega*. Extremely abundant mesquite species (both honey [*Prosopis glandulosa*] and screwbean [*Prosopis pubescens*] and a variety of other shrubs and grasses used for food, forage, and basketry, were and are available. The plants and the water attracted a variety of animals that the inhabitants would have used for many purposes. The area also encouraged agriculture and we know that both indigenous and newly arrived people raised various crops at Vallecito by 1846 when the Army of the West passed through (Johnston 1848:612; Griffen 1943:219).

The Vallecito location was a life-sustaining node on a travel corridor that was used by prehistoric and historic travelers – indigenous people on-foot, traveling from the Colorado River and points east; explorers from the time of the Spanish; emigrants in wagons and stage coaches; gold-seekers; early U.S. military contingents; and the U.S. Mail, among others (Van Wormer et al. 2007). This is attested to in historical texts as well as in unpublished diaries written by travelers along the route that describe both the place and its indigenous and more recent inhabitants.

Vallecito encompasses more than 3400 acres of significant prehistory and history. This must be taken into account when planning for public access to and use of the Acquisition lands.

³ This complex was found eligible for nomination to the National Register of Historic Places as an Historic District (Wade 2006).

OWNERSHIP AND USE OF THE LAND: A HISTORY

- Ancestral territory of the Kumeyaay peoples from the time of their creation.
- Ethnographic area or village of *Hawi* or *Jagui* (the tules) (Rogers site record for C-165; Kroeber 1925:711).
- Important place on aboriginal trade and travel route between Colorado River peoples' villages and Pacific coast (Lawton 1976:29-30)
- Spanish "pioneer" trails of the Vallecito area were evidently aboriginal trails in continuous use since time immemorial (Bolton 1930, II:338-339; Rensch 1955:194).
- In 1772 Pedro Fages passed through San Sebastian (another *cienega* area to the north-northeast of Vallecito), pursuing mission deserters, and must have passed through Vallecito
- Pedro Fages made two trips in 1782 between the Colorado River and San Gabriel Mission; these brought him through Vallecito. He called the spot "San Felipe" and said that it had "plenty of pasture and two pools of water" (Priestly 1913:93).
- Between 1782 and 1846 travel along the Southern Overland Route⁴ was minimal and not well documented, although in 1787, Fages suggested that a military outpost could be established at Vallecito to aid the re-establishment of the overland route (Arrillaga 1969:96; Chapman 1921:348-349).
- In October of 1796, a visit to Vallecito was made by José Joaquin de Arrillaga (Governor of Baja California) who described a small settlement (Arrillaga 1969:96).
- Santa Ysabel Mission records (1818 and later) say that people came there from Vallecito (Englehardt 1920:169, 275, 350).
- In 1825, the Colorado River crossing (which had been non-operational due to hostilities) was again opened by the *Yumas* (Beattie 1933:62-64; Forbes 1965:246).
- In 1826-1827, the Southern Overland Route (between Sonora, Mexico and California) was again established (the Mexican Period). This led to increased dissension and warfare between Indians, Mexicans, and groups of Indians who allied themselves with the Mexicans. At the village of San Felipe (just to the northwest of Vallecito), many were killed in 1826, including people from Vallecito (Forbes 1965:249).
- Between the 1830s and early 1840s, it appears that, although the village at San Felipe was under Mexican control, Vallecito was not and therefore acted as a place of refuge (Forbes 1965:284-285).
- In May 1846 the Mexican-American War started. The Southern Overland Route came under the control of the United States; this greatly increased the activity along the Route and Vallecito was an important stopping and staging area for the military and, after 1848, others such as emigrants and gold-seekers.
- In November of 1846, Vallecito was visited by General Stephen W. Kearney and the Army of the West on their march westward from Ft. Leavenworth to

⁴ The "Southern Overland Route" is a name assigned to a combination of historic trails such as the Southern Emigrant Trail, the Butterfield Stage Route, and others. All passed through Vallecito.

California (Cleland 1930:218-219). In the four diaries available from those on that march, Vallecito is described as deserted, with abandoned cornfields and with cordage and basketry materials just left on the ground (Johnston 1848:612; Griffen 1943:219), indicating hasty departures on the part of those living there. Interesting English variations on the Spanish name for the place include: “Bayou Cita” and “Vayeau Chitoes.”

- In January of 1847, the Mormon Battalion, commanded by Lt. Colonel Philip St. George Cooke, came through Vallecitos (*sic*) and reported it abandoned (Cooke 1938:220-221).
- In December of 1848, a battalion led by Major Lawrence Graham, stopped at Vallecito for 19 days. Lt. Cave Couets noted that there was abundant cane and grass there and that the native residents were apparently related to the Yumas, ate rabbits, and had acorns from the mountains.
- Gold seekers, from as early as 1845, traveled from Sonora and elsewhere along the road through Vallecito. Morrison (1962:39) estimated that more than 200,000 people came through Vallecito, more than half between 1848 and 1853. The onslaught of non-native people traveling through Vallecito greatly disrupted the life styles of any native people who still resided there, but also likely provided occasional European goods.
- Diarists noted the environment, people, and conditions at Vallecito. In 1849, it was reported that the place had “fine grass and water” (Green 1955:75-76); that there were over 500 mules and horses resting there, and that there were three Indian families present (Evans 1945:165). It was reported that emigrants traveling through, raided Indian caches of stored mesquite beans and scavenged fallen beans from under the mesquite trees (Pancoast 1950:256). John Woodhouse Audubon (son of the famous artist and naturalist) visited Vallecito in October of 1849 and sketched the village there (Audubon 1906:168 [see Fig. 2, below]; Lindsay 2001: 350).
- California gold-seekers needed meat; this resulted in large cattle drives from Sonora and the greater Southwest, over the same trail through Vallecito. This, in turn, resulted in devastation of the natural vegetation and pollution of the Vallecito drinking water (Bartlett 1854:128-129; Bell 1932 [35]:209-210; Cleland 1930:306).
- Although some Indian presence remained at Vallecito, there were huge impacts on the resources of the Native populations in the area, resulting in many adaptations in dress, food, animal domestication, social patterns, and transition to a money-driven trade economy. During the Contact Period, it seems that there was a much closer alliance between the Vallecito and San Felipe communities than had previously been reported.
- About 1850, a short-lived military outpost was established at Vallecito, later used for provisioning Fort Yuma. A trading post was present in 1852 and was later improved by James Lassitor who sold supplies to both emigrants and military travelers (Wray 1996; Wade 2002).

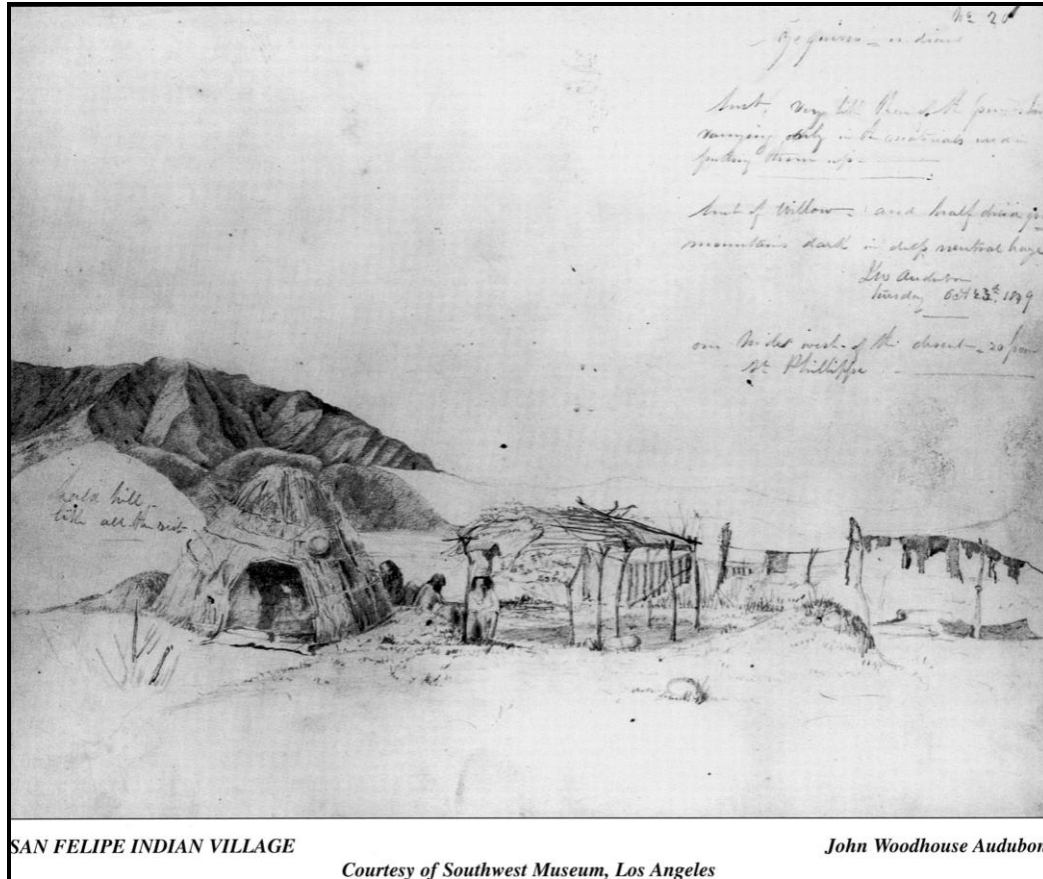


Fig. 2. Although this 1849 J.W. Audubon drawing is labeled “San Felipe” it has been identified as Vallecito.

- In June 1852, John Barlett, a member of the Whipple International Boundary Survey team noted that most people (i.e., indigenous people) living at Vallecito were those who had escaped from the missions; they were “Christians,” wore European clothes, and grew beans and pumpkins although they still relied on acorns (Bartlett 1854:124-126). This is the final account of Natives living at Vallecitos, although apparently San Felipe continued to be viable for some time.
- A San Antonio & San Diego Mail/Butterfield Stage Station and was established in 1857 (Conkling and Conkling 1947:229-236; Van Wormer et al. 2007).
- Only 20 individuals were apparently living at Vallecito by 1862 (Lindsay 2001:350).
- Travel continued on the Vallecito route until 1877 when the railroad between Yuma and Los Angeles was completed (Conkling and Conkling 1947:230-234).
- In 1884, James E. Mason, a former stagecoach driver on the San Antonio & San Diego Mail Line (1857), lived first at Vallecito and the moved just to the west to what was known as El Puerto and then as Mason Valley (Conkling and Conkling 1947:234; Brigandi 1995). The remains of his residence still exist on the Vallecito Acquisition. Mason and Charles Ayres, however, had been raising cattle and mules in the Vallecito area from as early as 1878 (Wade 2002).

- In 1891, James A. Jasper met an “old Indian man” near Vallecito and said that this was the last Indian who had lived there (Lindsay and Lindsay 1973:38).
- George McCain bought the Vallecito Ranch property from Mason. In 1905, McCain’s daughter Lena, married Everett Campbell, a chemist from Colorado. In 1916, the couple (Everett and Lena Campbell) established a cattle ranch at Vallecito, on what was originally the Mason homestead lands and lived there for many years.
- In 1910, Olin Bailey (son of Howard Bailey) homesteaded at Vallecito near the old Stage Station and built a rammed-earth structure (Reed 1963). The remains of this cabin are within the Vallecito Acquisition.⁵
- The original Campbell ranch house burned and was replaced in the 1940s; other structures were built to accommodate guests and ranch hands. Marjorie Reed, a well-known artist of western life, was a resident painter at the Campbell Ranch during the Campbell years and actually died there the Friday after Thanksgiving Day 1996 (www.BlueCoyote.com).
- In 1959, Catherine Spencer purchased the Campbell Ranch, built a home, and continued to raise cattle (Brigandi 1995: 185-192).
- The modern ranch home, runway, and airplane hangers on the Acquisition lands were built by Wayne Hoffman (Chairman and Chief Executive of TigerAir; an air cargo line originally known as Flying Tigers Line) in the early 1980s. About 1988, the ranch property was sold to Norman Canoff. In early 2004, California State Parks finalized the purchase of the property for inclusion into ABDSP (Mark Jorgensen, personal communication 2009).

PREVIOUS ARCHAEOLOGICAL RESEARCH AT VALLECITO

Over the years, the cultural resources at Vallecito have been recognized by many who carried out serious archaeological research. Below are brief discussions of some major work. Unfortunately, looters also have known of the richness of the archaeological and historical record and have illegally removed portions of that record.

Edward H. Davis at Vallecito

During the early part of the 20th century, Edward Davis collected many artifacts in Vallecito for the Heye Foundation (now housed at the Museum of the American Indian [Smithsonian Institution]). We know that he also excavated cremations at Vallecito. Davis also wrote about his visits to Vallecito in his journals that have recently been transcribed by the volunteers of the Colorado Desert Archaeology Society (San Diego Historical Society 2006) and are available at the Begole Archeological Research Center.

⁵ Although the roof had been lost, in 2005, a protective cover was built over this architecturally unique structure to preserve the remnants of the cabin for historic and interpretive purposes (Wade 2005; Schneider and Thomson 2006).

Malcolm J. Rogers at C-144 (CA-SDI-106 [Treganza 1950b])

M. Rogers excavated a cemetery at C-144 from which he and others (mostly looters) removed at least 70 cremations and burials between 1925 and 1929. He noted that this was the largest Yuman cemetery that he had seen. It was noted that the deposit was in what was apparently an older residential area that had been set aside as a cemetery. The deposit was an average of two feet below the surface and some was as deep as over four feet. Rogers field notes name some of the looters and he wrote that the stratigraphy was extremely disturbed because many people were digging there between his trips to the site (Rogers MS). In addition, five other isolated cremations were taken out in the vicinity of C-144 by Rogers and his associates (Rogers MS).⁶ This is also the site of El Puerto, a well-used camp for the Overland Trail, as well as the location of the Mason homestead, both of them disturbed. This area, on the north side of State Highway S-2 is opposite the private Butterfield Campground area. On a recent visit by Schneider and Thomson, observations confirmed that the surface is highly disturbed with many apparent looters' pits and backdirt piles. There are also prehistoric residential areas on the rocky hillside above the cemeteries at C-144 (called Mason Valley Village by Rogers).

Clark Brott at C-144 (CA-SDI-106)

In 1963, C. Brott and colleagues carried out the "rescue excavation" of a burial that was eroding out of the sidewall of an erosional channel. The skull and several vertebrae had fallen out of the sidewall of the creek bank into the streambed. Brott found a cremation associated with the burial. Excellent field notes and photographs are available (Brott 1963).

Malcolm J. Rogers at C-165 (CA-SDI-6873 [J. Cook and M. Donovan 1979])

This is what Rogers called Vallecito or *Hawi* (tules); he and his associates worked there from 1924-1926. This village site was first visited by Fages in 1781 (and/or 1782) and he described people living there. This site is located at the eastern end of the Vallecito Acquisition on some old sand dunes that line a large drainage running into the *Cienega*. Rogers believed that people lived at the site until the earliest part of the 20th century. There were many circular house pits that were burned and a large cemetery on the eastern sandy slope of the main ridge. Rogers removed at least 25 cremations from this site as well as a metate cache; others had looted there for some time (Rogers MS). Observations by CDD archeologists made during recent visits to this site indicate that it is very obvious and that the north-south ranch road at the eastern side of the Acquisition, as well as the east-west road to the Bailey Earthen Structure, run through the site (see below, this document). Cook and Donovan acquired the official California state trinomial for this site in 1979.

Benjamin McCown at CA-SDI-750

This site was officially recorded by Benjamin McCown in 1949. It consists of an extensive scatter of residential debris, cremations, and likely subsurface deposits on the flat area, south and below the spring on the southern slope of the hill behind (west of) the historic Campbell Ranch Residential complex. We know that McCown excavated here

⁶The San Diego Museum of Man, where the Rogers collections are housed, has completed its NAGPRA Inventory and all of the human remains and their associated materials have been repatriated.

and collections may be at area museums (McCown 1949). Many looters, including the residents at the ranch also conducted “recreational” digging there. There is evidence on the surface today of looting: backdirt piles with discarded artifacts, remains of excavation pits, and at least one abandoned archaeological screen. Hearsay evidence and some 20th century diaries and other textual accounts support the fact that substantial looting activity took place here. Human remains from one of the backdirt piles at the site were recently identified during this cultural resources inventory and were subsequently reburied where they were found.

Others

Emma Lou Davis (San Diego Museum of Man) recorded sites in the Vallecito area in the 1960s; Cupples et al. recorded milling sites around Vallecito Creek in 1975; the Vallecito Stage Station site was recorded on numerous occasions from 1950-1994 (Treganza 1950a; Shepard 1958; Knaak 1994).

U.S. Bureau of Land Management conducted survey in the areas around the Vallecito Acquisition in the late 1970s as part of the BLM Desert Study (Gruscek, Kaldenberg, Lyons, Welch, and others). Some of the sites that were recorded are partially on the Vallecito Acquisition lands. Recent (2003) updates and relocations were carried out by Susan Hector of ASM Associates, under contract to the BLM. (see site records).

California State Parks conducted a reconnaissance survey of portions of the Vallecito Ranch Acquisition between 2004 and 2005. During this time, the remaining historic ranching structures of the Campbell Ranch were recorded (Thomson 2005, 2006; Thomson and James 2005). These were included in a nomination for a Historic District (Wade 2006). The Campbell-Vallecito Ranch is part of the recently completed Ranching Study (Wade et al. 2009).

PRIORITIES FOR THE VALLECITO OPENING PROJECT

A number of objectives were determined as the priority for the Inventory Project. These are listed below:

1. Determining a reasonable public entry point to BLM lands through California State Parks Vallecito property that would not impact and endanger significant cultural resources.
2. Determining a plan to protect cultural resources within the Vallecito Acquisition.
3. Collecting data to be used in the designation of the Vallecito area as a Cultural Preserve and to develop preservation strategies.
4. Determining how best to use existing dirt roadways on the ranch as hiking, equestrian, and mountain bike routes
5. Determining important points of interpretation for the public
6. Determining the placement of gates and fences to guide recommended public uses of the Acquisition lands.

7. Determining proposed rules and guidelines for public uses of the Vallecito Acquisition lands, in concordance with the ABDSP General Plan of 2005.
8. Suggesting how re-establishment of vegetation might be creatively used to both protect cultural resources and recreate the natural environment before agricultural use of the land during historic times.
9. Suggesting how existing structures might be creatively re-used to enhance the visitor experience within the Vallecito Acquisition lands.

PURPOSES AND LOCATIONS OF THE INVENTORY WORK

To plan for public access to and management of the Vallecito Acquisition lands, ABDSP needed cultural resources information. Data was collected in the following manner:

- A records search was conducted.
- Archival and collections research was carried out at the San Diego Museum of Man where the field notes, maps, and collections of Malcolm J. Rogers are stored.
- Sue Wade and Heather Thomson recorded and assessed the National Register Eligibility of the Campbell Ranch residential complex.
- Cultural resources were recorded in the process of monitoring a tamarisk removal project along Vallecito Creek in the northern portion of the Acquisition in 2007-2008 (Thomson 2007).
- A pedestrian survey was conducted along a road in the eastern portion of the Acquisition that had been proposed as a route to access the BLM lands to the south (“Proposed Alternative Access Route A,” this report).
- A pedestrian survey was conducted along an alternative route (of a proposed access to BLM lands to the south) in the west-central portion of the Acquisition. This included a pedestrian survey along an almost-observed north-to-south-running old ranch road just at the western edge of Troutman Mountain (“Alternative Access Route B,” this report).
- A pedestrian survey was conducted along a third route to access BLM lands to the south: a proposed by-pass segment connecting to existing dirt roads through the western portion of the Acquisition (“Alternative Access Route C,” this report)
- Shovel test pits were used to determine if subsurface deposits were present along Alternative Access Route C at an historical trash dump at the southern terminus of the short by-pass segment (this report).
- All other dirt ranch roads that are proposed as hiking, equestrian, and mountain bike trails were inventoried.
- At three previously known prehistoric/contact era village complexes, locations and boundaries were determined using pedestrian survey and GPS. These data were entered on the GIS layer for the area. All point locations of additional cultural resources (sites, features, and isolated artifacts) were also entered on the GIS layer (this report).

METHODS USED IN PEDESTRIAN SURVEY

Cultural resources inventory carried out within and along dirt ranch-road corridors was by a survey team composed of between two and five members. All teams included California State Parks archaeologists, as well as certified CDAS volunteers and Native American monitors. The survey team walked courses parallel to roadways and at approximately 10-meter (30 ft) intervals between persons. The extent of the corridor areas surveyed along the roadways was a minimum of a 30-meter swath, parallel to the roadways, on either side. When cultural resources were encountered, the locations were marked with pin flags or flagging and the cultural resource locations were recorded using GPS technology. When cultural resources were determined to constitute an archaeological site, a Primary Record form was completed; isolated cultural resources were also recorded using GPS and then mapped.⁷

In areas where staging/parking areas for motorized vehicles were proposed, the inventory team walked back-and-forth transects, using the same methodology as that used along the roadways, thereby observing the entire surface within the proposed staging areas. Three areas were examined in this manner: (1) a proposed staging/parking area at the southern terminus of the eastern road; (2) a proposed staging area in the “melon field” at the northern end of the eastern road; and (3) a proposed staging area at the southern terminus of the western road (see Fig. 3). Site boundaries in village-complex areas were determined by the extent of the artifact and point was determined as a point on the site boundary. GPS technology was then used to connect these points and determine the site boundary for the GIS layer. Interior site components were not recorded at the request of Native American monitors who asked that they be allowed to record these components at a future time. All the major village complexes have boundaries that extend from CSP lands into BLM lands.

Bedrock milling stations were found surrounding the base of Troutman Mountain; the locations of these cultural resources were determined using GPS technology and entered on the GIS layer. Primary Records for these features are in the process of completion.

⁷ Due to lack of California State Park funding, site documentation was limited to Primary Records, Site Sketch Maps, and Resource Location forms.

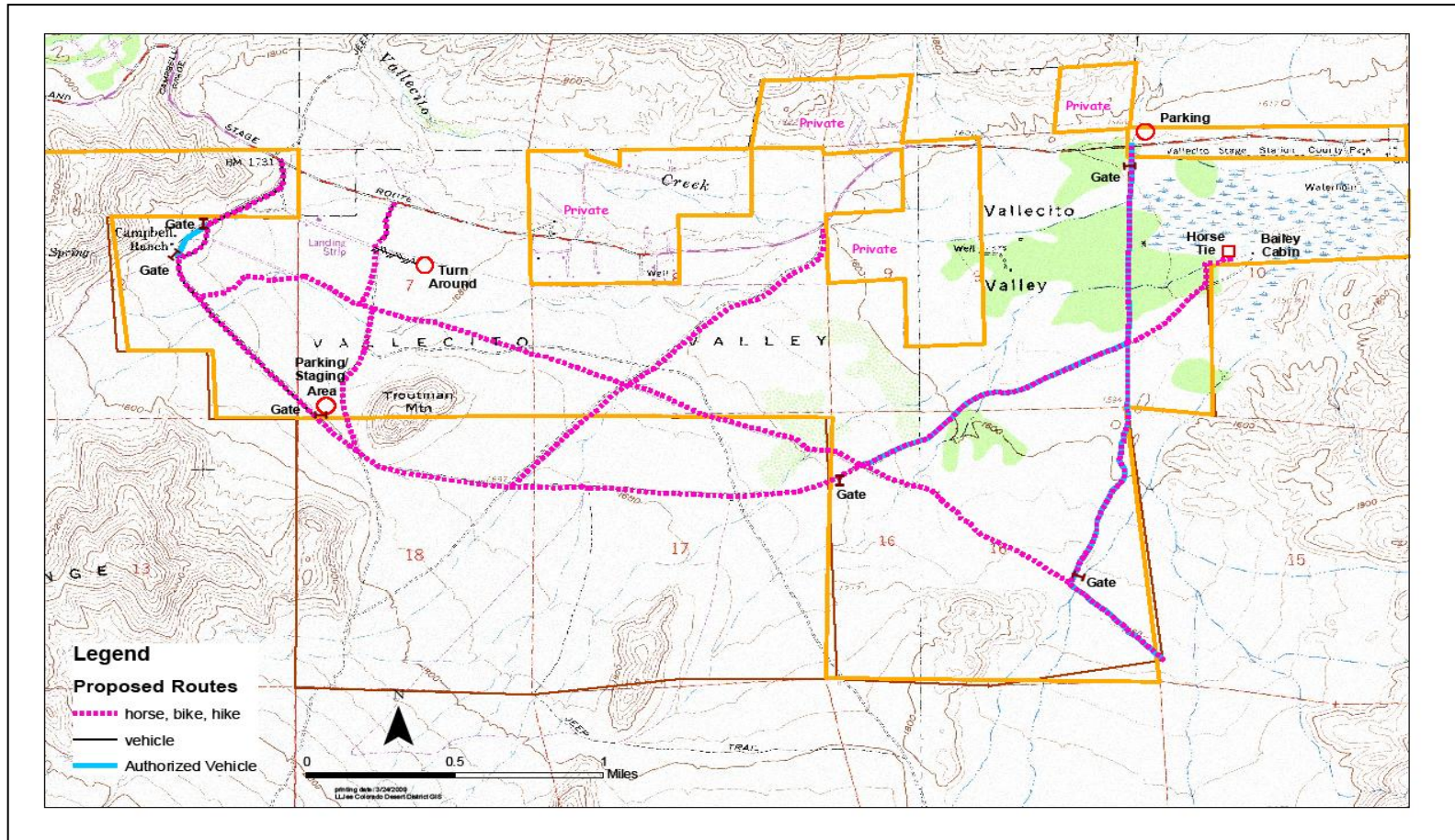


Fig. 3. Vallecito Acquisition showing locations of major features: proposed use areas; proposed vehicle routes; proposed staging areas; proposed hiking, equestrian, and mountain-biking trails; proposed gates, fences, and interpretive and regulatory sign kiosks.

ORGANIZATION OF THE INVENTORY REPORT

The following sections of this report will describe the methods used and the findings of all cultural resources inventory work to-date; presentation will be in the order in which the work was undertaken. The reader should be aware that cultural resources inventory of the entire area of the Vallecito Acquisition has not been completed at this time; only selected areas along proposed motor-vehicle access routes and staging/parking areas, as well as existing dirt ranch roads proposed for hiking, mountain biking, and equestrian use have been surveyed. The three prehistoric-contact period village complexes have not been recorded in detail; this will be carried out by Native Americans in the future (see above). This work remains to be accomplished. Following the presentation of the preliminary cultural resources findings, recommendations will be made for appropriate immediate and future uses of the Vallecito Acquisition lands.

INITIAL RECONNAISSANCE SURVEY OF THE CAMPBELL RANCH RESIDENTIAL COMPLEX

At the time of the Campbell/Vallecito Acquisition, Sue Wade, Associate State Archeologist for the Colorado Desert District, conducted a cursory reconnaissance survey of the ranch, particularly (1) the historic residential and ranching complex on the west end of the Acquisition (as well as outlying structures on BLM lands), (2) the Bailey Earthen Structure (Bailey's Cabin) at the east end of the Acquisition, and (3) the prehistoric/historic archaeological site (CA-SDI-750) on the flat area below a hillside spring at the western end of the Acquisition and directly west of the Campbell Ranch complex (part of this site is on BLM land).

Wade immediately embarked on two projects: (1) full recordation of the Campbell Ranch Complex and assessment of eligibility of the complex for the National Register of Historic Places as an Historic District (see Wade 2006) and (2) plans to protect the remains of Bailey's Cabin by constructing a protective cover (see Wade 2005; Schneider and Thomson 2006).

ASSESSMENT OF ELIGIBILITY OF THE CAMPBELL RANCH FOR THE NATIONAL REGISTER OF HISTORIC PLACES AS A DISTRICT

Sue Wade, Associate State Archeologist, Colorado Desert District and Heather Thomson, Archeological Project Leader, assessed the eligibility of the Campbell Ranch Complex for listing on the National Register of Historic Places as a District and found it to be eligible. The District Record and the assessment are attached here in Appendix A and are

on file at the Begole Archeological Research Center, Colorado Desert District Headquarters, Borrego Springs, as well as at the South Coastal Archaeological Information Center, San Diego State University. The District consists of the main Campbell Ranch House (P-37-028207 [Fig. 4]), two shacks: one a small cabin guest house used by Marjorie Reed (P-37-02808 [Fig. 5]), the other likely a storage shed (P-37-028209), the Campbell barn and corrals (P-37-028210 [Fig. 6]), a water reservoir and feeder lines (P-37-028212), and outlying water features (P-37-028200). Since the time of the recordation, the remaining standing portions of the barn have fallen, most of the buildings have further deteriorated, and the residence has become infested by rodents and insects. The outlying water feature systems, however, remain relatively intact. The following paragraph is from the District Assessment of Eligibility (Wade and Thomson 2006).

The Campbell Ranch is an intact example of Southern California ranching as it developed in the twentieth century. The majority of the buildings, structures, and features that comprised the ranch operation are still in place, if not in the best repair. As one of a limited number of family-owned and operated base ranches and one of few ranches that operated in the Colorado Desert and utilized mountain pastures seasonally, the Campbell Ranch property is a significant cultural resource. The Campbell Ranch property is arguably eligible as a District for the National Register of Historic Places under Criterion A, as representative of significant events in the region's history. As well, Everett and Lena Campbell were well-known personages in the region. As noted by historian Phil Brigandi, "Everett "had a hand in almost everything that went on in the area in the 1930s" (Brigandi :1998:190). Campbell developed an innovative irrigation and pasturage system for the ranch's desert cattle operation and experimented in crossing Brahma and Hereford cattle to develop a Desert-hardy breed. For its association with persons prominent in the region's history, the ranch is arguably eligible for the Register under Criterion B. Finally, surface observations of archaeological materials indicate it is likely that the ranch property contains historic trash deposits that can contribute archaeological data to the interpretation of early twentieth century agricultural lifeways on the Anza-Borrego Desert. The Campbell Ranch property is also arguably eligible for the Register under Criterion D, value of archaeological materials present that can contribute valuable historical research data.



Fig. 4. Campbell Ranch House (P-37-028207) as it exists today. View to NNW. Photo by J. Schneider.



Fig. 5. Cabin said to have been used by artist Marjorie Reed when she was a guest at the Ranch (P-37-02808). View to WNW. Photo by J. Schneider.



Fig. 6. Campbell barn and corrals (P-37-028210) as they appear today. At the time of the Acquisition, the old barn was still standing. View to the SSE. Photo by J. Schneider.

WORK AT THE BAILEY EARTHEN STRUCTURE (P-37-02812) IN PREPARATION FOR A PROTECTIVE ROOF

On January 5, 2007, trainees and members of the Colorado Desert Archaeology Society (CDAS) assisted Colorado Desert District (CDD) staff with surface mapping and collections within a 10-ft perimeter of the foundation of the Bailey Earthen Structure (hereafter Bailey Cabin; Fig. 7). The project had three goals: (1) documenting the types and locations of the surface materials; (2) clearing the area immediately surrounding the BES, as far as possible, so that the construction crew could approach the structure without impacting the scattered materials; and (3) insuring that all data were recovered from within the holes dug for support of the protective cover. For the third goal, excavations of six test units were conducted in preparation for the placement of six upright timbers for the support of the protective roof to be placed over the Bailey Cabin.

Glass fragments (>49) were the most frequent artifacts collected on the surface within the perimeter of the Bailey Cabin; most appeared to be window glass. Almost all the structural wood that had fallen from the structure was left at the site. Some metal was collected, in particular, pieces of the stove pipe and the thin metal patches that were used to close small holes in the walls of the structure. The coiled cables were left on site. A few artifacts of indigenous origin were present: eight pieces of lithic debitage and four ceramic sherds. From the collection, it is apparent that very little in the way of household

furnishings remained on the site. A map of the surface debris is available in the report on the work (Schneider and Thomson 2006).



Fig. 7. Bailey Earthen Structure (Bailey Cabin; P-37-02812) before the protective roof was placed over it. View to NE. Photo by J. Schneider.



Fig. 8. Typical view of materials fallen around the base and foundation of the Bailey Cabin before mapping and collection. Metal stovepipe part lies covered by brush and debris. Door opening at top right. View of the eastern aspect of the cabin, to NW and down. Photo by J. Schneider.

Six (6) test units were excavated; the units were placed where the supporting beams for the superstructure were to be placed (Fig. 9). The position of each supporting beam was determined and marked by the building contractor and each test unit was approximately 70 cm square. The maximum depth reached in any of the units was 61 cm.

Historical metal (n=399) and glass (n=167) fragments represented the major portion of the assemblage from the six excavated test units. Lithics (n=117) were also well-represented in the collection. Three units on the northern aspect of the structure contained all the formed flaked stone artifacts (i.e., the projectile points). The single ground stone artifact was from a unit on the southwestern aspect. A detailed report on the excavations is available (Schneider and Thomson 2006).



Fig. 9. CDAS members and trainees establishing one of the six excavation units. View to NE of southern aspect of the cabin. Photo by J. Schneider.

It was apparent from the artifact and soil profile data (see Schneider and Thomson 2006) that the early 20th century cabin was constructed in an area that was a peripheral portion of a large settlement of indigenous peoples (almost certainly *Kumeyaay* ancestors). In aerial photographs and in early historical records, the immediate area was part of a large *cienega*. Malcolm C. Rogers recorded large sites nearby.

The Bailey Cabin is well-known in the historical literature and from stories of old-time ranchers in the area (Reed 1961; personal communication, Jim Kemp 2004; Granville Martin Memoirs 2009, courtesy of Garry McClintoch). The increased accumulation of surface debris from the deterioration of the cabin was partly the result of the loss of the roof -- the abundant fallen wood, as well as disintegration of the earthen walls which had been fully exposed to the elements for the past few years since the roof was lost.

A portion of the natural surface at the site of the cabin (the eastern end) had been removed. This may have been the result of leveling the surface to build the structure, or may have resulted from erosion caused by extensive foot traffic (an entrance door to the cabin is located in the east wall). A circular rock feature in the underbrush (perhaps a well, cistern, or other storage feature) is also located at the eastern end of the cabin. The structure of the site has been altered over time, either by natural or human causes. There is a prehistoric component of the site, but it is not understood whether this component is in primary or secondary context. Two projectile points and an additional biface were found during excavation. Most prehistoric artifacts were found in Stratum 2 (and the upper portion of Stratum 3). These, however, were mixed with historical materials. Several other artifacts, attributed to a prehistoric presence, were found on the surface during the project: obsidian debitage, marine shell, and at least one projectile point.

In summary, surface survey and test excavations in proximity to the Bailey Cabin Structure show that the site has a mixed historical and prehistoric surface and subsurface cultural deposit and that the natural site stratification has been disturbed in the past. Further surface survey has determined that the large prehistoric and contact-period indigenous site in the eastern portion of the Acquisition includes the area around the Bailey Earthen Structure (see Fig. 10). In 2008, a protective roof was constructed; it now protects the remaining walls from further deterioration. Plans are in progress for further protection and stabilization measures.

VALLECITO CREEK WATERSHED REHABILITATION PROJECT: ARCHAEOLOGICAL MONITORING

A Colorado Desert District (CDD) Natural Resources tamarisk-removal project along the Vallecito Creek drainage, portions of which were within the Vallecito Acquisition, was monitored by Native American Gabe Kitchen of Red Tail Monitoring and Heather Thomson, CDD Archaeological Project Leader (Fig. 10). This area encompassed a number of sites previously recorded by Malcolm Rogers as his C-144 area and by Clark Brott (in the same area, assigned the trinomial CA-SDI-106), as well as one transect surveyed in the 1970s BLM Desert Study. Both Rogers and Brott reported removing human remains from sites in this area as well as there having been a great deal of looting.

The archaeologists and Native American monitors relocated some of the sites, recorded others and, in general, provided more up-to-date site boundaries than had previously been available (see Appendix B, this report). CA-SDI-4018, along Vallecito Creek, consists of 145 bedrock milling slicks, multiple roasting pits, midden areas, and concentrations of ceramic sherds (Thomson 2008a). As part of the Vallecito Creek Watershed Rehabilitation Project, CDD staff conducted a field survey of areas adjacent to the tamarisk removal area. Other cultural resources were found including a contributing element of the Campbell Ranch Historic District -- Campbell's Flume (P-37-028212). This feature complex enlarged the Historic District boundaries (see Thomson 2008b).

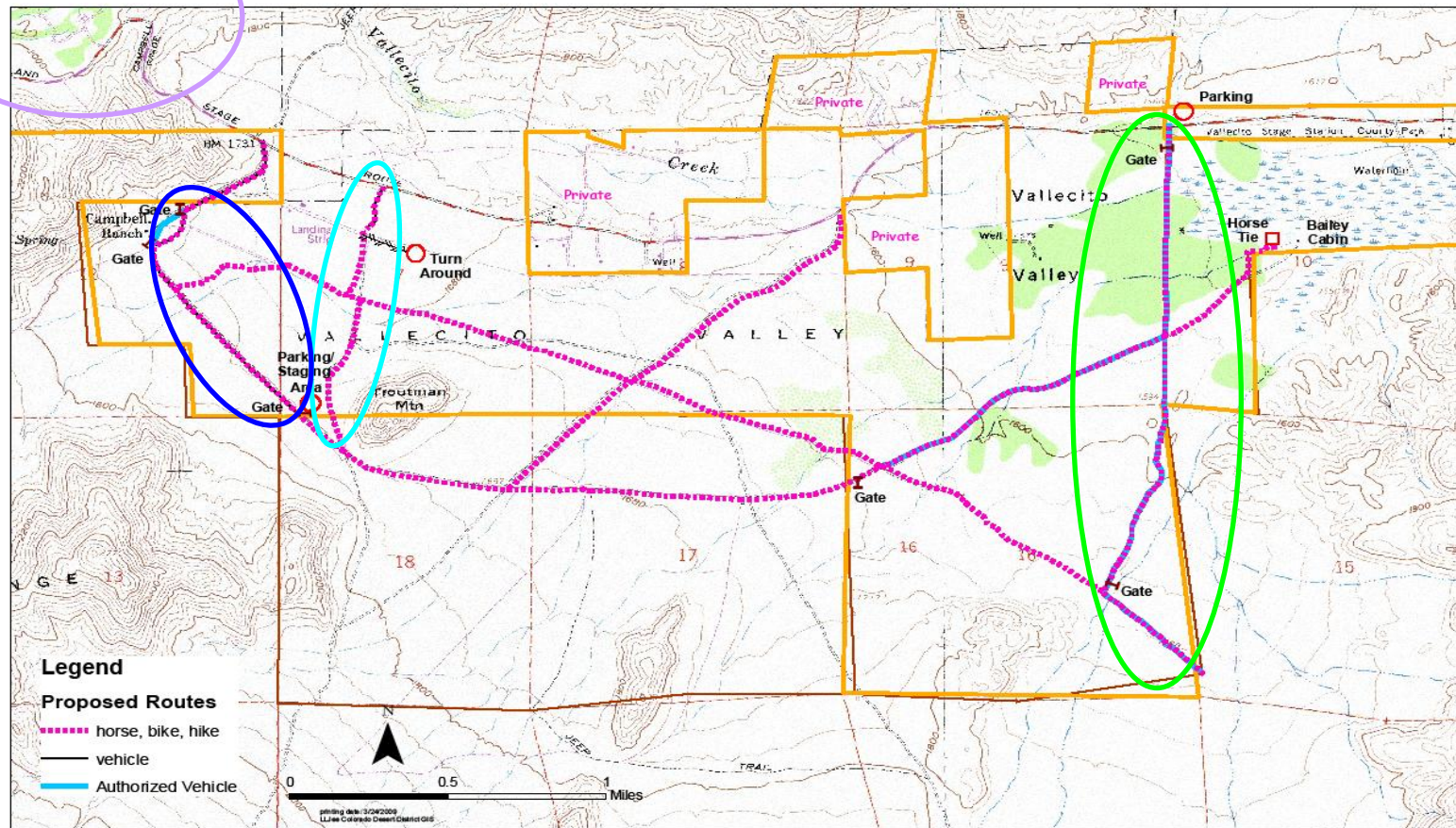


Fig. 10. Campbell-Vallecito Acquisition. Lavender oval shows the general area of the Tamarisk Removal Project. Green oval shape indicates inventory area of Alternative Access Route A. Turquoise oval shape indicates inventory area of Alternative Access Route B. Blue oval area indicates inventory area of Alternative Access Route C. Map by L. Jee.

PROPOSED EASTERN BLM ACCESS ROAD SURVEY AND PROPOSED EASTERN STAGING AREA (Alternative Access Route A)

The CDD planning team for the Vallecito Acquisition Opening proposed that an existing north-to-south ranch road (Alternative Access Route A) in the eastern portion of the Acquisition would be the most efficient route for hunters and others to access BLM Sawtooth Wilderness lands (see Figs. 3, 10). It was also proposed that a staging/parking area be created at the boundary between CSP and BLM lands so that hunters could enter into BLM lands from their automobiles. The CDD planning team asked District archaeologists to inventory the road and the proposed staging area for cultural resources.

Preliminary Reconnaissance

On October 2, 2008, Joan Schneider, Associate State Archeologist, and Bonnie Bruce, Archeological Specialist, met with Native American representatives at the proposed route. Clinton Linton (Kumeyaay; Santa Ysabel), Gabe Kitchen (Kumeyaay; Mesa Grande), and Carmen Lucas (Kwaaymii; Laguna), along with Wade and Schneider, conducted a preliminary reconnaissance along the proposed route, especially in the area of the site mapped as C-165 by Malcolm Rogers. The extent and content of this site were uncertain due to the cursory records held by the San Diego Museum of Man.

The preliminary reconnaissance indicated that the major portion of the site was located to the east of the dirt ranch road on a series of old low dunes that extended eastward from the road to the edge of a large drainage channel east of the dune system. Walking eastward, the surface artifact scatter markedly increased. Among the cultural resources observed were many cremation remains (a few specimens were definitely identified as human by Dr. Arion Mayes, forensic anthropologist), multitudes of ceramic sherds (some decorated) and fire-cracked rock, shell beads, many lithics of various materials, including obsidian, features that appeared to be house pits and/or roasting pits, as well as many other items (Figs. 11-12).

At the end of the reconnaissance, the Native American participants proposed that foot traffic on the site be discouraged and that the recording of the site be accomplished by trained Native American monitors to be organized and carried out by Clinton Linton. Plans were made to allow the appropriate mapping of the site boundary by CDD staff and volunteers during the systematic inventory of the proposed access route. All participants agreed to these two actions.

Systematic Cultural Resources Inventory

On October 21-23, 2008, a team of CDD staff, CDAS and other volunteers, Native American monitors, and Scott Green, Associate State Archeologist, CSP Planning Division, conducted a systematic three-day survey of the proposed route to the BLM



Fig. 11. Reconnaissance survey on October 2, 2008. Archaeologist Bonnie Bruce observes the surface in the area of Alternative Access Route A. View NNE. Photo by J. Schneider.



Fig. 12. Ground surface in proximity of Alternative Access Route A on Oct. 2, 2008. Cultural features and artifacts are common. Midden deposits are clearly visible. Photo by J. Schneider.

boundary (Figs. 3, 10, 13). The inventory began at the proposed staging/parking area at the southern terminus of the route (see Figs. 3, 14). Then, two crews of five persons each walked transects northerly parallel to the proposed route, one crew on each side of the route. In this way, a minimum 50-meter-wide swath was inventoried on either side of the route, as well as the road itself. Each crew carried a GPS unit to record findings. Problems were encountered with the GPS units, resulting in a need to return to repeat recording for the GIS layer. The entire length of the proposed access road was surveyed from the southern terminus to Highway S-2 and several new sites and numerous isolates were recorded.

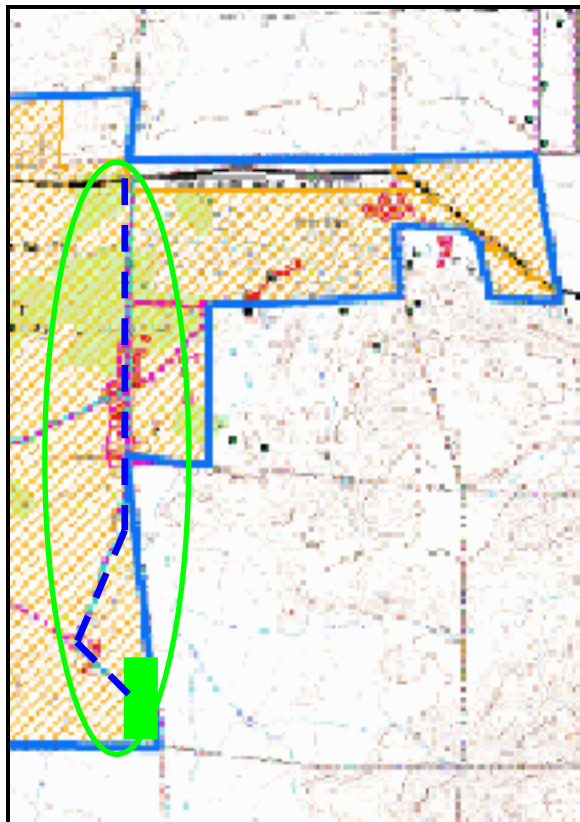


Fig. 13. Eastern portion of Acquisition showing Alternative Access Route A (blue dashed line within green oval outline) and proposed staging area (solid green rectangle).

A priority for this portion of the project was to determine the site boundaries of Rogers' C-165 site that appeared to be bordered by the proposed access route. As it had been requested by the Native American monitors that walking on the site be avoided, we approached establishing the site boundary by walking toward the site from two directions: (1) starting from dirt road running at the west side of the site and walking westward away from the site and (2) walking from the center of the drainage that runs along the eastern border of the site and walking westward toward the site. Pin flags were placed when artifacts began to appear. The site boundary would be placed along this line.

In the field, the survey teams found that artifacts were located within the dirt road on the western side of the site and further to the west of the road; artifacts extended down into the drainage on the eastern side of the site and onto BLM lands there. In addition, a rocky knob within the drainage had many artifacts and high frequencies of bedrock milling features (see Fig. 14). In later (see below) ranch road surveys, the artifact scatter extended further to the north of the site, encompassing the area around the Bailey Cabin too.



Fig. 14 a, b. Rocky knob in drainage on east side of C-165 (CA-SDI-6873) shown on left; view SE. On right is an example of some of the many bedrock milling features found in this area, likely a specialized area of C-165. Photos by J. Schneider

When copies of Rogers and Davis original photographs of excavations at C-165 were taken into the field and background views were compared, it was clear that this was the location they described where they had excavated many human remains and taken photographs (e.g., Fig. 15).



Fig. 15. View of the Malcolm J. Rogers excavations at C-165 in the 1920s. View west from the east side of the site, showing the ceramic vessels which were found. Photo from the San Diego Museum of Man archives.

The C-165 site, then, was much larger than originally mapped, extended onto BLM land to the southern boundary of the Acquisition (Figs. 3, 10). Clearly, Alternative Access Route A is not suitable for vehicular traffic due to the route running through the site, the high sensitivity of the site, and the fact that this site was likely National Register eligible.

Results of the Proposed Eastern BLM Access Road Survey and Proposed Eastern Staging Area

Clearly, the abundance and significance of cultural resources present along the proposed access route in the eastern portion of the Vallecito Acquisition makes this route ill suited for motorized vehicular access. Using the methods described above, two teams completed the survey. Identified and geo-coded during survey were 220 artifacts and 37 archaeological features. Of the 220 artifacts along the route of the road, 28 were historic, 191 were prehistoric, and one was undefined. Of the 37 features along the route of the road, 8 were historic and 29 were prehistoric. Three small sites were found near the intersection of the southern terminus of the road and its eastern extension to the BLM boundary; site records are currently underway.

Of particular significance is that the proposed eastern access road runs for at least ½ mile through a very sensitive late-prehistoric/contact era settlement area, first recorded by Malcolm C. Rogers as C-165 (modern trinomial designation is CA-SDI-6873).

PROPOSED WEST-CENTRAL ACCESS ROAD SURVEY AND PROPOSED STAGING AREA (Alternative Access Route B)

As an alternative route for access to BLM lands, it was suggested that an old existing dirt road (in Section 7) that ran south from State Highway 2, continued past the paved runway and the eastern edge of some agricultural fields, and continued south along the western base of Troutman Mountain to the BLM boundary line might be plausible (Fig. 16; Alternate Access Route B). This alternative and shorter route was inventoried using the methods described above. A staging/parking area in the southwestern corner of Section 7 (Fig. 16; Staging Area B) and adjacent to the BLM boundary at the southern terminus of this proposed route was also surveyed (see methods descriptions above).

Along the road corridor, 34 artifacts, 28 features, and 4 other unidentified cultural items were found. Half the artifacts (17) were historic, mostly cans and a few mason jars. The remaining artifacts (17) were prehistoric and included lithics, ground stone, and ceramic sherds. Two features were historic (accumulations of wood and other construction debris and a possible quarry); the remaining 26 were prehistoric and included many bedrock-processing stations encircling the base of Troutman Mountain as well as several roasting pit features. One roasting pit just south of State Highway 2 was recorded as a site, while other sites are in the process of being recorded.

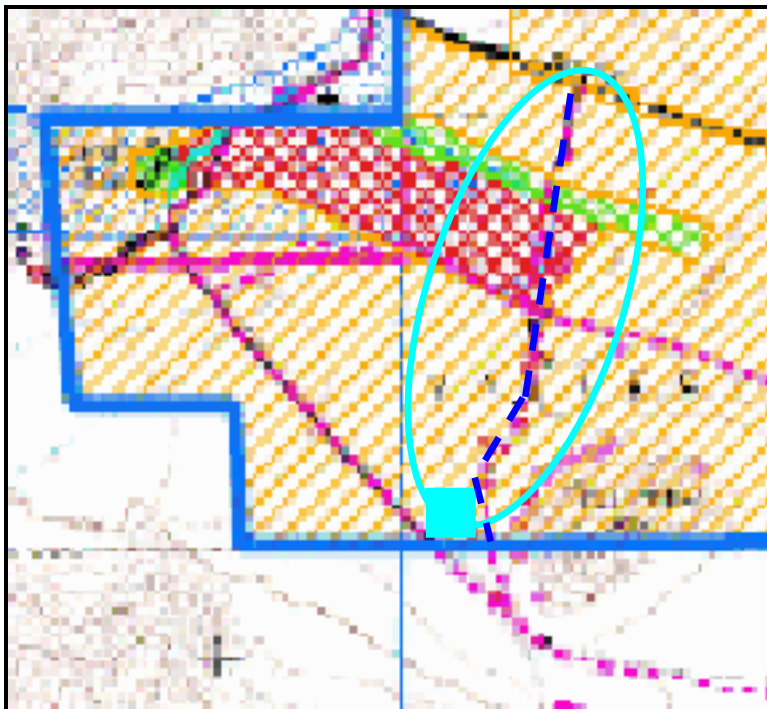


Fig. 16. Western portion of Acquisition showing approximate Alternative Access Route B (blue dashed line within turquoise oval outline) and proposed staging area (solid turquoise rectangle).

Although this west-central route would have been acceptable from the viewpoint of cultural-resource impacts, the grade and drainage patterns of this proposed route made its use impractical (personal communication, Jason Duke, CDD Maintenance Supervisor, January 2009).

PROPOSED WESTERN ACCESS ROAD SURVEY WITH BY-PASS LOOP (Alternative Access Route C)

A third alternative was subsequently considered: use of the existing dirt road at the ranch entrance in Section 8 (Alternative Access Route C; Figs. 10, 17). This access route would route motorized vehicles from the existing entrance gate, on State Highway 2, to the southwest, passing by the Campbell Ranch Historic District via a by-pass loop (so as not to bring motorized vehicles into the main part of the District), and then continuing southeasterly on the existing dirt ranch road to the BLM boundary (Fig. 10; Alternative Access Route C). The staging/parking area would be the same as was surveyed for Alternative Access Route B. Jason Duke, Maintenance Supervisor for the Colorado Desert District (CDD), marked the route of the road with pin flags

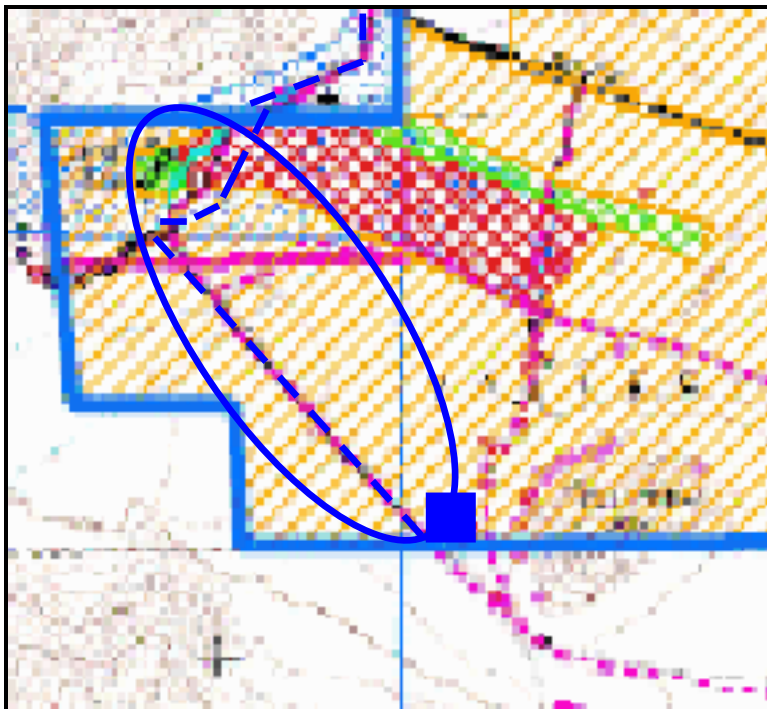


Fig. 17. Western portion of Acquisition showing Alternative Access Route C (blue dashed line within blue oval outline) and proposed staging area (solid blue rectangle; same staging area as Alternative B).

The alternative route from the entrance to the ranch to the end of the bypass loop was surveyed on January 22, 2009 by Sue Wade and Joan Schneider, CDD archaeologists. They walked the entire route of the pin flags set out by Duke, observing the ground surface for approximately 15 meters on either side of the route – the right-of-way (ROW). The remainder of the road corridor was surveyed in the same manner as previously described (see above). Along the entire route, 13 artifacts and 13 features were located. Of the artifacts, 6 were historic and 7 prehistoric. The 13 features (10 historic, 2 prehistoric, 1 undefined) included a large trash disposal area (Figs. 18, 19) in the immediate vicinity of the short by-pass loop in the central area of Section 8 laid out by Maintenance Supervisor Jason Duke. On the surface directly to the southeast of the bypass loop ROW, there were historic cultural materials. Also present were a few ceramic sherds of possible indigenous origin. Very sporadic small fragments of glass and rusted metal were observed within the ROW and there was some concern that subsurface historic deposits might be present within the ROW, although the ROW was peripheral to the trash dump area. For this reason, and because the loop road route would need to be slightly graded, it was decided by Wade and Schneider that a series of shovel test units (STPs) would be necessary.



Fig. 17. Area of surface trash deposit. Note sheet metal, wood, metal debris. View to NNW. Campbell Ranch house in background, left. Photo by J. Schneider.



Fig. 18. Close up of area of surface trash deposit. Photo by J. Schneider.

Testing for Subsurface Deposits

On February 26, 2009, an archaeological team consisting of Sue Wade and Joan Schneider, along with Colorado Desert Archaeology Society (CDAS) volunteers Richard Payne and Alan Schmidt, proceeded to test for shallow subsurface deposits that would have indicated that a trash pit might have existed within the ROW.

Methods. A 3-meter grid was laid out along the route of the proposed road (Fig. 19). The grid was laid out using two metric tapes and pin flags to mark the locations of STPs (Fig. 20). An STP of approximately 40 cm by 40 cm was excavated to 30 cm depth at each central pin flag along the ROW, starting with the central area (the datum) of the ROW near the surface trash disposal area to the southeast. STPs to both the east and west of the central ROW line on the grid were excavated as shown in Figure 19. Since the ROW sloped slightly downward to the southeast, after the initial set of STPs on the west side of the ROW, efforts were concentrated on the down-slope area (east side) of the ROW. Twenty-seven STPs were excavated. All soil excavated was passed through 1/8 inch mesh screening and all cultural materials collected and described.

In addition, a surface survey was conducted within the grid and the locations of surface artifacts indicated on the grid map.

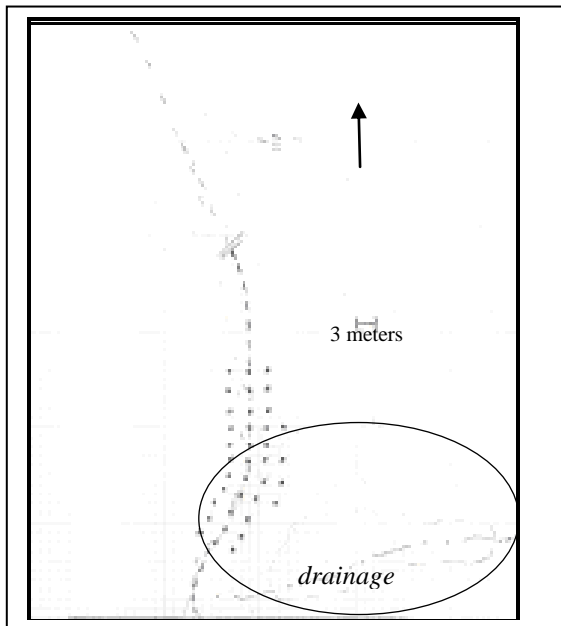


Fig. 19. Map of placement of shovel test pits along the route of the ROW loop. Oval shape indicates the major area of surface trash deposit on either side and within shallow drainage. Arrow points N.



Fig. 20. Richard Payne stands along one of the grid lines marked with purple pin flags. STP was placed at most pin flags. View NNE. Photo by J. Schneider.

Results. All soil in the STPs were uniformly a slightly damp medium brown sandy loam with no rocks and few small pebbles. A few historic materials were found in the 27 STPs excavated: nine items in all were found within seven of the STPs. Table 1 shows the locations of these materials, mostly glass and wood fragments. No substantive subsurface cultural deposits were found in the grid area; there was no indication of a trash pit.

All materials collected from the STPs and one item collected from the surface (an unusual cartridge shell that might provide chronological information) are cataloged and curated at the Begole Archeological Research Center, Colorado Desert District Headquarters in Borrego Springs, along with a copy of STP excavation records, photographs, and this report.

Table 1
Items Recovered from Shovel Test Pits; Vallecito Ranch Road Segment

<i>STP</i>	<i>Depth (cm)</i>	<i>Item</i>	<i>Number of items</i>	<i>Comments</i>
10m/0m	15	Glass vessel fragment; 3 cm long wood fragment	2	
10m/3mE	10	Small burned bone fragment; small rusted metal fragment	2	Bone is non-diagnostic
10m/3mW	15	Historic ceramic fragment	1	White glazed, no identifying marks
13m/0m	15	Glass fragment	1	Thin, so may be drinking glass; not window glass
13m/3mE	15	Wood fragment, approximately 10 cm x 2 cm	1	May be part of fence post
34m/0m	15	Glass fragment	1	Comparatively thick
34m/3mE	15	Glass fragment	1	Portion of neck of screw-top glass jar

Based on the results of the surface survey during which a brief review of the trash scatter was completed and the subsurface testing within the proposed ROW, limited conclusions regarding chronology and function can be made. Based on the observation of square nails, purple glass, milk glass inserts for zinc-cap canning jars, as well as relatively recent toilet fragments and agricultural refuse, it can be assumed that the dump materials date to the majority of the ranch's 20th-century occupation. The variety of activity groups represented, it can also be assumed that the dump represents a combination of household as well as agricultural refuse. Based on the temporal and functional range, it is likely that this refuse dump contains important archaeological data regarding the ranch history and thus is likely a contributing element of the Campbell Ranch Historic District.

Recommendations. Alternative Access Route C does not appear to impact significant historic or prehistoric cultural resources. STPs have indicated No Adverse Affect to the proposed route to a grading depth of 30 cm. It is recommended that the grading of the route can proceed. However, because deeper cultural deposits may exist along the ROW, it is recommended that a qualified archaeologist monitor all road-grading including the removal of any vegetation.

ROAD SURVEY OF ALL OTHER EXISTING RANCH ROADS TO BE USED AS TRAILS FOR HIKERS, MOUNTAIN BIKERS, AND EQUESTRIANS

It is proposed that most of the existing and recently used dirt ranch roads will be open to hikers, mountain bikers, and equestrians for day-use. Those road corridors not surveyed as alternative access routes to BLM lands were surveyed by a team of a CDD archaeologist and a Native American monitor (Heather Thomson and Gabe Kitchen). Methods used were identical to those described above. These proposed trails are indicated on the maps (Figs. 3, 10) as blue lines. Below are descriptions of each of the three major trails and the findings of the cultural resource inventory along the trail corridors. It should be noted that Thomson and Kitchen were concerned about limited visibility of the surface along the trail corridors and that they expressed low confidence in their own observations in some areas due to the lack of surface visibility.

Trail Segment 1 (approximately 2.5 miles long)

This segment begins in Section 6 where it intersects with Alternative Access Route C. It heads eastward, intersecting with Alternative Access Road B in Section 7 (just west of Troutman Mountain), and then heads southeasterly, for about 1 ½ miles across the remainder of Section 7 into Section 8. It intersects the BLM lands boundary at the southern edge of Section 8. The trail segment picks up again in State Parks land at the western edge of Section 16 and continues southeasterly across the section to the boundary with BLM lands at the east side of the Section.

Located and geo-coded along Trail Segment 1 were 44 artifacts and 16 features. Of the artifacts, 6 were historic and 38 were prehistoric (ground stone, lithics, ceramic sherds, and one fragment of marine shell). Of the features, 4 were historic (elements of water supply systems and a trash deposit) and 12 were prehistoric, all roasting pits.

Trail Segment 2 (approximately 1.1 mile long)

This trail segment starts in the northeast quarter of Section 8 at State Highway 2 and heads southwest across Section 8 to the boundary with BLM lands in the southwest quarter of Section 8.

Located and geo-coded along Trail Segment 2 were two prehistoric artifacts (sherds and a projectile point fragment) and one feature (a group of three roasting pits).

Trail Segment 3 (approximately 1.0 mile long)

This trail segment starts at the eastern boundary of Section 9, where it intersects the Alternative Access Route A road. From this point, it heads southwesterly to the northwest quarter of Section 16 to the boundary with BLM lands at the western border of Section 16.

Located and geo-coded along Trail Segment 3 were four prehistoric artifacts (ceramic sherds and lithics).

Highway S-2 Vehicle Pull-out and Access Trail to Trail Segment 2

On July 18, 2009, CDD archaeologists surveyed a proposed approximately 100-foot-long segment of an old dirt road connecting an existing vehicular pull-out along highway S-2 with Trail Segment 2 (see above; see Figs. 3, 10). The area surveyed is heavily disturbed by prior vehicular use and no cultural resources were found.

DISCUSSION

Table 2, below, summarizes the findings of the various stages of the cultural resources inventory. There are a number of factors that the reader should keep in mind:

- From our current information, it appears that the major concentrations of cultural resources appear at the northern, eastern, and western areas of the property while the in the central portion, cultural resources seem relatively sparse.
- While about half of Troutman Mountain is contained with State Parks lands, the entire mountain is ringed with bedrock milling features and scatters of artifacts; at some of these locations (especially on the northeast side of the mountain), midden deposits were observed.
- There are large and highly significant cultural resource locations just south of the State Parks boundary with BLM lands. The three large prehistoric/contact era residential site complexes within the Campbell-Vallecito Acquisition all extend onto BLM lands.
- The Vallecito Stage Station (County Park), at the Vallecito *Cienega* Site (CA-SDI-109), C-165 (CA-SDI-6873), and the Bailey Cabin (P# 37-02812) all are integral parts of a cultural and natural landscape complex known historically as Vallecito (see Schneider 2009a).
- The Native American community has communicated to State Parks that the Vallecito property is a part of a cultural corridor that extends from the Pacific Ocean to the Colorado River.

Table 2
**Synopsis of Cultural Resources Located during Inventory of
 Access Road Alternatives, Staging/Parking Areas, and Trails**

<i>Inventory Portion</i>	<i>Total Cultural Resources</i>	<i>Isolated Artifacts</i>	<i>Features</i>	<i>Other</i>	<i>Recorded Sites</i>	<i>Approximate km² of inventory</i>	<i>Approximate Number of CR per km²</i>
Alternative Access Route A	262	225	37		4	0.572	453.9
Alternative Access Route B	66	34	28	4	1 10+ in progress	0.347	190.2
Alternative Access Route C	27	13	13	1	1 district 1 in progress	0.097	278.4

Trail Segment 1	60	44	16			0.252	238.1
Trail Segment 2	3	2	1 (3 elements)			0.097	30.9
Trail Segment 3	4	4	-			0.097	41.2
Total	422	322	95	5		1.462	288.7

GENERAL PLAN STATEMENTS FOR PROPOSED USE OF VALLECITO PROPERTY

The Campbell-Vallecito Ranch Acquisition was included in the ABDSP 2005 General Plan. The facilities identified for opening portions of the property for public use in October 2009 are in concordance with the recommendations for Focused Use Zones made in that General Plan document. There are, however, a number of other uses identified in the ABDSP General Plan, which will be contingent upon securing the necessary financial and staffing resources to put them in place. For example, all staging areas and trails will be for day-use only until there is a law-enforcement, maintenance, or care-taker presence on the property during evening hours, as well as during the day. Overnight camping will also be contingent upon the installation of restroom facilities of some kind on the property. For the present time, camping and restroom facilities are available at the Vallecito Stage Station County Park adjacent to the State Parks lands for those members of the public who wish to overnight in the area.

Vallecito Ranch is in the process of being identified as a Cultural Preserve. One important component of the Preserve designation is the development of a potential caretaker-staffed Visitor Centered Park Facility. The facility would be located at the existing modern ranch house, adjacent to the abandoned air strip and proposed day use area / potential future campground, and in proximity to the proposed vehicle access roads. Benefits of the Visitor Center would be: (1) providing interpretation and education for users of the Vallecito Ranch property and (2) maintaining a presence on the property to enhance resource preservation efforts. In the interim, it is the Park's intention to establish a caretaker in a trailer or at the modern ranch house to protect the structures and resources from any vandalism impacts related to the opening of the nearby day use area.

SUMMARY OF THE PARTIAL CULTURAL RESOURCE INVENTORY FOR PUBLIC ACCESS TO PORTIONS OF THE CAMPBELL-VALLECITO RANCH ACQUISITION LANDS

The results of the cultural resources inventory work in preparation for opening portions of the Campbell-Vallecito Ranch Acquisition to the public include:

- Determining the number and type of previously known cultural resources.

- Determining the approximate number and type of cultural resources locations within the areas surveyed: mostly known sites and those along ranch road corridors.
- Identifying concerns of the Native American community related to traditional cultural property at Vallecito.
- Determining the best route for motorized-vehicle Access for entry to BLM lands to afford the best possible protection and preservation of cultural resources..
- Determining a suitable staging area for hunters near the entry to BLM lands.
- Determining how existing ranch roads may be used by the public for hiking, mountain biking, and horseback riding.
- Determining how motorized vehicles will enter the Acquisition lands and where they will park.
- Determining suitable staging areas for hikers, bikers, and equestrians

RECOMMENDATIONS

Based on our current knowledge of the cultural resources present within the Campbell-Vallecito Ranch Acquisition, the Cultural Resources staff of CDD has assisted with the development of the Project Description for the Project Evaluation Form (PEF) and will be preparing a DPR 5024 environmental document. The Native American Consultation has been initiated by providing the project description and map to the Native American Heritage Commission (NAHC) and requesting its comments as well as soliciting Tribal comments based on the list provided by NAHC. These documents will be open for comment by Native American individuals and groups, other stakeholders, and the general public (see Appendix C). Lastly, It is essential that the plans for the public opening of the Campbell-Vallecito Ranch Acquisition be concordant with planning for a Vallecito Cultural Preserve that is underway at present.

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Inventory of Southern Overland Trail Cultural Preserve; Features and Route

Sue A. Wade, Associate State Archaeologist

Cultural Preserves consist of distinct areas of outstanding cultural interest established within boundaries of other state park system units for the purpose of protecting such features as sites, buildings, or zones which represent significant places or events in the flow of human experience in California. Areas set aside as cultural preserves shall be large enough to provide for the effective protection of the prime cultural resources from potentially damaging influences and to permit effective management and interpretation of the resources. Within cultural preserves, complete integrity of the cultural resources shall be sought, and no structures or improvements which would conflict with such integrity shall be permitted. (PRC 5019.74).

Of the many overland routes that linked the East and West Coasts of the United States, the Southern Overland Trail is only recently being recognized for its importance. Like most trails used by early pioneers and emigrants who crossed the Colorado Desert, it was originally a Native American trail. Throughout the nineteenth century, the Trail linked points in Mexico and the American Midwest with the West Coast. The Trail enters California at Yuma on the Colorado River and crosses 90 miles of dry desert before reaching the spring and cienega at Carrizo, the entry point into Anza-Borrego Desert State Park. From Carrizo, at approximately 500 feet above mean sea level, the trail follows the Carrizo and Vallecito washes to Warner's Pass through a series of canyons and elevated valleys, including Vallecito, El Puerto (present day Mason Valley), Blair Valley, and San Felipe, where it exits Anza-Borrego Desert State Park to the north. A cutoff to San Diego leaves the desert northwest of El Puerto and follows Oriflamme Canyon to the Cuyamaca Mountains to the west. The routes follow the water sources and gradually lift travelers out of the desert. The desert crossing ends in San José Valley or Warner's Ranch, 50 miles to the northwest of Carrizo, at around 2,800 feet above sea level. Here the arduous desert crossing ends and travelers turned south to San Diego or north to Los Angeles.

History of the Southern Overland Trail: Indian Trail, Sonoran Road, San Antonio & San Diego Mail Route, Butterfield Stage Line, Mormon Trail, and Cattle Trail

The history of the Southern Overland Trail predates the existence of written records by millennia. Connecting the greater Southwest with the Pacific Coast, the Native Californian Trail connected the desert water sources including the marshes and springs at Carrizo, Palm Spring, Vallecito, El Puerto, and San Felipe within Anza-Borrego Desert State Park. Large areas of dense archaeological deposits surrounding these water sources document the importance of these prehistoric stops along the Overland Trail. From the desert, various branches of the Trail traveled to the mountains via canyons such as Oriflamme and San Felipe.

In the late eighteenth- and early nineteenth-century, the Spanish and Mexican military explored the Alta California deserts by following these Native American trails (Tamplin 1979:11-23). The first Spaniard to enter present day Anza-Borrego Desert was Lt. Pedro Fages of the San Diego Presidio, who left San Diego Mission with three soldiers on October 29, 1772, in pursuit of army deserters. They followed Indian trails across the Cuyamaca Mountains and desert via Oriflamme Canyon, Mason Valley, and the Carrizo Wash. Fages traveled over this route two more times, in 1782 and 1785. He discovered many of the points along the Carrizo Corridor that would later become landmarks on the Overland Trail, including the marshes and springs at Carrizo Creek, Palm Springs, and Vallecito. Continuing southeast into the desert, Fages' route joined the Anza Trail, established in 1776 between Sonora and San Gabriel Mission (Rensch 1955; Ives 1975; Lindsay 2001).

The portion of the Trail from Vallecito up San Felipe Valley to Warner's Ranch was established in the mid-1820s. In the 1820s José Romero, captain of the Tucson Presidio, and Lt. of Engineers Romualdo Pacheco, delineated the Trail via the San José Valley through Santa Ysabel and to San Diego as the official route for overland travel from Sonora to California. An alternative route for travelers wishing to bypass San Diego and reach the coast at a more northerly point led from El Valle de San José through Puerta La Cruz, Cañada Aguanga, and Temecula to San Gabriel and Los Angeles. This would become the main branch of the Overland Trail 20 years later (Warner 1886:3; Beattie 1925, 1933; Pourade 1961:174).

In spite of establishment of the route, travel between California and Sonora remained infrequent through the 1820s (Tamplin 1979:11-23). Starting in 1827, Sonorans used the route to move to California in order to escape Indian uprisings. Communication regularly came through from 1827 to 1828 (Bean 1962:87-88), but in 1830 Father José Sanchez reported that Indians had murdered four Sonorans on the west bank of the Colorado and that travel on that road had decreased considerably in light of this (Beattie 1933:68). The last official use of the road took place in 1834 when Rafael Amador carried dispatches from Mexican President Santa Ana to California governor Figueora (Hutchinson 1969:65).

In the early 1830s the Sonora Trail became the path of overland traders. In 1832 the Jackson-Young party from Santa Fe, New Mexico, followed the old Anza-Sonora Trail along the Gila River, through present-day central Arizona, to its junction with the Colorado. They then crossed the desert along the route established by Romero and Pacheco to the San José Valley and continued to Los Angeles. As a member of this expedition Jonathan Trumbull Warner first crossed the valley that would later commonly be known as his ranch. Jackson returned by the same route with 600 mules and 100 horses. Traffic increased during the 1830s and '40s as livestock traders drove herds of horses eastward to Sonora and New Mexico and the route between the Colorado River and Warner's Ranch became permanently established (Beattie 1925; Cleland 1963:236-237; Weber 1982:135). Water holes were discovered, maintained, and given names by which many are still known. West of the river the most difficult part of the trail lay across the Colorado Desert, until the waters of Carrizo Creek were reached. The 90 mile stretch of wind blown sand drifts, stone covered terraces, and salt flats with little to no vegetation, had no permanent sources of running water. The Trail followed the sandy streambed as it wound between weathered hills of ancient mud sediment until it reached the flowing spring and marsh known as El Carrizal (the cane grove). This was the first permanent flowing water source that could be relied upon west of the Colorado River (Couts 1849).

From Carrizo, conditions gradually improved. Water sources could be counted on at regular intervals as the trail rose gradually out of the desert. Continuing in a northwest direction, the route followed Carrizo and then Vallecito Washes for another nine miles before coming to a small spring located in a palm grove. Later travelers named this location Palm Spring, by which name it is still known today. After another nine miles along the same dry streambed, the trail came to the pasture and springs known as El Ojo Grande at Vallecito, where a semi-permanent Indian settlement was located.

Beyond Vallecito the terrain gradually began to change. Granite outcrops replaced the sandy hills and desert vegetation gave way to juniper woodland. The road crossed a granitic boulder ridge, today known as Campbell Grade, and reached another marshy area called El Puerto where water could be obtained. At this point, travelers could divert up the pass through Oriflamme Canyon to the Cuyamaca Mountains or enter the narrow gorge, now known as Box Canyon, and continue reaching the waters of San Felipe Creek and another large Indian settlement. Beyond San Felipe the trail left the desert floor and rose gradually into the mountains. The juniper woodland and creosote gave way to chaparral and oak trees. At Warner's Ranch, 15 miles from San Felipe, the San José Valley opened into broad flat grass-covered grazing land.

Although the Mexican livestock traders who established the trail left almost no written documentation of their travels, the fact that the route was well established by the 1840s, and that most of the major watering holes and landmarks had been identified and given Spanish place names that were well known by that time, provides testimony to the untold number of successful livestock drives that these hearty Hispanic pioneers completed during the 15 years prior to the American invasion of 1846. Born and raised in the desert, they knew how to drive large herds across arid expanses with little loss. In the decades following 1846, American immigrants attempted to drive their own livestock herds across the same terrain, and often met with disastrous results. Until establishment of the railroads in the 1870s, the dead carcasses of horses, mules, sheep, oxen, and cattle marked the trail and every water hole between the Colorado River and Carrizo Creek.

The United States' conquest of Northern Mexico and the subsequent settlement of California that followed had a major impact on development of the Southern Overland Trail, as the forces of Manifest Destiny took over the west. Beginning with the Mexican-American War of 1846-1848 and until the completion of the Southern Pacific railroad in the mid 1870s, the Carrizo Corridor to Warner's Pass became part of a major passage for overland migration and communication along the Southern Overland Trail.

The movement began with military expeditions. From the junction of the Gila and Colorado rivers, the trail followed the already well-established route across the Colorado Desert and northward along the east side of the Peninsular Range through the Carrizo Corridor, San Felipe Valley, Warner's Pass, and San José Valley (Warner 1886:1-6, 19-20; Bibb 1995). General Stephen W. Kearney's Army of the West crossed the desert between the Colorado River and Warner's Ranch in early December 1846, followed by General George Cooke's Mormon Battalion in January 1847 (Tamplin 1979:24-34; Pourade 1963:124; Beattie 1925, 1933).

The Mexican War ended while the Mormon Battalion had been engaged in its desert crossing. On January 24, 1848, three days after the battalion reached Warner's Ranch, gold was discovered at Sutter's Mill in northern California, launching the California Gold Rush. Nine days later on February 2, the Treaty of Guadalupe Hidalgo transferred ownership of California, along with territory that included the present states of Arizona, New Mexico, Nevada, Colorado, and Utah, to the United States.

The discovery of gold dramatically changed the dynamics of overland travel along the Gila River and Sonora trails. Within a year 80,000 people had traveled to California from around the world (Greeley 1987:14). Some sources claim that between six and ten thousand Sonorans from Mexico followed the route during 1849 and 1850. Traveling in family groups, many migrated to the Northern California gold fields each spring and returned to Sonora in the fall (Roske 1963:198-199; Beattie 1925; Kenny 1967). Dr. A. L. Lincoln, who had established a ferry to cross the Colorado River at its junction with the Gila, claimed that in three months during 1850 he crossed more than 20,000 people (Roth 1981). This would have averaged over 200 a day. Military commands and government expeditions continually traveled between San Diego and the river, adding to the immense amount of traffic already on the road. Detachments assigned to map the new boundary with Mexico, and explore probable railroad routes, followed the road. Finally in 1857, the Southern Route became part of the first transcontinental overland mail service.

Military mail had been carried overland to California since 1847 by military couriers but there was no civilian service. Joseph Swycaffer and Sam Warnock ran the first mail service between San Diego and Fort Yuma from 1854 to 1857. They used mules and followed the trail from Green Valley in the Cuyamaca Mountains down the old Indian and Fages trail in Oriflamme Canyon, intersecting the emigrant road between El Puerto and present-day Box Canyon (Lake 1957; Rensch 1957a; 1957b; Swycaffer 1938).

From 1857 to 1861 the Gila trail was used by the overland mail service. First carried by the San Antonio and San Diego Mail Line, from July 1857 through August 1858, and then the Butterfield Overland Mail Company, from September 1858 through June 1861, establishment of the Overland Mail on the Southern Overland Trail constituted the first regular communication and transportation service across the continental United States, 12 years before completion of the transcontinental railroad. The first west-bound mail, which left San Antonio on July 9, followed the same route across the mountains and arrived in San Diego on August 31 after a trip of 52 days (Johnson 1938; Pourade 1963:220-225). On July 7, 1857, the Postmaster General awarded the contract to provide overland mail service between San Francisco and the Mississippi to a combine headed by John Butterfield of New York. The first stage left Tipton, Missouri, on September 16, 1858. (Richardson 1925; Pourade 1963:224-225). The Overland Mail line developed a much larger and more complex infrastructure than the San Antonio and San Diego Mail. The company had manned stations every 10 to 15 miles, and occasionally 20 to 25 miles apart (Barrows 1896). Four stations lay within today's boundaries of Anza-Borrego Desert State Park: Carrizo Creek, Palm Springs, Vallecito, and San Felipe, with Warner's Ranch lying some ten miles north of San Felipe.

Carrizo Creek appears to have been occupied by employees of both the San Antonio and San Diego and the Overland Mail Companies, during the first year of the Butterfield Line's operation. San Felipe became one of the Overland Mail Company's two most important stations between the Colorado River and Warner's Ranch. The division agent, Warren G. Hall, resided there as well as five other employees: the station keeper (also called an agent), a hotel keeper, a cook, a harness maker, a stage driver, and their families. The company had invested \$5,000 in the station. The post had 48 tons of barley, 36 tons of hay, 19 horses, and 2 coaches. The remaining stops, Vallecito, Palm Spring, and Carrizo Creek, functioned as changing or "swing" stations to replace worn out teams with fresh horses. Most had a single keeper, identified as a hostler, who took care of the livestock and helped change the teams.

Once again, in 1861, national affairs changed the dynamics of travel across the Colorado Desert. Although emigrants and livestock herds still continued to move westward toward the California Coast, now large groups began to move eastward across the trail. First came southern sympathizers returning home to fight for the Confederate States, followed by U.S. Army troops intent on securing the southwest for the Union. With hundreds of troops and large wagon trains of supplies moving from the coast to the Colorado River, maintenance of the road and the establishment of supply lines became imperative. Stores of hay and barley were kept at all the former overland stage stations between San Felipe and Fort Yuma (Davis et. al. 1897- Carlton to West 3-16-1862:932; West to Cutler 3-16-1862:933; 4-2-1862:978; Rigg to Carleton 3-20-1862:939; 3-21-1862:942; 3-25-1862:950). Following the Civil War, travel on the trail between Yuma and Warner's Ranch declined somewhat compared to former decades. The route through the Carrizo Corridor and Warner's Pass did continue to be used by overland stage lines running between Los Angeles and Arizona (Wright 1961, Russling 1877:339).

By the 1880s, travel on the overland route between Warner's Ranch and Carrizo Creek ended the way it had begun, as a livestock trail. This is not surprising, for in actuality, herds of animals had always been the major users of the route during all periods of its development. Mexican horse traders had opened the trail. Following the American conquest, herds of cattle and sheep were constantly driven westward. The gold rush opened new markets in Northern California and livestock herds continued to be driven down the trail after the main surge of immigration had subsided. During 1854 more than 61,000 cattle crossed the Colorado River into California. Herds ranged in size from 600 to around 1,000 head. With the completion of the Southern Pacific railroad, the major cross-country cattle drives ceased, but local livestock raisers continued to cross the desert with their herds (Vail 1974). As late as 1919, cattle were still being driven across the desert between Carrizo Creek and Yuma (Brigandi 1995).

Background to Establishment of the Cultural Preserve

Although the significance of the Southern Overland Trail has been under-appreciated in the past, within the Colorado Desert it has long been recognized as a significant historic and interpretive resource. In 1972, the network of significant historic trails was combined into one resource for nomination to the National Register of Historic Places: the Fages-De Anza Trail – Southern Emigrant Road. The nomination encompasses multiple trails in the Colorado Desert including the Southern Overland Trail. Included in the nomination are recognitions of the original Native American travelers, Spanish explorers, American trappers and military, gold rushers, the first Transcontinental Mail, and the Butterfield Stage. The nomination contains a series of maps containing multiple Latitude-Longitude coordinates that appear to have been generated by research and some field survey. The Fages-DeAnza Trail – Southern Emigrant Road was listed on the National Register of Historic Places on January 29, 1973. At that time, the California State Landmarks Advisory Committee also dedicated a historical landmark at the head of Oriflamme Canyon, along the San Diego Trail segment of the Overland Trail, to commemorate the most significant point on the Fages Trail in San Diego County. Other related California Historic Landmarks in ABDSP include Box Canyon, Butterfield Overland Mail Route, Palm Spring, San Felipe Valley and Stage Station, Vallecito Stage Depot (Station).

More recent documentation of the Southern Overland Trail was undertaken for the Anza-Borrego General Plan Inventory of Cultural Resources in the late 1990s. At that time, District cultural staff documented multiple evidences of trail segments within Anza-Borrego Desert State Park. These segments were documented with GPS and a record kept in the District GPS files. This work was incorporated into the Southern Overland Trail mapping completed for the current Cultural Preserve Designation.

In 2000, Colorado Desert District and Southern Service Center archaeologists and historians embarked on a five-year historical and archaeological excavation and documentation of the Carrizo Stage Station. This effort documented the significance of the Carrizo Stage Station site, as well as the two other station sites in Anza-Borrego Desert State Park (Palm Spring and San Felipe) and one other station site surrounded by ABDSP lands but located on San Diego County Park property (Vallecito). The project determined that the Southern Overland Trail and Stage Station sites were eligible for the National Register as a Historic District. Unfortunately, monetary constraints have restricted the ability to complete a nomination. The final Carrizo Stage Station documentation report was completed in 2007 with copies distributed throughout the cultural community in California (VanWormer et al. 2007). The historic background section was synthesized to prepare the history of the Overland Trail included above in this document.

One of the Carrizo Stage station project outcomes was an interagency celebration of the 150th anniversary of the completion of the San Antonio and San Diego Mail line in 2007 and the Butterfield Stage line in 2008. Since 2007, two Districts of California State Parks and San Diego County Parks have collaborated in offering yearly interpretive commemorative events at Vallecito Stage Station County Park as well as in Old Town State Historic Park, highlighting the historical and educational importance of the Overland Trail and Stage Station sites. Planned for 2011 and 2012 are commemorative events that will recognize the importance of the Southern Overland Trail to the military during the Civil War.

Currently, the Southern Trails Chapter of the Oregon and California Trails Association (OCTA) is preparing an initiative to obtain National Historic Trail Status for the Southern Trail to California, of which Southern Overland Trail, from Yuma to San Diego and Los Angeles is a major component. This initiative has been presented to members of the United States Congress as well as of 15 State Legislatures, with positive results. Based on the positive economic and educational benefits, a bill to authorize a feasibility study is anticipated by OCTA Southern Trails Chapter in 2010 (Eddins 2010).

Proposition 84 Park Bond funds support the current effort: preparing the documentation to establish the Southern Overland Trail as one of seven (7) Cultural Preserves within ABDSP (fund limitations prevent the completion of the documentation for all the recommended Cultural Preserves because of the extensive field work and archival research that would be necessary to complete the documentation). When the limited Park Bond funds became available, Colorado Desert District and Southern Service Center cultural resources staff prioritized the list of recommended Cultural Preserves. Prioritization was based on the significance of the cultural resources in proposed preserves, amount of documentary information already available for each proposed Cultural Preserve, a lack of necessity for additional fieldwork, and the amount of visitor use of each area (observed impacts to existing cultural resources). The Overland Trail Cultural Preserve was high on the priority list for the above reasons; because of such great interest in the historic and interpretive significance of the Southern Overland Trail, it seemed only fitting that the Trail should be recognized in Anza-Borrego Desert State Park as a Cultural Preserve.

Description of the Cultural Features and Sites Contained Within the Southern Overland Trail Cultural Preserve

From Carrizo Creek Stage Station site on the southeast corner of Anza-Borrego Desert State Park to San Felipe Stage Station at the northwest corner, the Southern Overland Trail crosses approximately 35 miles of desert and rises approximately 2000 feet in elevation. The physical evidence of the Southern Overland Trail on the landscape includes intact segments identifiable by their unique “U”-shape cross-section, the result of wagons pulled by horse or mule teams, as well as characteristic rust marks on rocks, the result of scraping by iron bands of wagon wheels. Occasionally piles of rocks that obstructed travel can be found moved to the side of the trail as well as burned rock remains of fire rings indicating a wayside camp spot. Along the trail, there are additional features such as 1847 graffiti carved into patinated rocks at El Puerto and evidence of bedrock cut away in Box Canyon to provide passage of the Mormon Battalion wagons. Also located along the route within Anza-Borrego Desert State Park are the archaeological remains of three stage station sites: Carrizo Creek, Palm Spring, and San Felipe. Additionally, the standing Vallecito Stage Station building, on San Diego County Parks property, is surrounded by lands of Anza-Borrego Desert State Park. The two agencies have worked cooperatively to preserve and interpret the station site as well as the traces of the Southern Overland Trail on ABDSP land that lead to it.

The remains of the Trail, as it lifts through rugged passes from valley to valley, reflect the change in desert terrain and vegetation from 500 feet above sea level at Carrizo Creek Station to 2500 feet at San Felipe Station. In the southern portion of ABDSP between Carrizo and Palm Spring, the Trail bed is evidenced by deep cuts through mesquite- and creosote-covered sand dunes and iron scrape marks on occasional rocks. The landscape appears isolated and inhospitable, with the exception of the Carrizo Stage Station site on a small terrace above the waters of Carrizo Creek.

From Carrizo to Palm Spring, the Trail occasionally crosses a wash bottom, but road bed is evident across the rocky terraces where travelers sited their course from one ridge point to the next. The trail enters Palm Spring Station site (at around 800 feet elevation) from the agave-covered terraces to the southeast, and although Trail sections have been driven on in recent times, intact sections of characteristic U-shaped Trail bed with rust-scarred rocks continue across the rock terraces to the northwest, again rounding one ridge finger and traveling to the next.

Upon entering Vallecito Valley (at 1500 feet elevation), the surroundings change to valley land overlooked by the Laguna Mountains to the west, a wetland marsh, and mesquite bosque. The Trail travels northwest on the terraces parallel to Vallecito Wash, with some of the clearest road bed scars and rust-scarred rocks evident just southeast of Vallecito Stage station.

Up to this point, from Carrizo to Vallecito stations, the trail parallels Vallecito Creek, following the corridor, but staying on the terraces and out of the difficult sandy wash bottom. From Vallecito north, the Trail alignment is constrained by available canyon connecting the valleys and mostly parallels current Highway S-2. Northwest of Vallecito Stage Station, the Trail crosses agave, ocotillo, and cholla covered terraces and climbs between valleys through three rugged and difficult passes: Campbell Grade, Box Canyon, and Little Pass. Significant eroded scars of several roadbeds, moved as each became impassible over time, are visible on the slopes of these passes.

Road scars on Campbell Grade include the eroded scars of the Overland Trail as well as the later auto road; at the base of the grade is a paved strip, paralleling the Trail, that affords Accessible Trail viewing opportunities. Above Campbell Grade, the Trail travels past El Puerto, a marsh and watering stop along the route where the 1847 graffiti is located, and through Mason Valley. In Mason Valley (at an elevation of 2000 feet), the Trail crosses lands dense with cholla and agave. Intact road bed is evident at the north end of the valley, where horse and mule traffic split off to the west on the San Diego Trail that travels up Oriflamme Canyon to Cuyamaca and the wagon and stage traffic continued east on the roadbed up Box Canyon. Road bed scars are located at the top of Oriflamme Canyon before the Trail enters Cuyamaca Rancho State Park. On the Box Canyon wagon route, several eroded Trail alignments, including the wagon road cut by the Mormon Battalion, are visible from a Park Interpretive Overlook along Highway S-2.

At the head of Box Canyon (2500 feet elevation), the Trail strikes out through agave and juniper thickets and then across the Blair dry lake bed as indicated by a few remnant scars beside the current dirt road. The last rugged crossing is over Little Pass, where remains of the trail and the auto road are evident on the hill and a short distance north into Earthquake Valley. North of the private properties in Earthquake Valley, remnant trail scars are evident on the west of the Sentenac Cienega and into the San Felipe Valley (2500 feet elevation). The San Felipe Valley is hospitable terrain, with water and riparian and chaparral vegetation including cottonwood, oak, sumac, juniper, and agave. Two alignments of the Trail bed are evident west of San Felipe Creek, the earliest crosses to the east side of the creek and the second accesses the San Felipe Stage Station site before crossing the creek to rejoin the earlier Trail alignment. Now at the northwest boundary of Anza-Borrego Desert State Park, the Trail continues up through the San Felipe Valley to the Warner Stage Station in the Valle de San Jose.

The Southern Overland Trail Cultural Preserve map, attached to this document, illustrates the extent of the Cultural Preserve. Approximately 26.3 miles of Southern Overland Trail intact roadbed, identified by field survey, are included within the Southern Overland Trail Cultural Preserve. This does not include 3.3 miles of intact roadbed that are preserved within the two other Preserves, Vallecito and Welnensch. In some areas the preserve width was reduced due to proximity of roads or washes and in Box Canyon the preserve was expanded up to 120 yards to include the various alignments as they changed through time. The segments receiving Cultural Preserve designation consist of highly significant intact remains of roadbed as identified by the characteristic “U” shape profile and rust scraped rocks, three Stage Station sites, and other related features such as the 1847 graffiti at El Puerto. It is important to keep in mind that the entire route is still in existence but segments not given Cultural Preserve designation are sections where intact traces have been “over-written” by washes, jeep roads, paved roads, OHV use, agriculture, construction, natural events, and private land use. Inclusion of segments with intact remains in the Southern Overland Trail Cultural Preserve will provide absolute protection of these fragile traces, with volume of foot traffic controlled by requiring special event permit for use. Exclusion from Cultural Preserve designation, of sections “overwritten” by more recent uses, provides an exceptional opportunity for the public to experience Southern Overland Trail travel on horse or by vehicle. For instance, since the 150th anniversary of the first Transcontinental Mail in 2007, re-enactors on horseback have traveled in the wash south of Vallecito Stage Station as part of the annual celebrations of Vallecito Days.

Observations and Evaluation of the Cultural Resources of the Preserve

- 1 The Southern Overland Trail is the tangible evidence of human adaptation and perseverance in Southern California's diverse and unpredictable environment. From prehistoric times until the mid-twentieth century, people have traveled from the Colorado River, through the Colorado Desert, over the Laguna and Cuyamaca Mountains, and to the Coastal Valleys and Pacific Ocean. They made the journey to harvest plants, hunt game, trade goods, participate in group events, pasture livestock, and transport news, cargo, and people. While much of its evidence across the southland has been destroyed by modern development, the Trail remains largely intact in Anza-Borrego Desert State Park, from Carrizo Creek in the southeast corner of the park, to San Felipe in the northwest, and to the Cuyamacas on the west.
- 2 Documenting Native American environmental adaptation, the Trail reflects the movement of prehistoric peoples in harmony with the seasonal rhythms of the natural world. The Trail connects water sources and traditional use areas at Carrizo, Vallecito, San Felipe, and the Cuyamaca Mountains within Anza-Borrego Desert State Park, and reaches as far as the Colorado River to the east and the Pacific Ocean to the west. The Trail and the traditional areas it connects convey an enduring sense of the vast cultural landscape that is considered sacred by today's Kumeyaay and Kwaaymii Peoples as well as by other tribes from the Colorado River to the Pacific Coast.
- 3 In the nineteenth and early twentieth centuries, Mexican and American military, Sonoran and Yankee gold rushers, American emigrants, the Overland Mail and Butterfield Stage, thousands of cattle, and wagon and auto travelers followed the Trail through, what was to them, a hostile environment. The vast areas of the Anza-Borrego Desert were only accessible by foot or on muleback. The journey between Yuma and San Diego was dangerous and lengthy. Communication between the East and West Coasts was sporadic and unreliable. The history of travel on the Overland Trail through the nineteenth and early twentieth centuries, despite these difficulties, documents the hard work and persistence of the American pioneer and provides a thought-provoking contrast to today's world of paved roads and cell phones.

Recommendations for the Southern Overland Trail Cultural Preserve

- 1 The intact remains of the Southern Overland Trail preserved on the landscape of Anza-Borrego Desert State Park are unique and fragile cultural features that require preservation. Within the designated corridor of the Southern Overland Trail Cultural Preserve, no activity will be permitted that could damage intact remains. Only foot traffic will be allowed on the trail. It is anticipated that historical reenactment groups will want to travel on the Trail, and the numbers of people and frequency of use will be controlled by requiring a use permit.
- 2 Many segments of the Trail have been "overwritten" by more recent uses and were excluded from Cultural Preserve designation. These sections include roads in washes, old auto road, modern ranch roads, and paved roads. These sections provide an exceptional opportunity for the public to experience Southern Overland Trail travel on horse or by 2-wheel or 4-wheel drive vehicle.

The following table details opportunities-vehicle, equine, foot, vehicle camping, and ADA access-for the public to experience the various segments of the Southern Overland Trail Cultural Preserve. Future development to enhance these opportunities would include interpretive programs such as pod-cast travel logs and brochures, interpretive signage, accessible parking areas, and expansion of living history programs such as Vallecito Days at Vallecito County Park and Stagecoach Days on Old Town State Historic Park.

Carrizo Stage Station to Palm Spring Station:

Vehicle	Parallel travel on existing dirt roads
Equine	Parallel travel on existing dirt roads
Foot	Travel on Cultural Preserve by permit
Vehicle Camping	Carrizo and Palm Spring Stage Stations

Palm Spring Station to Vallecito Stage Station:

Vehicle	Parallel travel on Highway S-2
Equine	Parallel travel in washes by permit
Foot	Travel on Cultural Preserve by permit
Vehicle Camping	Palm Spring and Vallecito Stage Stations

Vallecito Stage Station to foot of Campbell Grade:

Vehicle	Parallel travel on Highway S-2
Equine	Parallel travel on old auto and ranch roads
Foot	Travel on Cultural Preserve (with minor diversions to Highway S-2 to avoid private property) by permit
Vehicle Camping	Vallecito Stage Station and future camping at Vallecito Ranch
ADA Access	Future Interpretive location at paved strip adjacent to Cultural Preserve

Campbell Grade to Box Canyon:

Vehicle	Parallel travel on Highway S-2
Equine	Not possible due to private property
Foot	Travel on Cultural Preserve (with frequent diversions to Highway S-2 to avoid private property) by permit
Vehicle Camping	None available

Box Canyon to north of Little Pass:

Vehicle	Parallel travel on Highway S-2
Equine	Parallel travel on designated Park Trails
Foot	Travel on Cultural Preserve and Park trails by permit
Vehicle Camping	Blair Valley

North of Little Pass to Sentenac Cienega:

Vehicle	Parallel travel on Highway S-2
Equine	Not possible due to private property
Foot	Travel on Cultural Preserve (mostly diversions to Highway S-2 to avoid private property) by permit
Vehicle Camping	None available

Sentenac Cienega to Park Boundary:

Vehicle	Parallel travel on Highway S-2
Equine	Travel on Ranch Roads by permit
Foot	Travel on parallel ranch roads by permit
Vehicle Camping	None available

- 3 Other land management agencies in Southern California currently recognize the importance of the Southern Overland Trail resources they manage. Since 2007, the Anza-Borrego Desert and Cuyamaca Rancho State Parks, Old Town State Historic Park, and San Diego County Parks have worked cooperatively to host Vallecito Days in the Colorado Desert and Stagecoach Days in San Diego, living history programs that highlight the historic importance of the Southern Overland Trail and 1850s frontier life. Historical themes have included the 150th Anniversary of the first Transcontinental Mail and Butterfield Stage, the evolution of communication (hand-written letters to email and cell phones), and the hard-work and make-do ethics of frontier life. The events planned for 2011 and 2012 will highlight Civil War era military use of the Trail. California State Parks should continue to take the lead in implementing these outstanding educational opportunities. Parks should also work with the Bureau of Land Management and Cleveland National Forest, who both manage land along the Southern Overland Trail, to partner in furthering the educational opportunities of our mutual resources.
- 4 It is indisputable that the origins of the Southern Overland Trail lie with the Native Americans. To date, the interpretive and educational programs have focused on Spanish, Mexican, and American activities along the Trail. California State Parks should work to include Native Americans in the telling of the story of the Southern Overland Trail.
- 5 Currently, the Southern Trails Chapter of the Oregon and California Trails Association (OCTA) is preparing an initiative to obtain National Historic Trail Status for the Southern Trail to California, of which Southern Overland Trail, from Yuma to San Diego and Los Angeles is a major component. Designation of the portion of the Southern Overland Trail within Anza-Borrego Desert State Park as a Cultural Preserve will support the initiative effort. California State Parks should work with the Southern Trails Chapter of OCTA to bring about designation of the Southern Trail as a National Historic Trail.

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