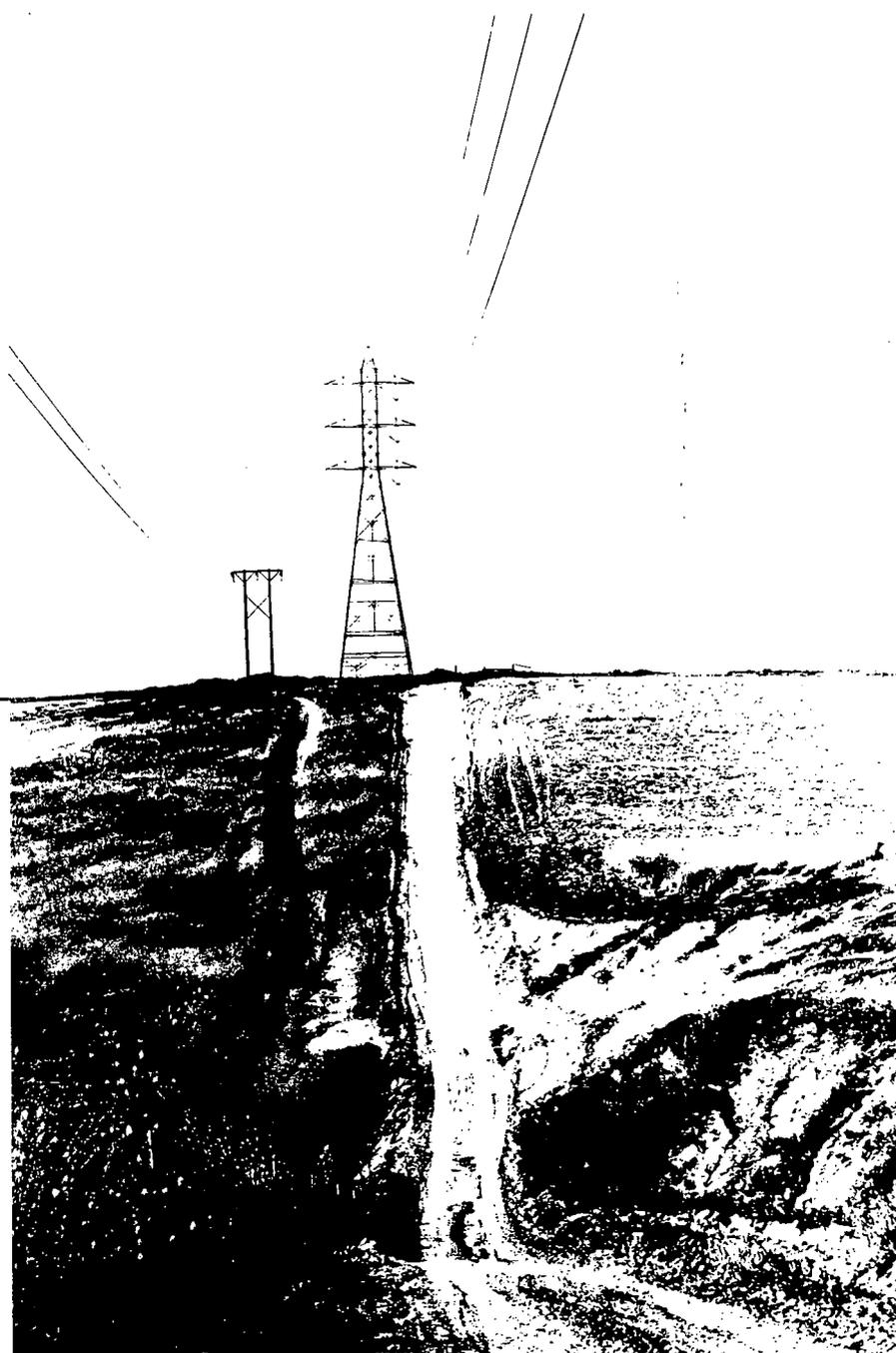


**NATIONAL REGISTER ASSESSMENT PROGRAM  
OF CULTURAL RESOURCES  
OF THE 230 KV TRANSMISSION LINE  
RIGHTS - OF - WAY  
FROM SAN ONOFRE NUCLEAR  
GENERATING STATION  
TO BLACK STAR CANYON AND  
SANTIAGO SUBSTATION AND TO  
ENCINA AND MISSION VALLEY SUBSTATION**



**CULTURAL RESOURCE REPORT  
VOLUME I  
September, 1980**



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NATIONAL REGISTER ASSESSMENT PROGRAM OF  
CULTURAL RESOURCES OF THE 230 KV TRANSMISSION LINE  
RIGHTS-OF-WAY FROM SAN ONOFRE NUCLEAR GENERATING  
STATION TO BLACK STAR CANYON AND SANTIAGO SUBSTATION  
AND TO ENCINA AND MISSION VALLEY SUBSTATION

CULTURAL RESOURCE REPORT

VOLUME I

Prepared For:

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San Diego Gas & Electric Company

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September 1980

## EXECUTIVE SUMMARY

The following Cultural Resource Report was prepared for Southern California Edison Company and San Diego Gas & Electric Company as part of their National Register assessment program of the 230 KV transmission line rights-of-way from San Onofre Nuclear Generating Station to Black Star Canyon and Santiago Substation and to Encina and Mission Valley Substation. In brief, the program encompassed assessment and evaluation of 41 previously identified archaeological sites.

The assessment program included updated record searches, review of previous fieldwork, conversations with knowledgeable archaeologists, ethnographers and historians, a thorough field investigation, data recordation and collection, and data analysis and compilation. Native American groups were contacted for input and Native Americans assisted with the field investigation and subsequent data analysis.

During the assessment program, the 41 sites were evaluated for National Register potential, using 36 CFR 60.6, 36 CFR 64 (draft), and 36 CFR 63. Site significance was assessed using contemporary criteria including those provided in 36 CFR 64 and in Moratto and Kelly (1978:1-26). Twenty-two archaeological/cultural resource sites are evaluated as potentially eligible for National Register nomination. The remaining 19 sites are not, in our opinion, considered potentially eligible for National Register nomination.

A Management Plan including measures for mitigation of potential adverse effects has been provided for the assessed sites. Mitigating measures include site avoidance and research-oriented data recovery programs when site avoidance is not possible. All future work and mitigation proposals will be coordinated with Southern California Edison Company, San Diego Gas & Electric Company, the California Office of Historic Preservation (OHP), Nuclear Regulatory Commission, and involved Native American groups.

## ACKNOWLEDGEMENTS

The contributors who participated in this National Register assessment program are many. Without their special assistance, the following report would not have been possible. This report is based upon the conscientious and thorough work performed by the following persons:

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In addition, Dr. David White (SCE), Tom T. Taylor (SCE), Ivonne DeLaCruz (SCE), Bob Meinzer (SDG&E), John Burton (SDG&E), Henry Bass (formerly of OHP), Dan Bell (OHP), Jeffery Bingham (OHP), and Dwight Dutschke (OHP) were involved in the program, as were many SCE and SDG&E personnel who assisted in the planning and implementation of the program.

A note of thanks goes to Mrs. David (Aurora) Belardes and her family for sharing their hospitality and for their special assistance during this study.

## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
	EXECUTIVE SUMMARY	i
	ACKNOWLEDGEMENTS	ii
I	INTRODUCTION	1
1.1	Purpose of Study/Mandates	1
1.2	Project Characteristics	3
1.3	Program Objectives	5
1.4	Program Characteristics	6
II	ENVIRONMENTAL SETTING	8
2.1	Introduction	8
2.2	Geomorphology/Geology	9
2.3	Environmental Alteration	10
2.4	Floral Profile	16
2.5	Faunal Profile	21
III	PRE-EUROPEAN CULTURAL SEQUENCE	23
3.1	Introduction	23
3.2	Proposed Chronologies	23
3.2.1	Early Man Horizon/Paleo-Indian	25
3.2.2	Milling Stone Horizon/Early Milling	28
3.2.3	Intermediate Horizon/Early Milling	30
3.2.4	Late Horizon/Late Milling	30
3.2.5	Post-European Period	34
3.3	Summary	34

TABLE OF CONTENTS (Continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
IV	POST-EUROPEAN CULTURAL SEQUENCE	36
4.1	Introduction	36
4.2	Irvine Ranch	36
4.3	San Juan Capistrano	39
4.4	Oceanside	46
4.5	Encinitas/Penasquitos	48
V	RESEARCH OBJECTIVES	51
5.1	Research Design	51
5.2	Course of Study	52
5.2.1	Research Hypotheses	52
VI	NATIVE AMERICAN INVOLVEMENT	57
6.1	Introduction	57
6.2	Preliminary Involvement	58
6.3	Field Investigation	58
6.4	Data Analysis/Report Preparation Involvement	59
6.5	Native American Concerns	60
VII	FIELD INVESTIGATION TECHNIQUES	62
7.1	Introduction	62
7.2	Site Access	63
7.3	Field Survey Techniques	64
7.3.1	Vegetation Clearing	64
7.4	Field Investigation Forms/Record Sheets	65

## TABLE OF CONTENTS (Continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
7.5	Botanical Recordation	65
7.6	Photography	66
7.7	Field Surface Artifact Cataloging	67
7.8	Feature Recordation	68
7.9	Subsurface Testing	69
7.9.1	Road Cut Excavation	70
7.9.2	Test Unit Excavation	71
7.10	Soil Samples, Pollen Samples/Soil Profiles	73
7.11	Site Field Mapping	74
7.12	Laboratory Procedures	75
7.13	Ancillary Studies	76
VIII	BACKGROUND DISCUSSION AND ANALYSIS OF ARTIFACT TYPES	78
8.1	Introduction	78
8.2	Type-by-Type Definitions	82
8.2.1	Lithic	83
8.2.2	Non-Lithic	94
IX	MILLING DEFINITIONS AND DISCUSSION	96
9.1	Introduction	96
9.2	Definitions of Milling Surfaces and Implements	98
9.2.1	Bedrock Milling	98
9.2.2	Portable Milling	104
9.2.3	Milling Implements	108

TABLE OF CONTENTS (Continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
9.3	Ethnographic Milling Data	112
9.3.1	Floral Resource Milling	112
9.3.2	Faunal Resource Milling	114
9.3.3	Mineral Resource Milling	115
9.4	Summary	116
X	ARCHAEOLOGICAL SITE ASSESSMENT DESCRIPTIONS	117
10.1	Introduction	117
10.2	Site Descriptions	118
10.2.1	Ora-831	118
10.2.2	Ora-830	123
10.2.3	Ora-829	129
10.2.4	Ora-787	135
10.2.5	Ora-832	139
10.2.6	Ora-438	142
10.2.7	Ora-828	149
10.2.8	Ora-447	155
10.2.9	Ora-827	160
10.2.10	Ora-825	165
10.2.11	Ora-826	173
10.2.12	Ora-905	176
10.2.13	Ora-725	182
10.2.14	Ora-786	186
10.2.15	Ora-785	190

TABLE OF CONTENTS (Continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
10.2.16	Ora-784	193
10.2.17	Ora-782	196
10.2.18	Ora-499	201
10.2.19	Ora-495	207
10.2.20	Ora-496	213
10.2.21	Ora-824	219
10.2.22	Ora-419	225
10.2.23	Ora-823	228
10.2.24	Ora-498	231
10.2.25	Ora-700	237
10.2.26	Ora-640	243
10.2.27	SDi-6693	249
10.2.28	SDi-4538	253
10.2.29	SDi-6136	256
10.2.30	SDi-6137	261
10.2.31	SDi-6138	267
10.2.32	SDi-6140	273
10.2.33	SDi-6135	284
10.2.34	SDi-6133	295
10.2.35	SDi-6149	299
10.2.36	SDi-6150	305
10.2.37	SDi-6151	308
10.2.38	SDi-6130	312

TABLE OF CONTENTS (Continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
10.2.39	SDi-6131	319
10.2.40	SDi-6152	325
10.2.41	SDi-5444	330
XI	EVALUATION OF POTENTIAL NATIONAL REGISTER STATUS/SITE SIGNIFICANCE	338
11.1	Introduction	338
11.2	Criteria Used to Assess and Determine Site Significance	338
11.2.1	Introduction	338
11.2.2	General Types of Site Significance	338
11.2.3	Project Specific Site Significance	343
11.3	Sites Considered Eligible for Inclusion in the National Register	344
11.3.1	Individual Site Eligibility and Possible Scientific Importance	344
11.3.2	District Site Eligibility and Possible Scientific Importance	346
11.3.3	Possible Native American Importance	348
11.3.4	Additional Substantiation of Site Significance	349
11.4	Sites Not Considered Eligible for Inclusion in the National Register	349
XII	DETERMINATION AND CRITERIA OF EFFECT	351
12.1	Introduction	351
12.2	Direct Effects	355
12.2.1	Construction Activities	355
12.2.2	Operation/Maintenance Activities	355

TABLE OF CONTENTS (Continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
12.3	Indirect Effects	356
12.4	No Effects	356
XIII	CULTURAL RESOURCE MANAGEMENT PLAN	358
13.1	Introduction	358
13.2	Mitigation Through Avoidance	358
13.3	Mitigation Through Data Recovery	358
13.4	Mitigation of Erosional Effects	360
13.5	Mitigation Summary	360
	REFERENCES CITED	361

LIST OF FIGURES

<u>Number</u>	<u>Title</u>	<u>Page</u>
1-1	Location of Project Rights-Of-Way	2
4-1	Location of Study Area by Descriptive Districts	37
9-1	Bedrock Milling Elements	99
9-2	Metates A, B: Portable Basin (Stone) C: Portable Basin (Wood) D, E: Portable Slick (Stone)	105
9-3	A, B: Portable Mortar (Stone) C: Portable Mortar (Wood) D: Stone Bowl	107

TABLE OF CONTENTS (Continued)

LIST OF FIGURES (Continued)

<u>Number</u>	<u>Title</u>	<u>Page</u>
9-4	A: Unifacial Cobble Mano B: Bifacial Cobble Mano C: Bifacial Shaped Mano D: Unifacial Wedge-Shaped Cobble Mano E: Unifacial Mano Made from Rough Block F: Muller G: Pestle (Wood) H, I, J: Pestle (Stone)	109

LIST OF TABLES

<u>Number</u>	<u>Title</u>	<u>Page</u>
2-1	Geologic Formations Within the Study Area	11
2-2	Floral Communities Within the Study Area	17
3-1	Chronological Model for Orange County and San Diego County Pre-European Sequence	24
10-1	Ora-831 - Surface Artifacts	119
	Ora-831 - Surface Shellfish Remains	119
	Ora-831 - Subsurface Artifacts by Unit and Level	120
	Ora-831 - Cultural Activities as Represented by Artifacts Types	120
10-2	Ora-830 - Surface Artifacts	124
	Ora-830 - Subsurface Artifacts by Unit and Level	124
10-3	Ora-829 - Surface Artifacts	131
	Ora-829 - Subsurface Artifacts by Unit and Level	131
10-4	Ora-787 - Surface Artifacts	136
	Ora-787 - Subsurface Artifacts	136
10-6	Ora-438 - Surface Artifacts	144
10-7	Ora-828 - Surface Artifacts	150
	Ora-828 - Subsurface Artifacts	150
10-8	Ora-447 - Surface Artifacts	156
	Ora-447 - Subsurface Artifacts	156

TABLE OF CONTENTS (Continued)

LIST OF TABLES (Continued)

<u>Number</u>	<u>Title</u>	<u>Page</u>
10-9	Ora-827 - Surface Artifacts	161
	Ora-827 - Subsurface Artifacts	161
10-10	Ora-825 - Surface Artifacts	167
	Ora-825 - Subsurface Artifacts by Unit and Level	168
10-11	Ora-826 - Surface Artifacts	174
10-12	Ora-905 - Surface Artifacts	178
10-13	Ora-725 - Surface Artifacts	183
	Ora-725 - Subsurface Artifacts	183
10-14	Ora-786 - Surface Artifacts	187
10-17	Ora-782 - Surface Artifacts	197
	Ora-782 - Subsurface Artifacts	197
10-18	Ora-499 - Surface Artifacts	202
	Ora-499 - Subsurface Artifacts by Unit and Level	202
	Ora-499 - Cultural Activities as Represented by Artifact Types	203
10-19	Ora-495 - Surface Artifacts	209
	Ora-495 - Subsurface Artifacts by Unit and Level	209
10-20	Ora-496 - Surface Artifacts	215
	Ora-496 - Surface Shellfish Remains	215
	Ora-496 - Subsurface Shellfish Remains	216
10-21	Ora-824 - Surface Artifacts	220
10-24	Ora-498 - Surface Artifacts	232
	Ora-498 - Subsurface Artifacts by Unit and Level	232
10-25	Ora-700 - Surface Artifacts	238
	Ora-700 - Cultural Activities as Represented by Artifact Types	238
	Ora-700 - Subsurface Artifacts by Level	239
	Ora-700 - Subsurface Artifacts	239
10-26	Ora-640 - Surface Artifacts	244
	Ora-640 - Subsurface Artifacts by Unit and Level	244
	Ora-640 - Cultural Activities as Represented by Artifact Types	245

TABLE OF CONTENTS (Continued)

LIST OF TABLES (Continued)

<u>Number</u>	<u>Title</u>	<u>Page</u>
10-27	SDi-6693 - Surface Artifacts	250
	SDi-6693 - Cultural Affinity as Represented by Artifacts Types	250
10-29	SDi-6136 - Surface Artifacts	257
	SDi-6136 - Subsurface Artifacts	257
	SDi-6136 - Surface Shellfish Remains	258
	SDi-6136 - Subsurface Shellfish Remains	258
10-30	SDi-6137 - Subsurface Shellfish Remains by Level	263
	SDi-6137 - Subsurface Artifacts by Level	263
	SDi-6137 - Shellfish Environments	264
10-31	SDi-6138 - Surface Artifacts	268
	SDi-6138 - Subsurface Artifacts by Unit and Level	269
	SDi-6138 - Subsurface Shellfish Remains by Unit and Level	269
10-32	SDi-6140 - Surface Artifacts	275
	SDi-6140 - Subsurface Artifacts by Unit and Level	275
	SDi-6140 - Subsurface Shellfish Remains by Unit and Level	276
	SDi-6140 - Shellfish Species	277
	SDi-6140 - Environmental Distribution of Recovered Subsurface Shell	278
10-33	SDi-6135 - Surface Artifacts	285
	SDi-6135 - Subsurface Artifacts by Level	285
	SDi-6135 - Subsurface Shellfish Remains by Level	286
	SDi-6135 - Shellfish Species	287
	SDi-6135 - Shellfish Environments	288
10-34	SDi-6133 - Surface Artifacts	296
	SDi-6133 - Surface Shellfish Remains	296
10-35	SDi-6149 - Surface Artifacts	300
	SDi-6149 - Presence of Surface Shellfish Remains within Sampling Areas A-G	300
	SDi-6149 - Subsurface Artifacts by Level	301
	SDi-6149 - Subsurface Shellfish Remains by Level	301
10-37	SDi-6151 - Surface Artifacts	309
10-38	SDi-6130 - Surface Artifacts	313
	SDi-6130 - Surface Shellfish Remains	313
	SDi-6130 - Subsurface Artifacts by Level	314

TABLE OF CONTENTS (Continued)

LIST OF TABLES (Continued)

<u>Number</u>	<u>Title</u>	<u>Page</u>
10-39	SDi-6131 - Surface Artifacts	320
	SDi-6131 - Subsurface Artifacts by Unit and Level	320
	SDi-6131 - Surface Shellfish Remains	321
10-40	SDi-6152 - Surface Artifacts	326
	SDi-6152 - Surface Shellfish Remains	326
	SDi-6152 - Subsurface Artifacts by Unit and Level	327
10-41	SDi-5444 - Surface Artifacts	332
	SDi-5444 - Surface Shellfish Remains	332
	SDi-5444 - Subsurface Artifacts by Unit and Level	333
11-1	Assessment of National Register Potential for Sites Included within Current Program	339
12-1	Potential Adverse Impacts/Proposed Management Measures	352

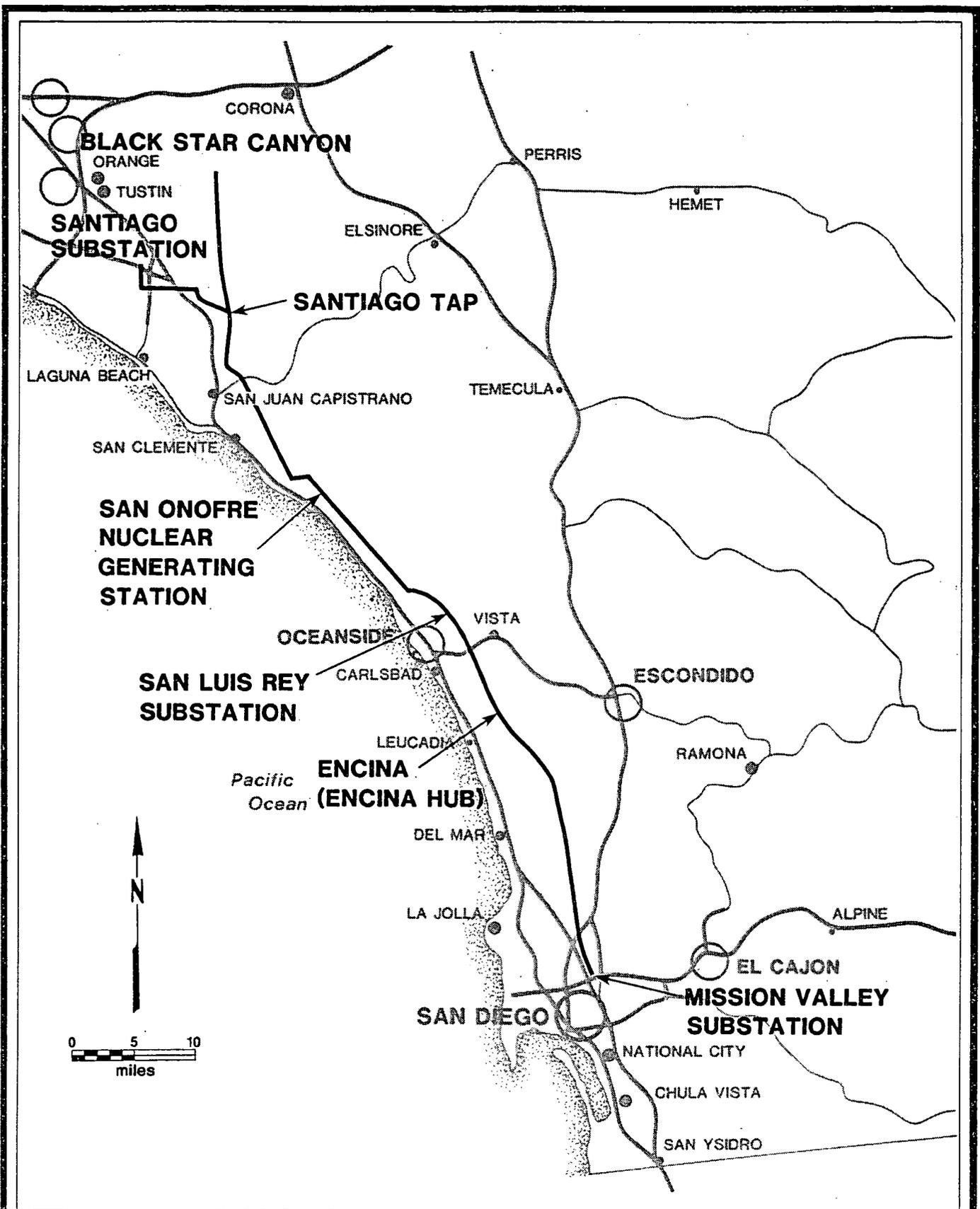
SECTION I  
INTRODUCTION

1.1 PURPOSE OF STUDY/MANDATES

The following report details and discusses an evaluation program conducted in response to a request for National Register eligibility assessment of 41 previously identified archaeological sites made by the Nuclear Regulatory Commission (NRC), the California State Historic Preservation Officer (SHPO), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E). These cultural resources were located during earlier surveys. Cultural Systems Research, Inc. (CSRI) surveyed the existing SCE San Onofre to Black Star Canyon and Santiago Substation 230 KV transmission line right-of-way (Bean and Vane 1979), and WESTEC Services, Inc. (Eckhardt 1979a, 1979b) surveyed San Onofre to Encina and San Onofre to Mission Valley Substation 230 KV transmission line right-of-way. Archaeological survey of the SDG&E San Onofre to Talega Substation transmission line right-of-way was also completed (Bean and Vane 1979; Wirth 1978; Walker and Bull 1978). However, because no cultural resources were identified within this right-of-way, further National Register site assessment was not required.

In compliance with Section 106 of the National Preservation Act and as requested by the Nuclear Regulatory Commission (lead agency), in conjunction with the California Office of Historic Preservation (OHP) (36 CFR 800), SCE and SDG&E implemented the archaeological assessment program at the following sites located within the above-described project areas (Figure 1-1):

- |         |                   |
|---------|-------------------|
| Ora-831 | Ora-827           |
| Ora-830 | Ora-825           |
| Ora-829 | Ora-826           |
| Ora-787 | Ora-905 (Ora-458) |
| Ora-832 | Ora-725           |
| Ora-438 | Ora-786           |
| Ora-828 | Ora-785           |
| Ora-447 | Ora-784           |



Location of Project Rights-Of-Way

**FIGURE  
1-1**

Ora-782	SDi-6137 (W-1779)
Ora-499	SDi-6138 (W-1780)
Ora-495	SDi-6140 (W-1782)
Ora-496	SDi-6135 (W-1777)
Ora-824	SDi-6133 (W-120)
Ora-419	SDi-6149 (W-1955)
Ora-823	SDi-6150 (W-1956)
Ora-498	SDi-6151 (W-1957)
Ora-700	SDi-6130 (W-185)
Ora-640	SDi-6131 (W-281)
SDi-6693	SDi-6152 (W-1958)
SDi-4538	SDi-5444 (W-1528)
SDi-6136 (W-1778)	

The evaluation and assessment program was designed to document those cultural resources as specifically listed in the Memorandum of Agreement (MOA 1979), in conformance with 36 CFR, 63 and the suggestions outlined in Attachment A to the MOA. Individual application of regulations is discussed in detail in pertinent sections, including Sections XI and XII. Additionally, the current assessment program was designed in accordance with expressed Native American concerns as discussed in Section VI.

## 1.2 PROJECT CHARACTERISTICS

This evaluation program is oriented toward providing a Management Plan to include measures for mitigation of adverse effects to currently assessed cultural resources as potentially created by normal operation and maintenance of the specified transmission line rights-of-way. Normal operation and maintenance activities are defined as utilization of access roads and/or stub roads and the normal maintenance of these roads. The effects of these activities, along with impacts as a result of natural erosion caused or accentuated by existing access/stub, are described in Section X. Assessment of mitigating measures which can be taken to reduce or eliminate those impacts are explained in Section XII. All normal maintenance of access roads within project rights-of-way has been suspended pending completion and approval of the present investigation.

Prior to implementation of the current program, construction of the SCE San Onofre to Black Star Canyon and Santiago Substation transmission line was completed (Figure 1-1). The San Onofre to Black Star Canyon and Santiago Substation construction project involved the erection of new transmission lines (steel lattice towers) and reconductoring of existing transmission lines. All work took place within existing transmission line corridors that were originally established in the early 1960s, and existing access roads were used. Earlier transmission lines were completed in 1965, and construction on the current project line began in April 1977. A new line of 230 KV double-circuit steel lattice towers was constructed from San Onofre to the Santiago Tap, a distance of approximately 15 miles. Conductors were strung on both sides of the new towers. Reconductoring of existing lines took place between San Onofre and Santiago Substation (28 miles) and between San Onofre and Black Star Canyon (31 miles). Four interset steel towers were installed between Santiago Tap and Black Star Canyon.

Prior to implementation of the present evaluation program, however, construction of the SDG&E San Onofre to Encina and Mission Valley Substation had not yet begun. In accordance with the MOA (1979), adverse impacts to cultural resources that would be potentially affected by proposed SDG&E construction activities (Figure 1-1) have been included in the Management Plan as outlined in Section XII. Potentially affected sites are described in Section X.

Future construction of the San Onofre to Encina transmission line project will consist of the following activities: one circuit will be added to the vacant position on the existing double circuit steel lattice towers from San Onofre to Encina (23.3 miles). New wooden structures will be installed for a 0.6-mile segment of the right-of-way east of the Oceanside Airport. One steel lattice tower will be installed at the Encina Hub to provide necessary clearances between the new circuits and existing lines. Construction

on the San Onofre to Mission Valley portion of the transmission line project will involve one circuit being added to the vacant position on existing double circuit steel towers (42.1 miles). New wooden structures will be installed for a one-mile segment of the right-of-way east of Oceanside Airport. Between the San Luis Rey Substation and the Encina Hub, 5.6 miles of steel lattice towers will be installed. West of the Miramar Naval Air Station, 4.2 miles of wooden H-frame towers will be installed. All construction will be completed within existing transmission line corridors and existing access roads will be used.

### 1.3 PROGRAM OBJECTIVES

The archaeological evaluation and assessment program included an in-depth field investigation and analysis of the 41 archaeological sites and consisted of, at minimum, an understanding of surface and subsurface site components with surface boundary and locational determinations. Prior to implementation of the field investigation, a general research design (see Section V) was established in an effort to produce an assessment strategy and method of analysis that would allow the research and interpretation to go beyond simple description. Specifically, data was sought to fulfill the following objectives:

- Provide documentation of resources for determination of eligibility for the National Register by:
  - Providing information concerning individual site significance.
  - Providing information about possible individual site research potential.
- Provide individual site information that would allow design of a specific Management Plan and management options.

#### 1.4 PROGRAM CHARACTERISTICS

This Cultural Resource Report includes results of an intensive field examination within the previously described project rights-of-way by qualified WESTEC Services, Inc. archaeological staff and consultants (see Acknowledgements, p. ii). The archaeological field investigation was conducted at previously recorded site locales within existing transmission line rights-of-way according to test techniques formulated to ensure that data were collected in a manner dictated by research questions to be answered (Section V). Specific field techniques are detailed in Section VII. Information from previous archaeological investigations which located these cultural resources, including data based on consultations with Dr. Paul Ezell, Joan Oxendine, CSRI personnel, Robert R. Selway III (Environmental Analyses Division, County of Orange), and Marie Cottrell and Ted Cooley (Technical Appendix A), was incorporated into the present investigation (Section X).

Prior to commencement of fieldwork, a thorough review of pertinent literature was conducted, including but not restricted to previous fieldwork reports for the study area and a compilation of known sites in the area. Information on the nature, status, condition and extent of the archaeological sites to be investigated was sought. Previous record search data (Bean and Vane 1979; Eckhardt 1979a, 1979b) was reevaluated through requests to San Diego Museum of Man, San Diego State University and University of California, Los Angeles (Appendix A). All updated information received was incorporated into specific site documentation (Section X) or is available at the identified institutions; original site forms, as updated, are on file with SCE or SDG&E. The current examination and written report also includes data describing pre-European and post-European usage and development of the study area as synthesized from various sources available at: the Serra Museum, San Diego County Courthouse, San Diego

Historical Society, National City Public Library, and the California Room at the San Diego Public Library. Additionally, an interview with David Belardes resulted in compilation of his personally collected data and analysis specific to cultural resources noted within the study region. Historic data were collected and are presented as the post-European Cultural Sequence in Section IV. All ethnohistoric information gathered is specifically described as applicable in Section X of the Cultural Resource Report.

Prior to the archaeological site field investigation, the Native American Heritage Commission (NAHC) and appropriate Native American area representatives were contacted for their advice or comments regarding this project (Appendix B). Native American representatives were also present during field investigation activities and known Native American concerns and input assembled during this program are discussed in Section VI. As requested by Native Americans involved with the current study (Section VI) and as supported by SHPO, NAHC, SCE and SDG&E, all data concerning actual archaeological site locations or information that would allow sites to be exposed to or to be possibly disturbed by the general public, have been kept separate from the Cultural Resource Report and attached as Technical Appendices, Volumes II, III and IV.

Subsequent to field examination, ancillary studies were completed. Soil samples (pollen samples), taken when appropriate, and organic material that could be suitable for radiometric  $C_{14}$  dating were forwarded to recognized institutions or consultants for analysis (see Acknowledgements, p. ii). Faunal remains and some shellfish remains were examined and identified by Richard L. Reynolds and Tom Demere, respectively. Actual analysis result documentation is presented as Appendix C. Analyses are also incorporated into site-specific artifact analysis (Section X).

## SECTION II

### ENVIRONMENTAL SETTING

#### 2.1 INTRODUCTION

Since the express research goals of the current program are oriented toward the relationship of environmental factors and general settlement patterns, the identification of environmental characteristics is of paramount importance (Allee et al. 1949:1; Binford 1968:323). The environmental discussion presented here is based on direct field observations and information obtained from various literary sources as appropriate.

The project rights-of-way included within the current assessment program pass through both the Coastal Province and the Peninsular Range Province, which are composed of inland and coastal foothills, mesas, coastal plains, alluvial valleys and many drainages. Some of the geographic features crossed by the study corridor (from north to south) include the Santa Ana Mountain Foothills, San Joaquin Hills, Santiago Canyon, San Juan Canyon, Christianitos Canyon, Las Pulgas Canyon, San Luis Rey Valley, San Dieguito Valley, Del Mar Mesa, Los Penasquitos Canyon, Carroll Canyon, San Clemente Canyon and Kearny Mesa.

The climate of coastal southern California is dry and temperate. Freezing temperatures are infrequent immediately along the coast with less than 15 days per year (Griner and Pryde 1979). Average daily summer and winter temperatures are 75°F and 44°F, respectively (Griner and Pryde 1979). Rainfall within the study area generally occurs during a relatively short rainy season from October to April. The Blackstar Canyon vicinity, near Santiago Reservoir, experiences the greatest amount of rainfall: 18 inches (Hogg 1973). Coastal areas experience the least amount of precipitation with 10 to 11 inches per year. Each rainy season is variable in precipitation totals. In 1941,

nearly 25 inches of rain fell in San Diego while in 1961 only 3.5 inches fell. Considerable flooding has occurred in southern California particularly in 1862, 1916, 1927, 1937, 1941 and 1978 (Pryde 1979; Hogg 1973).

The biota of this coastal environment contains numerous plant and animal species but overall is not extremely diverse due to a high degree of geo-morphologic and climatic continuity. Three floral communities (Riparian Woodland, Inland Sage Scrub, and Southern California Grassland) make up the great majority of the study area. Noticeable vegetation variations within this "cool steppe region" occur primarily in response to environmental factors such as presence of water, slope of terrain and soil composition.

## 2.2 GEOMORPHOLOGY/GEOLOGY

Virtually all of the terrain traversed in the course of this study was covered by marine waters during the Cenozoic and/or Mesozoic epochs (Strand 1962). Some of these marine depositions have subsequently been overlaid by non-marine sedimentary deposits. Marine and non-marine formations along the study corridor are composed of a variety of sedimentary and metasedimentary rock (siltstone, mudstone, sandstone, conglomerate, shale and schist). Erosionally transported stones such as metavolcanic or cryptocrystalline cobbles are present in a few of the marine and non-marine formations as well as being present in active arroyos and other large drainages. Clay, sand and gravel are also characteristic of this region (Strand 1962; Morton and Miller 1973; Weber 1958). A single, localized area in the vicinity of Escondido Creek and the San Dieguito River in San Diego County is not depositional, but is composed of metavolcanic rock (Strand 1962).

Approximately 18 geologic formations are present along the corridor route. Descriptions of these formations as encountered from north to south upon the survey

route are presented in Table 2-1. The first four formations are found along the Santiago Substation right-of-way north of Mission Viejo with the remaining geologic formations occurring from Black Star Canyon southward to Mission Valley Substation.

### 2.3 ENVIRONMENTAL ALTERATION

Vegetation that is visible across the rolling hills, mesas, valleys and drainages of southern California today has in most cases been significantly influenced by man even if the land is not under cultivation or otherwise mechanically altered in some obvious way (see Section IV). Recognition of floristic changes during the course of human occupation of southern California is important due to expected locational correlations between archaeological sites and culturally-important plant location.

Pre-European inhabitants of coastal Orange County and San Diego County can generally be classified as hunting and gathering cultures. Under a generally accepted definition of this mode of survival, vegetative material and animals are harvested from the natural environment with little or no dramatic effects to the ecosystem (Bean and Saubel 1972:15; Aschmann 1976:42). Adherence to or divergence from this definition by pre-European inhabitants in the vicinity of the study area cannot be precisely determined because of the incompleteness of the archaeological record. In post-European times (circa 1769), however, there exist ethnohistoric accounts by missionaries and explorers that native inhabitants of the southern California coast practiced floral manipulation.

A form of floral alteration practiced by the area's pre-European inhabitants was grass burning. Burning large areas of native grass was recorded in 1769 by Francisco Palou (1926:119) as a method to enhance rabbit hunting. Homer Aschmann (1976: 40-41) suggests, however, that these wildfires may have been set accidentally by campfires. In either case, the fires became a determinant stage of local ecological succession. Any particular location within coastal grasslands or sage scrub would experience

Table 2-1

## GEOLOGIC FORMATIONS WITHIN THE STUDY AREA

Formation	Composition	Location Along Corridor
Alluvium and Colluvium	Non-marine; sand, gravel and silt with some occurrences of cobbles.	All valley and major drainage bottoms from San Joaquin Valley and Santiago Creek to Mission Valley.
Vaquero Formation	Marine; silty sandstone, siltstone and shale with minor conglomerate sandstone and thin limestone beds.	Hilltops immediately south of San Joaquin Valley in vicinity of Irvine Ranch.
Sespe Formation	Non-marine and marine; interbedded conglomerate sandstone and sandstone with minor siltstone and mudstone.	Hilltops in the vicinity of Laguna Canyon.
Niguel Formation	Marine; sandstone, interbedded siltstone, cobble conglomerate and minor breccia.	Hilltops in the vicinity of Aliso Creek and Mission Viejo.
Silverado Formation	Non-marine lower beds; sandstone, siltstone, and minor thin claystone and lignitic coal. Marine upper beds; sandstone, conglomerate and shale.	Slopes and hilltops northeast of Santiago Creek.
Williams Formation	Marine; sandstone and silty sandstone with limestone concretions.	Slopes northeast of Santiago Creek, above the Silverado Formation.
Terrace Deposits	Non-marine; gravel to silt.	Valley slopes adjacent to major drainages, coastal plain in the vicinity of Camp Pendleton, Mira Mesa, Kearny Mesa.

Table 2-1 (Continued)

## GEOLOGIC FORMATIONS WITHIN THE STUDY AREA

<u>Formation</u>	<u>Composition</u>	<u>Location Along Creek</u>
Santiago Formation	Marine lower beds; silty to clayey sandstone. Non-marine upper beds; sandstone.	Slopes immediately adjacent to Santiago Creek.
Vaquero and Sespe Formation	Consolidation of Vaquero and Sespe formations; see descriptions above.	Slopes and hilltops southeast of Santiago Creek.
Topanga Formation	Silty sandstone, interbedded siltstone and tuff.	Slopes adjacent to Oso Creek.
Monterey Formation	Marine; platy shale, sandstone and siltstone with limestone interbeds.	Isolated slope areas in the vicinity of Oso Creek, Trabuco Arroyo and San Juan Creek.
Capistrano Formation (Oso member)	Marine; silty sandstone and grit with shaly siltstone interbeds.	Slopes and hilltops between Oso Creek and Trabuco Arroyo.
Capistrano Formation (siltstone facies)	Marine; siltstone and mudstone with sandstone; frequent land slumping.	Slopes and hilltops between Oso Creek and Christianitos Canyon.
San Mateo Formation	Biotite-bearing sandstone.	Slopes and hilltops adjacent to Christianitos Creek and San Onofre Creek.
San Onofre Breccia	Schist breccia, conglomerate and sandstone.	Slopes above the coastal plain in the northern portion of Camp Pendleton.
Sandstone Undivided	Sandstone.	Slopes above the coastal plain and below foothills and mesas in San Diego County.
Black Mountain Volcanics	Rhyolite to andesite.	Slopes, hilltops and drainages in the vicinity of Escondido Creek and San Dieguito River.

Table 2-1 (Continued)

GEOLOGIC FORMATIONS WITHIN THE STUDY AREA

<u>Formation</u>	<u>Composition</u>	<u>Location Along Corridor</u>
Poway Conglomerate	Conglomerate, conglomerate sandstone, sandstone.	Canyon slopes within Penasquitos, Carroll, Rose and San Clemente Canyons and Mission Valley.

fire two or three times more frequently during this native burning period, as compared to the current "fire protection" period (Aschmann 1976:45-47).

Frequent burning had profound effects upon the landscape. Today, in parts of northern California, frequent burning is prescribed to minimize brush cover and encourage the growth of pasture land (Aschmann 1976:41). Similarly, pre-European burning would have produced rapidly-moving fires which would have consumed all dry or dead plants and accumulated ground litter. Areas affected by fire would revegetate with grasses and other annuals. It is suggested that a sustained burning program during pre-European times would have produced a park-like landscape. Diaries of the first Spaniards to traverse coastal southern California, in fact, recorded abundant "grassy" and "pasture" land (Fages 1937; Palou 1926; Costanso 1911).

Almost immediately after the mission system began in California the floral landscape began to alter significantly. Changes took place because of three major influences: 1) termination of native burning practices; 2) initiation of European clearing, grazing and farming practices; and 3) introduction of non-native plant species to the natural environment (Aschmann 1976). Termination of Native American burning practices encouraged accumulation of ground litter and expansion of chaparral. Occasional fires spreading through this type of environment would generate intense heat, destroying susceptible plants and seeds that might otherwise withstand more frequent, less intense fires.

Landscape alteration by Europeans began after the establishment of the missions. Friar Geronimo Boscana states that the ground was cleared for cultivation on land adjacent to Mission San Juan Capistrano soon following the mission's inception (Boscana 1934). Within five years of the Spaniards' entry into southern California, substantial herds of cattle were brought onto mission lands from Sonora, Mexico

(Aschmann 1976:42). Cultivation was practiced on lands contiguous to the missions, but was limited to relatively small plots. Pressures of clearing, grazing and farming were fatal to several native plant species, particularly grasses, that were not capable of adapting to these adverse impacts. Compounding the difficulty of some plant species to cope with European influence, non-native annual grasses and weeds began to appear along the coast. The method by which these mostly Mediterranean species were introduced is not clear. Some seeds may have been brought deliberately; others may have arrived in clothing or in ship ballast. In any case, some of the species which are now found in abundance, such as wild oats and foxtail barley, arrived in the region and quickly out-competed native populations (Aschmann 1976:43).

Livestock grazing and farming increased between 1769 and 1850 at a slow but steady rate. During this period, mission lands and later, rancho lands were developed. After secularization of mission lands in the 1830s, Spanish and Mexican governors granted a number of rancho tracts within coastal Orange County and San Diego County. When applying for a Mexican land grant, an applicant was required to be capable of stocking the land with the number of horses and cattle prescribed by law (Cleland 1952). Grazing upon the land created two distinct pressures upon native plant species. First, since the structure and life cycle of the plants had not evolved in response to such pressures, the mere act of grazing destroyed the capacity of these plants to reproduce. Second, since grazing removed tall grass and left only low stems and root stocks, any possible fire (a natural feature of natural plant succession) would be less able to pass through the area (Aschmann 1976:43-44).

After 1850, immigrants began pouring into California. In response to this influx of people, ranchers used available rancho land and newly established ranches increased production of cattle, sheep, horses, and to a lesser extent, crops (Aschmann

1976:44; Cannady 1976). Construction of the Santa Fe Railroad between Los Angeles and San Diego in 1890 changed rural marketing by supplying a means of transportation for perishable food products. From this time forward, crop farming became increasingly important to coastal Orange and San Diego Counties. Initially, barley, wheat and lima beans were important crops (Cannady 1976; Forster and Forster 1976). By the 1880s, citrus groves began to appear on some of the rolling hills from Irvine Ranch (Rancho Santiago de Santa Ana) to Rancho Santa Margarita y Las Flores (Rush 1964).

During the past 50 years, much of the landscape alteration along the corridor route has been a result of home, business, transportation and utility construction. In the 1960s, a group of Native American women, visiting Mission Valley (San Diego) for the first time since the 1920s could barely recognize the once-familiar landscape because of cut-and-fill operations (Cuero 1968:27).

#### 2.4 FLORAL PROFILE

Vegetation occurrence and growth is directly determined by environmental variables such as temperature, solar exposure, soil, wind exposure and availability of water. As discussed earlier, other influences, particularly those that are human-caused, can also affect the floral profile. Plants within the study area, therefore, are a reflection of the natural and human environment (Table 2-2).

The concept of plant communities, which are ecologically determined plant assemblages, is very useful when describing botanical settings of a region. Since plant communities are determined by environmental influences, analysis of plant communities provides not only floral information but a wide range of ecological data. A plant community, by definition, is not strictly bounded, but is transitional into the neighboring plant community(s). For this reason, botanists are not in uniform agreement when categorizing plant communities. Some systems of categorization are extremely

Table 2-2

## FLORAL COMMUNITIES WITHIN STUDY AREA

Site	Floral Community
Ora-831	Inland Sage Scrub; Southern Oak Woodland
Ora-830	Inland Sage Scrub; Southern Oak Woodland
Ora-829	Inland Sage Scrub
Ora-787	Southern California Grassland; Inland Sage Scrub
Ora-832	Southern California Grassland
Ora-438	Inland Sage Scrub; Southern California Grassland
Ora-828	Inland Sage Scrub; Riparian Woodland
Ora-447	Inland Sage Scrub; Southern California Grassland
Ora-827	Inland Sage Scrub
Ora-825	Inland Sage Scrub; Southern California Grassland
Ora-826	Inland Sage Scrub
Ora-905	Southern California Grassland; Inland Sage Scrub
Ora-725	Southern California Grassland
Ora-786	Southern California Grassland
Ora-785	Southern California Grassland; Riparian Woodland
Ora-784	Southern California Grassland; Riparian Woodland
Ora-782	Southern California Grassland; Freshwater Marsh
Ora-499	Southern California Grassland
Ora-495	Inland Sage Scrub; Southern California Grassland
Ora-496	Inland Sage Scrub; Southern California Grassland
Ora-824	Southern California Grassland
Ora-419	Inland Sage Scrub; Southern California Grassland
Ora-823	Not Assessed
Ora-498	Southern California Grassland; Freshwater Marsh
Ora-700	Southern California Grassland
Ora-640	Southern California Grassland
SDi-6693	Southern California Grassland
SDi-4538	Inland Sage Scrub
SDi-6136	Southern California Grassland

Table 2-2 (Continued)

FLORAL COMMUNITIES WITHIN STUDY AREA

<u>Site</u>	<u>Floral Community</u>
SDi-6137	Southern California Grassland; Inland Sage Scrub
SDi-6138	Southern California Grassland; Inland Sage Scrub
SDi-6140	Southern California Grassland; Inland Sage Scrub
SDi-6135	Southern California Grassland
SDi-6133	Inland Sage Scrub; Southern California Grassland
SDi-6149	Inland Sage Scrub
SDi-6150	Riparian Woodland; Southern California Grassland
SDi-6151	Southern California Grassland; Inland Sage Scrub
SDi-6130	Southern California Grassland
SDi-6131	Southern California Grassland
SDi-6152	Southern California Grassland
SDi-5444	Disturbed (possible Inland Sage Scrub)

generalized and inclusive, while others are extremely specific. Plant community distinctions used in this report are those defined by Robert Thorne (1976) and are relatively specific in nature. Other noteworthy plant community classification systems that are not used in this analysis are those of Munz and Keck (1949, 1950, 1959) and Vogl (1976).

Temperate climate and relatively uniform geographic terrain along coastal southern California creates an environment for relatively little plant diversity. Of the 78 floral communities recognized by Thorne (1976) within California, only five were noted along the study route: Freshwater Marsh, Riparian Woodland, Inland Sage Scrub, Southern California Grassland, and Southern Oak Woodland. Recordation of floral communities also provides a comparison between present environmental conditions and past site settings, as determined through analysis of pollen samples. A brief discussion of these communities are as follows:

- Freshwater Marsh

Located in permanently saturated, nutrient-rich soil, this community is not common along the corridor route. Freshwater Marsh occurs in small, isolated locations, grading into Southern California Grassland. Associated species include sedge grass (Carex spissa), common reed (Phragmites australis), and curly dock (Rumex crispus).

- Riparian Woodland

Permanent streams and springs support this floral community. The study corridor crosses numerous water sources which contain sycamore (Platanus racemosa), coast live oak (Quercus agrifolia), mule fat (Baccharis glutinosa), willows (Salix spp.), and grape (Vitis girdiana).

- Inland Sage Scrub

Dry cismontane slopes often support dense populations of low, herbaceous shrubs dominated by coast sagebrush (Artemisia californica), buckwheat (Eriogonum fasciculatum), golden yarrow (Haplopappus spp.), rock rose (Helianthemum scoparium), yerba santa (Eriodictyon crassifolium), deerweed (Lotus scoparius), lupine (Lupinus spp.), bush mallow (Malocothamnus fasciculatus), prickly pear (Opuntia littoralis), coast cholla (Opuntia prolifera), laurel sumac (Rhus laurina), lemonadeberry (Rhus integrifolia), white sage (Salvia apiana), black sage (Salvia mellifera), nightshade (Solanum xantii), poison oak (Toxicodendron diversilobum), and calabazilla (Cucurbita foetidissima).

- Southern California Grassland

Located on dry hills, lower mountain slopes, and old marine terraces south of the transverse mountain ranges (San Gabriel and San Bernardino Mountains) in southern California, this floral community has become, in post-European times, dominated by introduced grass and annual species. Native species occurring within this community are of the genus Stipa (bunchgrass) with occasional occurrences of Rhus species (laurel sumac and lemonadeberry), elderberry (Sambucus mexicana) and prickly pear (Opuntia littoralis). Common naturalized species include brome grass (Bromus spp.), wild oat (Avena spp.), mustard (Brassica spp.), Russian thistle (Salsola kali), filaree (Erodium spp.) and thistle (Cirsium spp.).

### Southern Oak Woodland

Located upon canyon slopes (often north-facing), this community may be either park-like or may contain a dense understory. Oak species are Engelmann oak (Quercus engelmannii) within dry habitats, and coast live oak (Quercus agrifolia) within moister habitats. Associated species are Ceanothus spp., squaw bush, laurel sumac, sugar bush, and lemonadeberry (all Rhus spp.), and poison oak (Toxicodendron diversilobum).

#### 2.5 FAUNAL PROFILE

Within coastal southern California, faunal composition is relatively consistent, although numerous species of mammal, reptile, amphibian and bird are full-time or part-time residents. A recent study conducted along the Santa Ana River (Marsh and Abbott 1972) revealed 272 terrestrial and avian vertebrate species.

Many of the animal species which live in proximity to the study area are not easily observed because of their elusive habits. In order to survive under natural pressures of predators, temperature, water and food availability, many animals are most active at night, concealed under rocks or vegetation, or are subterranean.

Streams and estuaries are host to the greatest number of species due to the shelter, food and water provided by this habitat. Rodents, small predators, amphibians and birds are of particular abundance in these areas. The Pacific Flyway, which passes along the California coast, is responsible for the large number of migratory species of ducks, terns and other water birds.

Drier habitats on slopes, hilltops and mesas also support a number of faunal species. Burrowing rodents, rabbit, deer, small predators, lizards, snakes and birds are especially common.

Particularly common native species inhabiting the study area include cottontail, black-tailed jackrabbit, pocket gopher, dusky-footed woodrat, California ground squirrel, deer mouse, pocket mouse, coyote, striped skunk, gray fox, mule deer, western toad, alligator lizard, western fence lizard, side-blotched lizard, kingsnake, western rattlesnake, red diamondback rattlesnake, red-tailed hawk, turkey vulture, northern harrier, American kestrel, California quail, American coot, killdeer, mourning dove, Anna's hummingbird, scrub jay, common crow, common raven, house finch, Brewer's blackbird, loggerhead shrike, mockingbird, brown towhee, cliff swallow, western meadowlark, California thrasher, white-crowned sparrow, and Audubon's warbler. Common species which have become naturalized into this region, but are not native, include opossum, bullfrog, house mouse, Norway rat and starling.

The faunal profile of the study area has changed substantially over the past 200 years since the arrival of European influence. As discussed in Section 2.3, changes in land use and influence of exotic species has dramatically changed the area's floral composition. Due to this floral alteration (or destruction) in many areas, animal species can no longer survive in their original numbers. As evidenced by current observations, these altered areas either support fewer species, individuals, or have been abandoned. Unmanaged hunting practices, particularly the reduction or elimination of predator species, have altered natural population dynamics, hence species proportions, of the fauna. Introduction of exotic species such as starlings has led to unnatural competition with native species and has decreased their numbers. Man's influence on the southern California landscape is easily seen in his urban and rural development, but a closer examination of local biotic composition reveals that the effects of his presence are significant and far-reaching.

## SECTION III

### PRE-EUROPEAN CULTURAL SEQUENCE

#### 3.1 INTRODUCTION

The following cultural history is a means of outlining and briefly describing the known pre-European cultural traditions within Orange County and San Diego County. A primary goal of a cultural history is to provide a diachronic or developmental approach to past lifeways, settlement patterns and cultural processes.

Lacking a synthesis of valid, regionally specific data, we are forced to fall back on a geographically generalized accepted cultural history which is at best ill-defined. Additionally, the current assessment and evaluation program encompasses a study area covering two counties. A preliminary inventory of archaeological resources located within the study area indicates that Orange County and San Diego County have received various levels or quantities of archaeological investigation. Continuing research and analysis has led to the development of distinct, yet mutually acceptable and often overlapping Pre-European sequences for the two counties. A synthesis of proposed sequences is presented as Table 3-1 to allow an overview of the study area.

#### 3.2 PROPOSED CHRONOLOGIES

The southern California coastal area has been the subject of two major culture chronologies. William Wallace (1955) was first to present a regional prehistoric cultural synthesis, entitled, "A Suggested Chronology for Southern California Coastal Archaeology." A second major contribution by Claude Warren (1968) appeared as "Cultural Tradition and Ecological Adaptation on the Southern California Coast." The major emphasis of both treatises was on coastal occupation by Native American groups, although data was included from non-desert areas of San Diego, Orange, Los Angeles, Santa Barbara, and Ventura Counties.

TABLE 3-1

CHRONOLOGICAL MODEL FOR ORANGE COUNTY AND SAN DIEGO COUNTY  
PRE-EUROPEAN SEQUENCE

WESTEC SEQUENCE	WALLACE'S SEQUENCE	ORANGE COUNTY		SAN DIEGO COUNTY	
		WARREN'S SEQUENCE			
LATE MILLING	LATE HORIZON	SHOSHONEAN TRADITION (Juaneno, Gabrielino)		YUMAN TRADITION (Northern Diegueno, Kumeyaay, Luiseno, Cahuilla, Cupeno)	
		800 AD			
EARLY MILLING	INTERMEDIATE HORIZON	ENCINITAS II TRADITION		ENCINITAS TRADITION	
		2000 BC (3950 BP)			
	MILLING STONE HORIZON	ENCINITAS TRADITION			
		5500 BC (7450 BP)			
PALEO-INDIAN	EARLY MAN HORIZON	SAN DIEGUITO TRADITION			
		7550 BC (9500 BP)			

Wallace proposed a total of four cultural horizons as having existed in differing temporal periods in southern California (Table 3-1). He defined them as:

Horizon I	Early Man	(prior to 7500 years BP)
Horizon II	Milling Stone	(7500-3000 years BP)
Horizon III	Intermediate Cultures	(3000-1000 years BP)
Horizon IV	Late Prehistoric Cultures	(1000-200 years BP)

Warren's (1968) regional cultural sequence (Table 3-1) is defined as:

San Dieguito	(Wallace's Horizon I)
Encinitas	(Wallace's Horizon II)
Campbell	(Wallace's Horizon III)
Chumash, Shoshonean, Yuman	(Wallace's Horizon IV)

Wallace cultural sequence is generally applied when defining site cultural affinity in Orange County whereas a combination of Wallace's horizons is applied within San Diego County (WESTEC Sequence, Table 3-1).

Recent research and experimentation with amino-acid dating (Bada 1974) has given new life to a decades-old assertion (Carter 1957) that humans were in the New World, and specifically along Mission Valley and the San Diego River, over 40,000 years ago. Although such a possibility exists, and continuing research seems to point in that direction, many scholars are unwilling to categorically state that humans occupied the New World before approximately 30,000 years ago. Continued research in the Arctic region and within our own area should help in resolving the date of initial New World occupation.

### 3.2.1 Early Man Horizon/Paleo-Indian

Evidence for area occupation by Native Americans in the Early Man Horizon has been minimal. Artifact and human remains from several locales (Laguna Canyon, Malaga Cove, and Rancho La Brea) suggest a temporal placement from 17,000-12,000 years BP (before present). Early man sites in the San Diego area have been reported at the Texas Street site (Carter 1957), at Del Mar (Rogers 1974); and at the well documented Harris site complex (Rogers 1929; Warren et al. 1961). A radiocarbon date of

9030 +350 BP has been obtained at the Harris site. The artifact assemblage obtained in excavations at these sites has been traditionally viewed as reflecting primarily hunting-oriented societies. The San Dieguito Complex artifact assemblage best represents anything associated with "Early Man" occupation. This complex is characterized by a wide range of scraper tools, leaf-shaped knives, large projectile points, the enigmatic crescentics, and hammer-pounders. Milling activities by the San Dieguito people have been viewed as non-existent in past investigations. Ongoing research into this facet of the San Dieguito Complex is presently reevaluating that position.

Typified as nomadic hunters, these people occupied the mesas, mountains and deserts of San Diego County roughly between 10,000 and 7000 years ago (Warren 1961:252-253; Rogers 1966:140-148; Ezell 1974:personal communication). The culture of the San Dieguito people has been divided into three relatively distinct phases representing assumed variations through time and space. Within these three phases exist various "industries." San Dieguito I, the oldest of the known Paleo-Indians in San Diego County, inhabited the desert regions east of the Cuyamaca/Laguna mountain ranges as long ago as 21,000 years (Childers 1974; Ezell 1974:personal communication). In general, the ancient hunters of the San Dieguito I phase apparently left little permanent record on the land, except for their scattered lithic tools, waste stone debris and two burials discovered in the Yuha Basin-Truckhaven area (Rogers 1939:25-31; Ezell 1974:personal communication; Childers 1974; Wallace 1955:189-191). San Dieguito I tool assemblages are characterized by ovate bifaces, spokeshaves, scraperplanes, bilateral notched pebbles, and chopping tools (Rogers 1939).

San Dieguito II is found both in the desert and throughout western San Diego County. Lithic artifacts represented by this phase include more finely worked blades, somewhat smaller and lighter points, and a larger variety of scrapers and choppers. In

general, however, the same morphological types remain basically unchanged from the earlier phase. Like their predecessors, these people were medium-to-large-game hunters, although foraging must have served to supplement their diet (Warren 1961:262; Moriarty 1969:1-18), perhaps to a greater extent than most scholars have implied.

The terminal San Dieguito phase, San Dieguito III, represents a morphological and typological change, as indicated by an altered technology. Tool types become far more varied both in style and in functional design, thus indicating a change in the culturally determined mental templates. Such alteration in technological form can be attributed to environmental adaptation and/or a technological "snowball" effect, wherein technological advances and changes thrive and feed on themselves and progressively create a new technological mode.

As a result of such technological changes, the tools of the San Dieguito III phase exhibit not only a wider variety of tool types, but also a fundamental refinement in tool manufacture. A primary difference in tool technology is represented by the introduction of pressure-flaked blades and points. Unlike simple percussion flaking, pressure flaking requires a more delicate touch and a more finely conceived mental template. The resulting tools exhibit form, complexity and balance not found in the early phases of the San Dieguito Culture.

Other diagnostic traits associated with San Dieguito III include planes, choppers, plano-convex scrapers, crescentic stones, elongated bifacial knives, and intricate leaf-shaped projectile points (Rogers 1939:28-31). Beyond specific tool types and the introduction of pressure flaking, there exists no absolute method of discerning between San Dieguito II and III. Patination, a weathering process involving chemical change on the surface of stones, is a relative guide to antiquity and provides gross distinctions between the San Dieguito phases; however, its use is limited by the many variables which are involved in its application.

### 3.2.2 Milling Stone Horizon/Early Milling

Milling Stone Horizon occupation areas have been identified in Santa Barbara as the Oak Grove culture (Rogers 1929). In Ventura County, this horizon has been uncovered at the Little Sycamore site (Wallace 1954). Other regions within southern California where investigations have revealed evidence for the Milling Stone Horizon settlement include: Topanga Canyon (Treganza and Malamud 1950), Malaga Cove, Level II (Walker 1951), and various designated La Jolla sites in San Diego County (Crabtree et al. 1963; Moriarty 1966; Rogers 1966; Kaldenberg 1976). In Orange County, evidence for Milling Stone Horizon cultures was ill-defined at the time of Wallace's synthesis.

Activities of this period are characterized by extensive seasonal exploitation of lagoon shellfish populations, evidenced by oftentimes large and deep shell midden deposits. The typical artifact assemblage of the Milling Stone groups consisted of hammerstones, cobble choppers, scrapers, manos, metates, and the occasionally encountered projectile point. Other culturally diagnostic traits include discoidals and cogged stones, steatite artifacts, shell ornaments, and flexed inhumations. Numerous radiocarbon dates have been obtained from these coastal sites, which range in time from 7700 BP to 3000 years BP. Archaeological work in the Orange County region often interchanges Wallace's Milling Stone designation with that proposed by Warren (Encinitas Tradition). There appears to be no well-defined separation between either category. The Milling Stone Horizon and the Intermediate Horizon are therefore combined in San Diego County as an Early Milling Horizon.

By about 7000 years ago, a new group of peoples had begun to inhabit and exploit the coastal and inland regions (Moriarty 1969:12-13). These people, representing the La Jolla Complex, were nomadic exploiters of maritime resources (Harding 1951;

Moriarty et al. 1959:185-216; Wallace 1960:277-306), who also relied on seed gathering and vegetal processing. The La Jolla Culture may have been entering into the mortar and pestle phase late in the terminal stage of the La Jolla-Pauma transitional period (Warren 1961). The tool types of the La Jolla indicate that these members of what Wallace (1955) terms Milling Stone Horizon possessed a far greater reliance on the sea and foraging than their predecessors, the San Dieguito people. Kaldenberg and Ezell (1974) have, however, excavated at least one San Dieguito site (W-49) which contained a well-defined shell midden. The variety and quality of lithic tool manufacture is much more basic and unrefined when compared with even the basal phase of the San Dieguito Complex.

Characteristic traits of the La Jolla culture include fire hearths, shell middens, flexed inhumation, grinding implements, and absence of ceramics. The archetype La Jolla sites are located along the coast near bay or lagoon areas. Several classic La Jolla sites are situated on the terraces above Agua Hedionda Lagoon and Batiquitos Lagoon.

In recent years, inland La Jolla sites of a seemingly later period have been discovered in transverse valleys and sheltered canyons, including Valley Center (True 1959:225-263; Warren et al. 1961:1-108; Meighan 1954:215-227). These non-coastal sites have led to a new name for La Jolla-type sites with an inland location. True (1959), Warren (1961) and Meighan (1954) had applied the term Pauma Complex to certain inland sites which possess a predominance of grinding implements (especially manos and metates), lack of shell, greater tool variety, more sedentary life patterns than expressed by San Dieguito sites, and an increased dependence upon gathering. However, it is more probable that these inland sites represent a non-coastal manifestation of Early Milling peoples who adopted or developed a hunting mode more so than

their coastal brethren. Wallace (1955:214-230) denotes this late transitional phase as Intermediate, and establishes its position between Milling Stone Horizon and Late Horizon.

### 3.2.3 Intermediate Horizon/Early Milling

In terms of horizon definition, the Intermediate Culture period, as defined by Wallace (1955), remains an ambiguous concept. Differences between the Milling Stone and Intermediate Horizons are based primarily upon the latter's shift in subsistence economy, as perceived through analysis of subsistence-related artifact material. Whereas the Milling Stone Horizon has been associated with the mano and metate combination, those of Intermediate Culture grinding assemblages are characterized by use of the mortar and pestle, reflecting a knowledge of acorn processing. Projectile points have been a diagnostic element used to establish differences between the Milling Stone and Intermediate Culture horizons.

This Intermediate Period, as defined by the archaeologist, indicates a more frequent use of projectile points than attributed to the Milling Stone Horizon. Stylistically, the projectile points differ in size and design, with the Intermediate Culture points being larger, and generally stemmed. Evidence for this type of artifact assemblage has been best defined in Santa Barbara and Ventura Counties, and less so in the Orange County and San Diego County environs. Warren (1968) designates this horizon as the Campbell Tradition (Encinitas II). He theorizes that the Campbell Tradition represents an intrusive inland group which diffused into the existing Encinitas Tradition.

### 3.2.4 Late Horizon/Late Milling

The Late Prehistoric Horizon designated by Wallace is characterized by a wider range of subsistence-related artifact types (small triangular projectile points, ceramic vessels, elaborate baskets, shell and bone artifacts). Cremation became the

common mode for burial of the dead; rock art was also in evidence. Warren (1968) elaborated on the Wallace (1955) Late Prehistoric categorization by subdividing it into Chumash, Shoshonean, and Yuman traditions.

The two basic subgroups within the greater Late Prehistoric Horizon represent geographic and linguistic affiliations for these traditions. The Shoshonean are identified with Orange and northern San Diego Counties and the Yuman tradition with southern and eastern San Diego County and portions of Baja California. The Late Prehistoric Horizon persisted up to the arrival of Spaniards in the area in 1769. Missionization processes delineated the Late Horizon groups into Gabrielino, Fernadeno, Juaneno, Luiseno, and Diegueno.

By 2000 years ago, Yuman-speaking peoples sharing cultural elements had occupied the Gila/Colorado River drainage (Moriarty 1966). Through gradual westward migration the Yumans drifted into Imperial and San Diego Counties, where they came into contact and apparently acculturated with the remnants of the Early Milling La Jolla cultural tradition (Moriarty 1965, 1966). Because of basic similarities in the late La Jolla/early Yuman patterns, it is difficult to clearly define the contact period or point between La Jolla/Yuman.

Dr. James R. Moriarty (1965, 1966) has suggested that there existed a pre-ceramic Yuman phase, as evidenced from his work at the Spindrifft Site in La Jolla. Based on a limited number of radiometric samples, Moriarty has concluded that a pre-pottery Yuman phase occupied the San Diego coast 2000 years ago and that by 1200 years ago ceramics had diffused from the eastern deserts.

Although some researchers still follow Malcolm Rogers' belief that Yuman peoples first appeared in San Diego County only 1000 years ago (Rogers 1945), there is a growing body of data supporting Moriarty's hypothesis. A recent excavation of a La

Jolla/Kumeyaay site in Sorrento Valley (Carrico 1975) encountered a cultural stratification with a basal date of 3755 years ago and a terminal date of 2525 years ago. It is worth noting that the upper stratum (0 centimeters to 10 centimeters) of the dated column contained ceramics and projectile points commonly considered time-markers indicative of Late Milling Kumeyaay. Radiometric dating of a large shell sample from this stratum produced a date of 2525 $\pm$ 70 years BP. The near absence of ceramics and total lack of projectile points below the 10 centimeter level, within a series of strata that contained a variety of seemingly early cultural material dated at 2925 $\pm$ 70 BP (30 centimeters to 40 centimeters) and 3755 $\pm$ 75 BP (50-60 centimeters) may indicate that the Rimbach Site is a multi-component culturally stratified site containing a transition between La Jolla and Yuman circa 2500 years ago.

Whether Yuman peoples moved into the area 2500, 2000, or 1500 years ago, they brought with them a culture heavily influenced by their Yuman neighbors in the eastern desert region of California and along the Colorado River. These prehistoric/protohistoric peoples possessed ceramics, operated a closely knit clan system, utilized a highly developed grinding technology, had elaborate and extremely complex kinship patterns, created rock art, and carried on extensive trade with the surrounding cultural areas (Rogers 1945:167-198; Kroeber 1970:709-725; Strong 1929). It has also been postulated that the Kumeyaay and their neighbors to the north, the Luiseno, may have been practicing a basic type of protoagriculture prior to Hispanic contact (Lewis 1973; Shipek 1974:personal communication; Treganza 1947).

About 1000 to 1500 years ago, a group of Shoshonean-speaking people migrated out of the Great Basin region and intruded like a wedge into southern California. This wedge separated the Yuman groups and was eventually to cause great cultural variations (Kroeber 1970:178; True 1966). In coastal San Diego County, this group of

Shoshonean intruders has been labeled the San Luis Rey I and II Complex (Meighan 1954:215-227). When the early Hispanic explorers contacted these people, they called them Luisenos, after the Mission San Luis Rey de Francia founded in the heart of Luiseno (San Luis Rey II) territory. Agua Hedionda Lagoon is traditionally considered the point of separation between Northern Diegueno and Luiseno territory, although some researchers separate the two at the San Luis Rey River.

Although of a different linguistic stock, the Luiseno and the Diegueno (after San Diego) shared many cultural traits. D.L. True (1966) has suggested that basic similarities in ecological exploitation, environmental setting and temporal placement forced the late-coming and highly nomadic Shoshoneans to adapt to a life style and cultural pattern that was established and functioning upon their arrival. D.L. True outlines certain attributes or traits which he finds dissimilar between the two cultures. He notes that Luiseno projectile points are more basic than those of the Diegueno; those of the Luiseno are predominantly made of quartz. He also notes that ceramics were evidently a late development of the Luiseno; they probably learned the use of pottery from the Northern Diegueno.

Luiseno territory encompassed an area from roughly Agua Hedionda inland to Escondido, east to Lake Henshaw, north into Riverside County, and west through San Juan Capistrano to the coast. The general area supported large populations of Luiseno, both in historic and prehistoric times. The Luiseno exploited a lush and bountiful environment within their territory through well-adapted seasonal migrations, extensive knowledge of native plant life, establishment of clan-governed districts, and various social control mechanisms.

The Luiseno were and are one of the most mystically sensitive and religious peoples of California. Even a cursory analysis of their cosmological tales, shamanism,

world-view, and numerous specialized religious ceremonies reveals a deep-rooted, well-conceived, thoughtful approach to life's mysteries (Sparkman 1908:215-227; DuBois 1908; Kroeber 1970).

### 3.2.5 Post-European Period

The Hispanic intrusion (1769-1822) into Native American southern California affected the coastal tribes and peoples living in well-traveled river valleys. The Mexican Period (1822-1848) saw continued displacement of the native population by expansion of the land grant program and development of extensive ranchos. The Gold Rush and the concomitant granting of statehood, combined with an influx of aggressive, land-hungry Anglos, caused a rapid displacement of the natives, as well as deterioration of their culture and lifeways (Bancroft 1886; Kroeber 1970).

The literature on these later peoples, the Northern Diegueno, Kumeyaay, Luiseno, Cupeno, Gabrielino, and others, is rather extensive and includes Barrows (1900), Bean and Saubel (1972), Caughey (1952), Gifford (1918), Hayes (1929), True (1970), Heizer and Whipple (1957), Hooper (1920), Kroeber (1970), Cuero (1968), Sparkman (1908:87-234), and Strong (1929).

### 3.3 SUMMARY

In the Pre-European past, the area now comprising San Diego County was densely occupied by Native American peoples including at least three major cultures. From roughly 12,000 to 7000 years ago, the San Dieguito people were sole inhabitants of this region. Beginning about 8000 years ago and extending to about 3000 years ago, the La Jolla-Pauma Culture was in existence, with the Pauma aspect being present in the inland regions. Commencing about 2500 years ago, and 1000 years ago respectively, the Kumeyaay (Diegueno) and Luiseno lived and hunted in the area. When trying to establish a firm cultural sequence for occupation in Orange County, a number of problems

present themselves to archaeologists. A primary problem, especially for the current study area, is the abundance of as yet synthesized data to be gathered from the piecemeal work accomplished in the County up to this time. What has emerged has been tentative in its conclusion, with a definitive study regarding culture occupation remaining to be accomplished.

Cursory examination of extant literature indicates probable area settlement in Orange County at least 9000 years ago. Distribution of sites over a wide range of geographic regions, and in a variety of ecological zones, seems to indicate a substantial movement, possibly seasonal, reflecting a small, highly migratory population. Along the coastal strip, collection and processing of shellfish species appears to be consistent with practices inferred from archaeological analysis done in other coastal locales. The inland sites indicate a dependence upon seed and plant resources, evidenced by the identification of grinding/milling stone implements. The cultural horizons as presented by Wallace (1955) and Warren (1968) appear to be operative in the Orange County region, although not as well-documented as in the case of counties to the north and south.

SECTION IV  
POST-EUROPEAN CULTURAL SEQUENCE

4.1 INTRODUCTION

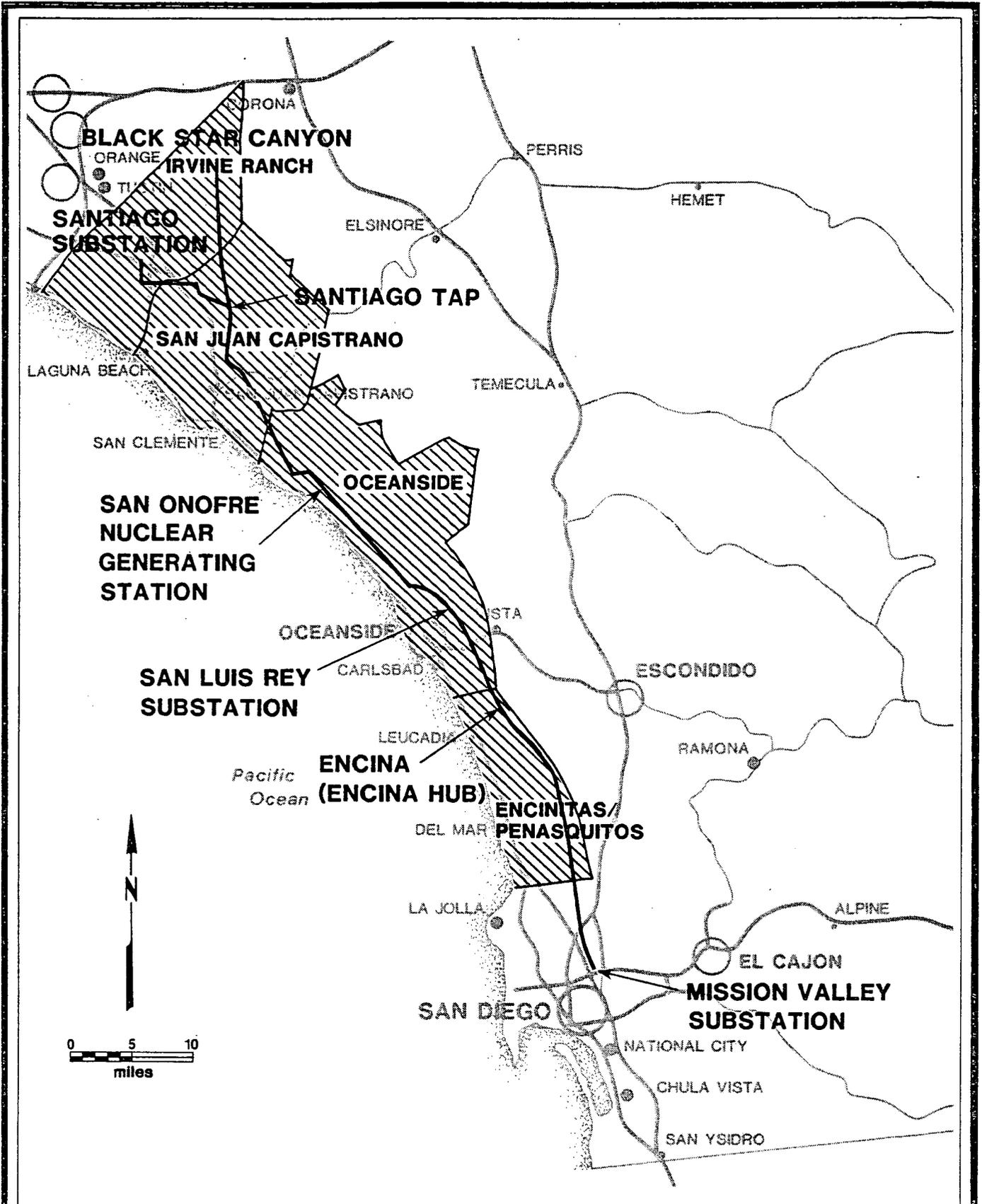
The following section consists of a background discussion or general overview of post-European activities within the immediate environment of the program study area. As noted previously (Section II), environmental alterations by man have been significant within the project rights-of-way during the post-European period and are particularly important to an understanding of archaeological site developments and conditions.

For descriptive purposes, the project rights-of-way have been divided into districts or distinct land units based on original land grants, which naturally separate themselves due to a historic diversity of land development, often at different rates or times. The separation by districts enables a more concise narration and applicable overview of the large study area comprising the project rights-of-way rather than attempting a complete cultural history of San Diego and Orange Counties. Study area district locations are indicated on Figure 4-1.

4.2 IRVINE RANCH

The Irvine Ranch district includes two Mexican land grants: Rancho Lomas De Santiago and Rancho San Joaquin. Most of the area included within these grants was later consolidated within Rancho Santiago De Santana, which lies north of the project area, to form the Irvine Ranch.

Rancho San Joaquin was granted to Jose Sepulveda in two sections by Governor Juan B. Alvarado in 1837 and 1842, and consisted of 11 square leagues (Robinson 1950:14).



Location of Study Area by Descriptive Districts

**FIGURE**  
**4-1**

Rancho Lomas De Santiago included 47,226.61 acres, which were granted to Tedocio Yorba in 1846 by Governor Pio Pico. William Wolfskill, a Yankee trapper/horse trader, acquired the ranch in 1860 and grazed sheep on the property. He sold the property in 1866 to Flint Bixby and Company (Robinson 1950:8). Along the eastern boundary of the grant, the project right-of-way crosses Black Star Canyon and Silverado Canyon. Coal and silver mines flourished briefly in this area during the 1870s (Taylor 1980:141).

James Irvine, who would eventually control both Rancho Lomas De Santiago and San Joaquin, was a Scottish-born immigrant who came to California during the gold rush. He soon made a fortune -- not in the mines, but in merchandise and real estate in the San Francisco area.

In 1866, Irvine became partners with Lewellyn Bixby and two brothers, Benjamin and Thomas Flint. The four partners purchased Rancho Lomas De Santiago and Rancho San Joaquin following the devastating droughts of the early 1860s. Their main objective in buying the property was to engage in wool production and by 1867, 200,000 sheep were grazing over their acreage. In 1868, 45,000 lambs were born (Rush 1965: 102-103; Cleland 1952:65-67).

Immediate success, however, was not to be the fortune of James Irvine and his associates. The droughts of the 1870s killed most of the sheep and squatters began to encroach upon the property. In 1876, Irvine bought out his partners and 10 years later he began to rent sections of the ranch to tenant farmers, who raised barley (Cleland 1952:79, 84, 94). The following year, a right-of-way was given the Santa Fe Railroad to lay a track across the property. By 1888, there were 12,000 head of sheep on the ranch along with some cattle (Cleland 1952:102).

During the last two decades of the nineteenth century, the Irvine Ranch followed the ever increasing trend to agriculture that characterized the general development of southern California during this period, although livestock continued to be important. In 1888, there were already 500 acres leased in small tracts to tenant farmers who were raising grain. Between 1890 and 1900, both the variety of crops and the number of acres under cultivation expanded as corn, potatoes, wheat and beans were planted. During the next decade, alfalfa, peanuts and celery were added. Orchards were first set out on Rancho San Joaquin in 1906. Six hundred acres were planted in walnuts and apricots, while an additional 400 acres were converted to citrus (Cleland 1952:102, 107, 110-111, 123). Agricultural production of the ranch continued to expand until by 1950 the crops grown included: barley, 13,430 acres; beans, 5280 acres; lima beans, 12,150 acres; sugar beets, 1040 acres; other vegetables, 2200 acres; avocados, 100 acres; grapefruit, 100 acres; lemons, 800 acres; persimmons, 100 acres; oranges, 3450 acres; and walnuts, 1000 acres.

In 1960, the Irvine Ranch began to take an active part in the suburban development of southern California. A general plan was developed for the ranch property. One thousand acres were given to the regents of the University of California for a campus. In addition, separate districts were identified as future residential, commercial and industrial areas. At present (1980), the property contains three dozen "villages" of single-family dwellings and a total population of around 50,000. By the year 2000, it is estimated that 245,000 people will be living within the area (Taylor 1980:54).

#### 4.3 SAN JUAN CAPISTRANO

The area surrounding the city of San Juan Capistrano includes the Mexican land grants of Rancho Canada De Los Alisos, Rancho Trabuco, Rancho Boca De La Playa, Rancho Mission Vieja-La Paz, Rancho Niguel, and Rancho Mission San Juan Capistrano.

Rancho Canada De Los Alisos consisted of 10,668 acres granted to Jose Serrano on May 3, 1842 by Governor Juan B. Alvarado. Dwight Whiting acquired most of the grant in the late 1880s and it became known as the Whiting Ranch. The community of El Toro is within this grant (Robinson 1950:4).

Rancho Trabuco was granted to Santiago Arguello in 1841 by Governor Alvarado and later sold to Juan Forster, an Englishman, in 1843. The grant consisted of 22,000 acres (Robinson 1950:17-18). The Trabuco Adobe lies approximately one-quarter mile east of the project right-of-way on Trabuco Creek. The house was occupied from the early 1830s to about 1900 (Smith 1965:29). Near this spot, the Portola party camped on July 24 and 25, 1769, and recorded a village of about 50 Native American (Palou 1966:125). Mission Viejo, Orange County's first major residential suburb, is located primarily within the boundaries of this grant (Taylor 1980:144).

Rancho Boca De La Playa was made up of 6,607.33 acres granted to Emigdio Vejar by Governor Pio Pico in May 1846. It was sold in 1860 to Juan Avila and in 1878 it was sold once again to Marcos Forster (Robinson 1950:2). The southern portion of Rancho Boca De La Playa is now the community of San Clemente. The town was founded during the land boom of the 1920s. The lots were laid out in 1925 and offered for sale on December 7 of the same year. On the first day, a total of \$125,000 worth of lots was sold. By 1929, the real estate syndicate had made \$7.5 million and the town had 1000 inhabitants (Taylor 1980:178).

Within the northeastern section of Rancho Boca De La Playa lies the Rios tract. This small grant of 7.07 acres was given to Santiago Rios in 1843 by Governor Micheltoarena (Robinson 1950:13).

Rancho Mission Vieja-La Paz was a grant of 46,432.65 acres issued to Agustin Olvera in 1845 by Governor Pio Pico. It was eventually sold to Juan Forster, who had

been grazing cattle there at the time the land was granted to Olvera (Robinson 1950:10). Rancho Niguel was granted to Juan Avila in 1842 by Governor Juan B. Alvarado and consisted of 13,316.01 acres (Robinson 1950:12).

The history of Rancho Mission San Juan Capistrano is the history of the Pueblo of San Juan, which begins with the founding of the mission. Mission San Juan de Capistrano was founded on October 31, 1775. However, no sooner had the missionaries and soldiers arrived than they received word that Native Americans had attacked the Mission at San Diego and on November 6, they returned to the Presidio of San Diego (Hallan 1975:12-13). The missionaries returned to San Juan Capistrano in September 1776 and on November 1, the site was dedicated to the Italian saint San Juan de Capistrano (Hallan 1975:13).

The new mission soon prospered. The first structures were a church, living quarters and livestock shed. Vineyards and vegetable gardens were also planted. In 1786 there were 544 Native American neophytes. By 1796 the number had risen to 994 (Hallan 1975:15-16).

In 1797, construction was begun on a great stone church. Sandstone was quarried six miles northeast of the mission, limestone was brought from near El Toro and sycamore trees were cut in Trabuco Canyon. The church was completed in 1806 but stood for only six short years when it was tragically destroyed by an earthquake on December 8, 1812, killing 400 people (Hallan 1975:17-18).

Despite this catastrophe, the mission continued to prosper. It had 1400 inhabitants in 1811 and produced 500,000 pounds of wheat, 190,000 pounds of barley, 202,000 pounds of corn, and 20,000 pounds of beans. Herds of livestock included 14,000 cattle, 16,000 sheep, and 740 horses (Hallan 1975:19).

By the late 1820s, however, San Juan Capistrano was beginning to decline, as were most of the missions in California. In 1829, the mission was visited by Alfred Robinson, who described it as "in a dilapidated state and the Indians are much neglected" (Robinson 1925:145).

By the end of the next decade, the mission was no longer functioning. In August 1834, the property of ten missions, including Mission San Juan Capistrano, was confiscated by the government. Half the land was to be given to the Native Americans and the other half was to be administered "for the public good and the support of the church" (Hallan 1975:21). In 1841, the mission was declared to be in a state of ruin, and it was advised that the Native American pueblo be dissolved. In place of the pueblo a secular town was organized. Thirty civilians were given from 100 to 300 acres each, and the Native American were allowed to remain on the land they already occupied (Hallan 1975:28; Taylor 1980:22).

In 1845, the mission was sold at public auction to Juan Forster and James McKinley for 710 dollars (Robinson 1950:11). Juan Forster was an English immigrant who had adopted Mexican citizenship and married a sister of Don Pio Pico. At one time he was one of the largest land owners in California, controlling several large grants in San Diego and Orange Counties. Forster and his family lived at the mission from 1845 until 1864 (Taylor 1980:45).

As the middle of the nineteenth century approached, the community at San Juan Capistrano began to take on the appearance of a pueblo. Adobe buildings were constructed around a central plaza. Some were homes; others functioned as stores or cantinas (Hallan 1975:33).

The decade of the 1850s saw an eruption of violence in the area that had been unknown during the Mexican period. Mexican bandits began to operate in the region

bringing to southern California its own version of the Wild West. In January 1857, the gang of outlaw Juan Flores raided San Juan Capistrano, terrorizing the town and killing one person. Flores was captured and hung in February of the same year. In 1862 the gang of another outlaw, Manuel Marquez, plundered and terrorized the region between San Juan Capistrano and Santa Ana. In the early 1870s, the bandit Tiburcio Vasquez operated in the area but Vasquez was captured and hung in 1874 (Hallan 1975:31-42).

The series of natural disasters which plagued southern California in the 1860s hit the region surrounding San Juan Capistrano especially hard. During the heavy rains in the winter of 1861 the town was flooded. The droughts which followed were even more disastrous, withering crops and destroying livestock. The smallpox epidemic of 1862 killed approximately 200 people (Hallan 1975:42-43).

As drought and disease took their toll on the area's cattle, sheep became the dominant livestock of the region. By the 1890s, the sheep industry had become so large that local labor could not handle the shearing, and Indians were brought from the reservations in San Diego County. The annual sheep shearing was a colorful spectacle whose excitement was captured by Helen Hunt Jackson in the following passage from the novel Ramona:

At the sheep-shearing sheds and pens all was stir and bustle. The shearing shed was a huge caricature of a summer house... A few rods away stood the booths in which the shearer's food was to be cooked... Near these the Indians had already arranged their camp.

...A high four-posted frame stood close to the shed; in this, swung from the four corners, hung one of the great sacking bags. A pile of the bags lay on the ground at the foot of the post...

...On one of the posts of the shed short projecting slats were nailed, like half rounds of a ladder. Lightly as a rope walker Felipe ran up these, to the roof, and took his stand there, ready to take the

fleeces and pack them in the bag. ...Luigo, with a big leathern wallet fastened in front of him, filled with five-cent pieces, took his stand in the center of the shed. The thirty shearers, running into the nearest pen, dragged each of his sheep into the shed, in a twinkling of an eye had the creature between his knees helpless, immovable, and the sharp sound of the shears set in. The sheep shearing had begun. No rest now. Not a second's silence from the bleating, baaing, opening and shutting, clicking, sharpening of shears, flying of fleeces through the air to the roof, pressing and stamping them down in the bales; not a second's intermission, except the hour rest at noon...

It was a dramatic spectacle. As soon as the sheep was shorn, the shearer ran with the fleece in his hand to Luigo, threw it down on a table, received his five-cent piece, dropped it in his pocket, ran to the pen, dragged out another sheep, and in less than five minutes was back again with a second fleece..." (Jackson 1915:95-96).

Diversified agriculture began in the area in the 1870s with the introduction of the walnut. The boom of the late 1880s quickly accelerated the pace at which land in the vicinity was converted to farms. Agricultural production of the Capistrano Valley for the fiscal year 1891 included 225 tons of hay, 1000 quintals of wool, 10,000 mutton sheep, 62 tons of English walnuts, 6 carloads of honey, 6 carloads of oranges, 8 carloads of corn, 3 tons of dried fruit, 3 carloads of green apples, 2 tons of pears, 2000 head of cattle, and 200 horses. Another major crop grown on the outskirts of the valley was wheat. The largest producer of this grain was Aaron Buchheim, whose property spread from the coast to El Toro (Hallan 1975:62).

The community of El Toro owes its origin to the land boom of the late 1880s. It is one of the few survivors of several "paper cities" throughout the region, promoted by land speculators (Hallan 1975:60).

During the 1890s the village of San Juan Capistrano became known as a tourist attraction. It had retained much of the flavor of the Mexican period and in 1895, the

Land Mark Club began to restore the mission. Its reputation as a tourist center continued to grow throughout the first two decades of the twentieth century (Hallan 1975:73-78, 80). In 1905 a visitor wrote, "Capistrano is probably the most thoroughly native Californian of any town in the state... Capistrano has a hotel, several stores, a school house and a number of saloons (Guinn 1907:486).

The pueblo continued to retain much of its Mexican atmosphere and in the 1920s it was again described as "still largely Californian of the early type. The inhabitants, while by no means all Spanish people — for French, Basques, Indians, Mexicans and some Germans, as well as some Americans (are) in the census — were still predominantly tinctured with the old traditions, and Spanish was the principal language of the place" (Saunders and O'Sullivan 1930:11).

During the 1920s, agriculture dominated the valley's economy. Most of the area was comprised of large farms. Walnuts were the major crop, and were grown in the valleys. Wheat and barley were grown on the hillsides, while cattle and sheep grazed on the ranges east of the village. Vegetables also became an important crop during this period, and oranges were grown extensively the valley north of town. During the 1930s and 1940s, oranges replaced walnuts as the major crop in the valley (Hallan 1975:93).

Agriculture continued to be the major activity in the region throughout the 1940s. By the end of the decade, however, the citrus trees were showing signs of disease and the walnuts were completely gone. The American fruit packing house which was located in town closed in 1952.

By the mid-1950s, tourism was playing an ever increasing role in the community's economy. The new freeway made San Juan Capistrano even easier to visit. The same freeway was responsible for the mushrooming growth which began to take place in

the late 1960s and early 1970s. It was now only a short distance from the area around San Juan Capistrano to the major employment centers of Santa Ana, Los Angeles and San Diego. The hills surrounding San Juan Capistrano are now being converted to residential areas, as exploding suburbia races to cover the former Mexican ranchos with asphalt, cement and well-trimmed lawns.

#### 4.4 OCEANSIDE

The Oceanside district includes the Mexican land grants of Rancho Santa Margarita y Las Flores, and Agua Hedionda, as well as Mission San Luis Rey de Francia, and the Community of Oceanside.

The history of Rancho Santa Margarita y Las Flores is closely associated with Mission San Luis Rey. The mission used the area to graze its extensive herds of livestock. By 1806, a corral and tile-roofed adobe house had been erected near the Canada de Santa Margarita. Las Flores was an asistencia of Mission San Luis Rey. Fields were planted there and by 1832, a house and granaries had been constructed (Good n.d.:4-5).

When the mission was secularized in the mid-1830s, an attempt was made to establish a secular Native American pueblo at Las Flores. However, by 1844 Pio and Andres Pico had obtained possession of the pueblo. Three years earlier, in 1841, the two Pico brothers had been granted 89,742 acres surrounding Las Flores by Governor Juan B. Alvarado. This grant was known as Rancho San Onofre y Santa Margarita.

The rancho came to be known as Santa Margarita y Las Flores. In 1846, it had 10,000 cattle, 15,000 sheep and 2000 horses. In 1864 the Picos sold the ranch to their brother-in-law, Juan Forster, for \$14,000 dollars (Rush 1965:93-94). Forster lost 50 percent of his cattle during the droughts of the early 1860s (Good n.d.:20).

In 1882, the ranch was sold to Richard O'Neil and James Flood. It remained under the control of the Floods and O'Neils until 1941, when it was sold to the Federal Government and converted into the Camp Pendleton Marine Base (Rush 1965:94).

Mission San Luis Rey de Francia was founded in 1798. The site of the mission had been discovered almost 30 years earlier by the members of the Portola expedition, who had camped there on July 18, 1769, observing two large Native American villages near the future mission site (Harvey 1974:128). The location was known to the Native Americans as Keish or Quechla (Tac 1958:12; Harvey 1974:148).

Despite its late founding, the mission became one of the most prosperous in California. It was visited in 1829 by Alfred Robinson, who recorded the following description of the establishment:

At this time its (the mission's) population was about 3,000 Indians who were all employed in various occupations. Some were engaged in agriculture, while others attended to the management of over sixty thousand head of cattle. Many were carpenters, masons, coopers, saddlers, shoemakers, weavers, etc., while the females were employed in spinning and preparing wool for their looms, which produced a sufficiency of blankets for their yearly consumption... Adjoining are two large gardens, which supply the table with fruit and vegetables, and two or three large ranchos, or farms, are situated from five to eight leagues distant, where the Indians are employed in cultivation and in domesticating cattle (Robinson 1925:43-44).

After secularization, many of the Native Americans remained in the area, although the mission quickly began to decay. When the establishment was visited by Eugene Dufлот De Mofras in the mid-1840s, he reported that "scarcely 600 Indians, 2000 cattle, 400 horses, and 600 sheep remain (Pufлот de Mafras 1937:176).

Soon after conquest by the United States, Yankee homesteaders entered the San Luis Rey valley. One of the earliest was George P. Tebbetts, who acquired property one mile south of the mission in 1854. Tebbetts had a prosperous farm which contained a large number of fruit trees, 24 horses, 20 milk cows, 4 oxen, 50 steers, 60 sheep, and a number of goats and hogs.

Many other settlers attempted to homestead the valley during the 1850s. However, the U.S. government did not recognize their claims and they were forced to leave by land speculators. In the 1860s and 1870s, other settlers moved into the valley and were more successful in justifying their claims (Jacques 1979a:41). Those who settled in the vicinity of the transmission line right-of-way were engaged in farming and stock raising. The area continued to be used for agriculture through the 1950s (Jacques 1979b:1-6).

During the 1950s and 1960s gradual expansion of the City of Oceanside into the area took place and now trailer courts and housing tracts are beginning to fill the valley.

The City of Oceanside is another of the few survivors of the late 1880s land boom. A visitor in 1890 noted "...Only some four years old, Oceanside has made remarkable growth... The original townsite was on Section 22, being a sheep range occupied in 1862, by A.J. Myers... The city was adopted in July 1888. Inhabitants are between 6,000 and 7,000" (Lewis Publishing Company 1980:65).

Rancho Agua Hedionda consisted of 13,311.01 acres granted in 1842 to Juan Maria Marron. During the early American period, the property came into the possession of Robert Kelley (Rush 1965:89). Most of the property is still held by the Kelley family and has primarily been used for livestock and agriculture.

#### 4.5 ENCINITAS/PENASQUITOS

The Encinitas/Penasquitos district includes the Mexican land grants of Rancho Encinitas, Rancho San Dieguito and Rancho Penasquitos.

Rancho Encinitas contained 4,341.03 acres which were granted to Andres Yorba in July 1842 (Rush 1965:40). Describing the general vicinity of the rancho in 1829, Alfred Robinson wrote: "We saw no habitations on the route (between San Diego

and San Luis Rey), and the soil was one continued waste of barrenness entirely destitute of cultivation. A few scattered trees adorned the road and now and then a deer was seen running over the hills, or a hare or rabbit sat basking in the sun among the low shrubs" (Robinson 1925:42).

In the 1880s, the area began to be divided into cultivated fields and orchards. The communities of Merle, Merrigan and Olivenhain were settled, while on the coast, just outside of the former rancho boundary, the town of Encinitas was established. Encinitas became the railroad shipping point for the farms in the area which were growing beets, beans, corn, wheat, barley, hay, sorghum, and deciduous fruits (Lewis Publishing Company 1890:63).

Rancho San Dieguito consisted of 8824 acres that were originally occupied by Juan Maria Osuna in 1836, and granted to him by Governor Pio Pico in 1845 (Rush 1965:40; Union Title-Trust Insurance 1949:2). By the end of the 19th century, Osuna's descendents retained only a small portion of the original grant. In 1906, the entire area of the original grant was purchased from its various owners by the Santa Fe Railroad. The railroad company had eucalyptus trees planted on the property, hoping the wood could be used for railroad ties. Too late, they realized the trees were too soft for this purpose (Union Title-Trust Insurance 1949:2).

In 1921, the Santa Fe Railroad decided to develop the area into citrus groves and homesites. They changed the property name to Rancho Santa Fe, and by 1929 it was a prosperous community. The development of Rancho Santa Fe was directed by a community plan which was adopted in 1927 (Union Title-Trust Insurance 1949:2).

Along the San Dieguito River, approximately one-half mile north of the transmission line, is the Lusardi adobe. Peter Lusardi ran sheep on about 3000 acres in this area during the later years of the nineteenth century. The ranch was bought in 1929 by

Douglas Fairbanks, Sr., who changed the name of the property to Rancho Zorro (Davidson 1939).

Rancho Los Penasquitos contained 8,486.01 acres. The first land grant in San Diego County, it was given to Francisco Maria Ruiz in 1823 (Rush 1965:24). The property was transferred to Don Francisco Maria Alvarado in 1837 (Johns 1973:1). During the early American period, the ranch came under the control of George A. Johnson, a Yankee who had married one of Alvarado's daughters (Morefield 1977:33).

Although the property has had various owners over the years, it was primarily used as a cattle range. In 1962 it was sold to the Penasquitos Corporation, and sections of the property have been developed into housing tracts (Rush 1965:24-26).

SECTION V  
RESEARCH OBJECTIVES

5.1     RESEARCH DESIGN

In recent years, many archaeologists and archaeological researchers have attempted to move closer toward explanation of prehistoric cultural systems and away from simple description of prehistoric artifacts and features (Fritz and Plog 1970:405-412; Kushner 1970:125-132; Binford 1964:425-441). One tool of these explanation-oriented archaeologists is a formalized research design based on deductive reasoning. Although past excavators and researchers no doubt possessed and used implicit or self-understood empirical research designs, recent efforts have been directed toward stating explicit research problems or objectives prior to commencement of fieldwork. These objectives thus serve as the basis for a hypothetical-deductive reasoning approach to archaeological data and cultural processes.

The overall intent of a research design is to provide a logical and systematic approach to scientific inquiry through the generation of ordered data. Questions are drafted from a data base consisting of an assessment of previous fieldwork and research; hypotheses are then formulated to state the objective(s) of the fieldwork to be conducted, and test techniques are formulated to ensure that data are collected in a manner which is dictated by the questions to be answered. Test implications are presented to particularize the hypothesis. The research or sampling strategy is developed out of the hypotheses, test implications and specific needs of the individual research goals.

## 5.2 COURSE OF STUDY

The proposed investigation techniques are geared toward assessing the vertical and horizontal distribution of cultural debris, attempting to define the types of activities practiced, and determining the significance of the cultural debris in an overall archaeological/cultural context. Research questions have been developed to ensure that evaluation and assessment are research oriented and that a management program based on these inquiries will contribute significantly to furthering our knowledge of pre-European lifeways. To form a logical progression of posing questions, testing the questions, understanding the test results and implications, and rejecting or accepting hypotheses, the following system is used.

### 5.2.1 Research Hypotheses

The following three research hypotheses are presented along with a progression of test implications and techniques logically leading to either the acceptance or rejection of the hypothesis itself. Although other hypotheses and test implications could be promulgated and tested, the focus of this study centers on three major research questions and concomitant problems.

#### Hypothesis (1):

Based on review of previous fieldwork in the study area, it appears that the sites to be evaluated reflect a wide range of prehistoric cultural activities. It is hypothesized that these activities represent either maintenance tasks or extractive tasks. As defined by Binford and Binford (1966), maintenance tasks are "activities related to the preparation and distribution of subsistence goods already on hand and to the processing of on-hand raw materials in the production of a base camp whose archaeological assemblage reflects preparation and consumption of food as well as the manufacture of tools for use in other locations (Binford and Binford 1966). In contrast, extractive tasks

are "those that center around the direct procurement of subsistence items or of raw materials to be used in the manufacture of artifacts" (Binford and Binford 1966). Extractive tasks are definitive of work camps.

Following the Binfords' model, it can be hypothesized that assessment of individual site cultural debris should indicate either a wide range of artifacts with no specific site specialization or a limited range of activities with specific site specialization.

- Implication (1): The implication of a site as a maintenance site is that it functioned as a base camp. Occupants of this site would have congregated here from nearby extractive locales. Conversely, the implication of a site as an extractive site is that the site functioned as a work camp or specialized procurement area.
- Test Technique (1): Two primary test techniques are proposed: an intensive, controlled surface mapping of all cultural debris and a thorough review of data relating to other sites in similar and dissimilar environments.
- Acceptance/Rejection of Hypothesis (1): If the artifacts recovered constitute a relatively broad assemblage, reflecting varied activities, then the individual site should be categorized as a base camp. However, if the artifacts recovered constitute a limited range or spectrum, then more limited and more specific tasks may have been conducted at the site. In this case it should be categorized as a work camp or procurement site. Acceptance or rejection of the hypothesis depends on the outcome of site-by-site analysis.

Hypothesis (2):

Study of previous fieldwork of the 41 sites being assessed indicates that the artifact assemblages present at these resources represent distinct specific cultural affinities (as recorded). As perceived by recent scholars, at least four major cultural patterns have operated in southern California. These four temporal divisions are defined by such researchers as Rogers (1939, 1945, 1966); Wallace (1955), Warren (1961) Hudson (1971), and Meighan (1978) and are described from early to recent as Early Man (paleo-Indian), Milling Stone (Early Milling), Intermediate (Early Milling), and Late Pre-historic (Late Milling). The relatively distinct cultural phases represent assumed variations in time and space which can be assessed within an archaeological context.

- Implication (2): The implication of these sites being either Early Man, Milling Stone, Intermediate or Late Milling is that the individual sites represent cultural activities of a given particular temporal period as reflected by the archaeological record.
- Test Techniques (2): To test the hypothesis that the sites within the study area are of a specific cultural affinity, four test procedures are proposed: a review of historic documentation of the project area for insightful data; the use of ethnographic analogy via commonly acknowledged and used references; a thorough analysis of the retrieved artifact assemblage (in particular the presence/absence of ceramics, diagnostic tool types); and the collection of datable materials for processing (i.e., bone, charcoal).
- Acceptance/Rejection of Hypothesis (2): If a solid and logical integration of the data gathered through the above detailed investigation techniques indicates a specific cultural component, then the hypothesis should be accepted. However, if the synthesized data indicates

anything to the contrary (i.e., lack of data to indicate culture or a multi-component), then the hypothesis should be rejected.

Hypothesis (3):

Preliminary data from field survey and from known sites in the study area and ethnohistoric/ethnographic sources indicate that the archaeological sites located within the study area may well represent cultural complexes or regional settlement systems. Each site within a system, whether base camp or work camp, is a component of that system. A component is defined here as an archaeological entity within a continuous space and within a meaningful time period which does not exist in isolation; rather, it is always integral to a larger system in space and/or time (Chang 1972).

The actual relationship between the sites can be more accurately ascertained once Hypothesis 1 and Hypothesis 2 have been tested. At this point, it can only be hypothesized that these sites relate to others as components of a system, and the system is an encompassing regional settlement system. Judging from limited ethnographic sketches and archaeological interpretation, the base camp appears to have had a bilateral dependence between base camp-work camp and base camp-base camp (McCoy and Thesken 1979). This dependence could prove important in determining the immediate interrelatedness of the sites and their function within the system.

- Implication (3): The implication of specific sites being components of a settlement system is at least twofold. The sites are a system themselves or part of a larger settlement pattern within this geographical region, and such a system would have required a complex cultural parallel to maintain itself, as has been well documented by Spier (1923) and others.

- Test Techniques (3): To test the hypothesis that sites do in fact constitute components of a settlement system, it is necessary to define site extents and function via controlled surface and subsurface sampling. Further, all data gathered should be subjected to laboratory analysis and considered in light of similar sets of data from nearby surrounding sites. Because site function is defined by its artifact assemblage, each artifact should be analyzed to determine type and function. At the same time, analysis and interpretation should also consider artifacts and cultural debris absent from the site.
- Acceptance/Rejection of Hypothesis (3): If spatial relationships and functional connotations of the specific sites indicate a potential dependence and interrelatedness, with sites of the same type or of different types, then the hypothesis should be accepted. If, however, analysis reveals gaps in the temporal, cultural or artifactual record as revealed during data gathering procedures, the hypothesis should be rejected, depending on the degree of disparity.

## SECTION VI

### NATIVE AMERICAN INVOLVEMENT

#### 6.1 INTRODUCTION

As requested in the MOA (1979), the current evaluation and assessment program was developed in coordination with Native American involvement. To enhance the ethnographic foundation of the program, to better understand Native American land use for site documentation and to ascertain Native American values on data retrieved, local (San Diego County and Orange County) Native Americans culturally associated with the study area both prior to and after European contact and specially identified by the State of California Native American Heritage Commission (NAHC) and/or the Bureau of Indian Affairs (BIA) were personally contacted. Additionally, and as continued contact from previous survey studies (Bean and Vane, 1979; Eckhardt 1979a, 1979b), Native Americans noted to have specific locations of personal influence or spheres of interest within the study area bounds were involved. Prior to implementation of the assessment program, the following persons were informed of the proposed archaeological investigation: Edward T. Arviso (Rincon Tribal Council), Raymond Belardes (Juaneno Band of Mission Indians), Claude Devers (Pauma Reservation), King Freeman (Pala Tribal Council), Tom Hyde (Viejas Tribal Council), Vincent Ibanez (Perchanga Indian Band), Augustine Orosco, Jr. (San Pasqual Reservation), Harlan L. Pinto (Cuyapaipe Tribal Council), Sam Powvall (Pauma Tribal Council), and Henry Rodriguez (Luiseno). Letters announcing the proposed assessment program were sent to each of these persons (Appendix A) followed by telephone conversations with each of the individuals in order to establish their desire for, and scheduling of meetings. Additionally, Patty Duro (Commissioner, NAHC) and Victoria Roberts (Acting Executive

Secretary of NAHC) were informed of the program through written (Appendix C) and verbal communications.

## 6.2 PRELIMINARY INVOLVEMENT

Through personal contacts with the previously mentioned Native Americans, and as assisted through consultation with Dr. Lowell Bean, Sylvia Vane and Jack Young of Cultural Systems Research, Inc. (CSRI) (see Acknowledgements to this report), the objectives for the current evaluation program were distributed. Of the ten Native American representatives associated with the project area, those persons specifically desiring active participation during implementation of the program included Henry Rodriguez (appointed by Sam Powvall and Claude Devers as representative for Pauma Tribal Council), Vincent Ibanez (representative for Pechanga Indian Band) and Raymond Belardes (spokesman for Juaneno Band of Mission Indians; Pala Tribal Council and Rincon Tribal Council had also deferred to project involvement by the Juanenos). Meetings with Henry Rodriguez as well as with the Juaneno Band of Mission Indians Tribal Council and representatives (David Belardes, Gloria Felix, James Hessen, Marie Patterson and Stephen Rios) resulted in suggestions for the program research design and proposed assessment techniques for the current project.

## 6.3 FIELD INVESTIGATION

In preparation for implementation of the in-field phase of the assessment program, written announcement of field activities, in San Diego County and Orange County, including specific site locations and site descriptions, were sent to the following Native American representatives (Appendix C): Raymond Belardes, Vincent Ibanez, Augustine Orosco, Jr., Harlan L. Pinto and Henry Rodriguez. Mr. Belardes, Mr. Ibanez and Mr. Rodriguez responded with requests for personal field observation participation. Through further consultations by CSRI, Mr. Art Morales (Gabrielino) was also personally

notified of the assessment program and expressed the desire to observe field investigation processes. Intermittent telephone conversations kept the aforementioned Native American representatives abreast of all current scheduling.

For field site assessment, all Native American consultants or observers were requested to share their knowledge about the cultural locations to be investigated. These objectives were especially relevant to the current investigation since the archaeological evaluation techniques were preservation oriented (see Section VIII) and were designed for assessment with only minimal actual artifact collection. Conversely, all Native American participants were informed of assessment plans, techniques and daily project assignments (see Section VII). Native American observers were encouraged to actively participate during the field investigation to become personally familiar with all archaeological techniques involved.

Vincent Ibanez, Henry Rodriguez and Art Morales were later unable to participate in the field investigation phase due to prior scheduling and previous commitments. However, Raymond Belardes appointed David Belardes as Juaneno representative during the current archaeological program. Additional Native American observers or active participants serving as appointed representatives of Raymond Belardes and the Juaneno Band of Mission Indians were: Luis Muro, Donna Murphy and Marie Patterson (see Acknowledgements to this report).

#### 6.4 DATA ANALYSIS/REPORT PREPARATION INVOLVEMENT

Native American input was also requested during all procedures of laboratory analysis. Invitation was extended to interested Native Americans (Appendix C). Those responding with personal visitation to WESTEC Services, Inc. Cultural Resources Laboratory were: Raymond Belardes, David Belardes, Aurora Belardes and family, Luis Muro, and Marie Patterson. As previously agreed, all collected subsurface cultural

material had been left in from original unit level bags until cataloging procedures could be explained to and viewed by the above mentioned Native American representatives.

After completion of the current report, Native American representatives are requested to review and comment on the report, if desired (Appendix C). All comments and replies will be incorporated within the final document or submitted to official governing agencies (see Section I).

#### 6.5 NATIVE AMERICAN CONCERNS

Ethnographic and ethnological research prior to original survey of the project rights-of-way revealed numerous Native American interests pertaining to the current study area including comments on construction and maintenance of transmission lines, value of archaeological sites and comments on archaeological techniques (CSRI 1979). Many of these values/desires were reiterated during the present evaluation and assessment program. Primary concerns described by Native Americans in discussions are as follows:

- (1) Expressed concern for importance of preservation of archaeological sites and of cultural artifacts/features as part of not only their heritage but the history of the United States (CSRI 1979:7-36).
- (2) Expressed desire to actively participate in the formulation of their own history, including Native American participation during all phases of archaeological investigation.
- (3) Expressed concern for keeping all archaeological site locations separated from the current final Cultural Resource Report so that the public cannot locate and disturb exposed sites.
- (4) Expressed fear that driving on access roads would crush artifacts.
- (5) Expressed desire that archaeologists not excavate Native American burial grounds.

(6) Expressed interest in retaining collected artifact material as part of their cultural heritage (Juaneno Band of Mission Indians).

(7) Expressed desire to have access to archaeological sites which are important for traditional and contemporary values. Access has been a problem to Native Americans since knowledge of specific sites is often limited due to most lands being owned privately, and land owners in the project area being sensitive to trespass.

(8) Expressed concern that archaeological techniques and intent often are not clearly defined for Native Americans.

(9) Expressed concern that the use of terminology such as "prehistory" and "prehistoric" suggests that Native Americans have no history.

(10) Expressed desire to have monetary compensation for archaeological sites destroyed within rights-of-way.

## SECTION VII

### FIELD INVESTIGATION TECHNIQUES

#### 7.1 INTRODUCTION

Field techniques employed during the assessment program covered a wide range of activities from actual fieldwork strategy and management to transporting recovered artifacts and data to the WESTEC Services, Inc. Cultural Resource Laboratory.

The current evaluation program is preservation-oriented, i.e., methods destructive of data or injurious to the natural features of the property were not employed when non-destructive methods were feasible. All phases of the field assessment were completed by trained personnel and consultants under direct professional supervision (see Acknowledgements).

Field investigation was generally accomplished during an eight-hour workday. Daily meetings were held prior to implementation of fieldwork at each site location with crew persons, Native American participants and consultants in order to explain all planned investigation techniques and to provide for necessary logistical and coordination matters. Inclement weather interrupted the schedule on occasion, but did not serve as a major disruption during the current assessment.

Equipment necessary for all phases of the field investigation was transported daily to the archaeological sites to be assessed. For fieldwork in Orange County, a small trailer was used to store and transport equipment and supplies.

Specific tasks performed during the current assessment program were assigned to individual WESTEC crew persons throughout field investigation to ensure consistency and efficiency of data recovery. A complete listing of personnel and services provided is presented in Acknowledgements to this report.

## 7.2 SITE ACCESS

Current assessment techniques included examination of total site areas or extent, as far as possible, beyond the previously surveyed project rights-of-way (i.e., 300 feet width). Access to archaeological sites within the transmission line rights-of-way was gained primarily via existing access roads. When these roads were impossible to traverse due to disturbance by recent flooding, plowing or natural erosion, other existing dirt roads were used. In Orange County, a master key was provided by SCE to unlock access gates and assistance was provided by SCE personnel. In San Diego County, access was not limited by locks, although an SDG&E employee, John Burton, was available to facilitate access. Field investigation was implemented at those properties where permission to perform such work was previously legally obtained.

Admittance to archaeological sites on Aliso Viejo and Mission Viejo properties (Orange County) was under supervision by a representative of these properties, as per agreement with SCE. Once on the property, current assessment activities were restricted to previously recorded site locations as shown within existing access roads and/or the existing project rights-of-way (see Section X).

One archaeological site, SDi-4538, was not revisited by WESTEC crews since previously field surveyed (Eckhardt 1979a) due to site location (within the Camp Pendleton Marine Corps Reserve). Permission for access to this cultural resource was not granted by Camp Pendleton officials (Appendix A).

As mentioned in Section I, access roads have not been maintained while awaiting current evaluation results, and portions of some access roads were totally impassable. In several instances, access to site locations was difficult, requiring four-wheel drive vehicles to cross small streams, gullies and seldom-used dirt roads.

Because the transmission line rights-of-way cross several private land holdings, many private fencelines and gates were encountered. In each case, gates were secured after WESTEC vehicles had entered and secured, once again, when the crews left the property.

### 7.3 FIELD SURVEY TECHNIQUES

Once a site area (as previously recorded) was relocated, using USGS 7.5' topographic quadrangle maps and aerial strip maps, the entire crew lined up at two meter to three meter intervals and surveyed the surface area in "sweeps" across the recorded site location and beyond previously identified site boundaries. All surface artifact material and any features were marked with brightly colored surveyor's flagging. Surveying was continued until surface site boundaries had been determined. When shellfish remains were encountered, a different color flagging was used so that shell concentrations and artifact locations could be readily differentiated for site field mapping purposes (see Section 7.11). Surface site delineation required approximately one to four hours per site.

#### 7.3.1 Vegetation Clearing

In compliance with the MOA (1979), and only when necessary, vegetation was cleared from portions of several archaeological sites. Clearing was performed in an attempt to reveal previously recorded archaeological materials since obscured, locate additional artifacts in areas between observed materials where it appeared that a continuation of the site was probable, and to sample any obscured site area where total clearing was too impractical or potentially disruptive to site integrity to attempt investigation during the current assessment phase. Further information regarding site clearing is contained in the individual site discussions (Section X). Clearing of dense grasses and brush increased surface visibility and permitted site identification as well as test unit placement.

Once an individual site area was determined by onfoot reconnaissance, high potential portions of the site were cleared of obscuring vegetation. Initially, two to three persons removed vegetation, varying from grasses to heavy brush, with sickles, rakes, pitchforks, and machetes. The remainder of the crew followed this clearing procedure on hands-and-knees, using trowels to inspect the newly visible ground surface and remaining vegetation stubble. These cleared areas are shown on site field maps (see Section 7.11), as are any artifact and shell concentrations subsequently located.

#### 7.4 FIELD INVESTIGATION FORMS/RECORD SHEETS

Documentation of archaeological site data during the present assessment program fieldwork includes forms/sheets regularly used by WESTEC archaeological teams, as well as specially revised and newly devised forms specific to the current project only. These forms provide clearly defined methods for recording pertinent data about archaeological artifact materials, the associated environmental setting and current field activities. All forms are contained in Technical Appendix, Volume II, and Technical Appendix, Volume III, and are discussed in the following subsections. All measurements described during the current assessment were recorded using the metric system. Completed field forms were filed daily in large binders by site number. These included Photograph Record Sheets, Unit Level Sheets, Soil Profile Forms, Botanical Record Forms, and Feature Sheets. A field diary was also kept by the Project Manager to document daily activities.

#### 7.5 BOTANICAL RECORDATION

Descriptive record forms were kept of existing vegetation at each archaeological site included within the assessment program to document land use, degree of land disturbance as reflected in the floral landscape and as a further measure of potential vegetal exploitation by pre-European occupants. These records are also used in

conjunction with pollen analysis for each site and for comparison with previous survey vegetation data in order to document possible surface visual limitations. The Botanical Record Forms are contained in Appendix F and are discussed in Sections II and X.

#### 7.6 PHOTOGRAPHY

The field investigation conducted during the current assessment and evaluation program was well documented through the compilation of a Photographic Record (Appendix G). Black and white print photographs (Technical Appendix, Volume IV) were routinely taken at each archaeological site investigated. Completed test units, existing landform and vegetation, site area disturbance, transmission line tower areas, access roads, archaeological features, many of the surface artifacts, and general field techniques were photographed. A Canon TX 35mm camera was used for these photographs (Plus X Pan film). Color slide photographs were also taken, often duplicating the black and white photographs, to aid in soil and vegetation analyses, support mapping details and document field activities. A Nikon F 35mm camera was used for the color slide photographs (Kodachrome 36 film).

Over 2300 photographs were taken during fieldwork, approximately three-quarters of which were black and white photographs, as required for National Register nomination. Surface artifact photographs, feature photographs and unit finish photographs included a photograph (menu) board with movable letters and numbers for object identification. A black and white arrow, divided into metric increments, was also included to give a scale to the object as well as to indicate the north direction.

Completed Photograph Record Sheets are included in Appendix G (a listing of all black and white photographs and all color slide photographs taken during current assessment). Color slides and black and white photograph negatives are on file at WESTEC Services, Inc. Cultural Resources Laboratory.

## 7.7 FIELD SURFACE ARTIFACT CATALOGING

In-field cataloging of surface artifacts was conducted as part of the assessment fieldwork in keeping with the non-impact policy of the current program, i.e., rather than actual collection and removal of surface artifacts. Each surface artifact encountered and flagged during each archaeological site survey was located on a site field map using an alidade and plane table (or engineer's transit) and assigned a consecutive field number (i.e., 1,2,3...20,21...etc.). This number corresponds to the catalog number on the Field Catalog Sheets (Appendix H). In some cases, more than one artifact occurred at the same mapping location; these artifacts were assigned a single catalog number as follows: Shot 14, Catalog Number 14-1, 14-2, 14-3, etc. At two sites, artifact clusters were recorded by area encountered and were assigned letter rather than numerical designations such as "Area A," "Area B," etc. Surface shellfish concentrations did not receive specific designations.

Field Catalog Sheets were used to record data pertaining to surface artifacts which were considered relevant to the eventual analysis and assessment of the cultural resources. The following discussion clarifies the manner in which cataloging information was collected.

Each artifact was classified according to the typology presented in Section VIII and a basic lithic material type was then recorded (i.e., granite, basalt, felsite, quartz). Three dimensional measurements were taken: length, width and thickness. Presence of cortex and patination was noted for lithic artifacts, as were diagnostic physical qualities such as bifacial, unifacial, shaped, unshaped, convergent, unilateral, bilateral and if the item was a fragment or non-diagnostic.

Information provided in the technique section of the Field Catalog Sheet was intended to reflect specific techniques used in the manufacture of the artifact. These

include grinding, soft-hammer percussion, hard-hammer percussion, pecking, and bipolar flaking.

Shell fragments were encountered on the surface of several sites, and although all surface shell observed was not counted or cataloged, a representative sample and approximate number were recorded. Shell was identified to the species level only and any burned specimens were noted. The count section of the Field Catalog Sheet refers to the count of shell hinges in each shot.

The remarks section of the surface catalog sheets describes specific morphological qualities (as mentioned before), the appearance of battering, flakes exhibiting a prepared platform, or if an artifact fragment was identified as belonging to another cataloged fragment. Additional comments regarding artifact shape, condition or other relevant data were also included in this section.

The final phase of the in-field cataloging consisted of photographing diagnostic artifacts. One or more black and white photographs were taken of each of these diagnostic artifacts; the photograph roll and frames are indicated on the Field Catalog Sheets. The artifact was placed on a black felt photograph (menu) board which displayed the site number, shot number and date included on the board. A black and white arrow, divided into metric increments, was placed next to the artifact for scale.

#### 7.8 FEATURE RECORDATION

Features recorded during the current assessment program include four bedrock milling features, one rock alignment, two artifact and rock clusters, and nine rock cairns.

Investigation of milling features was focused toward gaining descriptive data necessary to evaluate the significance of these features and to assess variables such as location of milling surfaces on the bedrock and type of milling surface presented by

each bedrock milling station. These variables, in association with other site-specific information, would be used in immediate analysis of the archaeological locale as well as being recorded for future interpretation. Definitions of milling (grinding) feature types are provided in Section IX.

After surface survey, the bedrock milling features were accurately located directly from an established datum and feature location was mapped using a plane table, alidade (or engineer's transit) and metric stadia rod. From the primary datum, or associated subdatum, the center of all bedrock outcroppings containing evidence of milling were determined. Each bedrock outcrop with milling elements was assigned a consecutive letter beginning with "A." Measurements were taken from the center of the outcrop to facilitate a determination of boulder dimensions and location of the associated milling elements on the bedrock. Also included on Milling Feature Field Sheets (Appendix I) were individual dimensions of the milling elements specified as to type, i.e., slick, mortar or basin (see Section IX), and other data necessary to accurately record the presence of these features. Photographs were also taken of the individual bedrock milling elements at each outcrop (Appendix G). Descriptions and analysis of all bedrock milling features are included in Section X.

After site surface reconnaissance, the rock alignment and rock cairns were located on an appropriate site field map using a plane table, alidade (or engineer's transit) and metric stadia rod in relation to an established primary datum or subdatum. A field drawing of each feature was completed and pertinent data were recorded on Feature Sheets as included in Appendix J. Any associated surface artifacts were also recorded. A discussion of these rock features is found in Section X.

#### 7.9 SUBSURFACE TESTING

Current field investigation included manual subsurface excavation of a limited number of test units, each one meter by one meter square. As requested in the MOA

(1979), subsurface testing was an optional technique, ascertained during field site assessment by professional judgment that such testing was necessary for determining National Register potential. Excavation, as discussed in Section X, generally contributed to a basic understanding of the nature of an archaeological site midden deposition by defining the existence (or non-existence) of subsurface artifact material rather than defining total site subsurface boundaries. Subsurface testing also contributed to the formulation of a Management Plan (Section XII) by defining site areas potentially affected by future adverse impacts. Subsurface testing did not occur if site surface evidence was deemed adequate to advise in favor of eligibility or if previous excavation test results were considered to be an adequate representative site subsurface sampling. In the event that surface survey revealed the presence of subsurface artifact material exposed in a road cut/bank, excavation methods were devised to identify and establish depth for such subsurface evidence, thereby substantiating possible site midden deposition. Positive excavation of road cut surfaces usually precluded the necessity for further impacts to archaeological sites through continued subsurface testing. All subsurface testing was designed in keeping with Native American sensitivities (Section VI).

7.9.1 Road Cut Excavation

Four road cut excavations were completed as part of the field investigation at the following sites:

<u>Site</u>	<u>Number of Road Cut Excavations</u>
Ora-447	2
Ora-700	1
SDi-6136	$\frac{1}{4}$

These excavations or road cut clean-ups were implemented in an attempt to avoid site impact caused by subsurface testing via test units. The four road features

tested consisted of moderately deep, relatively cleanly cut portions of site topography exposed by past road construction. A two meter long cut surface was marked off with string and nails and excavation was achieved by shaving the cut with a shovel, pick mattock and trowel. Excavated soil was passed through one-eighth inch mesh screening and artifactual materials were retrieved for laboratory analysis. Artifacts were attributed to depths below the original ground level at arbitrary intervals as located, measured down from the ground surface directly above the removed item.

Once the cut was completed to the existing road level (ranging from 55 centimeters to 104 centimeters), a soil profile of the excavated road cut was drawn. Soil profiles are contained in Technical Appendix K. Analysis of any cultural debris encountered during said testing is discussed in Section X. All tested road cut areas were covered over upon completion of excavation.

#### 7.9.2 Test Unit Excavation

Subsurface testing was conducted at 26 of the 41 archaeological sites included within the evaluation program. A total of 43 one meter by one meter square test units was excavated. Placement of test units at each site was based on the results of the surface reconnaissance wherein visible artifacts and associated cultural materials (i.e., shell) and features were flagged. The resulting surface artifact boundaries and concentrations served as the basis for arbitrary, intuitive sampling procedures. Test units were located within the individual site areas as deemed appropriate by natural landform, surface conditions (i.e., disturbed versus undisturbed), contours and visible cultural indications of potential subsurface deposition, i.e., surface artifact concentration or culturally darkened soil. Units were oriented along a true north baseline, and located on the site map in relation to an established site datum.

Test units were numbered consecutively for each site (i.e., 1, 2, 3, etc.). Each test unit was manually excavated in arbitrary (non-stratified) ten centimeter levels using the high corner for unit datum. Excavated soil was passed through one-eighth inch mesh hardware cloth screening. Emphasis was placed on recovery of artifacts in situ, and every attempt was made to delineate any subsurface features, e.g., artifact concentrations or rock clusters, as they appeared in the ground. In situ artifact locations were triangulated and specifically identified as shown on Unit Level Sheets (Appendix L). Other cultural debris not recovered in situ, and usually retrieved by screening, were bagged separately by level and taken to WESTEC Services' laboratory for analysis. Pick mattocks, hand axes, shovels and trowels served as excavation tools.

Unit Level Sheets were completed after each ten centimeter level was finished to document artifacts encountered, soil types and stratigraphy, and any disturbances. These forms are contained in Appendix L.

An excavation unit was determined to be complete by the absence of cultural materials; test units were completed to a depth of "sterile" soil. To avoid site deposition "masking" by natural and non-natural overburden, a minimum of 30 centimeters of depth was required for most units before stopping excavation. Positive units, or those units yielding cultural materials either in situ or in the screen, were generally required to have two non-cultural or sterile levels before calling the unit complete. In three instances, only half of the unit was excavated in the final level to achieve a completed unit due to extremely unmanageable soils.

A photograph was taken of each test unit upon completion (Appendix G); any features encountered in the units were also documented with photographs (Appendix G), field drawings and measurements (Appendix L). All test excavation results and unit feature descriptions are discussed in Section X. Test unit placement was located on

appropriate site field maps using the high corner for unit datum to the established site datum by means of a plane table, alidade (or engineer's transit) and metric stadia rod. All subsurface test units were backfilled upon completion of excavation.

#### 7.10 SOIL SAMPLES, POLLEN SAMPLES/SOIL PROFILES

Once a unit was excavated to a sterile level and a photograph taken, soil samples and pollen samples were removed. Samples were taken only from positive units (those with cultural materials present). The samples were taken at ten centimeter levels corresponding to previously excavated unit levels, generally from the north wall. If the north wall showed less stratigraphy than another wall or did not encompass all of the unit levels due to the slope of the unit, another wall was chosen.

Soil samples were removed using a trowel and were sealed in labeled, manila envelopes. Pollen samples were taken with a trowel also, but the trowel was rinsed with distilled water between samples and samples were taken from the bottom of the unit upwards to avoid possible contamination from other levels. Prior to sampling for pollens, the wall surface was scraped down to reveal a non-contaminated soil face.

A soil profile of the four unit walls was drawn on Soil Profile Forms in order to depict soil changes and intrusions (i.e., roots, rocks, artifacts). As often as possible, Munsell Soil Color designations were used for the various soils present. The unit soil profiles are contained in Appendix L.

Soil samples taken are currently being curated at WESTEC Services, Inc. Cultural Resources Laboratory as possible indicators of cultural activity, reflected by soil type, color, pH, microscopic non-soil components, or some other quality. At present, no sure method for detecting cultural evidence via soil analysis is commonly used. These samples are preserved in the hopes that future technology will provide a means of detecting indications for the occupation of a given locale, culture variation within that locale, and other pertinent data.

Pollen samples are actually soil samples taken with more restricted methods in an attempt to isolate non-contaminated examples of the floral communities present through time at a given site. Pollen samples were sent to David Vork (see Acknowledgements to this report) for pollen identification to determine the floral communities associated with subsurface artifacts and stratigraphic changes. The results of this analysis are contained in Appendix C and are discussed in Section X.

#### 7.11 SITE FIELD MAPPING

Mapping was accomplished in the field in conjunction with the evaluation of archaeological sites for determining National Register potential. Site field maps were drawn to conform to specific project requirements noted below:

- a. Accurately locate sites in relation to transmission line right-of-way.
- b. Map existing impacts and areas subject to future impact.
- c. Record the location of all visible surface cultural materials and features.
- d. Record the location of subsurface test units and road cut excavations.
- e. Delineate horizontal boundaries as based on presence or absence of cultural materials and features.
- f. Depict contour delineation of site areas.
- g. Provide intelligible maps showing spatial relationships of right-of-way, impacts, boundaries, elevations, test excavations, and cultural materials and features.

Equipment for field mapping included use of a plane table with a telescopic alidade and, during damp weather, an engineer's transit. Both instruments were used in conjunction with a metric stadia rod. A Brunton pocket transit was used for alignment and leveling of the plane table. The engineer's transit and pocket transit were adjusted to reflect true north bearings.

Prior to actual mapping, control points were established to facilitate observations. The initial control point was designated as the primary datum. Subsequent control points (subdatums) were given letter designations. Upon relocation at a new site datum, backsights were employed to ensure accuracy of horizontal and vertical controls. Datum locations were primarily identified with wooden stakes which were marked with the site number and the datum designation. Bridge nails were used where hard packed soil was present.

At each mapping station, the cultural materials were mapped first. As these materials were cataloged, corresponding numbers were sequentially assigned to the artifacts and the mapped location. Clusters of artifacts were mapped in by areal extent and were not assigned numbers. Any cultural features (bedrock milling or rock features) were then mapped, followed by the location of test excavation units, transmission line towers, access roads, areas cleared of vegetation, heavy disturbance, and vertical control points. The latter were recorded to depict topographic relief.

Elevation points were selected along ridges, drainages, knoll tops, depressions, slopes, or where distinct changes in slope were evident. These points were recorded on site field maps and logical contouring by interpolation was used to tie the points together. A programmable calculator was used in the field for vertical angle computations. Elevations, as noted on the site field maps, are in relation to the primary datum elevation, which was arbitrarily selected as 100 meters. Contour intervals were determined on the basis of site size and terrain. Completed site field maps are included in Appendix M.

#### 7.12 LABORATORY PROCEDURES

Cataloging procedures followed those currently used at local universities and other institutions. All artifacts obtained from subsurface testing were washed, dried,

given preliminary analysis using the typology described in Section VIII, weighed, measured, and numbered. These data, along with other relevant information, were entered on standardized catalog cards. Laboratory techniques were geared toward accurately describing each artifact in terms of material type and shape, providing preliminary analysis of the possible function for tools, and comparison of the artifacts with others from apparently similar sites in the study area.

Each artifact retrieved during subsurface test excavations received a consecutive catalog number (inked directly on the artifact or written on an attached tag or label). Artifacts not recovered in situ were separated according to unit and level designation, and thereafter received consecutive catalog numbers defined by typological groups (i.e., mano, flake, debitage, etc.). In situ artifacts were cataloged separately regardless of type. Data from the catalog cards were entered on master catalog sheets in sequential order and placed in binders for safekeeping.

All cataloged artifacts, divided by site number, were placed in appropriately labeled boxes for storage at WESTEC Services, Inc. Cultural Resources Laboratory. All artifacts will be curated at the WESTEC facility until such time as local institutions or Native American groups are able to assume the collection (see Section VI). Qualified researchers may gain access to the artifacts, data and other relevant materials upon written request.

#### 7.13 ANCILLARY STUDIES

As applicable, shellfish and faunal remains were either washed or dry brushed in the laboratory, then speciated, weighed, measured and analyzed in light of their function and role in pre-European (prehistoric) diet. Techniques for shellfish analysis, such as hinge/valve count, were used to estimate minimum shellfish populations and to clearly define what types of shellfish were exploited. The San Diego Natural History

Museum, and in particular Tom Demere (see Section I), aided in the identification of several shellfish samples. Analysis of shell remains per specific site locale is described in Section X.

Identification of faunal remains was completed by Richard Reynolds of the Page Museum in Los Angeles, California (see Acknowledgements to this report). Results of this analysis are contained in Appendix C and discussed in Section X.

During laboratory analysis, pottery (ceramics) was cleaned and identified using traits such as temper, color, carbon streak, hardness, and core.

Any post-European (historic) remains were examined by WESTEC Services, Inc. Historical Researcher, Stephen Van Wormer.

## SECTION VIII

### BACKGROUND DISCUSSION AND ANALYSIS OF ARTIFACT TYPES

#### 8.1 INTRODUCTION

Description and analysis are two explicit stages required for an evaluation of artifacts. They are integral parts of any archaeological research project. Both stages require that artifacts be scrutinized in an attempt to generate conclusions about specific cultural systems and changes within the systems. It is necessary to introduce a classification procedure that serves to bridge the gap between description of artifact attributes, and inferences, explanations or conclusions about cultural systems.

Classification is the foundation of data analysis in archaeology, and it is largely on the basis of raw data classification that inferences are made (Read 1974: 216). Archaeological inferences are based on patterning of data, which are assumed to be the result of patterned behavior and activities of human beings through time and space. Classification necessarily involves explicit definition of typologies in terms of assumptions about patterning among variables that result from different artifacts being manufactured, used and disposed of in the course of varying activities.

Specific research objectives determine the kind of patterning to which a typology must be sensitive. The focus may vary in response to the type of cultural resource under investigation and to the research potential relevant to particular resources. For this reason, a typology should be designed to allow for specific problems; concurrently, it should be flexible enough to allow for the input of additional data relevant to the problems.

In archaeology, the basic unit of classification is termed a "type." The artifact type is an abstract construct created to facilitate analysis where typological classification is dependent upon the kind of attributes recognized and selected for the

specific problem at hand. Most commonly used typologies distinguish between morphological types, functional types, temporal types, and technological types; however, many typologies are actually composed of a number of different classificatory type constructs.

Morphological types are the most basic artifact type used in archaeology, involving the explicit definition of each artifact's morphological (i.e., formal) attributes. Although in its purest state morphological typology is simply descriptive in nature, in practice it is often a combination of attributes relevant to temporal and functional determination of the artifact's classification.

The method for determining functional types involves selection of attributes that are functionally related to the artifact's manufacture and use, such as edge angles, weight, striations, flake scars, or polish. Functional analysis is dependent upon ethnographic analogy, experimental archaeology, and microscopic examination for accurately determining the aboriginal use of the tool. Overall, functional typology is considered one of the best and most useful classificatory schemes in archaeology, when feasible.

A temporal type is a set of one or more morphological types with a fixed and known range in time (Thomas 1974:10). Temporal classificatory schemes attempt to establish a set of time-markers, or morphological types known to have a certain assigned temporal range. Most of the early typologies during the Classificatory-Historical Period (1914-1940), such as those of Malcolm Rogers (1929, 1939), are quasi-temporal in nature. As more precise dating techniques have become available, the use of temporal typologies has diminished.

Technological analysis attempts to determine procedures used to manufacture implements through examination of both the implements and manufacturing debitage (Sheet 1975:371). Technological analysis distinguishes various steps along the manufacturing continuum from the end-products or types, thereby avoiding the error of

assigning unfinished specimens to a type at the same level of contrast as types composed of finished artifacts.

A primary level of classification involves the division of artifacts into categories such as flaked lithics, groundstone and ceramics, thus enabling the archaeologist to make inferences about differential site use in terms of broad categories of activities, such as food procurement, food preparation, maintenance and manufacturing. This procedure continues until it is either no longer profitable and justifiable, or until limited by available data. Throughout, there are two important aspects to the process:

First, the finer the classification, the more information is available. This is contingent upon associating different activities with the subcategories. Second, the accuracy of inferences will be highly dependent on the accuracy with which individual artifacts are classified (Read 1974:217).

The following (from Sheets 1975) is a list of potential objectives in classifying lithic artifacts, and correspondingly, their applicability to this analysis:

- To simplify description. Since it is not feasible to individually describe every artifact recovered, items are grouped into classes, and those classes are described. This is a primary objective of any preliminary analysis and is considered one of the major reasons for using the typology discussed in this text.

- To ascertain ethnic affiliation. Assuming a group sharing a common culture would have manufactured similar artifacts, the aim of this classification is to identify the cultural or ethnic group with the artifacts they made and utilized. Although this is a major objective of the present study, it should be noted that there are many problems encountered with this complex classificatory approach; therefore, it should be constructed with extreme caution.

- To isolate chronological indicators. The approach to this objective is similar to that discussed previously with temporal types. Projectile points and ceramics

often provide broad temporal markers in the absence of organic samples suitable for dating by the C<sub>14</sub> method.

- To determine the nature of social ranking. Undoubtedly outside the range of a preliminary analysis such as the one performed on the recovered lithics, the aim of this approach is to associate the types with the social position of the user.

- To investigate idiosyncratic patterns. This involves systematic investigation into the patterning of lithic assemblages at the individual level, as opposed to the societal or industrial level.

- To identify external cultural influence. The analysis involved here consists of devising classifications that are sensitive to outside influence on the industrial tradition.

- To understand the function of the tools. Basically a behavioral analysis, the objective of this approach is a determination of the problems or tasks for which the implement was used.

- To explicate the structure of an industry via technology. In technological analysis, the products (both tools and wastage) of an industry are examined to see how materials were processed. The objective is related to relationships between manufacture and use.

The classificatory system used in this study is an "established" typology consisting of a combination of Bordes/Mousterian types (Bordes 1968) and an assortment of specialized local types, including those established by D.L. True (1970). This typology is a variation of the form first introduced by Russell Kaldenberg (1976), and subsequently used by numerous contract archaeologists. As the typology is a combination of several varieties of types, it can be considered a multi-purpose classification in that it provides a basis for classifying a wider range of classes relevant to cultural behavior. An

attempt is made to use varying kinds of analytical techniques and methods which maximize information about the cultural system from readily available data. The result is a discussion which includes not only the strong inferences that may be made from the data, but also a series of tentative conclusions and hypotheses about specific topics that are of a conjectural nature. No single analysis or research project can touch on all the possible archaeological topics, nor should it necessarily be attempted.

A type-by-type summary is included for reference. According to House (1975), from whom the majority of this type-by-type discussion is derived, it is advisable to include subsections concerning "potential errors" and "hypothetical systemic function" when the typology is tentative in nature. For our purposes, the intent of the subsection on potential errors is to present some strengths and weaknesses of each type definition, a problem which, as previously discussed, is quite important and necessary. The subsection on hypothetical systemic function is intended to be a generalized discussion, attempting to link the various physical attributes of each artifact type with hypothetical past cultural behavior. The summary is structured by some generally held classificatory assumptions, wherein a series of types are brought together under an inclusive hierarchical arrangement.

## 8.2 TYPE-BY-TYPE DEFINITIONS

The following type-by-type summary is divided into two sections: 1) lithic and 2) non-lithic. Within these sections, major categories include groundstone artifacts, flaked lithics, ceramics, ecofacts, and historic artifacts. Types and subtypes follow.

The definitions listed below relate to artifact types identified during the current assessment program. A total of 31 different types was observed.

Shell and faunal remains, observed on the surface or recovered during excavation of test units, are described in Section X. The faunal remains were analyzed by

Richard Reynolds of the George C. Page Museum, in Los Angeles. Analysis of shell was accomplished by Peter Ainsworth of WESTEC Services, Inc., and Tom Demere of the San Diego Natural History Museum.

8.2.1 Lithic

GROUNDSTONE ARTIFACTS

Further discussion of milling surfaces and implements is contained in Section IX.

● Unifacial, Unshaped Manos

Morphological definition: Generally a cobble exhibiting wear on a single, slightly curved to convex face, where modification can be differentiated from the remaining natural surface as a result of utilization. May exhibit battering.

Potential errors: Often difficult to distinguish from natural surface.

Hypothetical systemic function: Used in conjunction with a metate or similarly functioning base, these functioned as hand-held grinders, or pounders, for processing plant and animal foods, and possibly plant fibers.

Research value: Indicative of processing and extractive activities associated with food resources. Variation in form or size of manos may indicate a functional specialization. There may also be a relationship to different time frames.

● Unifacial, Shaped Manos

Morphological definition: Generally a cobble exhibiting wear on a single, slightly curved to convex face, where modification can be differentiated from the remaining natural surface as a result of utilization. Shaping wear, such as pecking, grinding, and battering, is evident on the outer margins.

Potential errors: Evidence of shaping wear reduces potential error, which otherwise remains the same for all manos.

Hypothetical systemic function and research value is the same for all manos.

- Bifacial, Unshaped Manos

Morphological definition: Generally a cobble exhibiting wear on two parallel, slightly curved to convex faces, where modification can be differentiated from the remaining natural surface as a result of utilization. May exhibit battering.

Potential errors, hypothetical systemic function, and research value are the same for all manos.

- Bifacial, Shaped Manos

Morphological definition: Generally a cobble exhibiting wear on two parallel, slightly curved to convex faces, where modification can be differentiated from the natural surface. Shaping wear, such as pecking, grinding, and battering, is evident on the outer margins.

Potential errors: Evidence of shaping wear reduces potential error, which otherwise is the same for all manos.

Hypothetical systemic function and research value are the same for all manos.

- Wedge-shaped Manos

Morphological definition: Various sized lithic materials exhibiting grinding wear on one or two faces. The faces are not parallel, but converge toward one end of the cobble or block. Wedge-shaped manos are often larger than the manos described above.

Potential errors, hypothetical systemic function, and research value are the same for all manos.

- Non-diagnostic Manos

Mano fragments which lack sufficient characteristics to distinguish between unifacial or bifacial use.

- Pestles, Unshaped

Morphological definition: Generally a natural elongate cobble exhibiting the following characteristics.

- Ground and/or battered surface(s) on one or both ends.
- Grinding wear on the sides, which is not always continuous.

Potential errors: Irregularly shaped fragments may resemble mano fragments where grinding wear is not well defined.

Hypothetical systemic function: Used in conjunction with portable or bedrock mortars, as a hand-held pounder, crusher, or grinder for processing plant and animal foods. Closely associated with acorn processing.

Research value: Same as for manos.

- Metates

Morphological definition: A general characteristic of metates is the presence of ground or abraded surface(s), which range from flat to concave, and which may exhibit evidence of pecking. Two basic types are recognized: portable slicks and portable basins. Morphological variant terms include slab, shaped, unshaped, unifacial and bifacial. Portable basins are distinguished by observable depth and a direction to the actual milling surface (usually oval-shaped). Portable slicks are simply referred to as metates on the field catalog sheets and statistical tables. With these, little or no depth is perceived while considerable variation can occur in the milling surface shape; direction is usually not distinguishable.

Potential errors: Weathering of granular lithic materials, such as sandstone, often obscures wear attributes.

Hypothetical systemic function: Represents the stationary component involved with grinding activities associated with the processing of plant and animal foods.

Research value: Needs considerably more study; may relate to particular subsistence modes and exploitive techniques.

- Discoidals

Morphological definition: A disc-like object with parallel faces which are slightly convex. Faces and outer surface of the periphery have been ground. Concavities are often pecked into the center of one or both faces. Surface texture ranges from smooth to rough.

Potential errors: It is possible that some discoidals may be identified as bifacial, shaped manos.

Hypothetical systemic function: The function of these groundstone artifacts is undetermined at this point. Hypotheses include gaming pieces, transitional forms of cogged stones and fire-drill platforms.

- Non-diagnostic Groundstone

Those groundstone artifacts lacking diagnostic attributes or surfaces that would allow the researcher to type or categorize such implements.

## FLAKED LITHICS

### Production Waste

- Cores

Morphological definition: Any piece of parent material, cobble or boulder, which exhibits evidence of intentional removal of flakes as indicated by the following attributes:

- Presence of one or more flat surfaces (striking platforms) from which flakes were removed.
- Presence of a negative bulb of percussion.
- Absence of wear patterns.

Potential errors: May be identified as unifacial tools, such as domed scrapers or pushplanes.

Hypothetical systemic function: Remnant of the process of manufacturing flakes; reduction is generally by hand-held percussion. In many cases, expended cores have been utilized as tools.

Research value: Size and shape may reflect varying methods of flaking which produce definite types of flakes or blades.

- Flakes

Morphological definition: Any piece of lithic material removed from a core or tool, by the application of force, exhibiting the following characteristics:

- A striking platform.
- A bulb of percussion.

Flakes may be detached from cores by two basic techniques; percussion or pressure flaking. Pressure flaking is a process involving removal of material from a core by a pressing force. Percussion flaking involves a striking force.

A flake may be any size or dimension, depending on the technology used for detachment. Typological blades are those flakes with a length-width ratio of at least two to one.

Potential errors: Error is diminished if both attributes listed above are present. Natural circumstances may also create qualifies similar to intentionally detached flakes.

Hypothetical systemic function: Byproducts of the process of flaked-stone tool manufacture.

Research value: Indicate exploitation of lithic veins, dikes, and/or cobbles. They may also be indicative of specific lithic technology, such as the bipolar technique, wherein the flake is the desired end result.

- Debitage

Morphological definition: Production waste not possessing a striking platform or a bulb of percussion. A negative bulb is observable on many pieces ofdebitage.

Potential errors: It is often difficult to distinguish between objects occurring in nature and those that are the result of intentional removal from core.

Hypothetical systemic function: Byproduct of core reduction or flaked-tool production.

Research value: Indicative of source material.

## UNIFACIAL TOOLS

- Sidescrapers

Includes the following types: Bilateral double convergent, unilateral straight, convex sidescrapers, bilateral convergent, unilateral convex, unilateral concave and notched.

Morphological definition: A flake tool with marginal retouch on the lateral area of the flake. Whereas a bilateral double convergent sidescraper has continuous retouch around the entire margin or edge of the flake, a unilateral straight sidescraper has retouch on one side only and forms a relatively straight line along said area. A convex sidescraper has retouch on one side only, forming a convex outline.

Potential errors: Relatively few; type is fairly easy to identify.

Hypothetical systemic function: Varying in function, possibly ranging from light woodworking to plant food processing such as pulping or de-twigging.

- Endscrapers

Basically, a flake or blade exhibiting continuous retouch at distal or proximal end(s); often present a more or less convex, rarely straight, working edge.

Potential errors: Relatively few; type is easy to identify.

Hypothetical systemic function: Same as sidescrapers.

- Domed Sidescrapers

Morphological definition: A sidescraper, oval in outline, plano-convex in cross section with a small hump in the central portion of the dorsal side. Flaking is steep and accomplished by percussion around the periphery of the cortical surface, forming a flake scarred hump.

Potential errors: Often they are indiscernable from convergent sidescrapers; therefore the typological placement is an arbitrary decision.

- Pushplanes

Morphological definition: Steeply retouched tools not made on a flake or cobble, but rather a somewhat large, tabular stone.

Potential errors: As locally defined, there is very little problem in isolating and identifying this type, although in actuality they may intergrade with other scrapers, choppers, or possibly even cores.

Hypothetical systemic function: Ethnographic literature and local archaeological tradition suggest a plant processing function similar to pulping or scraping; this is presently under debate.

Research value: Needs considerably more study; may relate to particular subsistence modes and exploitive techniques.

- Non-diagnostic Unifacial Tools

Those unifacial tools or tool fragments lacking complete diagnostic attributes or surfaces that would allow the researcher to type or categorize such implements.

BIFACIAL TOOLS

Although choppers and chopping tool types are morphologically within this category, they have been placed in the amorphous tools series.

- Projectile Points

Morphological definition: Symmetrically pointed biface with low edge angle (less than 45 degrees), exhibiting preparation to facilitate hafting. Bases may be straight, concave or convex; sides (shoulders) may be notched, concave or convex; tips may be rounded, extremely pointed or irregular. Subtypes follow D.L. True (1970:21-28).

Potential errors: Categorizing and typing of projectile points is fraught with serious potential for error and ambiguity; it is impossible (from a morphological stance) to accurately describe actual function because the category may include arrowpoints, spearpoints, dartpoints, gravers, drills and punches; it is probable that a given point served several functions from the time of its manufacture to its disposal.

- Blades

Morphological definition: Any flake or portion of a flake maintaining relatively parallel sides. Blades may be retouched unifacially or bifacially in partial or complete position.

Potential errors: Some blades may be unfinished points, knives, or preforms.

Hypothetical systemic function: Probably used as knives or cutting implements to cut, sever, or do light scraping. May be indicative of activities requiring more controlled and specialized cutting than those associated with scrapers.

- Bifaces

Morphological definition: Generally, bifaces are worked pebbles, cobbles or large flakes which exhibit total or comprehensive retouch on both faces.

Potential errors: May sometimes intergrade with other bifacially worked implements.

- Non-diagnostic Bifacial Tools

Those bifacial tools or tool fragments lacking complete diagnostic attributes or surfaces that would allow the researcher to type or categorize such implements.

Potential errors: May sometimes intergrade with cores or steep-angled scrapers. The primary diagnostic wear pattern attribute is considered to be the absence of extreme battering on an edge greater than 90 degrees.

### AMORPHOUS TOOLS

Tools in this category are made of cobbles or pebbles and may be unifacial or bifacial. Such a distinction may be tentatively justified, based upon gross weight differences and the source of the tool blank, i.e., a cobble.

- Choppers (includes convex and concave choppers)

Morphological definition: Generally a cobble with flakes removed unifacially to produce a sharp cutting edge and exhibiting wear patterns.

Hypothetical systemic function: Possibly used in the processing of plant foods, butchering, or preliminary woodworking.

- Chopping Tools

Morphological definition: Basically the same as a chopper, except flakes are bifacially removed; most specimens have a convex outlined working edge.

Potential errors: Morphologically few; these may sometimes intergrade with others of the cobble series.

Hypothetical systemic function: Possibly the same as choppers, except for a slight difference in the edge angle, i.e., acute versus obtuse; probably used for plant processing, pulping, crushing, or any function requiring both crushing and cutting.

- Inverse Choppers

Morphological definition: Essentially the same as a chopper, except the cobble is split in two, in the direction of its flatness.

Potential errors: If cortex is absent, these may be confused with pushplanes, domed scrapers, or cores.

Hypothetical systemic function: Probably the same as chopping tools.

- Hammer-pounders

Morphological definition: Any rock exhibiting varying degrees of battering on one or more sides. Battering is often found on cobbles and on what appear to be expended cores.

Potential errors: More research should be conducted because it is evident that this category includes a number of different types, i.e., crushers, hammers, pounders, etc.

Hypothetical systemic function: Undoubtedly, a wide variety of functions, from percussors used in tool manufacture to pulverizing instruments.

Research value: Differentiation between battering resulting from crushing or pounding and that resulting from a function of core reduction. Size or density and composition of lithic material may indicate different functions.

#### COMPOSITE TOOLS

Morphological definition: Composite tools are implements that defy categorization into a specific class because of multi-use, i.e., grinding, chopping, battering and concomitant variables in morphology, i.e., ground surfaces, fractured edges or flake removal.

Potential errors: Many may represent tools that have gone through several different uses or were used for a variety of functions during a single work effort.

Hypothetical systemic function: Probably a multi-functional tool to which no specific function can be ascribed at this time.

#### MISCELLANEOUS MODIFIED LITHICS

- Utilized Flakes

Morphological definition: A flake exhibiting modification due only to utilization, i.e., non-retouched.

Potential errors: There may be a bias toward flakes whose material composition is such that utilization modification is readily evident.

Hypothetical systemic function: A generalized cutting and/or scraping function requiring a low edge angle (less than 30 degrees) and a small expenditure in production labor.

Research value: May be indicative of sites of a temporary nature, or where variables such as accessibility to lithic resources intervened.

- Retouched Flakes

Morphological definition: Any flake or blade exhibiting discontinuous, apparently random retouching, by percussion or pressure-flaking on any edge(s).

Potential errors: It is possible that this assumed type actually represents broken blades, projectile point fragments, or utilized flakes.

Hypothetical systemic function: The presence of these flakes may indicate manufacture and use of a basic cutting tool or reuse of broken blades or points.

#### ECOFACTS

Morphological definition: Generally, ecofacts are those materials or resources found on an archaeological site that are out of their natural context but show little or no intentional alteration by human activity. In this report, we are including five lithic ecofacts as follows:

ORA-496	Shot 5	schist cobble
ORA-700	Catalog No. 14	green chert nodule
ORA-825	Shot 20	chert nodule
ORA-831	Shot 8	quartz crystal
ORA-829	Shot 24	chert nodule

Potential errors: Since no specific artifact types are assigned to these specimens, there is practically no error involved. They were retained as examples to be referred to in case other similar specimens were discovered.

Hypothetical systemic function: These were noted not because of any presumed function but because of the uniqueness of their material to the site area and, in the case of the green chert nodule, because it was not identifiable in the field.

#### 8.2.2 Non-Lithic

#### CERAMICS

Morphological definition: The ceramic sherds recovered are all examples of locally produced Tizon Brown Ware. As described by Dobyns and Euler (1958), this ware is a coil/paddle-and-anvil ceramic fired in a poorly controlled oxidizing atmosphere.

The color varies from black, gray and brown to red. Temper is sub-angular to rounded quartz, feldspar or mica inclusions. The fracture is noted as crumbling; texture, coarse to medium fine; decoration, apparently rare. Distribution of Tizon Brown Ware extends from the Catarack Creek/Gila River area west into coastal San Diego County and northward into Orange County.

Potential errors: Relatively little, although local attempts to define subtypes have possibly led to some over-categorization and development of invalid types.

Hypothetical systemic function: The ceramics recovered during surface collection are all sherds representative of vessels. Clay vessels served a variety of functions in prehistoric society, including water containers, parching platters, storage pots, cooking pots, cremation urns, and granary jars. No evidence of ceramic ornaments, effigies or clay pipes was discovered.

#### HISTORIC ARTIFACTS

Chronological definition: Those artifacts created by or as a result of European-American occupation (ca 1542) to present day.

## SECTION IX

### MILLING DEFINITIONS AND DISCUSSION

#### 9.1 INTRODUCTION

Milling of floral, faunal and mineral resources to produce culturally useful products has taken place in southern California for several thousand years. Archaeological evidence of these activities is primarily discovered in the form of bedrock milling surfaces, stone portable milling surfaces and opposing stone, hand-held implements. Historic, ethnographic and archaeological descriptions of the various milling surfaces and implements over the past 200 years have often been ambiguous. The purpose of the following discussion is to establish morphological definitions of milling items from San Diego, Imperial, Orange, and Riverside Counties and eliminate ambiguity of bedrock and portable milling data facilitating intra-site comparisons of milling items.

Functional categorization of milling items may be useful to archaeological study, but is at this time not possible due to a lack of data. Descriptions of observed milling practices are compiled almost exclusively from a variety of post-European and recent reports which encompass only the last 200 years of a 7000-year milling history. Functional information presented in this discussion is, therefore, known to be pertinent to only a small span of human activity and can only be indirectly applied to earlier cultural phases.

Late post-European inhabitants of southern California are often referred to as being associated with Milling Cultures. This term reflects the abundance of milling or grinding surfaces situated on bedrock located at occupation sites. A more thorough investigation and analysis of the artifact assemblages have led archaeologists to the identification of at least two such cultural horizons (see Section III).

Malcolm Rogers first described the existence of a "shell midden people" or La Jolla culture in 1929 and more accurately in 1945 (Rogers 1929, 1945). D.L. True (1959) documented an inland complement to the La Jolla group, termed the Pauma Complex. The La Jolla/Pauma Complex exhibits the earliest known milling evidence (Wallace 1955), dating to between 3900 years and 7500 years before present (BP) (carbon dates by Moriarty, Shumway and Warren 1959; Carter 1957; Crane and Griffin 1958; Hubbs, Bien and Suess 1960).

Cultural horizons which followed the advent of the milling tradition include peoples designated by a variety of names. Recognized milling group names (some being synonymous) within southern California include La Jolla II, Oak Grove, Amargosan, Yuman I, II and III, San Luis Rey I and II, Luiseno, Kumeyaay (Diegueno), Cahuilla, Cupeno, Kamia and Juaneno.

Continued use of particular bedrock milling sites (as evidenced by adjacent subsurface data) created a synchronic milling record. During the estimated 7000 year history of milling in southern California, generations of food gatherers and hunters processed plant material and to a lesser extent, animal and mineral resources. Even though there may have been significant variations in milling technology and function during this period of time, development and possible evolution of milling surfaces can only be viewed cross-temporally using the bedrock record. With more data relating milling components to specific temporal components, a more complete archaeological interpretation of milling evolution may be established.

Throughout this discussion, the process of milling has been divided into two basic actions: "pounding" and "grinding." These two words describe two different actions which were, in fact, probably performed independently during some milling operations and in conjunction during other operations. To pound a substance upon a

milling surface refers to a vertical percussion motion of the hand-held milling implement. Grinding refers to horizontal milling action in which a substance is milled upon a surface by a back-and-forth or circular motion of the hand-held milling implement. Generally, each of these two motions would produce diagnostically divergent milling surfaces.

## 9.2 DEFINITIONS OF MILLING SURFACES AND IMPLEMENTS

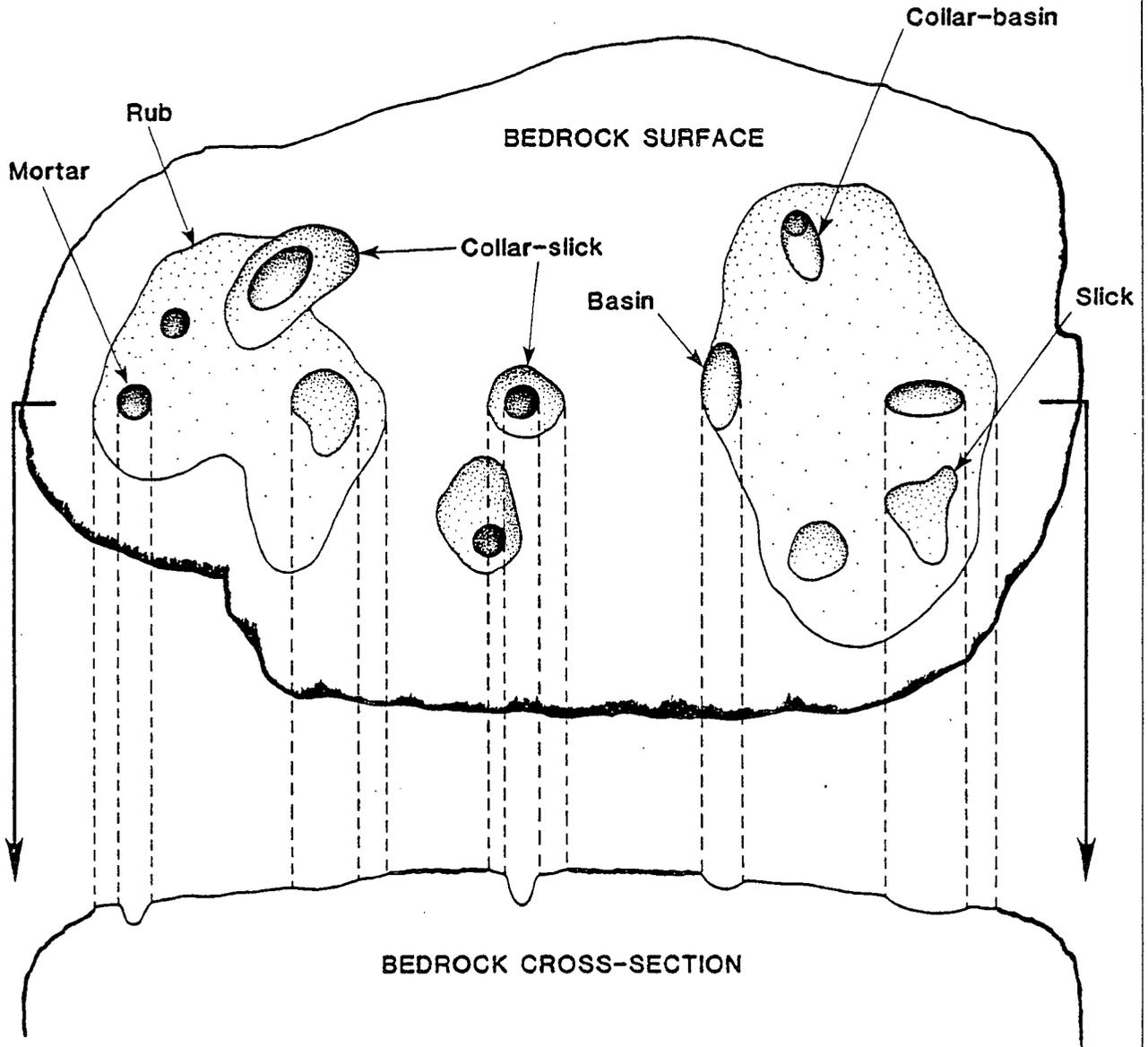
Any categorization of milling surfaces and implements is to some degree generalized and arbitrary. When identifying portable surfaces, hand-held implements, and particularly bedrock milling surfaces, any standardized form (e.g., mortar, slick, mano, pestle) can be found in an intermediary or variant state. The definitions set forth here, therefore, will encompass the vast majority of milling surfaces and implements of southern California, but may not include uncommon or variant forms.

The following definitions are based upon descriptive works by numerous authors (e.g., Bean and Saubel 1972; Gifford 1931, 1934; Hudson 1977; McCown 1955; Spier 1923) and upon over 50 milling site studies conducted by WESTEC Services, Inc. in southern California.

9.2.1 Bedrock Milling: Bedrock milling refers to milling surfaces or elements located upon rock outcroppings or immovable boulders (Figure 9-1). Barrows (1900) speaks of an elderly Cahuilla woman who carried a portable mortar weighing 150 pounds with great ease. "Immovable" boulders therefore must have a minimum weight somewhat greater than 150 pounds. Bedrock composition is most commonly granitic or gabbroic in southern California, but when this resource is unavailable sandstone, schist, and basalt stone may have been used.

- Mortar

Mortars are the most recognizable milling elements, reaching depths up to of approximately 25 centimeters. The element is round, as viewed from above,



0 50 cm.

*J. Becken*

Bedrock Milling Elements

FIGURE  
9-1

with diameter measurements varying from approximately 5 centimeters to 20 centimeters. Cross-section is semi-circular to parabolic in shape. The milling surface is generally smooth from milling wear, unless there has been erosional decomposition of the bedrock. Mortars usually remain visible in the presence of bedrock decomposition. Mortars in Baja California (Michelsen 1967) occasionally exhibit "pecking" on their surfaces. Development may be solely an evolutionary deepening process from slick to basin to mortar, or may initially involve "pecking" a rough shallow depression at the desired bedrock location. Other milling elements which may directly border the mortar are rubs, collar basins, collar slicks, and side mortars. The hand-held milling implement used in conjunction with the mortar is the pestle.

- Basin

A relatively shallow, oval depression, the basin rarely exceeds a depth of 5 centimeters. Horizontal dimensions range from a length of approximately 15 centimeters to 40 centimeters and a width of 10 centimeters to 20 centimeters. The elongated shape of this element reflects a directional "angle of rub" across the long axis. Cross-sectional form is semi-circular, widthwise, and semi-circular to semi-elliptical, lengthwise. The surface of the basin is generally smooth from milling wear, but may become rough due to natural bedrock decomposition, occasionally becoming obscured due to severe bedrock decomposition. Michelsen (1967) reports the practice of "pecking" milling surfaces in Baja California to attain a desirable abrasive surface. Milling elements which may be found bordering the basin are rubs and collar slicks. The mano is usually the hand-held implement used in conjunction with the basin. Gifford (1931) reports that the Desert Kumeyaay (Kamia) used mullers in association with the rectangular-shaped basin, although this form usually occurs in a portable form and not on bedrock.

- Slick

Slicks are localized milling surfaces, usually exhibiting depth in relation to the original bedrock surface. Shape, size, and depth are variable. Even though the diameter is usually less than 30 centimeters to 40 centimeters, adjacent slicks may overlap, producing a large, amorphous milling surface. There is no discernible "angle of rub," indicating that horizontal milling wear is multi-directional. Depth is generally less than 2 centimeters, and in many cases may not be measurable. Slicks are very susceptible to bedrock composition, becoming undetectable with relatively little weathering. A slick may be found directly adjacent to a rub. The milling implement used in conjunction with the slick is the mano.

- Rub

A bedrock surface that exhibits smooth milling wear but no detectable depth or localization is a rub. Shape and size of this element is highly variable ranging from a very small (approximately 5 centimeters by 5 centimeters) surface to an encompassing rub that may cover the entire top surface of a bedrock or boulder. This feature is highly susceptible to bedrock decomposition. Any amount of weathering may either obliterate the entire element or remove a majority of it. A rub may be in direct association with and encompass all other bedrock milling elements: mortars, basins, slicks, collar slicks, and collar slicks. The implement used in conjunction with the rub is the mano.

- Collar Basin

This element is a morphologic basin with a mortar inside its perimeter (see basin definition). The collar basin may either completely surround the mortar, may be bisected by the mortar, or may be adjacent to one side of the mortar. As a morphologic basin, this element possesses a long and a short axis with the "angle of rub"

coinciding with the long axis. Whether the mortar evolved subsequent to the basin associated with it or the collar basin was created coincidentally with the mortar is not clear and may vary between individual elements. Like a basin, the basin is moderately susceptible to bedrock decomposition. The general form of the element may remain visible even though the smooth milling surface has eroded away. The mano is the implement used in conjunction with the collar basin, but because of the intimate association with the mortar, the pestle may have also been used to create this element.

- Collar Slick

As a morphologic slick (see slick definition), the general dimensions of the slick/collar are basically the same as the slick. Like the collar basin, this element is in direct association with deeper milling elements: basins and mortars. The basin or mortar found in association may be surrounded by or adjacent to the collar slick. Depth of the collar slick may be as great as 5 centimeters, particularly when associated with a deep mortar. There is no discernible "angle of rub" as in a basin or collar basin. Depending on the original depth of this element, erosion of the bedrock may have severe impact upon recognition of the collar slick. The implement used in conjunction with the slick collar is the mano, particularly when the feature is in association with a basin. When the element is in association with a mortar, it is probable that the pestle was directly or indirectly applied to the development of the element.

- Miscellaneous Bedrock Elements

Occasionally, culturally produced bedrock elements other than those previously described appear upon bedrock milling sites or completely disassociated from bedrock milling. Some of these manufactured elements are obviously not formed by resource milling, but probably possess other practical or religious applications.

McCown (1955) refers to a bedrock "side pocket," an element occasionally in direct association with a mortar. This element is crescent to kidney-shaped,

usually not broader than the diameter of the adjacent mortar. Depth varies from approximately 1 centimeter to 5 centimeters, often proportional to the depth of the associated mortar. This element differs from the collar slick or collar basin in that there is not a descending continuity from the element into the deeper adjacent mortar. The pestle was used in conjunction with this element. Distribution of this element in southern California is not as ubiquitous or common as the previously described elements in this section. Locations where the side mortar have been reported are Temecula (McCown 1955), Santa Ysabel (Carrico and Taylor n.d.) and Cuyamaca (True 1970). Another infrequently recorded bedrock element is a "rut"; an elongated groove with its length dimension being over twice that of the width. Lengths and widths may vary from 12 centimeters to 35 centimeters and 6 centimeters to 9 centimeters, respectively. The lateral perimeter of the element may be slightly curved or parallel and in cross-section are parabolic. Troughs may be found independent from milling elements or may be encompassed by a slick or rub. Few recorded occurrences of troughs (Phillips and Carrico n.d.) in southern California exist. Those elements recorded in the Penasquitos Canyon area of San Diego County are found on sandstone bedrock, and hence do not have smooth or polished surfaces. The steep sided cross-sectional profile of this element suggests that the typical hand-held implements such as the mano, pestle or muller were not applied to the bedrock surface.

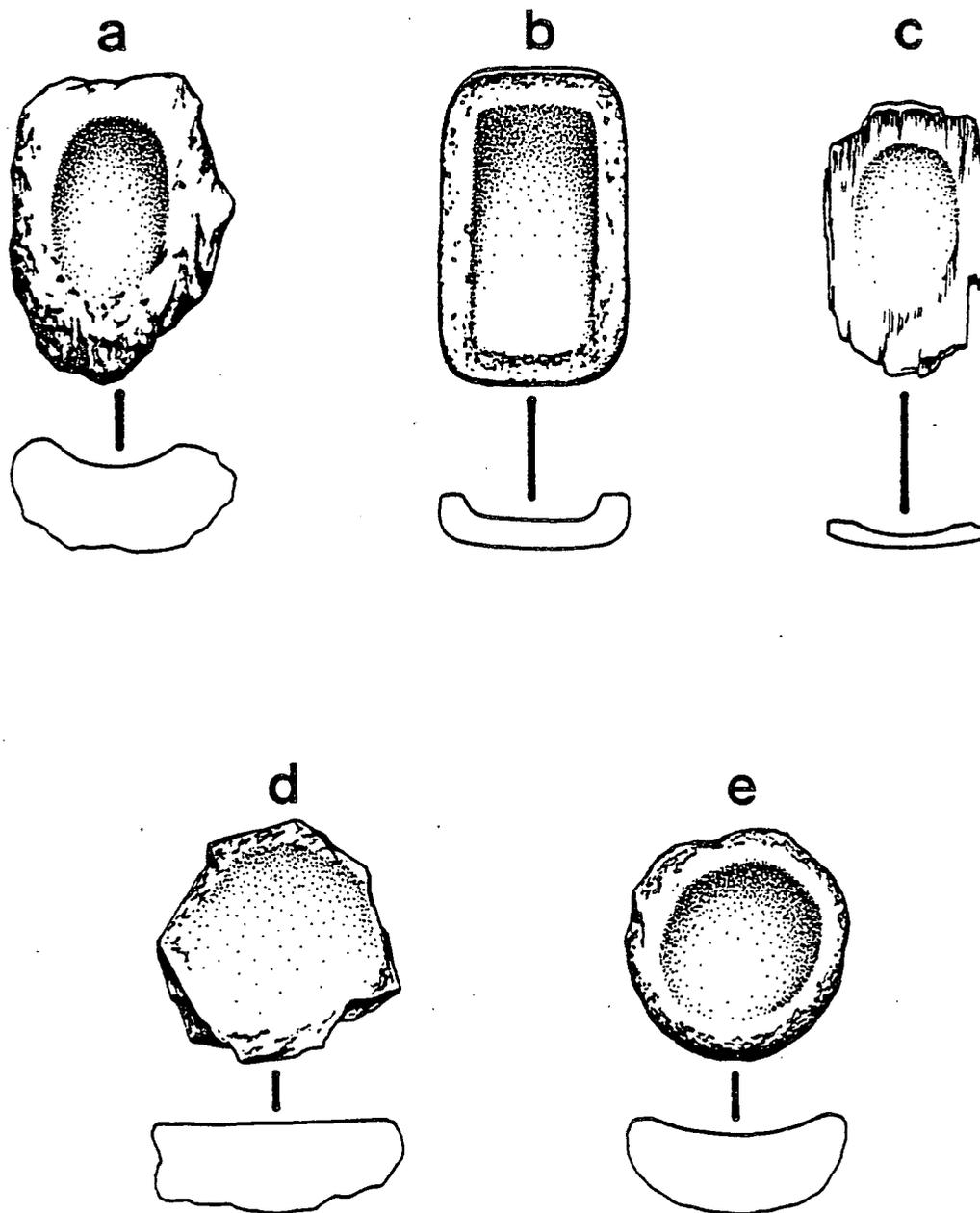
Other infrequent bedrock elements may exist upon southern California archaeological sites that may, upon initial inspection, appear to be a product of milling activities. These may, indeed, be elements deserving of categorization or may be variants of the elements previously described. Certain elongate linear and curvilinear grooves and small round depressions which are in the realm of rock art (Busby et al. 1978; Steward 1929; Minor 1975) are found in many areas of Southern California.

9.2.2 Portable Milling: As stated previously in this discussion, the distinction made between portable and non-portable (bedrock) milling surfaces is often not a clear division. Generally speaking, however, a portable milling surface occurs upon a portion of stone or wood, usually less than 150 pounds, capable of being lifted or dragged over any distance. Material upon which portable milling surfaces are created include cottonwood and mesquite logs, granitic block and large cobbles, sandstone block and slabs, schist slabs and other assorted stone sources. Many portable milling remnants found upon archaeological sites possess a flat or concave milling surface, yet are so fragmentary that they are classified as portable milling fragments or groundstone fragments.

- Metate

A metate is a piece of shaped or unshaped stone or wood which exhibits a horizontal milling surface on one (rarely more than one) face. The shaped stone metate with legs that occurs in the Southwest and central Mexico does not occur in southern California. Generally, the milling surface is smooth. Michelsen (1967) noted that in Baja California, metates from inland sites occasionally exhibited textured or "pecked" surfaces. Hand-held implements used in conjunction with the metate are the mano and muller. Horizontal milling surfaces may represent either a basin or slick, as defined in the bedrock section, earlier in this discussion. These two distinctions, portable basin and portable slick, can be made, but should be recognized as subcategories of the metate (Figure 9-2).

Portable basin milling surface descriptions are consistent with that of the oval bedrock basin with the addition of a rectangular form (Gifford 1931). Both of these forms, the oval and rectangular, exhibit bilateral direction of the milling surface. Composition of the portable basin is granitic with localized occurrences of sandstone or schist. Portable basins made of wood are not common, probably due to their perishable



0 30 cm.

*J. F. Hester*

Metates  
A, B: Portable Basin (Stone)  
C: Portable Basin (Wood)  
D, E: Portable Slick (Stone)

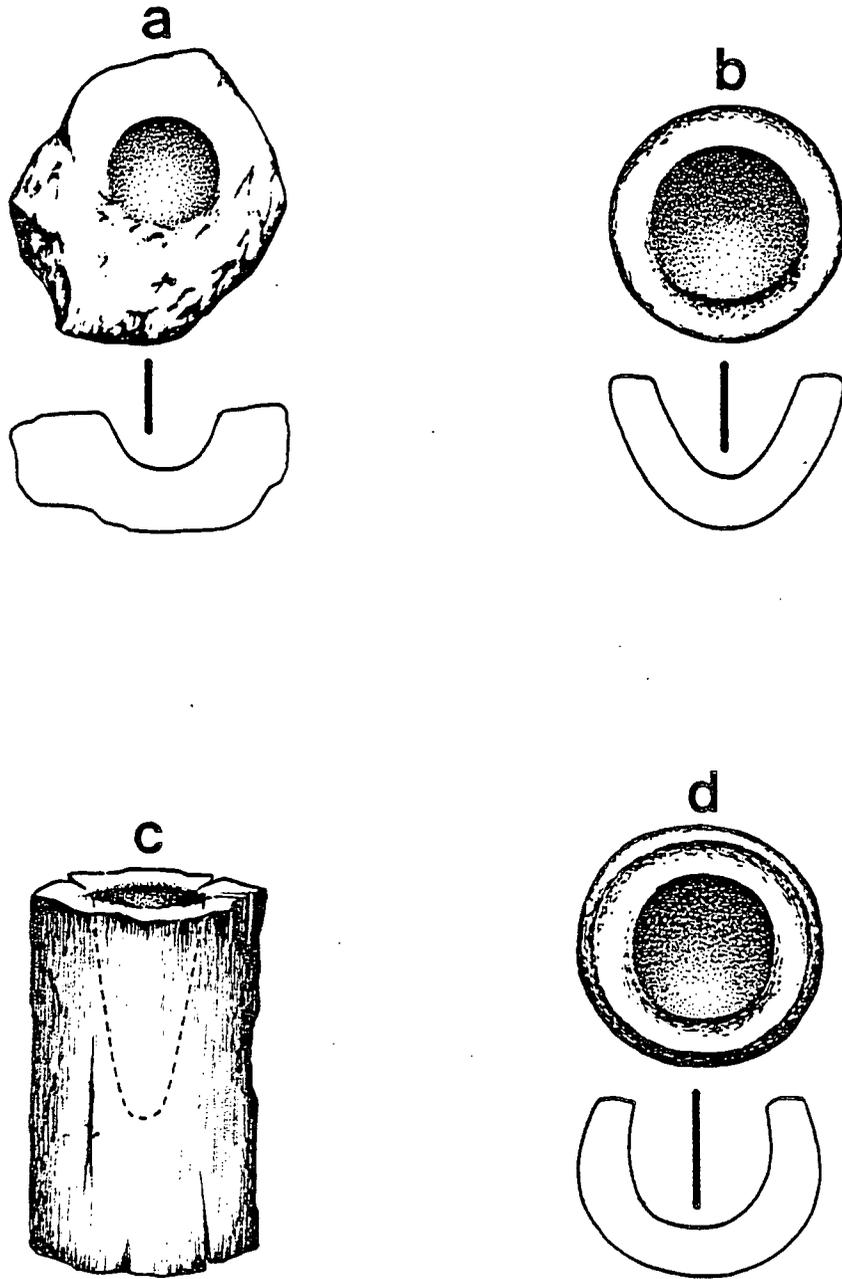
**FIGURE  
9-2**

nature. A portable basin made from a mesquite plank has been recorded in the Anza-Borrego area (Minor 1976:personal communication). A historic contact site along the San Luis Rey River produced a portable basin made upon a floor tile, perhaps from the Mission San Luis Rey (Carrico 1980:personal communication).

Portable slick milling surfaces exhibit multi-directional milling and generally occur in a round or amorphous shape. Depth of this surface, similar to that of the bedrock slick, may vary from a flat surface to approximately 5 centimeters.

- Portable Mortar

This milling surface may be located upon a stone cobble, block or slab, or upon a wooden log (Figure 9-3). Just as the bedrock mortar diagnostically differs from the basin and slick, the portable mortar differs from the metate. Produced by the vertical pounding action of a pestle, this surface is usually round and has a semi-circular or parabolic cross-sectional profile. Depth may vary from approximately 1 to 15 centimeters on stone and 5 to 40 centimeters on wood. Shaped or unshaped stone portable mortars, usually made of granitic or occasionally sandstone material, are widespread in cismontane southern California, but are often replaced by the cottonwood mortar in the desert areas (Bean and Saubel 1962; Gifford 1931, 1933; Spier 1923). Cottonwood mortars, made from logs approximately 0.6 meter to 1.0 meter long, may appear burned along the outer margin of the mortar hole, remaining from of the initial development process (Bean and Saubel 1962; Gifford 1931). A long (0.7 meter to 1.0 meter) stone or mesquite pestle is used in conjunction with a cottonwood mortar (Gifford 1931). A stone pestle is generally used with a stone portable mortar. An unweathered portable mortar generally has a smooth milling surface, however, in Baja California, certain mortars are pecked to achieve more abrasion (Michelson 1967).



0 30 cm.

*J. Hester*

A, B: Portable Mortar (Stone)  
C: Portable Mortar (Wood)  
D: Stone Bowl

**FIGURE  
9-3**

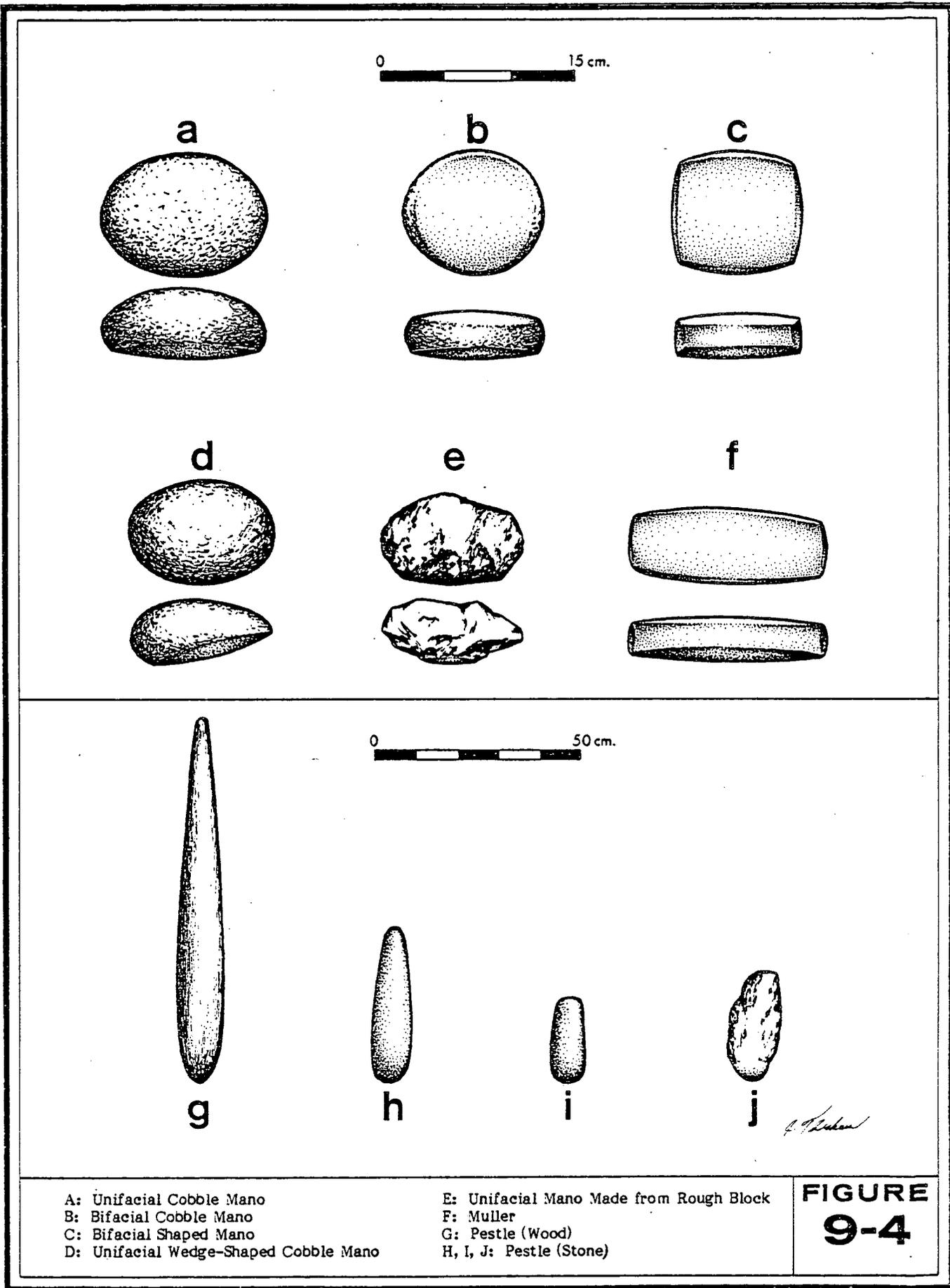
- Stone Bowl

Stone bowls are morphologically similar to portable stone mortars, but because of their ethnographically recorded functions cannot be entirely categorized as milling items. Stone bowls (stone vessels) are found throughout southern California particularly along the coast and upon coastal islands. Generally, a stone bowl has a broader diameter (15 centimeters to 30 centimeters) than a portable stone mortar, and often has straight or constricted inside walls near the vessel opening (Hudson 1977). Decorative incising or shell inlay occasionally occurs on these items (Hudson 1977; Reinman and Eberhart 1980). Bowls were used as cooking vessels as well as mortars.

- Miscellaneous Portable Milling

Virtually all of the portable milling surfaces found in southern California are described in the preceding definitions. Items not included in these categories occasionally occur and have been recorded. One such item is the "anvil stone" described by Hudson (1977) as an irregular or regular slab or cobble used for pounding or battering. Whether this can actually be classified as a milling surface is unclear. The surface of the anvil stone is worn and textured, but does not exhibit the smooth surface continuity of a metate.

9.2.3 Milling Implements: During the process of milling, the operator pounds or grinds the desired material upon the milling surface with a hand-held utensil (Figure 9-4). The utensil (milling implement) is made most commonly of stone, and in desert areas is occasionally made of mesquite wood. As milling surfaces can be divided into two groups based upon the two actions of grinding and pounding, so too can the milling implements be divided. Grinding operations are associated with the mano and muller, while pounding is accomplished with a pestle.



- Mano

Manos or mano fragments are found on many milling sites in southern California. Selected to fit into the palm of the hand, the mano measures from 5 centimeters to 20 centimeters in diameter (Aschmann 1949). Shape is usually round or oval, but can also be rather irregular or shaped along its margin. Most typically, a mano is formed from an oblate cobble. Milling can be performed on one face, producing a unifacial mano, or on two faces, producing a bifacial mano. The worn face(s) of a mano have a rather distinct region upon the implement with noticeable alteration of the natural stone contour. Ground surface(s) of a mano can range from a planar to an arched convex profile, usually produced upon the more flattened natural surface. When one or two faces of a mano are worn oblique to the naturally flattened cobble surfaces, a wedge-shaped implement may result. Oval and shaped manos were likely applied to the opposing milling surface in a bilateral direction (in reference to the mano surface). Such directionally oriented manos occasionally reveal wear patterns that can be seen by macro- or micro-visual inspection. Various rock types are used for manos, including granite, quartzite, sandstone, schist and porphyry. Opposing milling surfaces include basin, slick, rub, collar basin, collar slick, portable basin and portable slick. The shaping of manos may be one function of the rut bedrock element.

- Muller

The muller is actually, in form, a distinct variation of the mano. Kamia Indians of transmontane San Diego County and Imperial Valley reportedly collected naturally elongate stones up to 30 centimeters long, capable of being easily held in two hands (Gifford 1931). The muller is not common in cismontane southern California. A lateral side(s) was applied to the opposing milling surface, producing reduction

of the muller. Distal portions were not affected by this horizontal milling. The back-and-forth motion of the muller would produce an opposing milling surface with semi-parallel sides. Parallel-sided basins are generally portable and not found on mountain or coastal sites in southern California.

- Pestle

The pestle is an elongate milling utensil used for pounding material within a bedrock or portable mortar. Composition may be either wood or stone, the latter of which is much more prevalent and much more resistant to decomposition. Either wood or stone pestles may be shaped into a semi-cylindrical form from a more irregular natural shape, but ornate shaping is uncommon in Southern California. Wooden pestles are predominantly found in desert regions of Southern California and are made of mesquite wood. Mesquite pestles can be quite long, ranging from approximately 30 centimeters to 120 centimeters (Gifford 1931). Many specimens of wood pestles are blunt at the pounding end and continuously tapered to a rounded point at the distal end. The pounding end of the wood pestle may have a maximum diameter of approximately 10 centimeters. Stone pestles, found well distributed in coastal, mountain and desert environments, have a wide range of size and form. Typically, a water worn, naturally elongate granitic cobble was used as a pestle. Such cobbles are located in the numerous conglomerate formations, major waterways and shorelines throughout southern California. Length may range from 10 to 90 centimeters (Bean and Saubel 1962; James 1960; Michelsen 1967). This slightly tapered implement reaches a maximum diameter of 10 centimeters and a minimum of 5 centimeters at the pounding end. Sparkman (1908) states that pestles are merely made from a conveniently-shaped stone. Pestles do occur which are made of slender, irregular stone blocks without the symmetry of the cobble pestles. Manos and mullers may occasionally be used as a pestle, with manos exhibiting wear on lateral portions and mullers showing wear on distal ends.

### 9.3 ETHNOGRAPHIC MILLING DATA

Ethnographic information pertaining to milling practices of southern California's aboriginal occupants first appears in diaries of Pedro Fages, Miguel Costanso, Francisco Palou, and Gaspar Portola, who traveled northward by foot up the California coast from San Diego in July 1769. Since that time, soldiers, missionaries, ranchers, travelers, anthropologists, and Native Americans have made an assorted record of the disappearing aboriginal milling activities of the Indian cultures of southern California. The following information is a synthesis of the milling activities found in these relatively recent recordings covering the past 200 years.

9.3.1 Floral Resource Milling: Material that was reduced to a more desirable form upon milling surfaces falls into three basic categories: 1) floral, 2) faunal, and 3) mineral. Floral processing upon milling surfaces was an extremely important and time-consuming subsistence activity for native populations of Southern California. Diverse ecologically-determined variations of milling practices existed between regions such as coastal plain, inland foothills, mountains and deserts. Even though people from each region harvested different locally-available fruits and seeds with each resource requiring its own preparation procedure, milling surfaces and implements of all regions are surprisingly uniform in appearance.

Among coastal, foothill and mountain people, the nutritional staple was acorns of (in order of preference) the black oak (Quercus kelloggii), coast live oak (Quercus agrifolia), canyon live oak (Quercus chrysolepis), Engelmann oak (Quercus engelmannii), and scrub oak (Quercus dumosa) (Bean and Saubel 1972; Spier 1923). Many accounts describing the processing of acorns have been recorded, most of which consistently report that after shelling and drying, the acorn meat was ground in a mortar, sifted and further pulverized in the mortar (Sparkman 1908; Gifford 1931; Cuero 1968;

Bean and Saubel 1972). Generally, bedrock or stone portable mortars were used for this process (Sparkman 1908; Barrows 1900; Hill and Nolasquez 1973).

Other seed and fruit products that were milled by cismontane Native Americans were obtained from chokecherry (Prunus virginiana), hollyleaf cherry (Prunus ilicifolia), manzanita (Arctostaphylos spp.), pine (Pinus spp.), sages (Salvia spp.), prickly pear (Opuntia littoralis), ceanothus (Ceanothus sp.), yerba mansa (Anemopsis californica), various native and introduced grasses and a number of other species (Bean and Saubel 1972; Spier 1923; Cuero 1968). Larger seeds such as those of manzanita, pine and Prunus species were reduced to flour in stone mortars (Bean and Saubel 1972; Hill and Nolasquez 1973; Cuero 1968). Smaller seeds such as those of sage, prickly pear and grasses, were ground upon horizontal bedrock surfaces and metates (Bean and Saubel 1972; Cuero 1968; Gifford 1931; Sparkman 1908).

Desert people relied primarily upon the honey mesquite (Prosopis juliflora) and screwbean mesquite (Prosopis pubescens) for their nutritional needs (Bean and Saubel 1972; Hooper 1920; Gifford 1931, 1934). The entire bean pod is pounded in a stone mortar (Hooper 1920), or more commonly, in wooden mortars made of a mesquite or cottonwood (Populus spp.) log (Bean and Saubel 1962, 1972; Gifford 1931, 1934). Pestles used for mesquite reduction were made of either stone or mesquite wood (Gifford 1931, 1934). Seed from other shrubs and trees such as ironwood (Olneya tesota), palo verde (Cercidium floridum), catclaw (Acacia greggii), palm (Washingtonia filifera), juniper (Juniperus californica), pinon pine (Pinus monophylla), and jojoba (Simmondsia chinensis) were also ground into flour in a mortar (Bean and Saubel 1972). Gifford (1931) reports that Desert Kumeyaay (Kamia) used the mortar and pestle to process not only wild plant seeds, but also domesticated pumpkin seeds, watermelon

seeds, corn and beans. Other seeds of desert species milled in either mortars or horizontal surfaces include saltbush (Atriplex spp.), prickly pear (Opuntia mojavensis), seepweed (Sueda spp.), sage (Salvia spp.), ocotillo (Fourquieria splendens), and many annuals and grasses (Bean and Saubel 1972; Gifford 1931, 1934).

Desert, mountain and coastal people processed seeds, roots and other plant parts to produce non-food products. Jimsonweed (Datura meteloides) was used throughout southern California to produce hallucinations for boys undergoing puberty rites and by shamans (Bean and Saubel 1972; Gifford 1931, 1934; Hooper 1920; Spier 1923). The root of jimsonweed was dried and pounded in a small ceremonial stone mortar which, in some cases, was highly polished and decorated (Sparkman 1908). Plant parts of yerba mansa (Anemopsis californica), mistletoe (Phoradendron spp.), chia (Salvia columbariae), ribbonwood (Adenostoma sparsifolium), yerba santa (Eriodictyon spp.), wild garlic (Allium spp.), and coffeeberry (Rhamnus californica) were ground for medicinal purposes (Bean and Saubel 1972; Almstedt 1977). Soap for washing clothes and for hygiene was obtained by pounding the root of yucca (Yucca spp.) and from several parts of calabazilla (Cucurbita foetidissima) (Bean and Saubel 1972).

9.3.2 Faunal Resource Milling: Descriptions of Native Americans using mortars and metates for pulverizing small animals or larger animal bones and meat have been recorded in several published works (Cuero 1968; Michelsen 1967; Sparkman 1908; Gifford 1931). In relation to floral milling, however, it is clear that faunal milling (pounding) was not as prevalent or time-consuming to southern California aboriginal groups.

An entire small animal such as a cottontail rabbit (Sylvilagus spp.), woodrat (Neotoma spp.), or other rodent would be skinned, then completely pulverized (bone and all) in a mortar (Cuero 1970; Sparkman 1908; Michelsen 1967; Gifford 1931). A nutritious stew was made of the macerated product. Desert groups usually used cottonwood

mortars, while other groups used stone mortars for this process (Cuero 1970; Gifford 1931; Sparkman 1908). Animal bones, such as those of the blacktail jackrabbit (Lepus californicus), or mule deer (Odocoileus hemionus) were occasionally reduced to powder in a shallow stone mortar. Salt and water were added to produce a thick, edible paste (Michelsen 1967). Occasionally, the meat of large animals such as mule deer was tenderized in a mortar and stored (Sparkman 1908). In Baja California, additional texture was given to metate surfaces used for meat tenderizing by "pecking" the otherwise smooth surface (Michelsen 1967). Coastal people harvested abalone (Haliotis spp.) which were tenderized by pounding on a rock (Cuero 1970). It is not clear whether this was accomplished on any type of milling surface.

9.3.3 Mineral Resource Milling: Primarily, two categories of mineral products were processed on bedrock and portable milling surfaces: clay and pigments. The process of obtaining desirable potting clay involved the reduction of naturally occurring clay to a fine powder and, depending on the region, the addition of temper. Quarried clay would be broken into small pieces on a flat rock or on hard ground, followed by complete pulverization in a mortar or on a metate (Rogers 1936). Temper, which was either organic or inorganic, was sometimes added. Gifford (1931, 1934) reports that desert groups ground broken potsherds in wooden mortars and used it as temper. Dobyms and Euler (1958) report in their micro-analysis of Tizon Brown Ware that angular minerals such as mica, feldspar and quartz is present. These tempering materials may have been prepared by crushing them upon bedrock or portable rock surfaces.

Pigments were used in many social contexts by Native Americans of southern California. Pigments, which were made of both organic and inorganic materials were used in tattoos, body painting, pictographs, pottery, baskets, and other ceremonial and utilitarian objects. Natural colors (red, black, green, white and yellow) were most

commonly used. Mineral resources from which pigment was produced are hematite (red), manganite (black), limonite (yellow, brown, black) and cinnabar (red) (Heizer and Treganza 1944). These resources were extracted from quarries and pulverized by crushing it upon bedrock or portable rock surfaces, occasionally using small mortars (Sparkman 1908).

#### 9.4 SUMMARY

Milling was an extremely important aspect of late prehistoric aboriginal life in southern California, producing a great portion of the daily diet, medicinal products, potting clay and pigments. The perhaps 7000 years of milling activities in Southern California have produced a rich material assemblage of artifacts and bedrock milling elements currently being analyzed and interpreted by archaeologists. This discussion has attempted to categorize and define the prevalent bedrock milling elements, portable milling surfaces and milling implements which occur in southern California to achieve a degree of standardization in their recordation. Only when some form of standardization is attained can intra-site evaluations be conducted.

## SECTION X

### ARCHAEOLOGICAL SITE ASSESSMENT DESCRIPTIONS

#### 10.1 INTRODUCTION

This section consists of individual archaeological site descriptions based on in-field assessments derived from surface survey and subsurface testing of sites. Cultural resource inventories for all sites evaluated were determined by using field investigation techniques discussed in Section IX. Typological descriptions in Sections VIII and IX were used to analyze individual artifacts and features.

Technical Appendices, Volumes II and III (Appendices A through M) to this report, contain all site specific data used in evaluating and interpreting individual archaeological site significance. The state trinomial numbering system was employed as the primary reference for discussion of all sites assessed. Local numbering systems were incorporated to facilitate cross-reference between sites. Site descriptions are presented in order of actual in-field assessment, i.e., from north to south along project rights-of-way (see Section I). Site locations and UTM coordinates are provided in Appendix D.

Evaluation of site activity, type, cultural affinity, and the analysis of potential site significance were determined from previous and current investigation data, resulting in a final analysis of assessment research questions (see Section V).

10.2 SITE DESCRIPTIONS

10.2.1 Ora-831

Site Documentation

Previously Recorded By: J. Oxendine, W. Pink, B. Crespin (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-424.

Site Location

As Previously Recorded: On Irvine Mesa between two SCE towers.

Current Assessment: On Irvine Mesa, south of Silverado Canyon and east of Santiago Creek.

Site Vegetation

As Previously Recorded: Not noted.

Current Assessment: Dense Inland Sage Scrub Community. Heavy ground cover may be result of past burning. Five separate areas were cleared of ground cover. Surface artifacts (four) were exposed in three of the cleared areas.

Surface Cultural Material

As Previously Recorded: Chalcedony and metamorphic flakes and tools. Density of artifacts was low. Artifacts were found on soil pushed aside by road grading.

Current Assessment: Forty-seven widely scattered surface artifacts were cataloged and micromapped (Table 10-1). A majority of these artifacts occurred in association with unimproved and/or access roads. Seven shell fragments were also encountered in the unimproved road at the northern boundary of the site (Table 10-1). Chert was the most frequent lithic material; five of the twenty-four flakes catalogued exhibited characteristics common to the soft hammer percussion flaking technique. Microflakes were not evident within the surface inventory.

Table 10-1

Ora-831  
SURFACE ARTIFACTS

	<u>Total</u>	<u>%</u>
Core	1	2.1
Flakes	24	51.1
Debitage	17	36.2
Hammer-pounders	3	6.4
Utilized Flake	1	2.1
Retouched Flake	<u>1</u>	<u>2.1</u>
TOTAL:	47	100.0

Ora-831  
SURFACE SHELLFISH REMAINS

	<u>Hinge Count</u>	<u>Total</u>
Shell		
<u>Chione</u> sp.		4
<u>Ostrea</u> sp.	1	1
<u>Pecten</u> sp.	1	1
Unidentified	1	<u>1</u>
		7

Table 10-1 (Continued)

Ora-831  
SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

Unit	0-10 cm.		10-20 cm.		20-30 cm.		30-40 cm.		40-50 cm.		50-60 cm.		Total	%
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>		
Mano														
Unifacial, Unshaped (fragment)	-	-	-	-	-	-	-	1	-	-	-	-	1	9.0
Flakes	1	1	1	2	-	1	-	-	-	-	-	-	6	54.5
Debitage	-	-	-	1	-	2	-	-	-	-	-	-	3	27.5
Hammer-pounder	-	-	-	-	-	-	-	1	-	-	-	-	1	9.0
<b>TOTAL:</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>100.0</b>

Ora-831  
CULTURAL ACTIVITIES AS REPRESENTED BY ARTIFACT TYPES

	<u>Grinding</u>	<u>Flaking</u>	<u>Cutting/ Scraping</u>
Surface	-	96.0%	4.0%
Subsurface	9.0%	91.0%	-

#### Subsurface Cultural Material

As Previously Recorded: Subsurface test excavation suggested.

Current Assessment: Two test units were excavated (Table 10-1). A total of 11 artifacts was encountered subsurface, ranging from 20 centimeters to 40 centimeters below original ground surface. One ecofact, a quartz crystal, was also noted in Unit 2 at a depth of 30 centimeters to 40 centimeters. Pollen analysis indicated climatic conditions similar to present conditions and consistent with present-day Southern Grassland Community.

#### Site Dimensions

As Previously Recorded: 50 meters by 80 meters.

Current Assessment: 80 meters by 100 meters.

#### Site Integrity

As Previously Recorded: SCE access road ran through site.

Current Assessment: Site disturbance is primarily due to grading activities associated with SCE access road and an additional unimproved road near the northern boundary of the site. Depth of grading ranges from 20 centimeters to 30 centimeters. The entire site area appears to have been burned during the recent past, as evidenced by charred vegetation.

#### Site Activity/Type

As Previously Recorded: Not noted.

Current Assessment: As evidenced by total site cultural inventory (58 items), artifact types represent limited extractive tasks with tool production (core and hammer-pounders, flakes and debitage), cutting or scraping (utilized flake, retouched flake), and grinding (mano). All lithic material may be locally obtained.

#### Site Cultural Affinity

As Previously Recorded: Not noted.

Current Assessment: Cultural affinity is not well-defined at site Ora-831. The single mano encountered during subsurface testing may be indicative of site use during the Milling Stone Intermediate/Late Horizons. Record search data reveals another limited lithic scatter known from survey only, Ora-847, to the west of site Ora-831, one-quarter mile beyond the project right-of-way on Irvine Mesa. Assessment has not been undertaken to determine relationship between these sites.

#### Site Significance

As Previously Recorded: Not noted.

Current Assessment: Site Ora-831 most likely represents an extractive area where minimal tools were required for food procurement. Limited shellfish remains did not permit assessment of site seasonality. Subsurface cultural deposition is not well-defined.

#### Site Settlement Pattern

As Previously Recorded: Not noted.

Current Assessment: As described in Section 10.3, site Ora-831 is probably related to sites Ora-830 and Ora-829 as extractive camps (work camp-work camp) with potentially similar cultural affinity based on artifact assemblages.

10.2.2 Ora-830

Site Documentation

Previously Recorded By: J. Oxendine, W. Pink, B. Crespin (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-423.

Site Location

As Previously Recorded: Along stream bank at 1120 foot elevation. SCE access road cut through a portion of the site.

Current Assessment: Ora-830 is located adjacent to an intermittent stream which flows westward into Santiago Creek.

Site Vegetation

As Previously Recorded: Coastal sage.

Current Assessment: Both Inland Sage Scrub and Southern Oak Woodland plant communities are represented at this locale. Ground visibility was not obstructed by vegetation.

Surface Cultural Material

As Previously Recorded: Oxendine, Pink and Crespin recorded flakes, tools and a metate as well as bedrock mortars along the stream bank. Lithic material was primarily quartzite, chalcedony, and chert.

Current Assessment: Twenty-five surface artifacts were located during the field reconnaissance including nineteen flakes and debitage and one each of the following: pestle, metate, core, pushplane, chopping tool, and retouched flake (Table 10-2). Lithic materials, in order of quantity observed, are chert, basalt and jasper. The soft hammer percussion technique of flake detachment is evident on almost

Table 10-2

Ora-830  
SURFACE ARTIFACTS

	<u>Total</u>	<u>%</u>
Pestle	1	4.0
Metate	1	4.0
Core	1	4.0
Flakes	8	32.0
Debitage	11	44.0
Pushplane	1	4.0
Chopping Tool	1	4.0
Retouched Flake	<u>1</u>	<u>4.0</u>
<b>TOTAL:</b>	<b>72</b>	<b>100.0</b>

Ora-830  
SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

Unit	<u>0-10 cm.</u>		<u>10-20 cm.</u>		<u>20-30 cm.</u>		<u>30-40 cm.</u>		<u>40-50 cm.</u>	<u>50-60 cm.</u>	<u>Total</u>	<u>%</u>
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>2</u>	<u>2</u>		
Flakes	-	2	-	2	-	3	-	1	-	-	8	34.8
Debitage	-	3	-	3	-	1	-	4	-	-	11	48.0
Hammer-Pounder	-	-	-	-	-	-	-	1	-	-	1	4.3
Historic	<u>-</u>	<u>-</u>	<u>1</u>	<u>2</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>3</u>	<u>12.9</u>
<b>TOTAL:</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>100.0</b>

half of the flakes and debitage, which were located within an area approximately two meters square. All of these items are composed of chert and are relatively smaller than observed elsewhere on the site. A chert core was found in association with these items. Flakes at Ora-830, as presented below, are smaller than those normally encountered on other sites in the areas.

	<u>Length (cm)</u>	<u>Width (cm)</u>	<u>Thickness (cm)</u>
Range	0.5-3.6	0.2-2.6	0.1-0.9
Mean	1.7	1.3	.325

Flaked tools found on the surface of this site are composed of basalt, and all are unifacially flaked. One bedrock milling feature situated directly on the northern edge of the stream contains 12 clearly defined mortars and 2 possible mortars (the latter were in the path of flowing water). Mortars ranged in depth from 2.5 centimeters to 2.5 centimeters. Diameters ranged from 10 centimeters to 2.5 centimeters. The surface of the bedrock outcrop was slanted downward toward the stream at an average slope of approximately 15 degrees. Mortars 1 and 5 have an elevated collar at the lower (south) edge of the mortar. These collars appear to have been formed by pecking the surface and thereby removing approximately one centimeter of the bedrock surface adjacent to the lower end of the mortar opening. The collars are approximately five centimeters in width (N-S) and extend from the midsection of the west side, around the south (lower) end, to the midsection of the east side.

All mortars except mortar 6 have a shelf, developed during pecking (primary development) of the mortars. The shelves are crescent-shaped and are located on the northern edge of the mortars, except for mortars 7 and 8, which have the shelf on the west (high) side of the mortar. The two long axis and two short axis measurements that appear on the Milling Feature Sheet represent the diameters of the mortar plus the shelf, and of the mortar separately.

The slab metate, of granitic material, is unifacial and unshaped. The pestle, located next to the mortars on the bedrock outcrop, is of an elongated, irregular shape. Evidence of grinding appears on only one end of the tool and on the sides adjacent to that end. Activities represented by the surface materials at Ora-830 include tool manufacture or maintenance and grinding, chopping, and scraping or cutting associated with plant processing and possibly woodworking. Waste production material comprises 80 percent of the surface artifacts. Lithic tools comprise 12 percent, and milling tools account for 8 percent of all artifacts.

#### Subsurface Cultural Material

As Previously Recorded: Possibility of a subsurface deposit.

Current Assessment: Subsurface testing was accomplished at Ora-830 for the purpose of establishing the presence or absence of cultural materials. Two test units were excavated; one near the access road (Unit 1), the other upslope from the bedrock milling feature (Unit 2). Unit 1 was excavated to a depth of 40 centimeters. A single historic 22-short shell casing was recovered from this unit at a depth of 10 centimeters to 20 centimeters. No prehistoric material was located in Unit 1. Cultural materials retrieved from Unit 2 included both post-European and pre-European objects. Historic items, consisting of 2 square cut nails dating pre-1900, were recovered at a depth of 10 centimeters to 20 centimeters. Flakes and debitage were present in all levels of Unit 2 to a depth of 40 centimeters. Flakes and debitage are composed of chert, basalt and quartzite. Characteristics diagnostic of flaking techniques were absent, as was patination. Cortex was visible on one piece of debitage. Both subsurface test units were completed to a depth of at least 20 centimeters with culturally sterile soil.

#### Site Dimensions

As Previously Recorded: 20 meters by 25 meters.

Current Assessment: 25 meters by 70 meters.

#### Site Integrity

As Previously Recorded: The site was bisected by an SCE access road.

Current Assessment The southern portion of site Ora-830 shows minimal disturbance in contrast to the northern portion which demonstrates alteration by erosion and grading of the access road. The access road has been cut to a maximum depth of 60 centimeters along the northern section of the road. A fire has also occurred at this locale prior to the current field investigation, as evidenced by burned stumps and blackened artifacts.

#### Site Activity/Type

As Previously Recorded: Not noted.

Current Assessment: Although a wide variety of artifacts were observed at Ora-830, the primary activity appears to have been focused on milling, with procurement and processing of plant resources predominating.

#### Site Cultural Affinity

As Previously Recorded: Not discussed.

Current Assessment: Cultural affinity is considered to be Milling Stone/ Intermediate Horizons as indicated by the artifact assemblage and milling features. The absence of ceramics does not preclude the possibility of Late Horizon affiliation.

#### Site Significance

As Previously Recorded: Not noted.

Current Assessment: Ora-830 appears to be a significant extractive camp in terms of the potential for obtaining data relevant to an understanding of the processes involved in the formation of bedrock mortars. The artifact assemblage indicates

limited extractive activities compatible with milling tasks; depth of milling elements, however, suggests site use over a period of time.

Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: As described in Section 10.3, Ora-830 is probably related to Ora-829 and Ora-831 as extractive camps (work camp-work camp) with potentially similar cultural affinity, based on artifact assemblages.

10.2.3 Ora-829

Site Documentation

Previously Recorded By: J. Oxendine, W. Pink, B. Crespín (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-422.

Site Location

As Previously Recorded: Site situated on a highly disturbed hill which had been graded for use as a SCE equipment storage yard.

Current Assessment: The site is located on an elevated land form, uphill and south of an intermittent stream which is directly associated with the bedrock milling feature at archaeological site Ora-830. The stream flows in a westerly direction into Santiago Creek.

Site Vegetation

As Previously Recorded: Coastal sage.

Current Assessment: An Inland Sage Scrub plant community is present. Vegetation is absent on most of the southwestern portion of the site. On the small knoll in the northeast portion of the site, vegetation cover is very dense.

Surface Cultural Material

As Previously Recorded: Cottonwood triangular projectile point, mano fragments, tools, and flakes.

Current Assessment: A total of 139 artifacts was observed, with the majority being encountered near the knoll top. No artifacts were observed on the access road. Three areas on the knoll were cleared of vegetation for more thorough site assessment. A number of the artifacts were revealed in this process of clearing. Surface artifacts include a core, flakes, debitage, retouched flakes, one blade fragment,

and two manos (Table 10-3). Of the 139 artifacts observed on the surface of Ora-829 only 1.4 percent represent grinding activities. The production or maintenance of tools comprise 94.3 percent, while cutting/scraping activities are suggested by 4.3 percent of the artifact assemblage. These flaked lithic tools consist of five retouched flakes and one blade tip which is non-diagnostic in terms of function due to its fragmented condition. It can be suggested, however, that a cutting and scraping function, similar to that inferred for retouched flakes, can be assigned to the blade fragment. Tools of this type imply on-site processing associated with extractive activities.

The types of flakes and debitage are indicative of both initial manufacturing of new tools from cores or blanks and finer work often associated with retouching or sharpening existing tools. Lithic materials in this category consist of chert, basalt, chalcedony and quartzite, with chert occurring at a much higher frequency. Twelve flakes have evidence of platform preparation; in addition, nine of these exhibited evidence of the soft hammer percussion flaking technique. The quantity of microflakes observed on the surface are in excess of other sites investigated in the area, with the exception of the adjacent cultural resource Ora-830. The following figures, relating to flake size, are based on the measurement of 54 surface flakes.

	<u>Length (cm)</u>	<u>Width (cm)</u>	<u>Thickness (cm)</u>
Range	0.9-11.0	0.4-5.4	0.1-2.4
Mean	2.6	1.8	0.53

Artifacts representing grinding activities were minimal at Ora-829. Of the two mano fragments, both are unshaped; one is unifacial, the other bifacial. Grinding surfaces are on cobbles similar in material to those occurring in the nearby streambed.

Subsurface Cultural Material

As Previously Recorded: Subsurface depth was not determined.

Table 10-3

Ora-829  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped	1	1	.7
Bifacial, Unshaped	1	1	.7
Core		1	.7
Flakes		54	38.8
Debitage		76	54.8
Blade	1	1	.7
Retouched Flakes		<u>5</u>	<u>3.6</u>
TOTAL:		139	100.0

Ora-829  
SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

Unit	<u>Surface</u>		<u>0-10 cm.</u>		<u>10-20 cm.</u>		<u>20-30 cm.</u>		<u>30-40 cm.</u>	<u>40-50 cm.</u>	<u>Total</u>	<u>%</u>
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>1</u>		
Flakes	-	2	67	1	-	38	16	-	1	-	124	62.6
Debitage	-	1	45	4	-	22	3	-	-	1	72	36.4
Projectile Point	-	-	-	-	-	1	-	-	-	-	1	0.5
Non-Diagnostic Biface	<u>-</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>0.5</u>
TOTAL:	0	4	112	5	0	61	19	0	1	1	198	100.0

Current Assessment: Two test units were excavated at Ora-829 for the purpose of establishing the presence or absence of subsurface cultural material. Unit 1 was placed near the top of the knoll in an area cleared of vegetation. Burned shrub stumps and charcoal were visible on the surface of the unit, as well as two flakes and one piece of debitage. This unit was excavated to a depth of 50 centimeters. Soil in the first 30 centimeters consisted of sandy loam blended with humus. Below this level the soil consisted of decomposed sandstone. Rodent and root activity were noted to a depth of 40 centimeters. 193 artifacts were retrieved from Unit 1, with the greatest quantity being found above 20 centimeters. Unit 2 was located in the center of the highly disturbed portion of Ora-829. Topsoil appears to have been removed from this area as the soil consisted of a hard packed clay. Excavation, though extremely difficult, was extended to a depth of 30 centimeters. Only five artifacts were retrieved, at a level of 0 centimeters to 10 centimeters.

Subsurface artifacts are primarily flakes and debitage, but one projectile point fragment and one non-diagnostic biface were also recovered (Table 10-3). As with surface artifacts, chert is the most commonly occurring lithic material. Flake sizes, including microflakes, are also within a similar range. Several flakes and debitage, occurring in the same level as the non-diagnostic biface, are of identical lithic material as the biface. One piece of debitage, also matching this material, was retrieved from the 20 centimeter to 30 centimeter level.

Analyses of pollen samples retrieved from both units indicate a subtropical climate similar to the present (Inland Sage Scrub).

#### Site Dimensions

As Previously Recorded: 18.5 meters by 49.5 meters.

Current Assessment: 80 meters by 115 meters.

### Site Integrity

As Previously Recorded: The hill on which the site is located had been graded for use as a SCE equipment storage yard. Disturbance in the area was noted as measuring 75.3 meters by 50 meters.

Current Assessment: At least 75 percent of the site is heavily disturbed. The undisturbed portion of the site remains in a relatively natural state. A fire has occurred at this locale in the past, which may account for the heavy vegetation cover present in the area of least disturbance. This ground cover also serves to protect the cultural materials on the surface. An access road is approximately 25 meters from cultural resource materials and does not disturb the site area.

### Site Activity/Type

As Previously Recorded: Not discussed.

Current Assessment: The percentage of artifacts associated with waste production indicates that tool manufacture and tool maintenance were the predominant activities at Ora-829.

### Site Cultural Affinity

As Previously Recorded: Based on the presence of the cottonwood triangular projectile point and an additional projectile point fragment, it was postulated that some site activities were associated with the period after AD 1300 (Late Horizon).

Current Assessment: The artifact assemblage observed at Ora-829 is indicative of site use during the Milling Stone/Intermediate Horizons. Although the cottonwood triangular projectile point observed during previous fieldwork was not relocated, its absence does not negate the earlier postulation of occupation after AD 1300 (Late Milling). A clearly defined cultural affinity is dependent on additional data.

### Site Significance

As Previously Recorded: Characterized as a relatively recent occupation in an area where most sites are much older (Bean and Vane 1979:9-33).

Current Assessment: This cultural resource has the potential for yielding data relevant to inter-site relationships. The artifact assemblage is indicative of an extractive camp used sporadically over a period of time. Additional data are needed for a more clearly defined determination of cultural affinity.

### Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: Ora-829 is probably related to sites Ora-830 and Ora-831 as extractive camps (work camp-work camp) with a potentially similar cultural affinity based on artifact assemblages. No ethnographic references are described for this area.

10.2.4 Ora-787

Site Documentation

Previously Recorded By: T. Cooley (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-257.

Site Location

As Previously Recorded: Located on a knoll top above a ridge swale, with an SCE tower situated 40 meters to the northeast.

Current Assessment: Located on a small knoll, southeast of a larger rise near the end of a ridge. The knoll is south of an existing access road and above a ridge swale. SCE tower 27-2 is located northwest of the site area.

Site Vegetation

As Previously Recorded: Not noted.

Current Assessment: Southern California Grassland and Inland Sage Scrub plant communities.

Surface Cultural Material

As Previously Recorded: A scatter of milling stone artifacts, including seven metate fragments, four manos, and two cores.

Current Assessment: Sixteen artifacts were observed on the surface of Ora-787. Of this total, 75 percent are tools associated with milling activities (Table 10-4). The remaining 25 percent represent artifacts relating to core reduction.

The three manos observed include one bifacial (shaped), one unifacial (shaped), and one non-diagnostic fragment. All metates are unifacial. The majority of metates are on slabs with the grinding surfaces almost flat. Three metates exhibit concave surfaces and are cataloged as portable basins. All are too fragmented to determine if they had been shaped.

Table 10-4

Ora-787  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped		1	6.3
Bifacial, Unshaped		1	6.3
Non-Diagnostic	1	1	6.3
Metates	9	9	56.3
Core		1	6.3
Flakes		2	12.5
Hammer-pounder		<u>1</u>	<u>6.3</u>
TOTAL:		16	100.0

Ora-827  
SUBSURFACE ARTIFACTS  
(Unit 1)

	<u>0-10 cm.</u>	<u>10-20 cm.</u>	<u>20-30 cm.</u>	<u>30-40 cm.</u>	<u>Total</u>	<u>%</u>
Debitage	=	=	<u>1</u>	=	<u>1</u>	<u>100</u>
TOTAL:	0	0	1	0	1	100

The presence of a core, flakes and a hammer-pounder suggests the production of tools at Ora-787. Hard hammer percussion flaking technique was observed on one large flake. This flake and the core are patinated and exhibit cortex.

#### Subsurface Cultural Material

As Previously Recorded: Estimated depth of the site to be 40 centimeters to 60 centimeters. No subsurface testing was noted.

Current Assessment: In addition to the surface survey, two test units were excavated in an attempt to determine if subsurface cultural materials were present. Both units were excavated to a depth of 40 centimeters in areas associated with the highest density of artifacts. A large piece of debitage was recovered from Unit 1 at a depth of 20 centimeters (Table 10-4). This item is heavily patinated, with cortex, and appears to be a fragment of a large core. No cultural material was encountered in Unit 2. Soil in both test units gradually varied from sandy loam on the surface to compact clay at the lower levels.

#### Site Dimensions

As Previously Recorded: Estimated at 100 meters by 250 meters.

Current Assessment: Surface artifacts were observed in an area measuring 140 meters by 40 meters. As the area had previously been approximated as extending 250 meters, an effort was made to survey beyond what appeared to be the site boundaries, with concentration on the access road.

#### Site Integrity

As Previously Recorded: Not discussed.

Current Assessment: Erosion by natural forces appears to be the major disturbance at Ora-787, particularly on the slopes of the knoll. Several of the metates were slightly embedded in the soil as a result of slope wash. It is possible that both of the artifacts observed in the access road may have occurred at that location because of

a combination of slope wash and redistribution by grading of the access road, and as such they are not indicative.

Site Activity/Type

As Previously Recorded: Not stated.

Current Assessment: The assemblage of artifacts observed appears to be associated with extractive activities, with emphasis on the processing of plant foods.

Site Cultural Affinity

As Previously Recorded: Cooley suggested that Ora-787 was probably "...a complex site, as it appears to contain features from both Milling Stone and Late Horizons. A very late ceremonial site is located nearby" (Bean and Vane 1979:9-25).

Current Assessment: Current assessment revealed a paucity of surface and subsurface artifacts. No evidence was noted to confirm site Ora-787 as a complex site. Cultural affinity is considered only Milling Stone or Intermediate Horizon.

Site Significance

As Previously Recorded: Not discussed, except as noted under Cultural Affinity.

Current Assessment: Ora-787 appears to be an extractive camp with an emphasis on procurement and preparation of plant resources. This site appears to have had limited use as indicated by the paucity of artifacts and lack of significant depth.

Site Settlement Pattern

As Previously Recorded: Not stated.

Current Assessment: The area surrounding this cultural resource has not been intensively surveyed. The determination of a settlement pattern is therefore hindered by a lack of data. At present, Ora-787 is not associated geographically with other sites. Future surveys may reveal a relationship with archaeological sites to the north of this locale.

10.2.5 Ora-832

Site Documentation

Previously Recorded By: J. Oxendine, W. Pink, B. Crespin (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-425.

Site Location

As Previously Recorded: Located on a ridge and associated slopes.

Current Assessment: Not relocated.

Site Vegetation

As Previously Recorded: Not noted.

Current Assessment: Dense vegetation cover.

Surface Cultural Material

As Previously Recorded: Possible aboriginal trail with chalcedony cores in association. A core tool was found on the trail leading from the site, and four cores and one mano were located on the site proper.

Current Assessment: An intensive surface survey at the reported location for Ora-832 involved a traverse of the SCE access road, ridge locale and associated slopes. During the survey, a number of items were flagged for later inspection, predominantly chert fragments of varying size and quality. This lithic material occurs naturally within the region and was evident at this location in the form of extruded chert beds. An examination of these fragments did not indicate cultural modification.

Subsurface Cultural Material

As Previously Recorded: Not discussed.

**Current Assessment:** Although no evidence of subsurface cultural deposition was encountered during preliminary surface survey, subsurface testing was deemed necessary for adequate site assessment. One test unit was placed within the previously described site area on the ridge top. Excavation to a depth of 30 centimeters resulted in negative artifact retrieval. Additional testing was not considered necessary based on cumulative observations.

Site Dimensions

**As Previously Recorded:** 25 meters by 50 meters.

**Current Assessment:** Site dimensions could not be determined due to lack of cultural material.

Site Integrity

**As Previously Recorded:** Not noted.

**Current Assessment:** Intensive disturbance (i.e., grading and clearing) was evident.

Site Activity/Type

**As Previously Recorded:** Not stated.

**Current Assessment:** The lack of sufficient site data precludes possible analysis.

Site Cultural Affinity

**As Previously Recorded:** Not noted.

**Current Assessment:** Not determined.

Site Significance

**As Previously Recorded:** Not discussed.

**Current Assessment:** There is insufficient evidence to determine cultural affinity, site type or function. Current and previous intensive survey indicate, at most, isolated occurrence of culturally modified materials at this locale.

Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: Not determined. Site Ora-832 is not included within the settlement system analysis due to no determination of actual site or true artifact existence.

10.2.6 Ora-438

Site Documentation

Previously Recorded By: R.H. Crabtree, T.G. Cooley, G. Fenenga (1973).

Secondary Recordation(s): Munoz (1977); J. Howard (1977); WESTEC (1980).

Temporary/Other Site Designations: CSRI-343.

Site Location

As Previously Recorded: Located on a flat southwest-sloping ridge between two small bifurcated stream beds.

Current Assessment: The streams mentioned previously lead southwestward to Serrano Creek, approximately one mile to the southwest. The site is located on a low ridge and east facing slope, adjacent to Serrano Creek.

Site Vegetation

As Previously Recorded: Oak-chaparral. Areal extent of this site was difficult to determine because of dense vegetation on the northern portion (1980).

Current Assessment: Inland Sage Scrub and Southern California Grassland Communities. Prickly pear, coastal sagebrush, white forget-me-not, black mustard, filaree and brome grass were the most dominant species. Vegetation on the southern portion of the site is thicker than the northern, which has fairly good ground visibility. Three areas were cleared of vegetation; one area produced a bifacial mano. Oak trees occur frequently near the adjacent stream.

Surface Cultural Material

As Previously Recorded: Artifacts observed at this large site included chalcedony cores, manos, metate fragments, hammerstones, choppers, scrapers, a blade, and lithic flakes. It was noted that the site may have depth as suggested by artifacts visible in the road cut. No features were observed. WESTEC (1980) investigation showed Ora-438 to be a major site with a substantial subsurface deposit.

Current Assessment: Although a surface collection had been accomplished previously (1980), heavy rainfall this season has caused a large number of artifacts to be uncovered or possibly washed down the slope. These additional artifacts, catalogued during the present fieldwork, were located primarily along the access road. A total of 210 artifacts was observed (Table 10-6). Waste production accounts for 83.4 percent of the assemblage and includes 5 cores, 82 flakes and 88 debitage. Waste lithic materials include basalt (27), chalcedony (20), quartzite (7), jasper (1), and an unidentified material (4). Four of the flakes exhibit soft hammer percussion. Two have prepared platforms and two have ground platforms. Flakes have the following size distributions:

	<u>Length (cm)</u>	<u>Width (cm)</u>	<u>Thickness (cm)</u>
Range	1.0-9.8	0.4-6.9	0.1-3.7
Mean	3.4	2.4	0.86

Artifacts representing cutting/scraping activities comprise 7.4 percent and include 7 sidescrapers, 1 pushplane, 1 non-diagnostic uniface, 2 non-diagnostic bifaces, and 5 retouched flakes. The retouched flakes are all of chert except for one of quartzite. All are unifacial and four are also unilateral. Of the two bifaces, one is chert and the other, a possible projectile point base, is jasper. The sidescrapers are made of a variety of materials: three chert, two quartzite and two basalt. Three are unilateral, three double convergent, and one bilateral.

Artifacts representing grinding activities comprised 6.8 percent and include 11 manos and 3 metates. A variety of mano types are present including five unifacial, unshaped; one unifacial, shaped; one unifacial with shaping undetermined; one bifacial, unshaped, which also exhibits pecking and battering on the ends; two bifacial, shaped, and two non-diagnostic fragments. Due to the fragmented condition of the metates the number of ground faces is not discernible.

Table 10-6

Ora-438  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped	1	6	2.9
Unifacial, Shaped	1	1	.5
Bifacial, Shaped	1	2	1.0
Non-Diagnostic	2	2	1.0
Metates	3	3	1.4
Cores		5	2.4
Flakes		82	39.0
Debitage		88	42.0
Sidescrapers		7	3.0
Pushplane		1	.5
Non-Diagnostic Uniface		1	.5
Projectile Point	1	1	.5
Non-Diagnostic Bifaces		2	1.0
Chopping Tool		1	.5
Hammer-pounders		3	1.4
Retouched Flake		<u>5</u>	<u>2.4</u>
TOTAL:		210	100.0

Artifacts associated with chopping/pounding activities (1.9 percent of the assemblage) consist of one basalt unifacial, unilateral chopping tool, and three hammer-pounders.

A single chert projectile point base comprise 0.5 percent of the total surface artifacts. Hunting/drilling/punching activities may be represented by bifaces.

In addition to lithic artifacts, one Aequipecten sp. shellfish fragment was observed. This species is common to the eel grass flats environment of bays/estuaries.

#### Subsurface Cultural Material

As Previously Recorded: Excavation was strongly suggested in 1973. It was also suggested that there be no further construction in the area until test investigation procedures and attendant recommendations are carried out.

Test excavation by Schilz in January of 1980 (WESTEC) revealed a total of 251 lithic artifacts recovered from the surface and subsurface of the site. Artifacts included 1 projectile point, 4 scrapers, 6 modified flakes and 161 unmodified flakes. The projectile point is lanceolate-shaped of black obsidian (collected during the Munoz survey in 1977). The four scrapers are plano-convex and made of quartzite, by hard hammer percussion. The six modified flakes are three of quartzite, two of chert and one of chalcedony, made by hard-hammer percussion. The unmodified flakes consist mainly of quartzite, with a decreasing amount of Monterey chert, chalcedony, rhyolite, a meta-volcanic material and an unidentified micro-crystalline material. Ten metates were found; four are bifacially ground and six are unifacially ground. Five basin-shaped metate fragments were recovered from the surface: four are granitic and one is of gabbro. Eight chopping tools of quartzite, rhyolite, and an unidentified material were found. Twelve angular quartzite and rhyolite hammerstones that may have been used for chipped stone tool manufacture or for ground stone maintenance were found. Five

quartzite and two chert cores were recovered from the surface. Platform preparation is indicated by battering and abrasion on three of the quartzite cores and one of the chert cores.

There were three primary strata in the deposit. The lower stratum consists of medium brown compact adobe containing little or no cultural material. The middle stratum is a layer of light brown sandy adobe measuring 10 centimeters to 40 centimeters thick in some places. This stratum contained a major percentage of the cultural material recovered from the test units. The uppermost stratum consists of light brown, fine sandy topsoil with a thickness of 5 centimeters to 10 centimeters.

A total of seven, one meter by one meter, test units were excavated at the site.

Current Assessment: Due to the test excavation conducted in January 1980, no further subsurface testing was conducted at this site.

#### Site Dimensions

As Previously Recorded: 150 meters by 335 meters (1973). 100 meters by 250 meters (1980).

Current Assessment: 120 meters by 310 meters.

#### Site Integrity

As Previously Recorded: The site was recorded to have been directly impacted by an access road, and vulnerable to further direct and indirect impact. The area was recorded as being considered for development (1973).

During the 1980 test excavations, identifiable disturbance from rodent activity was found in all three strata tested. Ora-438 is located within the area to be directly impacted by proposed housing development.

Current Assessment: Same as noted previously.

### Site Activity/Type

As Previously Recorded: Site was recorded as a possible village site (1973). The artifacts found in 1980 test excavations indicate chipped stone tool manufacture, ground stone maintenance, flaking, cutting/scraping, hunting/drilling/punching and chopping/pounding activities.

Current Assessment: The quantity and range of artifacts present indicate a wide range of activities associated with the procurement of natural resources. Since 83.4 percent of all artifacts are associated with waste production, this indicates tool manufacture and maintenance were the predominant activities at Ora-438. Cutting/scraping tools of the same material as the waste lithics reinforce this interpretation. Several hammer-pounders are present which could have been used for flake detachment. On-site processing of plant foods is indicated by the presence of grinding tools, 6.8 percent of the total assemblage.

### Site Cultural Affinity

As Previously Recorded: The assemblage from Ora-438 includes scrapers, manos, metates, and large flakes, indicative of Milling Stone Horizon Sites (WESTEC 1980).

Current Assessment: Determination of cultural affinity for Ora-438 is based on data recovered from previous investigations, insofar as no current observations modify the time frame already established.

No ethnographic reference to the area could be found. Although the Portala party crossed just to the south of this location on July 26, 1769, while traveling between San Francisco Solano and Tomato Springs, their journals make no mention of Native Americans (Palou 1966:125; Smith 1965:29-30; Meadows 1965:26).

### Site Significance

As Previously Recorded: Not stated in early reports. WESTEC (1980) investigations indicate that Ora-438 is a major site which will contribute valuable information concerning intra-site patterning, inter-site patterning, and subsistence.

Current Assessment: As previously suggested, Ora-438 appears to be a complex site which may yield valuable information for an understanding of prehistoric lifeways.

### Site Settlement Pattern

As Previously Recorded: Not stated.

Current Assessment: Ora-438, located within the boundaries of the previously established Upper Aliso Creek Historic District, indicates a potentially contemporary time frame with other sites within the district.

10.2.7 Ora-828

Site Documentation

Previously Recorded By: J. Oxendine, W. Pink, B. Crespin (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-421.

Site Location

As Previously Recorded: Located on a slope on the southwest side of a small drainage that flows into a larger creek.

Current Assessment: Located on a south-facing slope adjacent to an intermittent stream which flows southwest into Serrano Creek.

Site Vegetation

As Previously Recorded: Coastal Sage Community. Sumac, toyon, live oak, wild roses and grasses were present on the hillside above the creek and creekbed.

Current Assessment: The south-facing slope is covered with vegetation representative of the Inland Sage Scrub and Riparian Woodland Plant Communities. Vegetative cover did not obstruct surface visibility.

Surface Cultural Material

As Previously Recorded: Surface scatter of manos, cores and flakes. The presence of thermally altered rock was noted in association with the surface artifacts.

Current Assessment: A surface survey was carried out in such a manner as to conform to the natural contour of the land. Seventy-two surface artifacts were located, cataloged and micromapped (Table 10-7). A scatter of fire affected rock, measuring approximately 5 meters wide by 8 meters long, was observed near the center of the site area. Specific features were not observed within this area. As mentioned in

Table 10-7

Ora-828  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped	1	2	2.8
Bifacial, Unshaped	1	2	2.8
Metates	4	4	5.6
Core		1	1.4
Flakes		23	32.0
Debitage		34	47.0
Sidescrapers		2	2.8
Chopping Tools		2	2.8
Hammer-pounders		<u>2</u>	<u>2.8</u>
TOTAL:		72	100.0

Ora-828  
SUBSURFACE ARTIFACTS  
(Unit 1)

	<u>Surface</u>	<u>0-10 cm.</u>	<u>10-20 cm.</u>	<u>20-30 cm.</u>	<u>30-40 cm.</u>	<u>40-50 cm.</u>	<u>50-60 cm.</u>	<u>Total</u>	<u>%</u>
Flakes	1	-	6	5	1	1	-	14	42.5
Debitage	1	-	9	7	-	1	-	18	54.5
Core	-	-	<u>1</u>	-	-	-	-	<u>1</u>	<u>3.0</u>
TOTAL:	2	0	16	12	1	3	0	33	100.0

the previous field survey report (Bean and Vane 1979), artifacts were found within this area, specifically flakes, manos, and one metate.

Of the 72 surface artifacts located at the site, 81 percent are associated with tool manufacture or sharpening. Eleven percent are associated with grinding activities, and approximately six percent are tools relating to activities such as scraping, cutting and pounding (Table 10-7). Cherts and basalts comprise the largest categories of lithic materials. Quartz, chalcedony and quartzite are also present, although in significantly lesser quantities.

Four manos and four metates comprise the milling implements located on the surface. All manos are unshaped; two are bifacially ground and two were unifacially ground. A single metate fragment shows evidence of bifacial use and the remainder of the metate fragments are unifacially ground. One basin-shaped surface were noted.

The single core, flakes and debitage (Table 10-7) observed lack sufficient characteristics to clearly define techniques used in the manufacture of tools. Evidence of a ground platform was noted on a single chert flake. The size of the flakes, as noted below, suggests manufacture of tools rather than maintenance of existing tools.

	<u>Length (cm)</u>	<u>Width (cm)</u>	<u>Thickness (cm)</u>
Range	1.6-10.6	1.5-6.7	0.2-2.9
Mean	5.0	3.7	1.2

Cortex occurs on approximately one-third of the flakes and debitage observed. The quantity of manufacturing by-products present with this characteristic may indicate the use of relatively local lithic materials.

Flaked tools located on the surface include two sidescrapers, two chopping tools, and a hammer-pounder. These tools are all indicative of the extraction of food

resources, in that they can be used for a variety of tasks associated with plant (and possibly animal) processing.

#### Subsurface Cultural Material

As Previously Recorded: No record of excavation. It was suggested that artifacts on the slope might be eroding from a subsurface deposit.

Current Assessment: In order to determine the presence or absence of subsurface cultural materials, one test unit was excavated to a depth of 60 centimeters. Thirty-three artifacts associated with tool manufacture were retrieved from the first 50 centimeters of sandy loam soil. Of the 33 subsurface artifacts located at the site, 42.5 percent are flakes, 54.5 percent are debitage and 3 percent from one core (Table 10-7). There are 14 flakes, 18 debitage and 1 core in the subsurface units, with the majority of the artifacts located at the 10 centimeter to 30 centimeter levels. Root and rodent activity was noted from depths of 10 centimeters to 30 centimeters.

Four burned fragments of rabbit-size mammalian long bones occurred in the 10 centimeter to 20 centimeter level. The 20 centimeter to 30 centimeter level produced two long bone fragments of a coyote-size mammal. Although all faunal specimens probably represent food animals, the degree of the burns and calcination of the rabbit-size bones are in excess of cooking activities. None of the bone specimens showed any modification.

Fire-affected rock was also present in the test unit at depths of 5 centimeters to 15 centimeters. Pollen analysis indicated climatic conditions similar to present conditions.

#### Site Dimensions

As Previously Recorded: 32 meters by 60 meters.

Current Assessment: 35 meters by 40 meters.

#### Site Integrity

As Previously Recorded: Not stated.

Current Assessment: As Ora-828 is not situated in proximity to an access road or affected by tower construction, it remains in a relatively natural state. The general area is presently used for cattle grazing and presumably has been used for grazing for a long duration. Although the site is situated at the base of a fairly steep slope, slope wash does not appear to be a destructive factor.

#### Site Activity/Type

As Previously Recorded: Not stated.

Current Assessment: As evidenced by total site cultural inventory (105 items), artifact types represent extractive tasks associated with tool production (cores, hammer-pounders, chopping tools, flakes and debitage), cutting or scraping (sidescrapers), and grinding (manos and metates). The tools are indicative of the extraction of food resources, in that they can be used for a variety of tasks associated with plant and animal processing.

#### Site Cultural Affinity

As Previously Recorded: Not stated.

Current Assessment: Presence of milling implements may represent Milling Stone/Intermediate Horizon activities.

#### Site Significance

As Previously Recorded: Not stated.

Current Assessment: This cultural resource is near the boundary of an established district designated as Upper Aliso Creek Historic District. Numerous sites are located within this district which suggest a settlement system associated with the drainage pattern of the region. Ora-828 indicates a potentially contemporary time frame with these other sites.

Site Settlement Pattern

As Previously Recorded: Not stated.

Current Assessment: Ora-828 is located near the previously established Upper Aliso Creek archaeological district. Numerous sites located within this district indicate a settlement system associated with the drainage pattern of the region.

10.2.8 Ora-447

Site Documentation

Previously Recorded By: G. Fenenga, T. Cooley, and W. Butler (1973).

Secondary Recordation(s): Munoz (1977); Howard (1977); WESTEC (1980).

Temporary/Other Site Designations: CSRI-352.

Site Location

As Previously Recorded: Located along a narrow ridge overlooking Serrano Creek to the west (1973), or on a narrow ridge near the western-boundary of the Glenn Ranch project area (1980).

Current Assessment: Located on a ridge east of Serrano Creek. Canada de los Alisos is located to the southwest.

Site Vegetation

As Previously Recorded: Vegetation of the site was recorded as pear cactus, sage and chaparral. Area was cleared along a road cut and visibility was clear among the cactus.

Current Assessment: Inland Sage Scrub and Southern California Grassland Communities with a medium frequency of chamise, black mustard, and coastal sagebrush. Prickly pear cactus is also located at the site. The site appears to have been cleared of brush.

Surface Cultural Material

As Previously Recorded: Medium-grey midden was recorded on the ridge, with artifacts and detritus scatter beyond the midden. Artifacts noted include a scraper, core, hammerstone and manos. The artifact material is visible only in the road cut and eroded areas.

Current Assessment: A total of 89 artifacts was located on the surface of Ora-447 (Table 10-8). Waste production accounts for 75.3 percent of the assemblage

Table 10-8

Ora-447  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped	2	2	2.3
Unifacial, Shaped	1	1	1.1
Bifacial, Unshaped	1	1	1.1
Bifacial, Shaped	1	1	1.1
Non-Diagnostic	4	4	4.5
Metate	1	1	1.1
Cores		3	3.4
Flakes		34	38.2
Debitage		30	33.7
Sidescrapers		4	4.5
Pushplane		1	1.1
Hammer-pounders		6	6.7
Utilized Flake		<u>1</u>	<u>1.1</u>
TOTAL:		89	100.0

Ora-447  
SUBSURFACE ARTIFACTS  
(Road Cut 1)

	<u>0-55 cm.</u>	<u>Total</u>	<u>%</u>
Flakes	2	2	40
Debitage	2	2	40
Chopping Tool	<u>1</u>	<u>1</u>	<u>20</u>
TOTAL:	5	5	100

and includes 3 cores, 30 debitage and 34 flakes. Material composition is primarily chert (36 artifacts), quartzite (13) and basalt (12). The remaining six consist of rhyolite and felsite. Two of the chert flakes exhibit soft hammer percussion and one also has a prepared platform. Flake sizes have the following distribution:

	<u>Length (cm)</u>	<u>Width (cm)</u>	<u>Thickness (cm)</u>
Range	0.9-7.8	0.7-5.0	0.1-2.1
Mean	4.0	2.9	1.0

Artifacts representing grinding activities comprise 11.2 percent of the assemblage, and consist of 9 mano fragments and 1 metate fragment. A variety of mano types are present including: two unifacial (unshaped), one unifacial (shaped) one bifacial (unshaped), one bifacial (shaped), and four non-diagnostics. Due to the fragmented condition of the metate, the number of ground faces is not discernible.

An equal number of artifacts represents cutting/scraping and pounding activities, each totaling 6.7 percent. These are 6 quartzite hammer-pounders, and the 6 cutting/scraping artifacts include a rhyolite double convergent pushplane, a chert utilized flake and 4 sidescrapers. The sidescrapers consist of one chert unilateral, one basalt unilateral, one basalt double convergent, and one quartzite non-diagnostic side-scraper.

#### Subsurface Cultural Material

As Previously Recorded: No excavation was conducted.

Current Assessment: Two road cut excavations were conducted along the access roads. Road Cut 1 was excavated to 55 centimeters. Two flakes, two debitage and one chopping tool were recovered (Table 10-8). Soil throughout most of the excavation was loamy clay with intrusions of clay and sandstone appearing at 50 centimeters. Road Cut 2 was excavated to 62 centimeters. No artifacts were located in

this cut. Distinct levels of loam, loamy clay, sandy clay, clay and sandstone were observed.

#### Site Dimensions

As Previously Recorded: 100 meters by 425 meters (1973); 50 meters by 100 meters (1980).

Current Assessment: 75 meters by 170 meters.

#### Site Integrity

As Previously Recorded: Was impacted by the SCE access road and vulnerable to further direct and indirect impact. The access road crossed the northern end of the site. Eventual destruction of the site was foreseen through erosion and development. However, the site was intact at the time of recordation (1973). Schilz (WESTEC 1980) investigation stated that Ora-447 would not be directly impacted by the proposed Glenn Ranch development.

Current Assessment: Site has been disturbed by access roads which run in various directions from a central junction near the center of the site. Portions of the roads have been cut to a depth of one meter.

#### Site Activity/Type

As Previously Recorded: Not stated.

Current Assessment: Site is a probable maintenance camp. The quantity and types of artifacts present indicate a range of activities associated with the procurement of natural resources. Since 75 percent of all these artifacts are associated with waste production, this indicates that tool manufacture and maintenance were the predominant activities at Ora-447. Cutting/scraping tools of the same material as the waste lithics substantiated this interpretation, especially when considering the number

of hammer-pounders present (almost 7 percent) which could be used for flake production. On-site processing of plant foods is indicated by the presence of grinding tools, 11 percent of the total assemblage.

Site Cultural Affinity

As Previously Recorded: Not stated.

Current Assessment: Ora-447 is probably representative of the Milling Stone or Intermediate cultural horizon. Lack of diagnostic traits, other than grinding, hinders further evaluation.

Site Significance

As Previously Recorded: Not stated.

Current Assessment: Ora-447 contains a variety of cultural material suggesting that several activities took place at this site. As such it may contribute information on site function, resources exploited and intra-site activity areas. These data would be of value to the growing body of knowledge for the Historic District.

Site Settlement Pattern

As Previously Recorded: Not stated.

Current Assessment: Ora-447, located within the boundaries of the previously established Upper Aliso Creek Historic District, indicates a potentially contemporary time frame with other sites within the district.

10.2.9 Ora-827

Site Documentation

Previously Recorded By: J. Oxendine, W. Pink, B. Crespin (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-420.

Site Location

As Previously Recorded: Recorded as situated on a slope southeast of SCE tower 23-4.

Current Assessment: Ora-827 is located on a ridge east of Serrano Creek. A small earth-filled dam is present north-northeast of the site area. An SCE access road extends along the north side of the site and a transmission tower is located northwest of the site.

Site Vegetation

As Previously Recorded: Vegetation belongs to the Coastal Sage Community with chamise, black sage, white sage, mustard and prickly pear present.

Current Assessment: As previously recorded. An area was cleared of ground cover for improved visibility during the current investigation.

Surface Cultural Material

As Previously Recorded: Site consisted of a chalcedony and quartzite tool and flake scatter. Presence of thermally altered rocks were also noted.

Current Assessment: A total of 79 surface artifacts was located during the survey (Table 10-9). Most of the artifacts were observed in association with slope erosion on the southern end of the site. No artifacts were located in the access road during the current field investigation. Categories represented by the 79 artifacts

Table 10-9

Ora-827  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped		1	1.3
Non-Diagnostic	1	1	1.3
Metate	1	1	1.3
Core		1	1.3
Typological Blade		1	1.3
Flakes		35	44.3
Debitage		34	43.0
Sidescrapers		2	2.5
Pushplane		1	1.3
Hammer-pounder		1	1.3
Utilized Flake		<u>1</u>	<u>1.3</u>
TOTAL:		79	100.0

Ora-827  
SUBSURFACE ARTIFACTS  
(Unit 1)

	<u>0-10 cm.</u>	<u>10-20 cm.</u>	<u>20-30 cm.</u>	<u>30-40 cm.</u>	<u>Total</u>	<u>%</u>
Flakes	-	-	-	-	-	-
Debitage	<u>1</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>100</u>
TOTAL:	1	0	0	0	1	100

observed on the surface include grinding, waste production, unifacial tools, amorphous tools, and miscellaneous modified lithics.

Evidence of milling activities was in the form of two manos and one metate. These artifacts represent 3.9 percent of the total assemblage. The single complete mano is unifacial and shaped. The other mano was classified as non-diagnostic because of its fragmentary condition. The slab metate fragment is bifacially ground and shaped.

Waste production, associated with the manufacture or sharpening of tools comprises 90 percent of the total artifacts observed. In order of quantity, chert is the most commonly occurring lithic material, followed by basalt, quartzite, jasper, chalcedony and felsite. Four types of artifacts associated with tool production or maintenance are present; 1 core, 1 typological blade, 35 flakes and 34 debitage. The core and blade, as well as 12 flakes and 22 pieces of debitage are of chert. Basalt is also well represented with a total of 18 flakes and debitage, equally divided. Patination is present only on basalt flakes and debitage. Characteristics commonly associated with the technique of soft hammer percussion were observed on one basalt and one chert flake. The following data is a summary of flake size at Ora-827.

	<u>Length (cm)</u>	<u>Width (cm)</u>	<u>Thickness (cm)</u>
Range	0.6-6.8	0.4.-5.0	0.1-2.6
Mean	4.8	2.5	1.0

Unifacial tools indicative of scraping activities represent 3.8 percent of the collection and include 2 unilateral sidescrapers of chert and basalt, and 1 chert double convergent pushplane. Cortex is visible on the two basalt artifacts. Patination is absent. Modified lithics include a single utilized chert flake.

One additional tool, a quartzite hammer-pounder, was also observed. As this tool could have served multiple purposes it was not assigned to any one activity.

The relative abundance of flakes and debitage, along with the occurrence of a core, might suggest that this object was used for the purpose of flake detachment.

#### Subsurface Cultural Material

As Previously Recorded: Not noted.

Current Assessment: One test unit was excavated to determine the presence or absence of subsurface cultural material. A single piece of debitage was recovered from this unit at a depth of 0 centimeters to 10 centimeters (Table 10-9). The unit was excavated to a maximum depth of 40 centimeters. Soil ranged from loam on the surface to clay within the lower levels. Subsurface disturbance was primarily due to root activity. Pollen samples analyzed from this unit indicate that climatic conditions were similar to present conditions. Asteraceae (Sunflower Family), and Pinaceae (Pine Family), the two most common samples, are representatives of a subtropical climate.

#### Site Dimensions

As Previously Recorded: 16.5 meters by 17.5 meters.

Current Assessment: 125 meters by 145 meters.

#### Site Integrity

As Previously Recorded: Site had been partially destroyed by an SCE Tower.

Current Assessment: Ora-827 has been heavily disturbed by construction of the SCE steel lattice tower. Grading activities appear to have extended beyond the tower pad and access road, as a large flat area had also been graded. This area may have been associated with a turn around loop, as an abandoned section of a road is still evident at the northeast end of the area.

Erosion, primarily in the form of gullying, is evident in the southern portion of the site. This disturbance does not appear to be associated with grading activities.

There is a close association, however, with the presence of artifacts, as the highest density of objects occurs between the gullies.

Site Activity/Type

As Previously Recorded: Not stated.

Current Assessment: The quantity and range of artifacts present at Ora-827 would indicate that this archaeological site represents a limited range of activities associated with the procurement of natural resources. Onsite processing is indicated by the presence of grinding tools; the quantity noted, however, would not be sufficient to prepare a large quantity of plant resources.

Site Cultural Affinity

As Previously Recorded: Not discussed.

Current Assessment: The artifact assemblage observed at Ora-827 appears to be related to the Milling Stone/Intermediate Horizons.

Site Significance

As Previously Recorded: Not discussed.

Current Assessment: Ora-827 appears to have been an extractive camp associated with the resources available in the area. In combination with other sites nearby, this cultural resource is significant in that it offers the potential for an understanding of settlement systems in the region.

Site Settlement Pattern

As Previously Recorded: Not stated.

Current Assessment: This cultural resource is near the boundary of an established district designated as Upper Aliso Creek Historic District. Numerous sites located within this district suggest a settlement system associated with the drainage pattern of the region. Ora-827 indicates a potentially contemporary time frame with these other sites.

10.2.10 Ora-825

Site Documentation

Previously Recorded By: J. Oxendine, W. Pink, B. Crespín (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-418.

Site Location

As Previously Recorded: Located on the slope of a hill overlooking a stream which flows southwest into Aliso Creek; southeast of Tower 23-3.

Current Assessment: Located on a northeast by southwest trending ridge above a drainage which flows into Aliso Creek.

Site Vegetation

As Previously Recorded: Coastal Sage. Vegetation included black sage, white sage, nut grass, river tobacco, staghorn cholla and baccharis. Sycamore and oak were found in the stream channel.

Current Assessment: Two plant communities are represented: Inland Sage Scrub and Southern California Grassland. The central portion of the site is intensely disturbed. The remaining area is covered with thick grasses. As ground visibility was poor in the eastern portion of the site, two areas were cleared of vegetation and carefully examined for the presence of archaeological material. No artifacts were observed within these areas.

Surface Cultural Material

As Previously Recorded: The site was described as a flake scatter with possible depth. Artifacts observed included manos, cores, and flakes. Fire affected rock was also reported.

Current Assessment: A total of 41 surface artifacts were cataloged (Table 10-10). These objects, which were widely scattered over the site area, represent five artifact categories: groundstone, waste production, unifacial tools, miscellaneous modified lithics, and ecofacts. Groundstone objects, which represent 14.6 percent of the surface artifact assemblage, consist of 4 manos and 2 metate fragments. All manos are bifacial, and with the exception of one shaped mano, are unshaped. No evidence of battering is present. One metate is too fragmentary to discern the number of grinding surfaces. The other metate, also a fragment, is clearly unifacial and unshaped. Both are of granitic material. All groundstone objects are situated within an area 100 meters square.

Artifacts indicative of tool manufacturing or sharpening comprise 70.8 percent of all cultural materials observed at Ora-825. A total of 15 flakes are equally divided between chert, basalt, and quartzite materials. Two of the chert flakes which exhibited prepared platforms also have characteristics associated with soft hammer percussion flaking technique. The size of flakes observed on this site are presented below.

	<u>Length (cm)</u>	<u>Width (cm)</u>	<u>Thickness (cm)</u>
Range	2.0-7.9	1.2-5.8	0.1-2.6
Mean	4.3	3.0	1.2

Debitage and cores are composed of the same lithic materials as flakes, with the addition of one piece of chalcedony debitage. The presence of three cores of the same lithic material as the flakes and debitage substantiates the activity of tool manufacture at Ora-825. Percussors or striking implements also are present on the surface in the form of hammer-pounders. Although these objects may be considered multi-function tools, the relatively small size of both suggests flaking activities. A

Table 10-10

Ora-825  
SURFACE ARTIFACTS

	<u>Fragment</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped		3	7.3
Bifacial, Unshaped		1	2.4
Metates	2	2	4.9
Cores		3	7.3
Flakes		15	36.6
Debitage		11	26.9
Sidescraper		1	2.4
Retouched Flakes		3	7.3
Hammer-pounders		<u>2</u>	<u>4.9</u>
TOTAL:		41	100.0

Table 10-10 (Continued)

Ora-825  
SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

Unit	0-10 cm.			10-20 cm.			20-30 cm.			30-40 cm.		40-50 cm.		50-60 cm.	60-70 cm.	70-80 cm.	80-90 cm.	90-100 cm.	100-110 cm.	Total	100
	<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>			
Flakes	2	-	4	-	-	-	-	2	2	-	1	-	1	1	2	3	-	-	2	20	43
Debitage	-	-	4	-	-	3	-	-	9	-	1	-	-	1	-	2	3	2	-	25	53
Hammer-pounder/ Mano Unifacial, Unshaped (fragment)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2
Utilized Flake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	2
<b>TOTAL:</b>	<b>3</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>11</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>47</b>	<b>100</b>

large chert nodule, weighing approximately five pounds, was observed in the southeast portion of the site. Flake scars were not present, but it is probable that the nodule was brought to this locale for the purpose of tool manufacture; chert appears to have been preferred at Ora-825.

Four tools associated with cutting and scraping activities were observed on the surface: one chert unifacial sidescraper and three retouched flakes. A singular primary flake, removed from a cobble core, demonstrates discontinuous random retouch. The remaining two retouched flakes exhibit unifacial retouching, one being randomly retouched on two converging adjacent edges.

The distribution of archaeological surface materials at Ora-825 suggests that a wider range of activities took place on the southern portion of the site. This conclusion is based on the observation that tools, ground and flaked, are situated within an area measuring 25 meters by 10 meters. Other artifacts found on the site are limited to flakes and debitage and are widely scattered, in contrast to the concentrated area on the low lying knoll.

#### Subsurface Cultural Material

As Previously Recorded: It was suggested that the site be tested for depth.

Current Assessment: Three test units were excavated at Ora-825. Unit 1 was located on a small knoll southeast of SCE tower 23-2A. Since the majority of the surface artifacts found on the site were found on the knoll, it was determined to test for subsurface materials at this locale. The unit was excavated to 30 centimeters where sterile decomposed sandstone was encountered. Two chert flakes and one granitic unifacial mano which had also been used as a hammer-pounder were recovered from the 0 centimeter to 10 centimeter level (Table 10-10). Unit 2 was placed near the minimally disturbed northern portion of the site. This location was chosen in order to

test for depth in another area of the site, and to test for subsurface materials near the access road. A loam soil present in the upper levels was replaced by a sandstone intrusion beginning at a depth of 30 centimeters. Excavation was discontinued at 50 centimeters due to the presence of sterile sandstone. Two chert flakes were recovered in the 20 centimeter to 30 centimeter level. Although subsurface depth for Ora-825 was established by the excavation of the two units discussed above, an additional test unit was placed within a cleared area to determine if the subsurface deposit was continuous. Unit 3 was excavated to a depth of 110 centimeters. Rodent activity occurred frequently to 90 centimeters, in soil consisting of sandy loam. From 90 centimeters to 110 centimeters the clay content increased, hindering excavation. The contrast in depth between Unit 3 and the other two test units proved interesting as deep topsoil was not common in the immediate area. A close examination of site relief indicated that Unit 3 may have been placed in association with a sandstone depression which over a period of time accumulated soil deposited by slope wash activity. Cultural materials occurred in all levels of Unit 3. A total of 41 flakes and debitage and 1 utilized flake was recovered from this unit. Artifacts are composed primarily of chert, a lithic material also common to surface artifacts.

Pollen samples were also taken from Unit 3. Results of the analysis indicate that climatic conditions were similar to the present day subtropical climate. Commonly occurring pollens include Asteraceae (Sunflower Family), Poaceae (Grass Family) and Quercus sp. (Oak).

#### Site Dimensions

As Previously Recorded: 17.5 meters by 18 meters.

Current Assessment: The site measures 200 meters by 70 meters.

### Site Integrity

As Previously Recorded: The site had been partially destroyed by construction of the SCE tower. The site was located southeast of the tower, on the same hill. One chalcedony flake was located approximately four meters east of the tower on graded/bulldozed soil.

Current Assessment: Disturbance at Ora-825 has occurred in various forms. Primarily it can be attributed to construction of the SCE steel lattice tower and grading for the access road. Cattle grazing and erosion are also factors to be considered, especially in regard to the minimal depth of in situ subsurface cultural materials.

### Site Activity/Type

As Previously Recorded: A possible processing site.

Current Assessment: The percentage of artifacts associated with waste production indicates that tool manufacture and maintenance were the primary activities at Ora-825. Few tools associated with cutting, scraping or grinding were present, implying only a limited range of activities associated with the procurement of natural resources.

### Site Cultural Affinity

As Previously Recorded: Not stated.

Current Assessment: Cultural affinity at Ora-825 was not well defined.

### Site Significance

As Previously Recorded: Not stated.

Current Assessment: This site appears to be an extractive camp associated with the procurement and processing of resources available within the Aliso Creek drainage system. Ora-825 probably represents short term use.

Site Settlement Pattern

As Previously Recorded: Not stated.

Current Assessment: This cultural resource is near the boundary of an established district designated as Upper Aliso Creek Historic District. Numerous sites are located within this district which suggest a settlement system associated with the drainage pattern of the region. Ora-825 indicates a potentially contemporary time frame with these other sites.

10.2.11 Ora-826

Site Documentation

Previously Recorded By: J. Oxendine and W. Pink (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-419.

Site Location

As Previously Recorded: Located on a ridge north of Aliso Creek.

Current Assessment: Located on a generally east-west trending ridge, north of Aliso Creek and East of Serrano Creek.

Site Vegetation

As Previously Recorded: Coastal sage.

Current Assessment: Vegetation is Inland Sage Scrub with common plants consisting of Black mustard, Black Sage and Coast Sagebrush.

Surface Cultural Material

As Previously Recorded: Large core and flake tools, cores and manos of quartzite and igneous materials.

Current Assessment: A total of three artifacts were mapped on the surface of Ora-826. They include one bifacial (unshaped) mano, one felsite flake and one felsite, double convergent sidescraper (Table 10-11).

Subsurface Cultural Material

As Previously Recorded: The site was not tested for depth although artifacts were found in a road cut.

Current Assessment: Due to lack of artifacts located on the surface, no subsurface testing was conducted.

Table 10-11

Ora-826  
SURFACE ARTIFACTS

	<u>Total</u>	<u>%</u>
Mano		
Bifacial, Unshaped	1	33.3
Flake	1	33.3
Sidescraper	<u>1</u>	<u>33.3</u>
TOTAL:	3	100.0

### Site Dimensions

As Previously Recorded: 40 meters by 260 meters.

Current Assessment: 15 meters by 25 meters.

### Site Integrity

As Previously Recorded: Site had been disturbed by a road cutting through the middle of the ridge on which the site was located.

Current Assessment: A dirt road cuts through the site. There is an SCE access road and steel lattice tower 23-3 201 meters to the northeast.

### Site Activity/Type

As Previously Recorded: Not discussed.

Current Assessment: The presence of a narrow range of cultural material (one mano, one sidescraper, and one flake) indicates that a narrow range of functional activities took place here. Based on the artifact types, extractive tasks are likely.

### Site Cultural Affinity

As Previously Recorded: Not discussed.

Current Assessment: This site lacks material that is diagnostic of a specific culture or that can be accurately dated. The presence of a mano may indicate Milling Stone/Intermediate Horizons.

### Site Significance

As Previously Recorded: Not discussed.

Current Assessment: Any significant information at site Ora-826 has been recorded.

### Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: Further site interpretation will depend on future investigation of sites outside the right-of-way.

10.2.12 Ora-905

Site Documentation

Previously Recorded By: Howard and Carter (1975).

Secondary Recordation(s): J. Oxendine (Bean and Vane 1979).

Temporary/Other Site Designations: Ora-458, CSRI-358.

Site Location

As Previously Recorded: On a small knoll to the south of El Toro Road, northwest of Ora-725.

Current Assessment: The site extends north of El Toro Road, from Aliso Creek north to SCE steel lattice towers 22-4 and 23-1. Ora-458 was included in a field test by the County of Orange (Scientific Resource Surveys, Inc.) in 1976 and 1977. CSRI map documentation of cultural material encountered in 1979 (Bean and Vane) indicates a recorded site location compatible with previous site data. During the current field investigation, however, Oxendine directed surface survey to the south side of El Toro Road, within the project right-of-way, and within the dirt shoulder of the road where CSRI had previously located several flakes. Current surface survey was also directed to the north side of El Toro Road and Aliso Creek towards SCE steel lattice tower 23-1. Both these investigated areas are beyond the original location of site Ora-458, separated from this site either by drainages, other ridges/knolls or Aliso Creek. Since no cultural material could be relocated within the southern shoulder area of El Toro Road, the limited artifacts encountered within the CSRI site area north of El Toro Road/Aliso Creek were concluded to be a distinct incident from cultural evidence at the original site Ora-458. As such, the material was newly designated as site Ora-905. Any discrepancy of site numbering during the current field investigation has been adjusted with the exception of specific artifact black and white photographs. Photo Record Sheets have been corrected.

### Site Vegetation

As Previously Recorded: Grassland.

Current Assessment: Vegetation belongs to Southern California Grassland and Inland Sage Scrub plant communities. Surface vegetation is of low density and did not limit visibility of ground surfaces.

### Surface Cultural Material

As Previously Recorded: Artifacts recorded in 1979 included chalcedony and quartzite flakes and two cores displaced by grading in the cut and surface of an SCE access road crossing Aliso Creek (north of El Toro Road) north to SCE steel lattice towers 22-4 and 23-1.

Current Assessment: No artifact material was encountered within the immediate vicinity of SCE Tower 22-4 or on SCE access roads leading from El Toro Road to the tower base. Artifact material was noted, however, on a south facing slope of Aliso Creek south of tower 22-4 and west of the SCE access road. A total of six artifacts, including of one flake, three pieces of debitage and two unilateral side-scrapers was cataloged at Ora-905 (Table 10-12). Similar to previously recorded cultural material seen at this site (1979) the majority of artifacts noted are composed of chert, with a single example of quartzite (sidescraper), all examples of locally available materials.

East of SCE tower 23-1 and immediately southwest of the access road leading to that tower, a single flake was also noted. Being at a distance from other cultural material and with no other artifacts being in evidence at this location, this single occurrence was considered to be an isolated artifact. As such, the flake was recorded and photographed, but not considered part of site Ora-905.

The bulk of the lithic materials recovered and previously reported are small waste flakes (one noted during current investigation) and debitage, rather than finished

Table 10-12

Ora-905  
SURFACE ARTIFACTS

	<u>Total</u>	<u>%</u>
Flake	1	17
Debitage	3	50
Sidescrapers	<u>2</u>	<u>33</u>
TOTAL:	6	100

tools. Because flakes and debitage are by-products of tool manufacturing or tool sharpening, one often also recovers the cores from which the flakes are struck and the hammerstones used to remove the flakes from the core. At Ora-905, no cores were recovered during the current field program and only two cores were previously noted; no hammer-pounders were encountered. The absence or paucity of cores and hammer-pounders at this site may be indicative of activities that did not involve their use. For example, maintenance of tools through sharpening and shaping could produce numerous small flakes and debitage without necessitating use of a core.

The cultural inventory at Ora-905 lacked quantities of formalized tools, as well as cores and hammer-pounders. The unifacial tools encountered exhibited only basic flaking, as if there were little need for a multi-faceted tool. These tools were probably used to skin hides, scrape woody tissue, work wood, and generally fulfill tasks where chopping and cutting were replaced by scraping.

#### Subsurface Cultural Material

**As Previously Recorded:** Displacement of artifacts within the road was suggested as evidence for subsurface artifact deposition.

**Current Assessment:** The suggestion of subsurface cultural deposition (1979), indicated by previous recordation of artifacts displaced by grading in a SCE access road, could not be substantiated during the current field investigation. No artifacts were relocated within these circumstances. Close examination of access roads, especially road cuts or when deeply graded, and erosional features and drainages, revealed no evidence of subsurface material or culturally altered soils. Since previously described artifacts within access road boundaries were not relocated during current field investigation, there may be a possibility that the road has been cleared since 1979, displacing these artifacts. Whatever the method of displacement, no new artifacts

were uncovered. With only six newly discovered and scattered artifacts encountered on site surface during the current program, the lack of evidence for subsurface remains precluded the desirability of subsurface testing at Ora-905.

Site Dimensions

As Previously Recorded: 40 meters by 60 meters.

Current Assessment: Not determined.

Site Integrity

As Previously Recorded: The site had been disturbed by grading during the construction of the SCE towers and access roads.

Current Assessment: As previously recorded.

Site Activity/Type

As Previously Recorded: None noted.

Current Assessment: The paucity of artifacts as well as lithic types at Ora-905 suggest a rather limited range of activities taking place.

Site Cultural Affinity

As Previously Recorded: None noted.

Current Assessment: The lack of diagnostic artifacts observed at Ora-905 limits a determination of cultural affinity.

Site Significance

As Previously Recorded: Not discussed for this locale.

Current Assessment: The presence of a relatively narrow range of cultural debris encountered at Ora-905 can be taken as an indication that limited types of functional activities took place here. Accordingly, these activities most likely represent extractive tasks. Lacking culturally diagnostic or accurately datable material, further assessment is difficult.

Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: This cultural resource is near the boundary of an established district designated as Upper Aliso Creek Historic District. Numerous sites located within this district suggest a settlement system associated with the drainage pattern of the region. Ora-905 indicates a potentially contemporary time frame with these other sites.

10.2.13 Ora-725

Site Documentation

Previously Recorded By: T. Cooley and A. Schilz (1978).

Secondary Recordation(s): Bean and Vane (1979).

Temporary/Other Site Designations: CSRI-410.

Site Location

As Previously Recorded: Located on a high ridge between Oso and Aliso creeks, south of El Toro Road.

Current Assessment: Located on a east-west trending ridge between Oso and Aliso creeks, south of El Toro Road.

Site Vegetation

As Previously Recorded: Oats and wild grasses with cactus in the ravine.

Current Assessment: Southern California Grassland including Black Mustard and Barley.

Surface Cultural Material

As Previously Recorded: A scatter of artifacts on ridge knoll and down adjacent ravine to southwest. These include two metate fragments, two manos, one hammerstone and several fire-cracked rocks.

Current Assessment: A total of nine artifacts were located on the surface of Ora-725 (Table 10-13). Waste material consists of 44.4 percent of the total surface assemblage, including a total of two basalt and one quartzite flake, and one chert debitage. Artifacts associated with grinding activities, a total of three manos, account for 33.3 percent and consist of 1 unifacial (unshaped) mano, 1 bifacial (unshaped) mano fragment and 1 non-diagnostic mano fragment. Chopping/pounding tools make up 22.2 percent of the total surface artifacts including one quartzite double convergent chopping tool, and one quartzite hammer-pounder.

Table 10-13

Ora-725  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Mano			
Unifacial, Unshaped		1	11.1
Bifacial, Unshaped	1	1	11.1
Non-Diagnostic	1	1	11.1
Flakes		3	33.3
Debitage		1	11.1
Chopping Tool		1	11.1
Hammer-pounder		<u>1</u>	<u>11.1</u>
TOTAL:		9	100.0

Ora-725  
SUBSURFACE ARTIFACTS  
(Unit 1)

	<u>0-10 cm.</u>	<u>10-20 cm.</u>	<u>20-30 cm.</u>	<u>30-40 cm.</u>	<u>Total</u>	<u>%</u>
Flake	-	1	-	-	1	12.5
Historic	<u>5</u>	<u>1</u>	<u>1</u>	<u>-</u>	<u>7</u>	<u>87.5</u>
TOTAL:	5	2	1	0	8	100.0

### Subsurface Cultural Material

As Previously Recorded: No excavation had been conducted, but disking on the site indicated a shallow deposit, perhaps from which the soil had been deflated.

Current Assessment: One unit, adjacent to the access road, was excavated at Ora-725. Soil in the unit is yellow clay from the surface to 40 centimeters, the maximum depth of the unit. Cultural materials recovered include 5 pieces of metal and glass in the 0 centimeter to 10 centimeter level. Recovered objects included one piece of glass and one flake from 10 centimeters to 20 centimeters, and one piece of glass in the 20 centimeter to 30 centimeter level. No cultural material was recovered from the 30 to 40 centimeter level. Climatic conditions based on pollen samples taken from the excavated unit indicate a similarity to present day. Common pollen samples include Asteraceae (Sunflower family) and Poaceae (Grass family); both common to arid to sub-tropical climates.

### Site Dimensions

As Previously Recorded: 20 meters by 20 meters (T. Cooley and A. Schilz 1978); 60 meters by 400 meters (Bean and Vane 1979).

Current Assessment: 70 meters by 140 meters.

### Site Integrity

As Previously Recorded: Disturbed by SCE tower 22-3 and access road. Disking had caused slight displacement of the artifacts.

Current Assessment: An access road and SCE steel lattice tower extend through the site.

### Site Activity/Type

As Previously Recorded: Not discussed.

Current Assessment: The presence of a narrow range and quantity of cultural material encountered at Ora-725 can be taken as an indication of limited functional

activities taking place. Accordingly, these represent extractive activities with an emphasis on the processing of plant foods.

Site Cultural Affinity

As Previously Recorded: Not discussed.

Current Assessment: Preliminary data from the current assessment indicates a lack of material that was diagnostic of a specific culture or that could be accurately dated.

Site Significance

As Previously Recorded: Site is located near several villages and a trail may very likely have run along here (1979).

Current Assessment: Significance is related to the future expansion of knowledge of similar sites in the Upper Aliso Creek Historic District.

Site Settlement Pattern

As Previously Recorded: Site is located near several villages.

Current Assessment: Ora-725, located within the boundaries of the previously established Upper Aliso Creek Historic District, indicates a potentially contemporary time frame with other sites within the district.

10.2.14 Ora-786

Site Documentation

Previously Recorded By: T. Cooley, L. Sullivan and D. Digua in (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-256.

Site Location

As Previously Recorded: Covered two low knolls adjacent to the west bank of Trabuco Arroyo.

Current Assessment: Similar to previously recorded site description.

Site Vegetation

As Previously Recorded: Not noted.

Current Assessment: Light ground cover was consisting primarily of grasses.

Surface Cultural Material

As Previously Recorded: Six metate fragments, four manos, four cores and three flake tools. Artifacts were encountered primarily within graded area of SCE steel lattice tower and access road, although some artifacts were also found on natural ground surface.

Current Assessment: Surface reconnaissance revealed only three artifacts found in similar circumstances to previously recorded cultural material. The recordation of minimal artifacts included a site sketch rather than complete site mapping.

Surface artifacts include one unifacial, unshaped mano, one double convergent quartzite sidescraper and one basalt chopping tool (Table 10-14).

Table 10-14

Ora-786  
SURFACE ARTIFACTS

	<u>Fragment</u>	<u>Total</u>	<u>%</u>
Mano			
Unifacial, Shaped	1	1	33
Sidescraper		1	33
Chopping Tool		<u>1</u>	<u>33</u>
TOTAL:		3	100

### Subsurface Cultural Material

As Previously Recorded: Subsurface cultural deposition estimated at 30 centimeters in depth.

Current Assessment: The lack of evidence for subsurface cultural deposition (i.e., no culturally darkened soil noted; all road cuts/banks and subsurface areas exposed by natural erosion or animal burrowing were examined), as well as minimal surface artifact occurrence, precluded the necessity for subsurface testing.

### Site Dimensions

As Previously Recorded: Estimated at 150 meters by 400 meters.

Current Assessment: Surface artifacts widely scattered over an area approximately 150 meters by 300 meters.

### Site Integrity

As Previously Recorded: Considered already impacted by grading, construction activities and farming activities (disking).

Current Assessment: Further road grading and new road construction may have disturbed previously recorded cultural material. During surface survey, it was discovered that while remnants of an original access road led from SCE tower 18/4 to the south, the former access road had been intersected and replaced by a freshly cut and graded dirt road maintained by Mission Viejo. The newly constructed dirt road, in some places, had been cut at least 50 centimeters below ground surface. However, current field investigation identified two separate, limited artifact areas (loci) as established by previous survey.

### Site Activity/Type

As Previously Recorded: Not stated.

Current Assessment: Artifact analysis, established from current site surface inventory, is too limited to indicate more than minimal tool use for extractive or

food production purposes. The appearance of two separate, albeit limited artifact areas may indicate isolated occurrences or minimal activity areas rather than a site per se.

#### Site Cultural Affinity

As Previously Recorded: Not stated.

Current Assessment: No definite cultural affinity can be determined due to the paucity of artifacts as well as the lack of diagnostic cultural materials. Previously recorded metate fragments may be indicative of Milling Stone Horizon/Intermediate Horizon site use.

#### Site Significance

As Previously Recorded: In 1979, Bean and Vane rated site Ora-786 as being potentially eligible for the National Register based on potential future findings rather than survey results.

Current Assessment: Current investigation revealed fewer surface artifacts than previously identified and no indications of subsurface cultural deposition.

#### Site Settlement Pattern

As Previously Recorded: It was suggested that site Ora-786 might be an extension of another cultural area located beyond the right-of-way to the west, where small artifacts would be obscured by vegetation.

Current Assessment: Although neither survey encountered any surface artifacts west of the SCE access road, the possibility of spatial relation with other nearby sites should be determined after further archaeological survey records have been completed beyond right-of-way vicinity (Cooley 1980:personal communication). A large maintenance campsite (village) has been noted historically within the Trabuco Arroyo area (Section IV), but it is not known if Ora-786 relates to such a settlement system.

10.2.15 Ora-785

Site Documentation

Previously Recorded By: T. Cooley and Digua (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-254.

Site Location

As Previously Recorded: On a low knoll, below a bluff on the west bank of Trabuco Arroyo.

Current Assessment: Not relocated.

Site Vegetation

As Previously Recorded: Not noted.

Current Assessment: Southern California Grassland. Ground visibility was fair.

Surface Cultural Material

As Previously Recorded: Light scatter of Milling Stone artifacts located in area graded for later construction of SCE tower (two metate fragments and one core tool).

Current Assessment: Survey examination of recorded site locale as well as a thorough inspection of surrounding area resulted in the discovery of no cultural material.

Subsurface Cultural Material

As Previously Recorded: No previous excavation noted. A possible subsurface depth of 30 centimeters was suggested.

Current Assessment: All subsurface areas exposed due to natural erosion or human disturbance (i.e., road cuts) were inspected during surface reconnaissance for the

presence of cultural material. No evidence for site subsurface cultural deposition could be determined. SCE tower pad construction had cut into original ground surfaces to a depth of approximately 60 centimeters in some places.

#### Site Dimensions

As Previously Recorded: 50 meters by 50 meters.

Current Assessment: Not determined.

#### Site Integrity

As Previously Recorded: Top of knoll had been graded in preparation for SCE tower construction. Surface artifacts located in graded area. Site area was noted as probably having been disked.

Current Assessment: Since previous survey, SCE steel lattice tower construction has been completed and the access road to the tower has been relocated (as determined through comparisons with previous site sketch by CSRI). The immediate site locale, as previously recorded, has been heavily disturbed although the surrounding area has been impacted only by normal erosion and rancho activities.

#### Site Activity/Type

As Previously Recorded: Not discussed.

Current Assessment: As no artifacts, surface or subsurface, were currently observed at Ora-785, no analysis is possible. Previously described site material, two metate fragments and one core tool, does not supply sufficient data to imply artifact function other than limited food production/extractive tasks.

#### Site Cultural Affinity

As Previously Recorded: Not discussed.

Current Assessment: Current site assessment revealed insufficient data to determine site cultural affiliation. However, based on previously recorded artifact

inventory, the site may have been associated with the Milling Stone Horizon/ Intermediate Horizon.

Site Significance

As Previously Recorded: Not noted.

Current Assessment: Based on current and previous site data, Ora-784 was most likely an isolated occurrence or minimal activity area.

Site Settlement Pattern

As Previously Recorded: Not noted.

Current Assessment: Lack of new information to augment previously recorded data results in insufficient evidence to determine site type or site function. Similar to archaeological site Ora-784, original site context is unknown and spatial relation to other possible nearby sites could be determined only after future archaeological survey records any cultural locales beyond the project vicinity (Cooley 1980: personal communication).

10.2.16 Ora-784

Site Documentation

Previously Recorded By: T. Cooley in 1974.

Secondary Recordation(s): CSRI 1979.

Temporary/Other Site Designations: CSRI-253 (Ora-783). Subsequent literature search and conversations with Cooley determined that the correct numbering for this site is Ora-784.

Site Location

As Previously Recorded: Located on a terrace along the west bank of Trabuco Creek. Artifacts located within an SCE tower pad area.

Current Assessment: Not relocated.

Site Vegetation

As Previously Recorded: Not noted.

Current Assessment: Ground cover light; grasses did not obscure observation of numerous cobbles. Ground visibility was fair.

Surface Cultural Material

As Previously Recorded: Surface artifacts reported as three metate fragments found among cobbles in an area north of an SCE tower.

Current Assessment: After locating the recorded site area by SCE aerial strip map, USGS topographic map, and site sketch map (1979), surface survey was initiated in a south to north direction. Four sweeps were completed, encompassing an area from the SCE steel lattice tower approximately south and west of the previously recorded artifact material to the next SCE tower north. Area surveyed also extended from Trabuco Arroyo west at least 400 meters. All areas exposed by erosion or man-made impacts were examined for the presence of possible subsurface materials. No artifact material was encountered.

### Subsurface Cultural Material

As Previously Recorded: Cooley indicated possible site subsurface depth (from surface examination) to 20 centimeters. Previous analysis indicated that the resource area was apparently a surface site.

Current Assessment: No evidence for site subsurface cultural deposition was encountered and no subsurface test excavation was initiated.

### Site Dimensions

As Previously Recorded: 40 meters by 100 meters.

Current Assessment: Not assessed.

### Site Integrity

As Previously Recorded: Surface artifacts originally recorded as being within SCE tower pad area and not disturbed.

Current Assessment: No disturbances within the recorded site area, except normal erosion/past ranch activities, were noted other than those reported during previous survey.

### Site Activity/Type

As Previously Recorded: Not noted.

Current Assessment: No artifacts observed. Previously recorded metate fragments may be evidence of a minimal occurrence of cultural debris related to food production/extraction.

### Site Cultural Affinity

As Previously Recorded: Not stated.

Current Assessment: No artifacts observed during current assessment. However, as based on previously recorded groundstone items, site may have been associated with Milling Stone/Intermediate Horizons.

Site Significance

As Previously Recorded: Not stated.

Current Assessment: Lack of new information to augment previously recorded data results in limited evidence to determine site significance. Site significance is limited to existing information.

Site Settlement Pattern

As Previously Recorded: Not stated.

Current Assessment: Although a large maintenance campsite (village) is noted historically within the Trabuco Arroyo area, it is not known if these artifacts relate to that settlement system. Future archaeological survey outside of the project vicinity may determine the significance of these remains (Cooley 1980:personal communication). Current and previous intensive surveys indicate a lack of cultural material within the immediate vicinity of site Ora-784.

10.2.17 Ora-782

Site Documentation

Previously Recorded By: J. Bickford and T. Cooley (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-251.

Site Location

As Previously Recorded: Situated on an old stream terrace on the east bank of Trabuco Arroyo.

Current Assessment: The site is located on a relatively flat terrace which has been recently disked.

Site Vegetation

As Previously Recorded: Vegetation consisted of grasses and mustard.

Current Assessment: Ground cover consists primarily of short grasses, good visibility of the ground.

Surface Cultural Material

As Previously Recorded: One metate fragment and two chert flakes.

Current Assessment: Observation of site surface revealed a total of 29 artifacts, with the majority of the artifacts being located in the southern portion of the site area. The remainder were widely scattered throughout the rest of the site. The range of artifacts is limited to three categories: groundstone, production waste and unifacial tools.

As shown on Table 10-17, surface lithic waste relating to stone tool manufacture or maintenance comprise 69 percent of the total artifacts. Artifacts indicative of grinding comprise 37.6 percent, and cutting/scrapping tools comprise 3.4 percent.

Basalt is the most common material found at Ora-782. A majority of the flakes and the single flaked tool are of this material. Chert and jasper flakes are

Table 10-17

Ora-782  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped	4	4	13.9
Bifacial, Unshaped		1	3.4
Bifacial, Shaped		1	3.4
Metates	2	2	6.9
Flakes		18	62.1
Debitage		2	6.9
Sidescraper		<u>1</u>	<u>3.4</u>
TOTAL:		29	100.0

Ora-782  
SUBSURFACE ARTIFACTS  
(Unit 1)

	<u>0-10 cm.</u>	<u>10-20 cm.</u>	<u>20-30 cm.</u>	<u>30-40 cm.</u>	<u>40-50 cm.</u>	<u>50-60 cm.</u>	<u>Total</u>	<u>%</u>
Flakes	-	-	1	3	-	2	6	67
Debitage	-	-	-	-	-	1	1	11
Sidescraper	-	-	-	1	-	-	1	11
Endscraper	-	-	-	-	<u>1</u>	-	<u>1</u>	<u>11</u>
TOTAL:	0	0	1	4	1	3	9	100

present in minimal amounts, as is felsite. Evidence of soft hammer percussion, a technique employed in removing flakes from cores, is present on three flakes. Patination of materials is evident in varying degrees, however, this characteristic is not considered significant for the analysis of materials at Ora-782. Although flakes and debitage, as by-products of tool manufacture or maintenance, are often found in association with cores or hammer-pounders, no cores or hammer-pounders were encountered.

Metates and manos constitute the milling tools cataloged at this site. One complete metate and one metate fragment were observed; both were unifacial. Of the manos cataloged, three subtypes are present. Unifacial, unshaped manos are the most common form; four of the six manos noted are of this subtype. The remaining manos are bifacial, unshaped and bifacial, shaped. The shaped mano was granitic. Battering characteristics are absent on all manos and mano fragments.

#### Subsurface Cultural Material

As Previously Recorded: Site estimated as having a depth of 30 to 40 centimeters by Bickford and Cooley.

Current Assessment: One test unit was excavated to a depth of 60 centimeters. No cultural material was recovered in the first 20 centimeters. However, a total of 9 artifacts was removed from the remaining 40 centimeters (Table 10-17). As in the surface assemblage, items related to tool manufacture or maintenance comprise the greater percentage of materials. The remaining artifacts represent cutting/scraping activities. Subsurface evidence of grinding is absent. The soil, a moist sandy loam, facilitated excavation. Rodent activity was observed to a depth of 50 centimeters. Below this depth, a significant increase in the quantity of cobbles was present.

#### Site Dimensions

As Previously Recorded: At least 50 meters by 50 meters.

Current Assessment: 90 meters by 140 meters.

### Site Integrity

As Previously Recorded: Past disking activity is likely.

Current Assessment: As noted above, archaeological site Ora-782 has been disked recently to maintain suitable cattle grazing land. Grazing probably causes little disturbance in comparison to the impact of soil cultivation. Disking furrows, although not clearly visible at this locale, have been determined to reach a depth of 40 centimeters. It is on this basis that subsurface test results and artifact distribution will be influenced.

Natural erosion is minimal due to the level surface of the terrace upon which the site is located; however, it is possible that slope wash on the northwestern portion of the site has caused some displacement of cultural materials.

Additionally, the construction of a SCE steel lattice tower has contributed to overall disturbance.

### Site Activity/Type

As Previously Recorded: None suggested.

Current Assessment: Cultural material associated with waste production comprise the majority of recovered artifacts, 69 percent of the surface and 78 percent of the subsurface material. Tools indicative of cutting or scraping activities amount to 3.4 percent and 22 percent respectively. Artifacts associated with milling activity are present on the surface only, and comprise 27.6 percent of the surface assemblage.

### Site Cultural Affinity

As Previously Recorded: Not noted.

Current Assessment: Cultural affinity is not well defined at Ora-782. Evidence of milling items may be indicative of either Milling Stone Horizon/ Intermediate Horizon or Late Horizon activities.

Site Significance

As Previously Recorded: None suggested.

Current Assessment: The range of artifacts at Ora-782 would indicate a work camp rather than a base camp. Because of the grinding and cutting/scraping tools it would appear that the occupants were extracting food resources and processing them on-site over a limited period of time.

Site Settlement Pattern

As Previously Recorded: None suggested.

Current Assessment: Ora-782 may be related to other sites situated along Trabuco Arroyo. A review of sites within a mile of this cultural resource suggests that these sites are extractive work camps. Additional assessments beyond the transmission right-of-way would be necessary for a determination of the settlement system.

10.2.18 Ora-499

Site Documentation

Previously Recorded By: P. Langenwalter and J. Howard (1974).

Secondary Recordation(s): W. Dodge (1978); (Bean and Vane 1979).

Temporary/Other Site Designations: Field No. 1 (1974); CSRI-323 (1979).

Site Location

As Previously Recorded: On west side of Laguna Canyon road adjacent and west of Poh Ranch.

Current Assessment: Location in agreement with previously recorded locale.

Site Vegetation

As Previously Recorded: Medium cover of European grass, thistle and small plants.

Current Assessment: Ground cover of low lying grasses of the southern California Grassland Community.

Surface Cultural Material

As Previously Recorded: 1974: Manos, metate, chopper, mano hammerstone. 1978: Two mano fragments within a 1200 sq. meter area. 1979: Manos, metate fragment, quartzite core, igneous tools, and chalcedony flakes. Distribution was reported as scattered with a low artifact density.

Current Assessment: A total of 49 surface artifacts was cataloged at Ora-499. As shown on Table 10-18, the majority of artifacts are associated with flaking and milling activities. Flaked lithics are composed primarily of basalt, with infrequent chalcedony, rhyolite and felsite. Evidence of patination is absent as are characteristics which would aid in a determination of specific flaking technology. One

Table 10-18

Ora-499  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped	4	8	16.30
Bifacial, Unshaped	3	3	6.12
Non-Diagnostic	1	1	2.04
Metates	4	4	8.20
Core		1	2.04
Flakes		15	30.60
Debitage		7	14.30
Sidescrapers		2	4.08
Hammer-pounders		4	8.16
Composite Tool		1	2.04
Retouched Flakes		<u>3</u>	<u>6.12</u>
TOTAL:		49	100.0

Ora-499  
SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

Unit	0-10 cm.		10-20 cm.		20-30 cm.	30-40 cm.	<u>Total</u>	<u>%</u>
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>		
Wedge-Shaped Mano	-	-	-	<u>1</u>	-	-	<u>1</u>	<u>100</u>
TOTAL:	0	0	0	1	0	0	1	100

Table 10-18 (Continued)

Ora-499

CULTURAL ACTIVITIES AS REPRESENTED BY ARTIFACT TYPES

	<u>Milling</u>	<u>Flaking</u>	<u>Cutting/Scraping</u>	<u>Chopping/Pounding</u>
Surface	32.66%	46.94%	10.2%	10.2%
Subsurface	100%	-	-	-

shellfish species, Laevicardium substriatum (Egg Cockle), was identified at Ora-499. The Egg Cockle is common to sand bottoms and sloping banks in bays or offshore. One nearly complete hinge of this species was recorded.

#### Subsurface Cultural Material

As Previously Recorded: Not tested. Depth unknown; none apparent (1974); no depth reported (1979).

Current Assessment: Two test units were excavated. Unit 1 was excavated to a depth of 20 centimeters. Unit 1, located in the access road, indicated no cultural subsurface depth. Unit 2 was placed upslope from the steel lattice tower in an area of relatively high artifact density. One wedge-shaped mano was recovered at a depth of 10 centimeters to 20 centimeters. Fire cracked rock was also observed at this level. Excavation to a depth of 40 centimeters indicated no additional cultural materials. Unit 2 was located on a slope which has been cultivated for many years.

#### Site Dimensions

As Previously Recorded: 50 meters by 100 meters (1974); 120 meters by 120 meters (1978); larger than previously reported, site extended north of tower M1/T4 (1979).

Current Assessment: 120 meters by 280 meters.

#### Site Integrity

As Previously Recorded: Site disturbance noted by Langenwalter and Howard (1974) included the construction of a transmission tower on the site in addition to plowing and disking activities. Dodge (1978) proposed that recent disking at this locale created sufficient disturbance to destroy the site. Bean and Vane (1979) reported minimal impact by towers on the site, which had been recently disked.

Current Assessment: Disturbance, evident primarily on the eastern portion of the site, includes grading associated with construction of a steel lattice tower and an

access road. A portion of the access road has deep erosional cuts as a result of recent rains washing downslope. Slopewash was diverted to the access road by berms which run roughly parallel to the road. Disking activity, evident throughout the site area, has undoubtedly affected the distribution of surface artifacts which are widely scattered.

#### Site Activity/Type

As Previously Recorded: Not suggested.

Current Assessment: The limited use of site Ora-499 is indicated not only by the general paucity of artifacts, but also by the lack of significant depth. This locale probably was not used over long periods of time nor was the activity intense. Cultural materials indicate that extractive activities occurred at this locale.

#### Site Cultural Affinity

As Previously Recorded: Cultural affinity was not discussed.

Current Assessment: Limited evidence of milling activities may suggest Milling Stone/Intermediate Horizons.

#### Site Significance

As Previously Recorded: Dodge in 1978 considered that site Ora-499 failed to meet National Register criteria based on site disturbance.

Current Assessment: Although site area at Ora-499 has been disturbed, current assessment does not consider disturbance (from erosion or farming) to be the only major criterion for site significance. Site Ora-499 most likely represents a work camp/procurement camp. Site significance lies in inter-site variables seen in a settlement pattern including Ora-495 and Ora-496 (see Sections 10.2.19 and 10.2.20).

#### Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: Six archaeological sites are located within one mile of Ora-499. Most appear to have been extractive camps associated with a settlement

system related to resources available along Laguna Canyon. These site types include lithic scatters, a milling station, and a rock shelter with pottery and seashell on the surface. Additionally during current field investigation, a newly recorded lithic scatter was discovered to the west of Ora-499. Site Ora-904 consisted of 12 flakes, core tools and hammer-pounders. Most likely representative of an extractive/work camp with limited use, this site is not known beyond survey data and can not yet be included within a settlement pattern. No ethnographic references to this area could be documented.

10.2.19 Ora-495

Site Documentation

Previously Recorded By: P. Langenwalter (1974).

Secondary Recordation(s): W. Dodge (1978). Bean and Vane (1979).

Temporary/Other Site Designations: Field No. 2 (1974); CSRI-321 (1979).

Site Location

As Previously Recorded: Situated along a ridge crest on the north side of Laguna Canyon (Langenwalter 1974).

Current Assessment:

Site Vegetation

As Previously Recorded: Light to heavy European grass cover.

Current Assessment: Inland Sage Scrub and Southern California Grassland community. Predominantly low lying grasses.

Surface Cultural Material

As Previously Recorded: "Extensive scatter of artifacts which appear to be relatively uniform over the site area and broken only where access roads or tower pads have been placed" (Langenwalter 1974). Dodge (1978) reported a widely dispersed artifact scatter comprised mostly of bifacial manos, oval and oblong in shape. Hammerstones were present, but other chipped stone was rare. One crudely made scraper was found.

A later survey (Bean and Vane 1979) reported that numerous artifacts were observed on the access road. The site was described as extensive. Artifacts included quartz, quartzite, chalcedony and igneous flakes, in addition to manos, tools, and metates. Nine apparent rock cairns and an alignment of small boulders were also observed, and it was stated the possibility existed that the site might contain burials.

Current Assessment: An extensive artifact scatter was observed at Ora-495 (Table 10-19) in addition to several types of features. Artifact distribution is variable over portions of the site. In the northwestern portion of the site the density of cultural material contrasts sharply with the outer fringes. Of a total of 144 artifacts observed, the majority are from a relatively small area. Because of this varying density, surface artifacts were treated as clusters and cataloged by area. Areas of density are outlined on the field maps. The area of highest density (Area B) is near the junction of two access roads.

Surface artifacts are comprised primarily of groundstone and waste production materials. Groundstone objects account for 26 percent of the total artifact assemblage. These items, indicative of milling or grinding activities, consist of metates and manos. All metates are unifacial and four of them are shaped. The manos are represented by a variety of lithic materials, and a wide range of sizes and subtypes. Cobble manos occur most frequently, including quartzite, sandstone, and igneous materials. Subtypes include both unifacial and bifacial, shaped and unshaped, manos.

Waste production materials consisted primarily of basalt; however, chert, quartz, felsite, rhyolite, jasper, chalcedony and petrified wood were also evident in minimal amounts. Flaked tools, also primarily of basalt, consisted of 11 retouched flakes and one domed scraper.

Two types of features were observed at Ora-495: rock clusters, or cairns, and bedrock milling elements. The bedrock features were located on an extensive sandstone outcrop at the northwestern edge of the site. Feature A consists of one bedrock rub. Feature B consists of two bedrock slicks. All elements are oval shaped and are of similar length and width.

The other rock features observed seem to correspond with those reported as apparent rock cairns by Bean and Vane (1979). Metates were found in association with

Table 10-19

Ora-495  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Mano			
Unifacial, Unshaped	10	10	6.9
Unifacial, Shaped	1	1	.7
Bifacial, Unshaped	3	6	4.2
Bifacial, Shaped	3	7	4.9
Non-Diagnostic	1	5	3.5
Metates	8	8	5.6
Cores		6	4.2
Flakes		40	27.7
Debitage		41	28.4
Hammer-pounders			9
Retouched Flakes		<u>11</u>	<u>7.6</u>
TOTAL:		144	100.0

Ora-495  
SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

Unit	<u>0-10 cm.</u>		<u>10-20 cm.</u>		<u>20-30 cm.</u>	<u>Total</u>	<u>%</u>
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>			
Flakes	2	-	1	-	-	3	50
Debitage	-	<u>2</u>	-	<u>1</u>	-	<u>3</u>	<u>50</u>
TOTAL:	2	2	1	1	0	6	100

Features 2, 3, and 7. These rock clusters were documented in an attempt to aid a later determination as to whether these clusters are of pre-European or post-European origin. Pre-European origin would indicate cairns which may be associated with burials. Post-European origin would suggest that the clusters may be a result of rock clearance associated with agricultural activities. Additional studies are required for determining a pre-European or post-European existence.

#### Subsurface Cultural Material

As Previously Recorded: Langenwalter (1974) reported that there was no apparent development of midden. Bean and Vane (1979) suggested that artifacts exposed by grading of access roads indicated a subsurface deposit of cultural materials.

Current Assessment: Two test units were excavated at Ora-495. Minimal amounts of cultural materials were retrieved. Unit 1, excavated to a depth of 30 centimeters, produced three flakes between the surface and a depth of 20 centimeters. Unit 2, excavated to bedrock at 20 centimeters produced 3 pieces of debitage.

#### Site Dimensions

As Previously Recorded: As much as 3000 feet in length along its north-south axis (1974). 200 meters by 90 meters was suggested by Dodge (1978).

Current Assessment:

#### Site Integrity

As Previously Recorded: Disturbance in artifact distribution where access roads or tower pads have been placed (Langenwalter 1974). Dodge (1978) reported two towers located within site boundaries with an access road transecting the site. He also stated that "a good deal of land modification has taken place during tower construction."

Current Assessment: Disturbance at Ora-495 varies. Heavy disruption near the northern portion of the site is due to tower construction and grading for access

roads. Areas between bedrock outcrops appear to be relatively intact. The site is presently used for cattle grazing. Evidence of past disking activity can be seen in the edges of bedrock outcrops and on rocks associated with the rock clusters.

Site Activity/Type

As Previously Recorded: Not discussed.

Current Assessment: Ora-495 is probably an extractive camp which relates to other sites in the area in terms of the procurement and processing of plant resources.

Site Cultural Affinity

As Previously Recorded: Langenwalter (1974) suggests that artifacts are representative of the Encinitas Tradition.

Current Assessment: Limited evidence of milling activities may suggest the Milling Stone/Intermediate Horizons. No diagnostic artifacts were observed which would allow a more clearly defined determination.

Site Significance

As Previously Recorded: Not discussed.

Current Assessment: Site significance lies in inter-site variables which relate to a settlement system including Ora-499, Ora-496, and Ora-494. Although the rock clusters have been assessed as thoroughly as possible during current assessment, future studies are possible. Ethnohistorical research may indicate any construction by farming activities. Pre-European origins might be exposed by excavation of these features although Native American sensitivities preclude such testing. Comparison with other known rock cairns may also document pre-European origins.

Site Settlement Pattern

As Previously Recorded: A preference for hill tops or first terrace ridges above major drainages was inferred by Dodge (1978). Dodge suggests a constant use of

these topographic settings through time for a similar purpose: processing of plant resources.

Current Assessment: Ora-495 appears to be related to other sites in the Laguna Canyon vicinity. Artifact assemblages and site types indicate interrelatedness within a potentially similar time frame. One site located nearby, Ora-494, offers a potential for further study relating to the establishment of a time frame that fits within the occupation of these other sites. The presence of pottery at the rock shelter Ora-494 suggests late occupation; based on development of midden there, that site may span several horizons.

10.2.20 Ora-496

Site Documentation

Previously Recorded By: P. Langenwalter (1974).

Secondary Recordation(s): W. Dodge (1978); (Bean and Vane 1979).

Temporary/Other Site Designations: Field No. 3 (1974); CSRI-322 (1979).

Site Location

As Previously Recorded: On a low hill adjacent to Laguna Canyon Road in Laguna Canyon.

Current Assessment: Similar to previously recorded information, this site is located on a knoll on the west side of Laguna Canyon.

Site Vegetation

As Previously Recorded: European grass and thistle.

Current Assessment: (1) Inland Sage Scrub and (2) Southern California Grassland.

Surface Cultural Material

As Previously Recorded: Langenwalter (1974) cited manos, a chipped stone scraper, and chipped stone. Pecten sp. shell was also observed. Dodge (1978) described the site as containing metates, manos, hammer-pounders and chipped stone. No shell was reported at that time. Bean and Vane (1979) located five manos, two quartzite cores, and a metamorphic tool.

Current Assessment: Twenty-six artifacts were identified; most were located on the south facing slope of the knoll. In addition, 19 shell fragments were noted. Milling tools include two metates and eight manos. One metate fragment displays a slightly concave surface with characteristics of an unshaped portable basin.

The activity of tool production is suggested by the presence of three cores, five flakes and two pieces of debitage. The cores are composed of basalt, quartz, and

an undetermined metavolcanic material. Flakes noted are of these same lithic materials plus chert. Flakes range in length from 2.6 centimeters to 9.7 centimeters with a mean length of 5.8 centimeters. The sample size diminishes analytic significance but the size range may be associated with tool production rather than tool maintenance. Characteristics associated with hard and soft hammer percussion flaking techniques were observed.

With the exception of a possible pushplane, all flaked stone tools are composed of basalt. The quartzite pushplane may actually be a core even though it possesses characteristics associated with a unifacial tool. Basalts comprise the largest category of lithic material. Chert, quartz, quartzite and a metavolcanic material are present in minimal amounts.

#### Subsurface Cultural Material

As Previously Recorded: Not tested.

Current Assessment: Two test units were excavated at Ora-496. Unit 1 test results were negative. Testing of the second unit produced only seashell remains; shellfish remains were retrieved at depths of 20 centimeters to 50 centimeters.

Shellfish Analysis: Two shellfish species, Chione sp. (Cockle), and Aequipecten circularis (Speckled Scallop) were identified during the surface cataloging at Ora-496. A total of 2 Chione fragment and 17 fragments of Pecten sp. were observed. These shellfish, associated with a bay/estuary environment, offer no seasonality information.

Subsurface testing resulted in the recovery of three shellfish species (Table 10-20), only one of which (Aequipecten circularis) was present on the surface. A total of two Balanus sp. (Barnacle), nine Mytilus sp. (Mussel), and one Aequipecten circularis (Speckled Scallop) were retrieved.

Table 10-20

Ora-496  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial	2	2	7.7
Bifacial, Unshaped	3	6	23.1
Metates	2	2	7.7
Core		3	11.5
Flakes		5	19.3
Debitage		2	7.7
Sidescrapers	1	2	7.7
Chopping Tool		1	3.8
Pushplane		2	7.7
Hammer-pounder		<u>1</u>	<u>3.8</u>
TOTAL:		26	100.0

Ora-496  
SURFACE SHELLFISH REMAINS

		<u>Total</u>	<u>%</u>
<u>Chione</u> sp.	fragments	2	10.5
<u>Aequipecten circularis</u>	fragments	<u>17</u>	<u>89.5</u>
TOTAL:		19	100.0

Table 10-20 (Continued)

		Ora-496 SUBSURFACE SHELLFISH REMAINS							
Unit	<u>0-10 cm.</u>		<u>10-20 cm.</u>		<u>20-30 cm.</u>	<u>30-40 cm.</u>	<u>40-50 cm.</u>	<u>Total</u>	<u>%</u>
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>		
<u>Balanus sp.</u>	-	-	-	1	1	-	-	2	17
<u>Mytilus sp.</u>	-	-	-	3	1	4	1	9	75
<u>Aequipecten circularis</u>	-	-	-	<u>1</u>	-	-	-	<u>1</u>	<u>8</u>
TOTAL:	0	0	0	5	2	4	1	12	100

Seasonal exploitation of Mytilus sp. may be indicated by the presence of the California mussel, Mytilus californianus. The California mussel may accumulate the toxin produced by dinoflagellates of the genera Gonyaulax. Blooms of these dinoflagellates create a situation referred to as "red tide." Gonyaulax becomes dangerously abundant only during the summer months along the open coast. The occurrence of Mytilus sp., especially Mytilus californianus may indicate seasonal exploitation taking place sometime between September to April.

Two species observed are usually associated with intertidal zones along the rocky shores (Mussel and Barnacle). The other, Aequipecten circularis, is more commonly associated with a bay/estuary environment.

#### Site Dimensions

As Previously Recorded: Projected as 134 meters x 231 meters by Langen-walter and 30 meters x 75 meters by Dodge.

Current Assessment: 70 meters x 205 meters.

#### Site Integrity

As Previously Recorded: Site had been impacted by the SCE access road.

Current Assessment: Disturbance noted includes SCE tower construction and grading of access road. Artifact distribution may be result of slope wash; however, this occurrence was not evident in subsurface testing. Area of highest density of artifacts appears to be relatively undisturbed.

#### Site Activity/Type

As Previously Recorded: None suggested.

Current Assessment: Cultural material associated with grinding activities and waste production is equally represented with each activity comprising 38.5 percent of the total assemblage. Tools indicative of cutting or scraping activities amounts to

15.4 percent, and chopping or pounding activities are suggested by the presence of two artifacts.

#### Site Cultural Affinity

As Previously Recorded: Surface artifact scatter of manos and chipped stones which appear to represent the Encinitas tradition (Milling Stone/Intermediate Horizons).

Current Assessment: The site appears to be a surface manifestation of a Milling Stone Horizon extractive camp, if manos can be considered a diagnostic trait. Otherwise, indications are few as to cultural affinity.

#### Site Significance

As Previously Recorded: This site was categorized as less significant by Bean and Vane (1979).

Current Assessment: Information provided by subsurface testing suggests a limited use area. Shellfish occurred subsurface, but not in association with cultural materials. Significance lies in the application of retrieved surface information in relation to intra/inter-site variables.

#### Site Settlement Pattern

As Previously Recorded: Not noted.

Current Assessment: Sites Ora-496, Ora-495 and Ora-499 all occur within a mile of each other along the same canyon. All appear to have manos, metates, hammerstones, scrapers and flaking waste or a combination of these, indicating similar extractive areas along the canyon ridges and slopes.

10.2.21 Ora-824

Site Documentation

Previously Recorded By: J. Oxendine, W. Pink (Bean and Vane 1979).

Secondary Recordation(s): M. Cottrell (1980); same area surveyed in 1973 by Archaeological Research, Inc., but site area not reported.

Temporary/Other Site Designations: CSRI-250.

Site Location

As Previously Recorded: On and between two small knolls to the east of an SCE access road.

Current Assessment: Located as previously recorded.

Site Vegetation

As Previously Recorded: Grasses.

Current Assessment: Scattered grasses; site had been recently disked.

Surface Cultural Material

As Previously Recorded: Cores, tools, a light flake scatter in the access road and a heavier flake scatter east of the access road. Also east of the access road, CSRI located an area approximately three meters in diameter with a compacted circular surface that suggested possible evidence of a hearth associated with a house or sweatlodge floor. Just prior to current field investigation, M. Cottrell visited site area Ora-824 and confirmed that the site consisted of a dense scatter of chipped stone and groundstone items.

Current Assessment: Survey within the access road boundaries located six artifacts. Cultural material consists of two quartzite flakes, two chalcedony debitage, a basalt core and one chert sidescraper (Table 10-21). Since archaeological site Ora-824 was included in the present assessment due to the proximity of an access road

Table 10-21

Ora-824  
SURFACE ARTIFACTS

	<u>Total</u>	<u>%</u>
Core	1	17
Flakes	2	33
Debitage	2	33
Sidescraper	<u>1</u>	<u>17</u>
TOTAL:	6	100

rather than being within the project right-of-way proper, Mission Viejo/Aliso Viejo allowed current field investigation only within the access road boundaries. A casual and limited inspection of the areas beyond the access road revealed no readily apparent surface artifacts to the west of the road. To the east, however, within the previously recorded site area and on the east side of a small knoll, chalcedony and quartz flakes are present on and below the ground surface immediately next to and within erosional cuts that had prohibited disking. Scattered pieces of milky quartz were also noted covering the knoll area although cultural alteration of these could not be established.

#### Subsurface Cultural Material

**As Previously Recorded:** Cottrell (1980) advised that observations of erosional cuts indicated site depth to be 60 centimeters to 80 centimeters (Appendix A). Bean and Vane (1979) also suggested subsurface cultural deposition based on surface site survey.

**Current Assessment:** Substantial use of the site area for Native American activities may be maintained by the occurrence of subsurface materials. Erosional cuts have resulted in materials being exposed at least 20 centimeters below ground surfaces and to a maximum depth of 60 centimeters to 80 centimeters. The maximum depth encountered goes beyond probable disruption by farming activities and most likely represents a true subsurface depth.

#### Site Dimensions

**As Previously Recorded:** 140 meters by 360 meters (Bean and Vane 1979). Cottrell suggested that site areal extent was smaller than previously recorded.

**Current Assessment:** 10 meters by 75 meters (access road only). Total site extent could not be determined due to limitations imposed; approximation given on USGS 7.5' quadrangle.

### Site Integrity

As Previously Recorded: Ora-824 has been disturbed continuously by farming activities.

Current Assessment: Area to the east and west of the access road, including the previously recorded site locale, was recently disked. All portions of the site area have been cleared by machinery turning the soil to a depth of 20 centimeters to 40 centimeters and leaving the soil in large chunks. All vegetation has been removed. Comparing the previously recorded feature with Bean and Vane (1979) photos, consultations with Joan Oxendine and surveyance of the presently disturbed terrain, it was determined that any evidence for that feature has been removed.

As noted during current field investigation, farming activities associated with clearing (disking) have obscured much of the surface cultural debris at Ora-824. Any evidence of a feature has also been disrupted by diskings. Presumably, natural processes, i.e., rain and subsequent erosion, periodically reveal surface materials. It seems improbable that clearing and diskings had not previously disturbed the site area prior to current field investigations. Both Bean and Vane in 1979 and Cottrell in 1980 encountered surface materials prior to diskings. Previous expansions or contractions of surface site boundaries may also be attributed to the smearing or obscuring of surface materials by diskings.

Site Ora-824, as confirmed by Cottrell (Appendix A), is located approximately 200 meters south of the existing power lines. It is the SCE access road, also used and maintained by Aliso Viejo, that appears to lie adjacent to the site area. Present field investigation could not determine exact site surface boundaries, although previous site documentation suggested that the impact of access is minimal as the road skirts the western boundary of the site.

### Site Activity/Type

As Previously Recorded: Suggested that site may have functioned as a quartz quarry.

Current Assessment: Since previously recorded cultural material noted at Ora-824 has not been specifically identified as to tool type or material, site type, activity and function can only be hypothesized. From past artifact inventories combined with current cataloging, archaeological site Ora-824 (when not obscured by disking) may represent a rather substantial work camp or possibly base camp where a variety of activities would have taken place. The presence of numerous cores and flakes suggests tool manufacture and maintenance. Recordation of tools, including the sidescraper located during current investigation, is indicative of various extractive tasks and/or maintenance tasks. Tool production from cores and subsequent waste debris (flakes and debitage), utilizing a nearby quartz outcrop, may also substantiate use of the site as a quarry area. However, the presence of chalcedony and quartzite flakes and debitage with at least one basalt core would possibly indicate obtainment of materials beyond the site boundaries for specific onsite activities. Food production and associated extractive tasks may be further suggested by noted groundstone items.

### Site Cultural Affinity

As Previously Recorded: Not stated.

Current Assessment: Current field investigation could not define a specific cultural component at Ora-824. Previously recorded groundstone artifacts may be indicative of a Milling Stone Horizon/Intermediate Horizon.

### Site Significance

As Previously Recorded: High potential for significance ("A" status as rated by Bean and Vane 1979).

Current Assessment: Multiple site activities, and function of site as possible maintenance camp-base camp with a potentially substantial subsurface deposition, indicate a significance dependent on future collection and use of data.

Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: Without specific cultural sequence and without documentation from other archaeological resources within the given area (previous fieldwork is limited to site Ora-419), a relationship between this site and others as components of a local settlement system and as an encompassing regional settlement system cannot be determined. A hypothesis that occupants of site Ora-824 would have congregated here from nearby extractive camps would best be assessed by a more holistic analysis of this resource and associated outlying sites, with careful definition of Ora-824 site boundaries and site content from surface collection and subsurface inventory, during investigations which are being planned by Aliso Viejo.

10.2.22 Ora-419

Site Documentation

Previously Recorded By: T. Cooley and M. Hall of Archaeological Research, Incorporated (1973).

Secondary Recordation(s): P. Langenwalter (1974); W. Dodge (1978); J. Oxendine and W. Pink (Bean and Vane 1979); M. Cottrell (1980) (see Appendix A).

Temporary/Other Site Designations: CSRI-205.

Site Location

As Previously Recorded: Described as being on a slightly sloping area on a ridge running down to a spring. CSRI listed site area as being on a knoll within 150 feet of an SCE steel lattice tower (1979).

Current Assessment: Previously described site area revisited; despite in-field consultations with Oxendine. Site not relocated.

Site Vegetation

As Previously Recorded: Not stated.

Current Assessment: Vegetation dense, although an exposed limestone deposit appeared clearly between rows of planted grains and in access road.

Surface Cultural Material

As Previously Recorded: Manos, a large metate fragment and a chopper (1973). In 1974, site appeared to be in same condition as when first located. In 1978 and 1979, original cultural material described as site Ora-419 could not be relocated. Bean and Vane (1979) did, however, encounter two rock cairns, and a depressed area near one cairn which might indicate the ruins of a prehistoric house, near the previously delineated site area. No artifacts were noted associated with cairns.

Current Assessment: An intensive site surface survey terminated with negative results. Neither cultural materials nor rock features were encountered. Surface

examination was extended beyond the site area with similar results. West 228<sup>0</sup> (approximately 21 meters) of the southernmost tower (22/1), but within the recorded site area, large pieces of limestone were noted on the surface. The only evidence for a possible rock cairn was indicated by these scattered limestone fragments, now smeared horizontally by recent disking but more densely concentrated than surrounding pieces.

#### Subsurface Cultural Material

As Previously Recorded: Not stated.

Current Assessment: The lack of cultural material, as well as exposure of the underlying limestone formation, precluded subsurface assessment.

#### Site Dimensions

As Previously Recorded: 30 meters by 60 meters (1973).

Current Assessment: Site not relocated.

#### Site Integrity

As Previously Recorded: Langenwalter suggested in 1974 that Ora-419, near an existing transmission line, might be impacted by future SCE construction of a second line. Later investigations by W. Dodge (1978) and Bean and Vane (1979) failed to relocate original cultural debris. However, CSRI did encounter two rock cairns adjacent to the previously recorded site area and indicated indirect potential impact to these features from users of the access road (1979).

Current Assessment: SCE construction activities have disturbed the present ridge area and at some time may have leveled the slightly sloping area on the ridge in preparation for a tower platform, thereby removing the limited quantity of artifacts. These activities, with the addition of grading for an access road, apparently left undisturbed the site features newly discovered in 1979. Farming related activities (disking at the site was taking place during current assessment) have now most likely destroyed remaining site evidence.

Site Activity/Type

As Previously Recorded: As originally recorded in 1973, artifacts at Ora-419 appear to be indicative of a limited range of activity most likely associated with extractive tasks.

Current Assessment: Site not relocated.

Site Cultural Affinity

As Previously Recorded: Milling Stone Horizon (Encinitas Tradition).

Current Assessment: Failure to relocate specific recorded artifacts inhibits determination of site cultural affiliation.

Site Significance

As Previously Recorded: Rock cairns and associated depression considered important as a resource for future investigation in order to discover what they represent (1979). Native American consultants to Bean and Vane (1979) suggested that the rock cairns might have been significant ethnographically.

Current Assessment: Site not relocated. Lack of new information to augment previously recorded data at Ora-419 results in insufficient evidence to validate or determine site significance.

Site Settlement Pattern

As Previously Recorded: Not noted.

Current Assessment: Not determined. Survey examination of area beyond the transmission right-of-way has not been completed by private land-owners.

10.2.23 Ora-823

Site Documentation

Previously Recorded By: J. Oxendine and W. Pink (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-249.

Site Location

As Previously Recorded: Located on a knoll northeast of an SCE steel lattice tower. Some features noted within 150 feet of that tower.

Current Assessment: During original survey (1979), site area had been mislocated on maps. Assessment of true site location was not permitted by the property owner.

Site Vegetation

As Previously Recorded: Not stated.

Current Assessment: Not observed.

Surface Cultural Material

As Previously Recorded: Twenty-two rock cairns. No artifacts noted in association.

Current Assessment: As recorded, site Ora-823 was shown as being on a knoll immediately west of Moulton Parkway. Current surface survey at this location revealed no artifacts/rock cairns, and after consulting with J. Oxendine and M. Cottrell, it was determined that site Ora-823 is located on a knoll immediately east of Moulton Parkway and the delineated site area. Agreement between SCE and Mission Viejo/Aliso Viejo allowed for current field investigation at specifically recorded site locales only.

#### Subsurface Cultural Material

As Previously Recorded: None noted.

Current Assessment: Not observed.

#### Site Dimensions

As Previously Recorded: 40 meters by 50 meters.

Current Assessment: Not observed during current investigation. However, documentation by Cottrell (1980) and Bean and Vane (1979) indicates that features are 150 feet from the tower or at least 25 meters from the existing project power lines.

#### Site Integrity

As Previously Recorded: Not stated.

Current Assessment: Ora-823 is north of and beyond the project right-of-way as observed during recent staking for determination of SCE boundaries (White 1980:personal communication). The site does not appear to have been disturbed by construction activities. Minimal disturbances may have occurred due to erosion and normal land use.

#### Site Activity/Type

As Previously Recorded: Cairns considered evidence of pre-European activities by Bean and Vane. Post-European activity is suggested by Cottrell.

Current Assessment: Not assessed.

#### Site Cultural Affinity

As Previously Recorded: Cairns noted by Bean and Vane as being pre-European activity. Post-European construction is suggested by Cottrell.

Current Assessment: Not assessed.

#### Site Significance

As Previously Recorded: Oxendine and Pink considered the rock cairns, resembling many cairn sites found in the desert, to be of potential National Register

significance, because of the size of the site and the possibility of great significance for local Native Americans. However, Cottrell noted that the area containing site Ora-823 had been surveyed at least twice previously, in 1973 and 1974, and neither survey had discovered evidence of prehistoric activities. Cottrell and T. Cooley both revisited the recorded site area in 1980 and noted piles of rocks stacked at various intervals with no indications of pre-European use. Cottrell suggests that site Ora-823 is not an archaeological deposit but rather that the cairns are products of limestone quarrying during the early years of the twentieth century. Piles of rock had been stacked at various intervals in the recent past and as such Cottrell suggested that the site should be removed from the resource inventory currently being considered.

**Current Assessment:** The identification of these rock concentrations as either historic or prehistoric is risky without further documentation, preferably during formal resource inventory and description of the privately owned property where the site is located (Aliso Viejo). A comparison of desert cairn sites to features at Ora-823, as well as to other piles of rocks along the "Pecten Reef" located near known quarry areas, should be considered.

Site Settlement Pattern

**As Previously Recorded:** Not stated.

**Current Assessment:** Not assessed. No other sites are recorded in association with site Ora-823.

10.2.24 Ora-498

Site Documentation

Previously Recorded By: P. Langenwalter (1974).

Secondary Recordation(s): W. Dodge (1978); Bean and Vane (1979).

Temporary/Other Site Designations: CSRI-228.

Site Location

As Previously Recorded: West sloping knoll in Trabuco Arroyo (1974); located on the first terrace above the Trabuco Canyon (1978).

Current Assessment: Location in agreement with previously recorded locale.

Site Vegetation

As Previously Recorded: 1974: Moderate to heavy cover of European grasses.

Current Assessment: Vegetation associated with Ora-498 is primarily of the Southern California Grassland community. Clearance of vegetation was not necessary for site assessment.

Surface Cultural Material

As Previously Recorded: Extensive surface scatter of artifacts on the knoll and western slopes: manos, metate fragments, and hammerstones (1974). Several possible rock features were observed. No chipped stone artifacts were present. Widely dispersed surface scatter of artifacts consisting of groundstone and a few hammerstones, artifacts primarily west and southwest of the tower (1978).

Current Assessment: A total of 109 artifacts was observed on the surface of Ora-498 (Table 10-24). Seventy-seven percent of the artifacts cataloged are representative of milling activities. Flaking, cutting/scraping, and chopping/pounding

Table 10-24

Ora-498  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped	5	7	6.4
Unifacial, Shaped		3	2.8
Bifacial, Unshaped	2	3	2.8
Bifacial, Shaped	10	12	11.0
Non-Diagnostic	4	4	3.7
Metates	51	55	50.4
Discoidal		1	.9
Core		1	.9
Flakes		5	4.6
Debitage		1	.9
Sidescrapers	2	5	4.6
Endscraper		1	.9
Blade	1	1	.9
Non-Diagnostic Biface		1	.9
Choppers		2	1.8
Chopping Tools		3	2.8
Hammer-pounders		4	3.7
<b>TOTAL:</b>		<b>109</b>	<b>100.0</b>

Ora-498  
SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

	<u>0-10 cm.</u>		<u>10-20 cm.</u>		<u>20-30 cm.</u>		<u>Total</u>	<u>%</u>
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>		
Historic	-	2	-	-	-	-	2	100
<b>TOTAL:</b>	0	2	0	0	0	0	2	100

activities are also represented on the site, each accounting for an average of 7 percent of the artifacts. Flaked tools are composed primarily of basalt; felsite, quartzite and quartz were also observed. Nineteen objects exhibit medium to heavy patination. A single blade fragment composed of milky quartz was observed on the access road, near the tower.

Groundstone artifacts include a number of subtypes. Of the 29 manos cataloged, 15 are shaped. Of the shaped manos, 12 are bifacial. Seven of the unshaped manos are unifacial. Metates are particularly significant at Ora-498, not only on the basis of quantity but variety of subtypes. A total of 55 metates or metate fragments was observed on the surface. The largest quantity of metates was located near the top of a steep drainage on the southwestern portion of the site. Three rock clusters in this area were recorded as features due to the number of associated metates. Feature 1 consists of 6 metates, 1 non-diagnostic biface, and approximately 21 unmodified rocks. The metate fragments are composed of variable lithic materials, indicating that they are fragments of the six individual metates. Feature 2 consisted solely of artifacts, including two metates and one mano. This small cluster was considered a feature because of an association with Feature 3. The latter feature was extensive, with metates and related artifacts scattered among unmodified rocks on either side of a drainage. This cluster includes four metates, one chopping tool, one mano, and two flakes.

The metates consist of both portable basins and slab metates. Characteristics common to each subtype include shaped and unshaped objects which are either unifacial or bifacial. Shapes and sizes are highly variable.

One metate (bifacial, slab) and two manos (bifacial, shaped) exhibit heavier degrees of weathering than observed on the overall groundstone assemblage. These objects appear to be of the same lithic composition as others located on the site.

A discoidal was also observed on the surface of Ora-498. This groundstone object exhibits pecking in the center of one side only. The pecked area is 11 millimeters wide and approximately 2 millimeters deep.

#### Subsurface Cultural Material

As Previously Recorded: No discernable midden development (Langenwalter 1974). Not tested. No apparent midden (Dodge 1978).

Current Assessment: Two units were excavated at Ora-498 to a depth of 30 centimeters. Unit 1 was placed within a loop formed by an access road. Soil consists of loam to 10 centimeters, where clay is encountered. No cultural resources were recovered from Unit 1. Unit 2 was located on a relatively level ground 70 meters southwest of Unit 1. Soil is grey loamy clay throughout the entire 30 centimeters of excavation. Artifacts encountered in this unit include two pieces of historic glass in the 0 centimeter to 10 centimeter level. The fragments are clear to slightly purple and are dated between 1880 and 1915. No pre-European materials were located (Table 10-24).

#### Site Dimensions

As Previously Recorded: Estimated at 500 meters by 900 meters (1974). Approximately 60 meters by 120 meters (1978).

Current Assessment: 200 meters by 260 meters.

#### Site Integrity

As Previously Recorded: Site was disced, but little erosion evident, SCE assess roads crossed site and tower on site (1974). "A transmission tower is situated within the site boundaries. The main access road and a stub road to the tower also transect the site" (1978). Bean and Vane (1979) found this to be a large site in good condition, although it had been slightly damaged by a transmission tower and access road.

**Current Assessment:** As reported previously, site disturbance can be attributed to construction of the steel lattice tower, grading of the access road, and agricultural activity. The presence of a gully suggests slope wash as a cause of additional displacement of cultural materials. It is suggested that the distribution of metates, which were observed primarily near the edges of slopes and in association with the gully, is the result of farming activities.

#### Site Activity/Type

**As Previously Recorded:** Not discussed (1974). "...it can be surmised from the artifact types that these sites were utilized for plant processing activities" (1978).

**Current Assessment:** The artifact assemblage at Ora-498 indicates an extractive camp with a heavy reliance on the procurement and preparation of plant resources. Other activities at this site are not as well represented, nor do they appear proportionate to the tasks indicated by the presence of 80 groundstone artifacts. The presence of a single discoidal may add a new dimension to the site as the function for this object is not well defined.

#### Site Cultural Affinity

**As Previously Recorded:** Langenwalter assigned site to the Millingstone Horizon (1974). Dodge suggested an association with the Encinitas tradition (1978).

**Current Assessment:** Ora-498 can be assigned as an Early Milling site. Diagnostic artifacts, which would enable a determination between Intermediate or Milling Stone Horizons, were not present.

#### Site Significance

**As Previously Recorded:** Site fails to meet National Register criteria on the basis of site integrity. Dodge (1978) suggested that intra-site artifact patterns were altered by the process of erosional activity and by site disturbance at the time of construction of the San Onofre-Santiago transmission line.

Current Assessment: This cultural resource has the potential of contributing significantly to an understanding of prehistoric modes of resource exploitation. Based on the quantity and variety of milling tools present at Ora-498, it may be possible to extract data relevant to particular subsistence modes and exploitive techniques. Displacement of artifacts at this locale does not serve as a limiting factor for in-depth studies of groundstone objects.

#### Site Settlement Pattern

As Previously Recorded: A settlement pattern based on a preference for hill tops or first terrace ridges above major drainages is indicated. Sites of similar configuration and artifact assemblages can be found all along such drainages implying a constant use of these topographic settings through time for a similar purpose, i.e., the processing of plant resources.

Current Assessment: Ora-498 may be related to other sites located along Trabuco Arroyo, in terms of the exploitation of natural resources. A determination of temporal relationships has not been well established, however, a review of reported artifact assemblages suggest a similarity.

10.2.25 Ora-700

Site Documentation

Previously Recorded By: T. Schuster and D. Jacobs (1977), Archaeological Research, Inc.

Secondary Recordation(s): Bean and Vane (1979).

Temporary/Other Site Designations: CSRI-37.

Site Location

As Previously Recorded: West of transmission line easement on small bench over Deshecha Canyon.

Current Assessment: Located on a gently sloping ledge overlooking Prima Deshecha Canyon on the southeast.

Site Vegetation

As Previously Recorded: Low weeds, grasses, and mustard.

Current Assessment: Southern California Grassland community. Four separate areas were cleared of ground cover during current investigation, with surface artifacts revealed in only one of the cleared areas.

Surface Cultural Material

As Previously Recorded: Sparse flake and milling stone scatter in addition to a basin metate fragment, a discoidal fragment, a metate fragment (presumably slab), two basalt flake scrapers, basalt flakes, and a quartz flake.

Current Assessment: A total of seven surface artifacts were observed (Table 10-25). Five of these were associated with road cuts and one was revealed in an area cleared of vegetation. With the exception of a single mano, all artifacts are composed of either basalt or quartz. Evidence of patination or cortex was absent, as are attributes indicating specific flaking techniques. The discoidal fragment was not relocated.

Table 10-25

Ora-700  
SURFACE ARTIFACTS

	<u>Fragment</u>	<u>Total</u>	<u>%</u>
Mano,			
Bifacial, Shaped	1	1	14.3
Flakes		4	57.1
Debitage		<u>2</u>	<u>28.6</u>
		7	100.0

Ora-700  
CULTURAL ACTIVITIES AS REPRESENTED BY ARTIFACT TYPES

	<u>Milling</u>	<u>Flaking</u>	<u>Cutting/ Scraping</u>
Surface	14.0%	86.0%	-
Subsurface	5.2%	79.0%	15.8%

Table 10-25 (Continued)

Ora-700  
SUBSURFACE ARTIFACTS BY LEVEL  
(Unit 1)

	<u>0-10 cm.</u>	<u>10-20 cm.</u>	<u>20-30 cm.</u>	<u>30-40 cm.</u>	<u>40-50 cm.</u>	<u>Total</u>	<u>%</u>
Flakes	2	2	4	1	-	9	56.3
Debitage	1	2	1	-	-	4	25.0
Utilized Flakes	-	-	-	1	1	2	12.5
Retouched Flake	-	-	<u>1</u>	-	-	<u>1</u>	<u>6.2</u>
TOTAL:	3	4	6	2	1	16	100.0

Ora-700  
SUBSURFACE ARTIFACTS  
(Road Cut 1)

	<u>0-20 cm.</u>	<u>20-40 cm.</u>	<u>40-48 cm.</u>	<u>50-75 cm.</u>	<u>75-104 cm.</u>	<u>Total</u>	<u>%</u>
Mano							
Bifacial,							
Shaped	1	-	-	-	-	1	33
Debitage	<u>1</u>	-	<u>1</u>	-	-	<u>2</u>	<u>67</u>
TOTAL:	2	0	1	0	0	3	100

### Subsurface Cultural Material

As Previously Recorded: No record of excavation. A possible depth of 10 centimeters was noted on the survey record along with the suggestion that subsurface tests be made.

Current Assessment: One test unit and one road cut were excavated at this site. The test unit was excavated to a depth of 50 centimeters and the road cut to 104 centimeters. A total of 19 artifacts were retrieved (Table 10-25). Limited subsurface cultural deposition is indicated to a depth of 50 centimeters in the test unit. Artifacts from the road cut were recovered from two separate levels, 0 centimeters to 20 centimeters and 40 centimeters to 48 centimeters. The excavation in the road cut resulted in one incisor and seven bone fragments being located. The incisor is that of an adult Botta pocket gopher Thomomys bottae. The bone fragments are adult pronghorn antelope Antilocapra americana, all seven fragments form the proximal portion of the third phalanx (ungual). Antelope remains are relatively uncommon in archaeological sites in southern California. Neither specimen shows any evidence of modification.

### Site Dimensions

As Previously Recorded: 100 meters by 100 meters.

Current Assessment: 15 meters by 43 meters.

### Site Integrity

As Previously Recorded: Site location was noted as west of power line easement, with roads having cut the east edge of the site along a fenceline. Disking activities were reported.

Current Assessment: An access road runs along the southeastern edge of the site and an unimproved road is located southeast of the site. An additional road that appears to be associated with discontinued grading activities is visible near the

central portion of the site area. A majority of the artifacts observed were located in association with the recently graded road cut. Conversations with employees of Rancho Mission Viejo revealed that this locale has been subject to periodic disking.

#### Site Activity/Type

As Previously Recorded: Milling station with flake scatter.

Current Assessment: Cultural materials observed at Ora-700 indicate extractive activities with a preponderance of artifacts associated with tool production or maintenance. Locale is probably a work camp/procurement site.

#### Site Cultural Affinity

As Previously Recorded: None assigned.

Current Assessment: No definite cultural affinity can be determined due to the paucity of artifacts as well as the lack of diagnostic cultural materials. Groundstone artifacts as previously recorded and as currently encountered may indicate Milling Stone Horizon/Intermediate Horizon cultural activities.

#### Site Significance

As Previously Recorded: Not assessed for significance. Bean and Vane suggested that the discoidal fragment was a rare find.

Current Assessment: Since the artifact record indicates both a disturbed site and paucity of cultural debris, site significance of this extractive camp lies in the future uses of data now recorded. Specifically, this site should be examined as a part of the system of base camps and extractive areas either already known to exist or yet to be located, in the area.

#### Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: Record search data indicate the presence of two cultural resources located within a mile of Ora-700. One has been recorded as an isolated core. The other site, Ora-701, has characteristics of a maintenance camp of a possible similar time frame to Ora-700; however, site assessment is incomplete. Both sites are located along Prima Deshecha Canyon and may have a bilateral dependence. Record search data is available at the University of California at Los Angeles (UCLA).

10.2.26 Ora-640

Site Documentation

Previously Recorded By: P.E. and R.E. Langenwalter (1977).

Secondary Recordation(s): Bean and Vane (1979).

Temporary/Other Site Designations: Segunda Deshecha 10 (1977); CSRI-36 (1979).

Site Location

As Previously Recorded: Located on the slopes of a south/southeast facing amphitheater on/above a stream. Also, on southeast-trending slope below transmission towers, immediately above intersection of north and east forks of stream, 20 meters north of Visbeck-Mission Viejo boundary.

Current Assessment: Same as previously recorded location.

Site Vegetation

As Previously Recorded: Dense cover of grasses and mustard.

Current Assessment: Southern California Grassland community. Less ground cover than previous survey.

Surface Cultural Material

As Previously Recorded: Edge-ground parallel biface manos, a schist chopper and basalt flakes.

Current Assessment: Twenty-one artifacts, including manos, a metate fragment, one core, flakes, debitage, sidescrapers, a domed scraper, one chopper and hammer-pounder encountered in an area similar to previously recorded site description (Table 10-26).

A survey of the area south of Ora-640 (across stream) was accomplished in an attempt to relocate previously recorded Ora-639. No evidence of cultural debris was encountered here, although previously excavated test units were still evident.

Table 10-26

Ora-640  
SURFACE ARTIFACTS

	<u>Fragment</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped		1	4.7
Bifacial, Unshaped		1	4.7
Bifacial, Shaped		1	4.7
Metate	1	1	4.7
Core		1	4.7
Flakes		6	28.6
Debitage		2	9.5
Sidescrapers		2	9.5
Domed Scraper		1	4.7
Chopper		1	4.7
Hammer-pounders		<u>4</u>	<u>19.0</u>
TOTAL:		21	100.0

Ora-640  
SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

Unit	<u>0-10 cm.</u>		<u>10-20 cm.</u>		<u>20-30 cm.</u>		<u>30-40 cm.</u>		<u>40-50 cm.</u>	<u>Total</u>	<u>%</u>
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>		
Flakes	-	-	-	-	-	-	-	1	-	1	14.3
Debitage	<u>1</u>	<u>1</u>	<u>1</u>	-	-	<u>2</u>	<u>1</u>	-	-	<u>6</u>	<u>85.7</u>
TOTAL:	1	1	1	0	0	2	1	1	0	7	100.0

Table 10-26 (Continued)

Ora-640

CULTURAL ACTIVITIES AS REPRESENTED BY ARTIFACT TYPES

	<u>Milling</u>	<u>Flaking</u>	<u>Cutting/ Scraping</u>
Surface	18.8%	61.8%	18.9%
Subsurface	-	100%	-

### Subsurface Cultural Material

As Previously Recorded: Bean and Vane (1979) had suggested the possibility of subsurface cultural deposition at Ora-640. Ora-639, previously assessed by Langenwalter (1977), is described as a heavy surface scatter, with a subsurface cultural deposition estimated at 50 centimeters, comprised of unifacial and bifacial manos, metate fragments, scrapers and choppers. Although assessment, surface collection and subsurface examination have been initiated at site Ora-639, the results of this testing are not available (R. Desautels 1980:personal communication).

Current Assessment: Two units were placed in areas exhibiting a density of surface cultural debris. Testing resulted in the recovery of three artifacts from Unit 1 and four artifacts from Unit 2. They were excavated to depths of 40 centimeters and 50 centimeters, respectively, and were terminated at sterile soil (a hardened gray clay). The subsurface deposition area most likely corresponds to surface boundaries since steeply rising knoll slopes and stream boundaries limit deposition size. Only one flake and six debitage were recovered from the subsurface, varying from one to two artifacts per level (Table 10-26). Analysis of pollen samples indicate no unexpected or unusual floral components. Climatic conditions (subtropical) seem to be consistent with present conditions.

### Site Dimensions

As Previously Recorded: 25 meters by 30 meters.

Current Assessment: 40 meters by 100 meters.

### Site Integrity

As Previously Recorded: Surface has been cattle trodden and erosion has occurred on slopes.

Current Assessment: Site area has been minimally disturbed by natural erosion and cattle activity. Archaeological site Ora-640 is at least 50 meters south of

the SCE access road and 139 meters southeast of the nearest SCE steel lattice tower, and is not within the project right-of-way.

Site Activity/Type

As Previously Recorded: None recorded.

Current Assessment: Specific site activities are represented by groundstone items (food production/extraction), sidescrapers and domed scraper (extraction) and chopper (extraction). The core and hammer-pounders usually indicate tool production/manufacture, although hammer-pounders are also documented as being used to crush bones, sever tendons, grind seeds, rub face paint and bruise woody tissue (extraction). Flake size may indicate tool production rather than tool maintenance/sharpening.

Site Cultural Affinity

As Previously Recorded: None assigned.

Current Assessment: Cultural affinity, based on the presence of groundstone, can be attributed to the Milling Stone Horizon or Intermediate Horizon.

Site Significance

As Previously Recorded: None stated.

Current Assessment: It would appear that Ora-640 and Ora-639 are loci of the same site. Significance of this site would be in future comparison of artifact inventories. If, in combination, a larger quantity of cultural material and wider range of tasks is evidenced, this area might be characterized as a maintenance/base camp rather than an extractive/procurement camp as presently viewed.

Site Settlement Pattern

As Previously Recorded: None noted.

Current Assessment: Previously recorded archaeological sites within the immediate vicinity of Ora-640 exhibit a direct interrelatedness and possible dependence

between base camp/work camp. A recent analysis of sites and their retrieved artifact assemblages may substantiate the research hypothesis for a regional settlement pattern within a common environment, utilizing specific resources (R. Desautels 1980:personal communication). Sites Ora-504, Ora-638 and Ora-746, as well as previously described locales Ora-640 and Ora-639, exhibit Milling Stone/Intermediate components. These sites, clustered along the Segunda Deshecha Creek, reflect both maintenance and extractive activities definitive of base camps/work camps. Smaller scatters of artifacts, described within adjacent sites Ora-632, Ora-633, Ora-634, Ora-635, Ora-636, and Ora-637, although not specifically identified as affiliated with the Milling Stone Horizon, probably constitute further components of a settlement system (all original site forms are on file at University of California, Los Angeles).

This area lies in Juaneno territory, along Segunda Deshecha Creek and the western edge of Los Christianos Creek. Los Christianos Creek is the location where the Portola Party camped on July 22, 1769. A Native American, with more than fifty inhabitants, was encountered near a pool of fresh water. The missionaries of the Portola Party baptized two children of the village who were dying. The spot is now marked by an historic shrine erected by the Marine Corps (Meadows 1965:25; Engelhardt 1920:28-29; Costanso 1911:13; Palou 1926:122; Smith 1965:28). The discussed sites are approximately one mile north of and associated with the mouth of San Mateo Creek. This location was known as Panhe (or Pange) by the Juaneno (Kroeber 1970:plate 57; Engelhardt 1920:24).

10.2.27 SDi-6693

Site Documentation

Previously Recorded By: T. Cooley (Bean and Vane 1979).

Secondary Recordation(s): None.

Temporary/Other Site Designations: CSRI-48.

Site Location

As Previously Recorded: Along a broad, flat ridgeline descending east toward Christianitos Creek in a graded area and along a graded access road to SCE towers.

Current Assessment: Surface artifacts were located either on the access roads near towers or within berms alongside the access road.

Site Vegetation

As Previously Recorded: Dense sage and grasses outside of graded access road.

Current Assessment: Dense cover of the Southern California Grassland community; the exception being the recently graded access road between SCE towers.

Surface Cultural Material

As Previously Recorded: Two cores, one green rhyolite and one black basalt, and three basalt flakes were located along graded access road between towers.

Current Assessment: Seventeen artifacts were located either on the access road near the towers or within the berms alongside the access road (Table 10-27). In addition, six large areas were cleared of vegetation to the east of the access road along the base of the knoll and around towers on the ridgeline on both sides of the access road. No artifacts were found in the manually cleared areas.

Artifacts consisted of 7 flakes, 4 debitage, 1 core, 3 sidescrapers, a chopper and a hammer-pounder.

Table 10-27

SDi-6693  
SURFACE ARTIFACTS

	<u>Total</u>	<u>%</u>
Core	1	6
Flakes	7	41
Debitage	4	24
Sidescrapers	3	17
Chopper	1	6
Hammer-pounder	<u>1</u>	<u>6</u>
TOTAL:	17	100

SDi-6693  
CULTURAL AFFINITY AS REPRESENTED BY ARTIFACT TYPES

	<u>Flaking</u>	<u>Cutting/Scraping</u>
Surface	77%	23%

### Subsurface Cultural Material

As Previously Recorded: No subsurface testing was conducted previously.

Current Assessment: Two subsurface test units were excavated. Unit 1 was placed on the ridge near the towers and surface artifacts; Unit 2 was placed in a cleared area of the knoll also near surface artifacts. Both units were taken to a depth of 30 centimeters and revealed no subsurface cultural debris or culturally darkened soil. Excavation terminated with a compacted clay hardpan.

### Site Dimensions

As Previously Recorded: 100 meters by 100 meters.

Current Assessment: 115 meters by 155 meters.

### Site Integrity

As Previously Recorded: Access road and grading within site had impacted the area.

Current Assessment: Previous grading and construction activities have severely impacted the site area. Surface artifacts have been obviously disturbed from original deposition, as seen during current field investigation and previous site survey (Bean and Vane 1979).

### Site Activity/Type

As Previously Recorded: Not stated.

Current Assessment: Site SDi-6693 is probably a work camp/procurement site, and should have a bilateral dependence between some nearby but not recorded base camp/maintenance site. Analysis of site lithics indicates some tool manufacture and cutting/scraping activities with flake size and the presence of cortex being indicative of close proximity to material source and/or manufacture (core reduction).

#### Site Cultural Affinity

As Previously Recorded: None assigned.

Current Assessment: No definite cultural affinity can be determined due to the paucity of artifacts as well as the lack of diagnostic cultural materials.

#### Site Significance

As Previously Recorded: Not assessed.

Current Assessment: Since extensive surface survey and some subsurface testing failed to reveal the presence of artifact material other than that encountered within the bounds of access roads, it is speculated that either minimal original site cultural debris was disturbed and redeposited into present positions, or a larger artifact inventory has been permanently disturbed/removed leaving only those artifacts as assessed during current investigation.

Site significance is limited to the degree to which this sparse lithic scatter can be incorporated into the cultural pattern of the area.

#### Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: Within a one-mile radius of SDi-6693, seven sites have been assessed by recordation only. All but one are similar in that they are sparse lithic scatters of less than 20 artifacts. The other, Ora-745, contains possible bedrock milling (21 mortars in sandstone). SDi-6693 may have been one of the extractive/procurement areas similar to the others mentioned, and all may be tied into a central base camp as yet unrecorded or possibly destroyed.

10.2.28 SDi-4538

Site Documentation

Previously Recorded By: Speegle and P. Ezell (1960).

Secondary Recordation(s): P. Ezell and C. Bull (1975). L. Eckhardt (1979a).

Temporary/Other Site Designations: Cal:A:11:20.

Site Location

As Previously Recorded: The site was located at the mouth of Horno Canyon, just north of Interstate 5, within the Camp Pendleton Marine Corps base.

Current Assessment: No current assessment. Site location is as previously recorded.

Site Vegetation

As Previously Recorded: Not discussed.

Current Assessment: No current assessment.

Surface Cultural Material

As Previously Recorded: Speegle and Ezell have described the site as being a midden deposit containing an abundance of shellfish remains. A surface collection was performed, although no artifact description was completed. In 1975, Bull records the site as having an extensive dark midden with concentrations of Donax (bean clam) and related artifacts including cobble choppers and scrapers. These tools usually had cortex remaining on them, and a majority of the artifacts had flakes struck off one end, both unifacially and bifacially. Five artifacts were collected, a basalt endscraper, a quartz concave sidescraper, a basalt convex sidescraper, and two basalt choppers. In addition, two cobble chopping tools, one convergent sidescraper, two cores and three primary flakes were observed but not collected. No ceramics or finely worked lithic implements were noted. In 1979, Eckhardt revisited the site during a SDG&E transmission line right-of-way survey. At this time, several artifacts including a chopping tool

and flake were observed as well as shellfish remains consisting of Chione sp. and Aequipecten sp.

**Current Assessment:** During the current assessment program, marine officials at Camp Pendleton were contacted for permission to re-evaluate site SDi-4538. Permission was not granted, limiting site evaluation to existing survey data combined with previous fieldwork by Dr. Paul Ezell.

#### Subsurface Cultural Material

**As Previously Recorded:** Posthole testing indicated a midden depth of at least 100 centimeters. This depth was measured cultural by discoloration of soil rather than disposition of artifacts, and should not be considered absolute. One human burail was exposed by a stream cut (1960).

**Current Assessment:** No current assessment.

#### Site Dimensions

**As Previously Recorded:** The site covered a surface area measuring 360 meters by 360 meters (Ezell and Bull 1975).

**Current Assessment:** Exact dimensions for SDi-4538 are unknown, and may be incalculable due to the disturbed nature of the area.

#### Site Integrity

**As Previously Recorded:** Site had very little disturbances (1975). SDi-4538 was located directly beneath transmission lines that span Horno Canyon, and directly to the southwest of the project right-of-way. The site area had been impacted by military construction and maintenance of a road leading into Horno Canyon (L. Eckhardt 1979a).

**Current Assessment:** No additional information can be added to the previous site assessment.

#### Site Activity/Type

As Previously Recorded: Not discussed.

Current Assessment: Due to the limited information on the types of artifacts which are present, only tentative site activity can be accessed. There appear to be a large number of artifacts associated with cutting and scraping activities involved with on-site processing. Little is known of the shell midden in terms of vertical or horizontal continuity of shellfish types, thus little more can be said except that food processing took place at SDi-4538.

#### Site Cultural Affinity

As Previously Recorded: SDi-4538 was categorized as a La Jolla (Early Milling) site.

Current Assessment: No additional information can be added to the previous site assessment.

#### Site Significance

As Previously Recorded: The known existence of at least one inhumation and the extensive midden deposition indicate that this site is highly significant. The site has had little disturbance and its loss would greatly damage southwest prehistory (1975).

Current Assessment: No current assessment. However, site has significance for future research potential.

#### Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: A review of sites reported in the vicinity of SDi-4538 (Ezell and Bull 1975) suggest a possible settlement pattern associated with Early Milling sites. Exploitation of resources is similar.

10.2.29 SDi-6136

Site Documentation

Previously Recorded By: R. Franklin and J. Thesken (1978).

Secondary Recordation(s): None.

Temporary/Other Site Designations: SDM-W-1778.

Site Location

As Previously Recorded: Site was located on Mesa Drive, west of El Camino Real, and 60 meters from present site of San Luis Rey Substation.

Current Assessment: Site is located west of El Camino Real and north of Mesa Drive. The site area occupies a narrow, previously disturbed ridgeline alongside Mesa Drive near the 200 foot contour.

Site Vegetation

As Previously Recorded: No vegetation was recorded in 1978 due to grading. Eucalyptus, shrubs and trees were recorded in the surrounding area. In 1979, vegetation was described as Coastal Sage Scrub with grasses.

Current Assessment: Vegetation was recorded as Southern California Grassland with a low occurrence of foxtail, laurel sumac, eucalyptus and grasses.

Surface Cultural Material

As Previously Recorded: Recorded as a light scatter of stone tools (four hammer-pounders), flaking debris, scattered shellfish remains (Chione sp., Aquiptecten sp., Ostrea sp., Donax sp.) and darkened soils (1978).

Current Assessment: A thorough examination of the site surface revealed only one fragment of shell (Donax sp.) and four scattered artifacts consisting of one non-diagnostic groundstone, one basalt sidescraper, one basalt chopping tool and one basalt hammer-pounder (Table 10-29). Survey of the substation grounds directly across from the site area revealed no presence of artifact material.

Table 10-29

SDi-6136  
SURFACE ARTIFACTS

	<u>Total</u>	<u>%</u>
Non-Diagnostic Groundstone	1	25
Sidescraper	1	25
Chopping Tool	1	25
Hammer-pounder	<u>1</u>	<u>25</u>
TOTAL:	4	100

SDi-6136  
SUBSURFACE ARTIFACTS  
(Road Cut 1)

	<u>32 cm.</u>	<u>42 cm.</u>	<u>Total</u>	<u>%</u>
Flake	<u>1</u>	-	<u>1</u>	<u>100</u>
TOTAL:	1	0	1	100

Table 10-29 (Continued)

SDi-6136  
SURFACE SHELLFISH REMAINS

	<u>Total</u>	<u>%</u>
Shell		
<u>Donax sp.</u>	1	100

SDi-6136  
SUBSURFACE SHELLFISH REMAINS  
(Road Cut 1)

	<u>32 cm.</u>	<u>42 cm.</u>	<u>Total</u>	<u>%</u>
Shell				
<u>Donax sp.</u>	-	<u>6</u>	<u>6</u>	<u>100</u>
TOTAL:	0	6	6	100

#### Subsurface Cultural Material

As Previously Recorded: Not previously excavated.

Current Assessment: The excavation of a two meter section of the road cut (Road Cut 1) was implemented. Cultural material resulting from this excavation include 1 flake at 32 centimeters and 6 Donax sp. at 42 centimeters (Table 10-29).

In addition, an unfilled portion of a trench opened in the center of Mesa Drive revealed 2 small shell fragments (Donax sp.) below the level of road asphalt at a depth of 33 centimeters. The road is at least 50 centimeters below the surface of the site area as seen in the northern road cut bank along side Mesa Drive.

#### Site Dimensions

As Previously Recorded: 30 meters by 40 meters (1978).

Current Assessment: 15 meters by 30 meters.

#### Site Integrity

As Previously Recorded: Site may have been disturbed as a result of substation construction. Planned urban development is a potential impact.

Current Assessment: The site has been cut and graded for placement of underground telephone and gas lines along with previous construction of two steel lattice towers and two wooden H-frame structures.

#### Site Activity/Type

As Previously Recorded: The site represented a food-processing campsite with shellfish remains and lithic items (1979).

Current Assessment: A food processing campsite is likely, considering the limited shellfish remains and the types of lithic artifacts present.

#### Site Cultural Affinity

As Previously Recorded: Not stated.

Current Assessment: Cultural affinity at SDi-6136 is not well defined. The groundstone present at this site could be representative of either Early Milling or Late Milling Horizons. The absence of pottery does not serve as a determining factor.

Site Significance

As Previously Recorded: Not stated.

Current Assessment: SDi-6136 appears to be an extractive camp of short term use. Exploitation of both marine and terrestrial resources is indicated by the artifact assemblage and the presence of shellfish remains.

Site Settlement Pattern

As Previously Recorded: Not stated.

Current Assessment: A limited number of archaeological sites have been recorded in the area surrounding this site.

10.2.30 SDi-6137

Site Documentation

Previously Recorded By: WESTEC Services, Inc. (1978).

Secondary Recordation(s): None.

Temporary/Other Site Designations: SDM-W-1779.

Site Location

As Previously Recorded: Site was located 100 meters northwest of the intersection of El Camino Real and Oceanside Boulevard. A trailer park was 80 meters southwest. Located on a knoll top.

Current Assessment: SDi-6137 is located on the western slope of a small knoll northwest of the intersection of El Camino Real and Oceanside Boulevard. An access road is 10 meters west of the site.

Site Vegetation

As Previously Recorded: Vegetation consisted of black sage and mustard.

Current Assessment: Both Southern California Grassland and Inland Sage Scrub are represented at SDi-6137.

Surface Cultural Material

As Previously Recorded: Site consisted of a shell midden containing a small amount of firecracked rock. Shell species present included +1000 Donax sp., and one Saxidomus nuttalli. Also noted was one unburnt bone fragment of recent origin.

Current Assessment: During the surface mapping of the area, Donax gouldii was the only shellfish species located on the surface of the site. Donax gouldii, which inhabits the open-coast sandy beaches environment, is common in San Diego County. This small wedge-shaped clam appears sporadically in large pods along the open coast sandy beaches in any season except winter (Radwin 1977). This species was so common

at one time that they were canned commercially in Long Beach. Through depletion, this species can no longer be found in such great numbers (Radwin 1977). When this species occurs along the coast, it is relatively easy to collect. Time spent in search and procurement of this species would be minimal.

No lithic artifacts were observed on the surface.

#### Subsurface Cultural Material

As Previously Recorded: Not discussed.

Current Assessment: One unit was excavated at SDi-6137. It was located in the northern portion of the shell midden and was excavated to a depth of 100 centimeters. Soil within this unit was grayish-brown sandy loam for the first 10 centimeters, and light brown sandy loam for the remaining 90 centimeters.

A total of five marine shellfish species were identified during the subsurface testing of SDi-6137. They include Chione sp. (Cockle), Aequipecten circularis (Speckled Scallop), Anomia peruviana (Pearly Scallop), Tagelus californianus (Jackknife Clam), and Donax gouldii (Bean Clam) (Table 10-30). Of these five species, only Donax sp. was present in all levels of the test unit. The remaining four species were in the 0 centimeter to 10 centimeter level only.

These five species are presently found in a wide range of coastal habitats in San Diego County, which include open beaches and bay/estuaries (Table 10-30). The open coast is an entirely unprotected surf-swept shore. This type of coastline is generally convex, varying from bold headlands to gently bulging stretches of beach with a fairly deep offshore (Ricketts and Calvin 1968). This habitat is broken into two categories: open-coast rocky shores, and open-coast sandy beaches. No individual species from the open-coast rocky shores was recovered from this site. One species, Donax gouldii, which inhabits the open-coast sandy beaches environment, was recovered from

Table 10-30

SDi-6137  
SUBSURFACE SHELLFISH REMAINS BY LEVEL  
(Unit 1)

	<u>0-10</u> <u>cm.</u>	<u>10-20</u> <u>cm.</u>	<u>20-30</u> <u>cm.</u>	<u>30-40</u> <u>cm.</u>	<u>40-50</u> <u>cm.</u>	<u>50-60</u> <u>cm.</u>	<u>60-70</u> <u>cm.</u>	<u>70-80</u> <u>cm.</u>	<u>80-90</u> <u>cm.</u>	<u>90-100</u> <u>cm.</u>	<u>Total</u>	<u>%</u>
<u>SHELL</u>												
<u>Donax</u> <u>gouldii</u>	295	450	375	155	21	13	11	6	4	10	1340	99.70
<u>Aquiptecten</u> <u>circularis</u>	1	-	-	-	-	-	-	-	-	-	1	.07
<u>Chione</u> sp.	1	-	-	-	-	-	-	-	-	-	1	.07
<u>Anomia</u> <u>peruviana</u>	1	-	-	-	-	-	-	-	-	-	1	.07
<u>Tagelus</u> <u>californianus</u>	<u>1</u>	<u>-</u>	<u>1</u>	<u>.07</u>								
<b>TOTAL:</b>	299	450	375	155	21	13	11	6	4	19	1344	100.0

SDi-6137  
SUBSURFACE ARTIFACTS BY LEVEL  
(Unit 1)

	<u>0-10</u> <u>cm.</u>	<u>10-20</u> <u>cm.</u>	<u>20-30</u> <u>cm.</u>	<u>30-40</u> <u>cm.</u>	<u>40-50</u> <u>cm.</u>	<u>50-60</u> <u>cm.</u>	<u>60-70</u> <u>cm.</u>	<u>70-80</u> <u>cm.</u>	<u>80-90</u> <u>cm.</u>	<u>90-100</u> <u>cm.</u>	<u>Total</u>	<u>%</u>
Flakes	-	1	-	-	-	-	1	1	1	-	4	66.4
Debitage	<u>-</u>	<u>-</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>-</u>	<u>2</u>	<u>33.2</u>
<b>TOTAL:</b>	0	1	1	0	0	0	1	1	2	0	6	100.0

Table 10-30 (Continued)

SDi-6137  
SHELLFISH ENVIRONMENTS

	PERCENTAGE BY WEIGHT
A. Protected Outer Coast	0.0
B. Open Coast: Consisting of	99.8
1. Open coast rocky	0.0
2. Open coast sandy beaches ( <u>Donax</u> )	99.8
C. Bay/Estuaries: Consisting of	0.2
1. Rocky shores ( <u>Anomia</u> )	<0.05*
2. Sand and mud flats ( <u>Chione</u> , <u>Tagelus</u> , <u>Saxidomus</u> )	0.15
3. Eelgrass flats ( <u>Aequipecten</u> )	<0.05*

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\*Weight less than 0.1 grams.

SDi-6137. A total of 1340 individuals weighing 196.6 grams equaled 99.8 percent of all shell collected (Table 10-30).

The second basic environment, the bays and estuaries of southern California, consist of areas greatly protected from wave shock and the rise and fall of the tides are not complicated by the surf. This habitat can be divided into three major subgroups: rocky shores, sand and mud flats, and eelgrass flats. One species, Anomia peruviana, which is common to the rocky shores of bays and estuaries, totaled less than 0.1 gram or less than 0.005 percent of the recovered shellfish. Three species, Chione sp., Tagelus californianus, and Saxidomus nuttalli are common to the sand and mud flats of bays and estuaries. The identification of Saxidomus nuttalli was made during the initial survey, but no examples of this species were recovered during the current excavation. Chione sp. and Tagelus californianus which were recovered totaled 0.3 grams or 0.015 percent of the total shell weight. One species, Aequipecten circulatis which is common to the eelgrass flats environment, was recovered from the test excavation. This species totaled less than 0.1 gram or less than 0.05 percent of the total shell weight.

Lithic artifacts were also recovered from the excavation (Table 10-30). A total of four flakes and two debitage were located within the test unit.

#### Site Dimensions

As Previously Recorded: 30 by 35 meters.

Current Assessment: 55 meters by 95 meters.

#### Site Integrity

As Previously Recorded: The knoll top containing the site had been graded.

Current Assessment: The western slope of the knoll containing one-quarter of the site is heavily disturbed. Two access roads and a transmission tower are located 10 meters west of the site. Grading by private development has created gullies on the top and slopes of the knoll.

#### Site Activity/Type

As Previously Recorded: Shell midden.

Current Assessment: The portion of SDi-6137 excavated is associated almost solely with the extractive activities of shellfish processing. The paucity of lithic artifacts implies a "dumping" or processing area for shellfish.

#### Site Cultural Affinity

As Previously Recorded: Not discussed.

Current Assessment: The predominance of the shellfish species, Donax gouldii (Bean Clam), common to the sandy beaches of southern California, has been noted in numerous Late Milling sites in northern San Diego County. These sites are typically concentrated in the area formerly inhabited by the San Luis Rey II cultural tradition and the Luiseno Indians. The late Dr. G. Radwin of the San Diego Museum of Natural History has stated that Donax gouldii appears sporadically along the shore in any season except winter (Radwin 1977:personal communication). This implies a seasonal exploitation pattern for Donax gouldii by Late Milling peoples of the area.

#### Site Significance

As Previously Recorded: Not discussed.

Current Assessment: Surface and subsurface cultural materials indicate that SDi-6137 was an extractive camp in which the primary resource was seashell.

#### Site Settlement Pattern

As Previously Recorded: Not noted.

Current Assessment: SDi-6137 is located in an area which has not been extensively surveyed. Determination of a settlement system within this region remains unresolved.

10.2.31 SDi-6138

Site Documentation

Previously Recorded By: M. Rogers (1930s).

Secondary Recordation(s): WESTEC Services, Inc. (1978).

Temporary/Other Site Designations: SDM-W-1780.

Site Location

As Previously Recorded: On a ridge 225 meters north of the junction of Highway 78 and El Camino Real. Site was 50 meters east of El Camino Real.

Current Assessment: Located northeast of Buena Vista Lagoon on a north-south trending ridge. The site is primarily on the east side of El Camino Real, but a small portion in the northwest extends west of the road.

Site Vegetation

As Previously Recorded: Ruderal grasses.

Current Assessment: Consists of Southern California Grassland and Inland Sage Scrub communities including black mustard, coast sage brush, star thistle, coyote brush and foxtail.

Surface Cultural Material

As Previously Recorded: Shell midden with Donax sp., Chione sp., Pecten sp. and salt water snails. Five hearths containing fire-cracked rocks, three to four choppers, two hammer/pounders, and manos were also present. Soil was greasy black midden.

Current Assessment: A total of 101 artifacts was observed on the surface of SDi-6138 (Table 10-31). Waste production accounted for 50 percent of the assemblage and included 4 cores, 11 debitage and 36 flakes. Material composition is primarily basalt and felsite, with four objects of rhyolite and one each of quartzite, andesite, quartz and chert. Flakes have the following size distribution:

Table 10-31

SDi-6138  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped		4	3.9
Bifacial, Unshaped	4	7	6.9
Bifacial, Shaped	1	2	2.0
Bifacial, Wedge-Shaped		1	1.0
Metates	7	7	6.9
Non-Diagnostic Groundstone		2	2.0
Cores		4	3.9
Flakes		36	35.3
Debitage		11	10.8
Sidescrapers		2	2.0
Blade	1	1	1.0
Non-Diagnostic Bifaces		2	2.0
Chopping Tools		2	2.0
Hammer-pounders		19	18.6
Retouched Flake		<u>1</u>	<u>1.0</u>
TOTAL:		101	100.0

Table 10-31 (Continued)

SDi-6138  
SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

Unit	0-10 cm.		10-20 cm.		20-30 cm.		30-40 cm.	40-50 cm.	Total	%
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>1</u>		
Flakes	1	-	1	-	1	-	-	-	3	75
Retouched Flake	-	-	-	-	-	-	1	-	1	25
TOTAL:	1	0	1	0	1	0	1	0	4	100

SDi-6138  
SUBSURFACE SHELLFISH REMAINS BY UNIT AND LEVEL (WEIGHT IN GRAMS)

Unit	0-10 cm.		10-20 cm.		20-30 cm.		30-40 cm.	40-50 cm.	Total	%
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>1</u>		
Shell										
<u>Donax sp.</u>	-	-	1	-	.2	-	-	-	3	7.9
<u>Aequipecten circularis</u>	-	-	.1	-	.8	-	-	-	.9	23.6
<u>Chione sp.</u>	-	-	.5	-	1.8	-	.3	-	2.6	68.4
TOTAL:	0	0	.7	0	2.8	0	.3	0	3.8	100.0

	<u>Length (cm)</u>	<u>Width (cm)</u>	<u>Thickness (cm)</u>
Range	1.8-7.0	1.4-5.7	0.1-2.8
Mean	4.1	3.0	0.9

Artifacts representing grinding activities comprise 22.7 percent of the artifact inventory and include 14 manos, 7 metate fragments, and 2 non-diagnostic groundstone. A variety of manos were present, including four unifacial, unshaped; seven bifacial, unshaped; two bifacial, shaped; and one bifacial, wedge-shaped. Next in artifact quantity are chopping-pounding tools which comprise 20.6 percent. Two bifacial, basalt chopping tools and 19 hammer-pounders were present. Cutting-scraping artifacts represent only 6 percent of the total surface assemblage, and include one quartzite sidescraper, one basalt unifacial, double convergent sidescraper, two non-diagnostic bifaces, one blade fragment consisting of the midsection which exhibited evidence of hard hammer percussion flake removal, and one retouched primary flakes of basalt. In addition to the artifacts, eight unidentified bone fragments were also observed.

#### Subsurface Cultural Material

As Previously Recorded: Not noted.

Current Assessment: Two units were excavated at SDi-6138. Unit 1 was located 20 meters east of an access road. Soil consisted of grey loamy clay to 50 centimeters, the maximum depth of the unit. Recovered artifacts include a total of 3 flakes from each of the first 3 levels, and one retouched flake from 30 centimeters to 40 centimeters. No artifacts were located from 40 centimeters to 50 centimeters (Table 10-31). In addition to the artifacts, three shellfish species were also retrieved, Donax sp., Aequipecten sp., and Chione sp. Table 10-31 lists shellfish remains by level and weight in grams. Unit 2 was placed adjacent to an SDG&E steel lattice transmission tower. Soil consisted of greyish brown hard-pack clay to 30 centimeters, the maximum depth of the unit. No artifacts were recovered from this unit. Based on pollen

samples from Unit 1, climatic conditions of SDi-6138 seem to be consistent with present conditions. Common species which occurred include Asteraceae (Sunflower family), Poaceae (Grass family) and Chenopodiaceae (Goosefoot weeds), all belonging to the arid to subtropical climatic zones, and Pinaceae (Pine family) a temperate to subtropical plant. In addition, SDi-6138 probably had fossil input associated with the in-place pollen. Alnus sp. and Pterocarya sp. are typical of ancient floras of Southern California and are rarely found living today in the area.

#### Site Dimensions

As Previously Recorded: 30 meters by 60 meters.

Current Assessment: 170 meters by 485 meters.

#### Site Integrity

As Previously Recorded: Site had been seriously disturbed by grading and soil removal.

Current Assessment: Site has been heavily disturbed by access roads, paved streets, parking lots and building structures.

#### Site Activity/Type

As Previously Recorded: Not stated.

Current Assessment: Site has been described as a village. This is possibly an extension of SDM-W-139, and with the type of artifacts present, this could be a special use area of a larger site. The large amount of milling artifacts indicates extractive activities with an emphasis on the processing of plant foods.

#### Site Cultural Affinity

As Previously Recorded: Not stated.

Current Assessment: An ethnographic account states that this locale continued to be occupied by the Luiseno for several years after the American conquest

(Harvey 1974:152). If SDi-6138 is actually an extension of W-139, Rogers (1930s) describes it as a highland accretion type without any appreciable interruptions. Cultural material indicates occupation attributed to cultures of the San Dieguito II, La Jolla II, and Luiseno.

#### Site Significance

As Previously Recorded: Not discussed.

Current Assessment: This site represents a portion of the larger village site, W-139, recorded by Rogers, and noted ethnographically by Father Crespi of Portola's group in 1769. The site extends beyond the project right-of-way, and the current assessment deals with only the outer fringes of this extensive resource. Other portions of the site have remained intact and offer the opportunity for extracting data from a site which has been continuously occupied through three cultural horizons, including San Dieguito II, La Jolla II and Luiseno.

#### Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: SDi-6138 is located along Buena Vista Lagoon, an area rich in cultural resources with 12 other sites being located nearby. This site is most likely a remnant of Roger's W-139 site located to the northwest, but due to development of the area this is unconfirmed. Ethnographic sources say that on July 17, 1769, the Portola party camped near the eastern edge of Buena Vista Lagoon. They named the location Santa Sinforosa and Father Crespi, one of the missionaries with the group noted, "We saw from the camp a village of heathen on the summit of a hill, who, having been informed by their neighbors of San Alejo (Batiguitos) departed two of their number to ask permission to visit us...as soon as they went back to their village all its inhabitants came to camp. Not fewer than forty presented themselves" (Carrico 1976:36; Harvey 1974:126; Costanso 1911:9).

10.2.32 SDi-6140

Site Documentation

Previously Recorded By: WESTEC Services, Inc. (1978).

Secondary Recordation(s): L. Eckhardt (1979a, 1979b).

Temporary/Other Site Designations: SDM-W-1782.

Site Location

As Previously Recorded: Site was located 30 meters north of Agua Hedionda slough area; housing tract northeast 40-50 meters; Kelly Road to west 80 meters (1978). L. Eckhardt (1979) reported that the site was discovered within the immediate path of the subject right-of-way on the northern side of Agua Hedionda slough, occupying the toe and south-facing slope of a low-lying knoll between the 10 to 60 foot contours.

Current Assessment: Site is located on the south slope of a low knoll, adjacent to the north side of Agua Hedionda.

Site Vegetation

As Previously Recorded: Ruderal grasses (1978). Vegetation in 1979 was listed as: willow, chamise, scrub oak, lilac, holly-leaf cherry, toyon, sugarbush, gooseberry, squaw bush, Engelmann oak, live oak, California juniper, manzanita, jimsonweed, miner's lettuce, prickly pear cactus, wild rose, white sage, black sage and elderberry.

Current Assessment: Three vegetation types are common - Southern California Grassland, Inland Sage Scrub and Freshwater Marsh.

Surface Cultural Material

As Previously Recorded: Site was recorded as a shell midden with chopping and pounding tools (100+), flakes (100+) and fire-cracked rock. Artifacts included chopping tools, one bifacial mano, flakes, one hammer-pounder and fire-cracked rocks

(1978). Shellfish remains of Chione sp. and Pecten sp. were included. Observed on the surface in 1979 were chopping tools, one bifacial mano, flakes, one hammer-pounder, fire-cracked rock and shellfish remains (Chione sp., Aquiptecten sp.).

Current Assessment:

Subsurface Cultural Material

As Previously Recorded: A total of 35 artifacts was mapped on the surface of SDi-6140 (Table 10-32). Waste production accounts for 85.7 percent of the assemblage and includes 1 core, 6 debitage and 23 flakes. Material composition is primarily basalt, with 23 examples. Only six are of felsite and one of quartz. There were three hammer-pounders, two basalt and one felsite, which make up 8.5 percent of the total. Grinding and cutting/scraping artifacts are each 2.9 percent of the total surface assemblage, and consist of one granite metate and one retouched basalt flake. In addition, one burnt bone was also observed on the surface.

Current Assessment: Two units were excavated at SDi-6140. Unit 1 was located approximately 15 meters east of the access road and 15 meters west of an abandoned, unimproved dirt road. The soil consisted of greyish-brown sandy loam to 40 centimeters. From 40 centimeters to 70 centimeters, tan sandstone completed the soil profile to 100 centimeters. Artifacts in this unit consisted of six flakes whose distribution can be found in Table 10-32. In addition, two bone fragments (which fit together) from the 80 centimeter to 90 centimeter level make up the distal portion of a left coracoid of an adult bird in the size range of a hawk. Due to the vicinity of the site to Agua Hedionda, a water bird is a likely possibility. Unit 2, which was located in a road cut in the access road, was excavated to 40 centimeters and consisted of dark brown hard-packed clay throughout. One flake was located in the 10 centimeter to 10 centimeter level. In addition to the artifacts, shell was also abundant, especially in

Table 10-32

SDi-6140  
SURFACE ARTIFACTS

	<u>Total</u>	<u>%</u>
Metate	1	2.9
Core	1	2.9
Flakes	23	65.7
Debitage	6	17.1
Hammer-pounders	3	8.5
Retouched Flake	<u>1</u>	<u>2.9</u>
<b>TOTAL:</b>	35	100.0

SDi-6140  
SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

Unit	0-10		10-20		20-30		30-40		40-50		50-60		60-70		70-80		80-90		90-100		<u>Total</u>	<u>%</u>
	<u>cm.</u>																					
Flakes	<u>1</u>	<u>-</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>7</u>	<u>100</u>									
<b>TOTAL:</b>	1	0	1	1	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	7	100

Table 10-32 (Continued)

SDi-6140  
SUBSURFACE SHELLFISH REMAINS BY UNIT AND LEVEL (WEIGHT IN GRAMS)

Shell	Unit	0-10 cm.		10-20 cm.		20-30 cm.		30-40 cm.		40-50	50-60	60-70	70-80	80-90	90-100	Total	%
		<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	cm.	cm.	cm.	cm.	cm.	cm.		
	<u>Chione</u> sp.	9.1	-	21.2	-	64.8	-	77.6	-	154.9	132.3	227.9	405.2	83.2	-	1,176.2	71.1
	<u>Donax</u>	-	-	-	-	-	-	-	-	-	-	-	-	-	.1	.1	-
	<u>Aequipecten</u>	.2	-	2.1	.2	13.9	-	7.0	-	19.5	37.0	53.6	86.0	30.6	1.8	252.9	15.3
	<u>Mytilus</u>	-	-	-	-	-	-	-	-	.1	1.2	1.3	.7	.2	-	3.5	.2
	<u>Polinices</u> sp.	-	-	-	-	2.4	-	-	-	-	-	-	-	-	-	2.4	.1
	<u>Ostrea lurida</u>	.6	-	-	-	9.2	-	1.9	-	9.4	43.0	57.5	62.9	16.3	-	200.8	12.1
	<u>Tagelus cali-</u> <u>fornianus</u>	.1	-	-	-	-	.3	-	-	1.1	.7	2.0	7.8	.9	-	12.9	.8
	<u>Crucibulum</u> <u>spinosum</u>	-	-	-	-	-	-	-	-	-	.1	-	.1	-	-	.2	-
	<u>Anomia peru-</u> <u>viana</u>	-	-	-	-	-	-	-	-	.6	1.2	.6	.5	-	-	2.9	.2
	<u>Calcareous</u> <u>worm tube</u>	-	-	.1	-	-	-	-	-	-	-	-	-	-	-	.1	-
	<u>Protothaca</u>	-	-	-	-	-	-	-	-	-	-	.3	.6	-	-	.9	.1
	<u>Crepidatella</u> <u>lingulata</u>	-	-	-	-	-	-	-	-	-	-	.2	-	-	-	.2	-
	<u>Semele decisa</u>	-	-	-	-	-	-	-	-	-	-	-	-	.5	-	.5	-
	Unidentified	-	-	-	-	-	-	.1	-	-	-	-	-	-	-	.1	-
	TOTAL:	10.0	0	23.4	.2	90.3	.3	86.5	.1	185.6	215.5	343.4	563.8	131.7	2.9	1,653.7	100.0

Table 10-32 (Continued)

SDi-6140  
SHELLFISH SPECIES

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
<u>Chione californiensis</u>	Wavy Cockle
<u>Chione undatella</u>	Banded Cockle
<u>Chione fluctifraga</u>	Smooth Cockle
<u>Aequipecten circularis</u>	Speckled Scallop
<u>Ostrea lurida</u>	Native Oyster
<u>Tagelus californianus</u>	California Jackknife Clam
<u>Mytilus californianus</u>	California Mussel
<u>Polinices sp.</u>	Moon Snail
<u>Anomia peruviana</u>	Pearly Jingle
<u>Crucibulum spinosum</u>	Spiny Cup-and-Saucer
<u>Semele decisa</u>	Clipped Semele
<u>Protothaca stamina</u>	Common Littleneck
<u>Donax gouldii</u>	Bean Clam
<u>Crepipatella lingulata</u>	Half-Slipper Shell
<u>Calcareous worm tube</u>	---
Unidentified	---

Table 10-32 (Continued)

SDi-6140  
ENVIRONMENTAL DISTRIBUTION  
OF  
RECOVERED SUBSURFACE SHELL

A.	Protected Outer Coast	(0.0)
B.	Open Coast: Consisting of	(0.2%)
	1. Open coast rocky shores	0.2%
	2. Open coast sandy beaches	< 0.1%
C.	Bay/Estuaries: Consisting of	(99.7%)
	1. Rocky shores	12.3%
	2. Sand and mud flats	72.1%
	3. Eelgrass flats	15.3%
D.	Unidentified	(<0.1%)

Unit 1 (Table 10-32). A total of 14 marine shellfish species was identified during the subsurface testing of SDi-6140 (Table 10-32). These shellfish species are all presently found in a wide range of coastal habitats now present in coastal San Diego County, including protected outer coast, open beaches and bay/estuaries. The protected outer coast is populated by shellfish species that have adapted to dissipated surf wave shock. This habitat is generally concave and is characterized by headlands and close-lying islands (Ricketts 1968). One shellfish species, Hinnites multirugosus (Rock Scallop), common to this habitat was identified on the surface of SDi-6140. None were recovered from the subsurface test. This rock scallop is commonly found in low tide and sublittoral areas attached to rocks.

The open coast is an entirely unprotected surf-swept shore. This type of coast line is generally convex, varying from bold headlands to gently bulging stretches of beach, with fairly deep water offshore (Ricketts 1968). This habitat is broken into two major categories: open-coast rocky shores and open-coast sandy beaches. Mytilus californianus (California Mussel), the only species recovered from the rocky shore, weighed 3.5 grams, or .2 percent of the total shellfish recovered from the units. Two species, Semele decisa (Clipped Semele) and Donax gowdii (Bean Clam), common to the sandy beach were identified. One fragment of each, or less than .1 percent of the collection, was present.

The bays and estuaries of southern California consist of areas greatly protected from wave shock and where the rise and fall of the tides are not complicated by the surf. This habitat can be broken into three major categories: rocky shores, sand and mud flats, and eelgrass flats. Four shellfish species, Ostrea lurida (Native Oyster), Anomia peruviana (Pearly Jingle), Crucibulum spinosum (Spiny Cup-and-Saucer), and Crepipatella lingulata (Half-Slipper Shell) are common to the rocky shores. These

4 species comprise a total of 204.1 grams by weight or 12.3 percent of the total shellfish recovered from the subsurface testing.

Four shellfish species and three subspecies, Chione californiensis (Wavy Cockle), Chione undatella (Banded Cockle), Chione fluctifraga (Smooth Cockle), Tagelus californianus, Polinices sp. (Moon Snail), and Protothaca stamina (Common Little Neck Clam), are common to the sand and mud flats of bays and estuaries. These species totaled 1192.4 grams or 72.1 percent of the total shell. One species, Aequipecten circularis (Speckled Scallop), common to the eelgrass flats, was identified at SDi-6140. This species totaled 252.9 grams or 15.3 percent of the total weight (Table 10-32).

Although pre-European methods of shellfish procurement and preparation can only be inferred, historic and ethnographic data provide some possible insights.

The collection of shellfish, in this case, primarily molluscs, is a relatively simple task involving few tools, minimal search time and predictable returns (Beaton n.d.). Ethnographic data of a largely maritime people, the Seri, and people with a seasonal maritime collection mode, the Kumeyaay, reveal that whole families took part in shellfish collection. McGee reported that "the Seri of Baja California went to nearby mud flats at low tide without special apparatus, felt with their feet, caught the shellfish with their toes or fingers and tossed them into handy receptacles" (1898:195). If the tide was totally withdrawn, the Seri sometimes used shell cups or scooping implements to aid them. Oysters and rock clingers were dislodged with a stone or slick without necessitating a specialized tool kit.

Apparently the Kumeyaay, and probably the Northern Diegueno and other coastal dwellers including the Luiseno, practiced methods similar to the Seri. One exception is the historic Kumeyaay who were reported to pour water into air holes in an effort to make the clam rise to the surface (Cuero 1968:28). Like the Seri, the Kumeyaay used convenient stones to break open or crush the shells.

Once collected, the shellfish were probably returned to the campsite in skin bags or woven mesh nets. Because of the short distance from the campsite to the shellfish collection area (bay/estuaries), the inhabitants of the site could have easily made several trips during individual collecting forays. Thus, a small group could have brought back to the camp with relatively little caloric output and minimal expenditure of time.

McGee noted that the maritime Seri practiced little actual cooking, singing and charring was common but not formalized cooking (1898:210-211). McGee (1898:215) estimated that three-quarters of Seri food was consumed raw. Shellfish were prepared rather than cooked, by tossing the contents of collection receptacle into open fire. The resultant heat and pressure would force the shell open whereupon the meat was eaten essentially raw (1898:195). Some shellfish were eaten without any preparation and were opened by smashing them with a hammerstone (1898:195). Sharp edged stone flakes may have been used as gougers to extract the meat.

A radiocarbon date based on a *Polinices* shell from the 20 centimeter to 30 centimeter level of Unit 1 dated the site at  $5815 \pm 110$  bp (3865 BC).

Climate conditions of SDi-6140 seem to be consistent with present conditions based on pollen samples from Unit 1. Common species which occurred include Asteraceae (Sunflower Family) and Chenopodiaceae (Goosefoot Weeds), both common to arid-subtropical climates.

#### Site Dimensions

As Previously Recorded: 50 meters by 80 meters (1978). 80 meters by 50 meters (1979).

Current Assessment: 90 meters by 175 meters.

### Site Integrity

As Previously Recorded: Site disturbance was recorded as a utility road with grading at the northeast part of the site. Future power line construction was foreseen as destruction possibility (1978). WESTEC 1979 reports that previous adverse impacts to the resource consist of easement roads, transmission poles and towers, and grading (in the northeast portion of the site). Additional impacts created by foot, horse and ORV traffic had also occurred (1979).

Current Assessment: In agreement with above.

### Site Activity/Type

As Previously Recorded: Not stated (1978). Food processing, as evidenced by milling technologies was noted at the site; stone working or evidence of sharpening, using or making stone tools was observed (1979). The site may represent a small, satellite camp or special use area that was occupied sporadically as a support camp for larger, more permanent camps or villages located nearby (1979).

Current Assessment: The presence of 15 species of shellfish common to all 3 major coastal environments would seem to indicate widespread collecting along the coast. Detailed speciation and analysis (Table 10-32) revealed that 99.7 percent (by weight) of the shell recovered commonly inhabit the bays/estuaries of southern California. This heavy preponderance of this environment type indicates the occupants of SDi-6140 stayed close to the site and exploited nearby Agua Hedionda with occasional forays to the outer coast areas. The majority of the bay/estuary shellfish was Chione sp. (71.1 percent), Aequipecten circularis (15.3 percent) and Ostrea lurida (12.1 percent). These high-protein, easily obtained shellfish require minimal search time, virtually no tools or hunting gear, and could be collected by the entire band.

The site is likely to be a shell processing camp, since the paucity of grinding implements (one metate) implies a minimal amount of plant food processing.

#### Site Cultural Affinity

As Previously Recorded: Not stated (1978). The site was representative of a well-developed hunting and gathering group exhibiting a limited ranged of diverse technologies (1979).

Current Assessment: Shellfish are known to have been exploited by both Early Milling and Late Milling peoples. From shell excavated at the site, a date of  $5815 \pm 110$  bp places SDi-6140 in the Early Milling time frame.

#### Site Significance

As Previously Recorded: Not stated (1978). The site may possess information about prehistoric lifeways including diet, seasonality, lithic technology, settlement patterns, regional dispersal and cultural change. Investigation of this archaeological locale which determines site function, provides data relative to inter-site relationships or refines the determination vis-a-vis cultural affinity would be a significant contribution to the prehistory of San Diego County (1979).

Current Assessment: This shell midden is significant in that it has datable non-cultural material in association with artifacts. Since this data enables the site to be placed within a time frame (Early Milling), comparative studies in the lagoon are now possible.

#### Site Settlement Pattern

As Previously Recorded: Not stated (1978).

Current Assessment: Agua Hedionda Lagoon is surrounded by numerous archaeological sites, several of which are primarily shell middens. Through time, different species of shell were available in the lagoon thus providing a way of dating and comparing these sites.

10.2.33 SDi-6135

Site Documentation

Previously Recorded By: WESTEC Services, Inc. (1978).

Secondary Recordation(s): L. Eckhardt (1979a).

Temporary/Other Site Designations: SDM-W-1777.

Site Location

As Previously Recorded: A knoll overlooking Agua Hedionda Lagoon. Evans Point and Kelly house were one-quarter mile east/northeast. Calaveras Road at base of knoll.

Current Assessment: Site is located on a knoll adjacent to the east side of Agua Hedionda. Calaveras Road is just west of site.

Site Vegetation

As Previously Recorded: Ruderal grasses.

Current Assessment: Vegetation consists of Southern California Grassland. Common plants include rye, foxtail, black mustard, coast sagebrush, and milkweed.

Surface Cultural Material

As Previously Recorded: Two flakes, basalt with inclusions; quartzite pounder/chopper; felsite scraper; thermally affected rock; Chione sp. shellfish.

Current Assessment: A total of five artifacts was found on the surface of this site: a mano fragment, bifacial and unshaped, a basalt core, a felsite hammer-pounder, and two basalt flakes (Table 10-33). These are scattered across the surface of the site in association with a sporadic sparse layer of shellfish remains. Another shellfish concentration occurs at the base of the hill to the west and may be due to slope wash.

Table 10-33

SDi-6135  
SURFACE ARTIFACTS

	<u>Fragment</u>	<u>Total</u>	<u>%</u>
Mano			
Bifacial, Unshaped	1	1	20
Flakes		2	40
Core		1	20
Hammer-pounder		<u>1</u>	<u>20</u>
TOTAL:		5	100

SDi-6135  
SUBSURFACE ARTIFACTS BY LEVEL  
(Unit 1)

	<u>0-10</u>	<u>10-20</u>	<u>20-30</u>	<u>30-40</u>	<u>40-50</u>	<u>50-60</u>	<u>60-70</u>	<u>70-80</u>	<u>80-90</u>	<u>90-100</u>	<u>100-110</u>	<u>Total</u>	<u>%</u>
	cm.	cm.	cm.	cm.	cm.	cm.	cm.	cm.	cm.	cm.	cm.		
Mano													
Unifacial, Unshaped (fragment)	-	-	1	-	-	-	-	-	-	-	-	1	33.3
Flake	1	-	-	-	-	-	-	-	-	-	-	1	33.3
Retouched Flake	<u>-</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>33.3</u>							
TOTAL:	1	1	1	0	0	0	0	0	0	0	0	3	100.0

Table 10-33 (Continued)

SDi-6135  
SUBSURFACE SHELLFISH REMAINS BY LEVEL (WEIGHT IN GRAMS)  
(Unit 1)

	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100-110	Total	%
	cm.	cm.	cm.	cm.	cm.	cm.	cm.	cm.	cm.	cm.	cm.		
Shell													
<u>Conus californicus</u>	-	-	-	.1	-	.5	-	-	-	-	-	.6	-
<u>Saxidomus nuttalli</u>	1.2	-	-	-	-	-	-	-	-	-	-	1.2	.1
<u>Crucibulum spinosum</u>	.1	-	.3	.2	.1	-	.4	-	-	.5	-	1.6	.1
<u>Anomia peruviana</u>	.4	-	.2	2.5	1.1	1.3	.4	.6	.2	-	-	6.7	.3
<u>Tagelus californianus</u>	9.2	-	4.3	15.7	8.2	4.9	6.1	.3	.2	.2	-	49.1	2.1
<u>Ostrea lurida</u>	17.1	-	9.5	26.2	13.2	6.2	19.5	2.7	1.7	-	.5	96.6	4.1
<u>Aequipecten sp.</u>	74.7	11.6	82.7	197.1	111.1	67.6	111.8	1.6	7.7	7.3	3.4	676.6	29.0
<u>Chione sp.</u>	143.4	36.9	126.7	369.5	226.4	245.5	166.6	118.9	22.0	11.4	-	1467.3	63.0
<u>Mytilus sp.</u>	3.6	-	1.0	9.4	5.9	2.4	1.6	-	1.1	-	.2	25.2	1.1
<u>Polinices sp.</u>	-	-	1.3	-	-	-	2.0	-	-	-	-	3.3	.1
<u>Tetraclita squamosa</u>	.2	-	-	.3	-	-	-	-	-	-	-	.5	-
<u>Barnacle</u>	-	-	-	.1	-	-	-	-	-	-	-	.7	-
<u>Norrisia norrisi</u>	-	-	-	-	-	.7	-	-	-	-	-	.7	-
<b>TOTAL:</b>	<b>249.9</b>	<b>48.5</b>	<b>226.0</b>	<b>621.1</b>	<b>366.0</b>	<b>329.1</b>	<b>308.4</b>	<b>124.1</b>	<b>32.9</b>	<b>19.4</b>	<b>4.1</b>	<b>2,329.5</b>	<b>100.0</b>

Table 10-33 (Continued)

SDi-6135  
SHELLFISH SPECIES

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
<u>Chione undatella</u>	Wavy Cockle
<u>Chione californiensis</u>	Banded Cockle
<u>Chione fluctifraga</u>	Smooth Cockle
<u>Aequipecten circularis</u>	Speckled Scallop
<u>Ostrea lurida</u>	Native Oyster
<u>Tagelus californianus</u>	Jackknife Clam
<u>Mytilus californianus</u>	California Mussel
<u>Saxidomus nuttalli</u>	Washington Clam
<u>Crucibulum spinosum</u>	Spiny Cup-and-Saucer
<u>Anomia peruviana</u>	Pearly Jingle
<u>Conus californicus</u>	California Cone
<u>Tetraclita squamosa</u>	(no common name)
<u>Norrisia norrisi</u>	Smooth Turban Snail
<u>Polinices</u> sp.	Moon Snail
<u>Balanus</u> sp.	Barnacle

Table 10-33 (Continued)

SDi-6135  
SHELLFISH ENVIRONMENTS

	<u>PERCENTAGE BY WEIGHT</u>
A. Protected Outer Coast	(<.1)
B. Open Coast: Consisting of	(1.1)
1. Open coast rocky shores	1.1
2. Open coast sandy beaches	0.0
C. Bay/Estuaries: Consisting of	(98.8)
1. Rocky shores	4.5
2. Sand and mud flats	65.3
3. Eelgrass flats	29.0

### Subsurface Cultural Material

As Previously Recorded: Subsurface not tested.

Current Assessment: A single unit was excavated at SDi-6135 to a depth of 110 centimeters. Three lithic artifacts were recovered from the first three levels: an unmodified flake, a retouched flake and a unifacial, unshaped mano fragment (Table 10-33). Shellfish remains were numerous throughout the levels, though the highest concentration occurs between 30 and 40 centimeters. Deep eroding fissures and rodent activity have probably contributed to the shellfish remains occurring subsurface. The unit was abandoned at 110 centimeters when the paucity of faunal material ended and no artifacts were located.

Also, two small fragments of bone were identified as fitting together and belonging to a small rabbit, Silvilagus sp. The bone is culturally unmodified. A total of 12 marine shellfish species and 1 species of Balanus was identified during the subsurface testing of SDi-6135 (Table 10-33). These species are all presently found in a wide range of coastal habitats in San Diego County, which include protected outer coast, open beaches and bay/estuaries.

The protected outer coast is populated by shellfish species that have adapted to dissipated surf wave shock. This habitat is generally concave and is characterized by headlands and close-lying islands (Ricketts and Calvin 1968). One shellfish species common to this habitat was identified during the excavation, Norrisia norrisi. This top-shell is found in low intertidal areas under rocks. One individual of this species was recovered weighing 0.7 grams, less than 0.1 percent of the total shell weight.

The open coast is an entirely unprotected surf-swept shore. This type of coastline is generally convex, varying from bold headlands to gently bulging stretches of beach, with fairly deep water offshore (Ricketts and Calvin 1968). This habitat is

divided into two major categories: open coast rocky shores and open coast sandy beaches. Two species, Mytilus californianus and Tetraclita squamosa, that inhabit the rocky shore environment were recovered from the site. These two species total 25.7 grams or 1.1 percent of the total shellfish remains. No species common to the sandy beaches was identified at SDi-6135.

The bays and estuaries of southern California consist of areas greatly protected from wave shock and where the rise and fall of the tides are not complicated by the surf. This habitat is divided into three major subgroups: Rock shores, sand and mud flats, and eelgrass flats. Four shellfish species, Ostrea lurida, Conus californica, Anomia peruviana, and Crucibulum spinosum are common to the rock shores of bays and estuaries. These 4 species comprise a total of 105.5 grams by weight or 4.5 percent of the total shellfish analyzed. Four species and three subspecies Chione californiensis, Chione undatella, Chione fluctifraga, Saxidomus nuttalli, Tagelus californianus and Polinices sp. are common to the sand and mud flats of the bays and estuaries. These species total 1520.9 grams or 65.3 percent of the total shell weight. One species, Aequipecten circularis, common to eelgrass flats, was identified. This species totals 676.6 grams or 29 percent of the total shell weight from Unit 1 (Table 10-33).

A concentration containing shell and ash was excavated in Unit 1 at a depth of 30 centimeters. The feature extended 20 centimeters north-south by 10 centimeters east-west, and was 4 centimeters thick. The charcoal ash observed in the feature was not of sufficient quantity for collection. Shellfish remains collected from the feature consisted of:

<u>Species</u>	<u>Weight (grams)</u>
<u>Chione</u> sp.	171.2
<u>Aequipecten circularis</u>	15.6
<u>Ostrea lurida</u>	10.3
<u>Tagelus californicus</u>	6.1
<u>Mytilus</u> sp.	3.2
<u>Polinices</u> sp.	0.8
<u>Anomia peruviana</u>	0.4
<u>Balanus</u> sp.	0.1
<u>Conus californicus</u>	0.1
<u>Crucibulum spinosum</u>	0.1

These weights have been figured into the total for level 30 to 40 centimeters. A possible artifact associated with the feature included one mano fragment.

Although prehistoric methods of procurement and preparation of marine shellfish species can only be inferred, historic and ethnographic data provide some possible insights.

The collection of shellfish, in this case, primarily molluscs, is a relatively single task involving few tools, minimal search time and predictable returns (Beaton n.d.). Ethnographic data of a largely maritime people, the Seri and people with a seasonal maritime collection mode, the Kumeyaay, reveal that whole families took part in shellfish collection. McGee reported that the Seri of Baja California went to nearby mudflats at low tide without special apparatus, felt with their feet, caught the shellfish with their toes or fingers and tossed them into a handy receptacle (1898:195). If the tide was totally withdrawn, the Seri sometimes used a shell cup or scooping implement to aid them. Oysters and rock clingers were dislodged with a stone or stick without necessitating a specialized tool kit.

Apparently the Kumeyaay, and probably the Northern Diegueno and other coast dwellers including the Luiseno, practiced methods similar to the Seri. One exception is that the historic Kumeyaay were reported to pour water into air holes in an effort to make the clam rise to the surface (Cuero 1968:28). Like the Seri, the Kumeyaay used convenient stones to break open or crush the shells.

Once collected, the shellfish were probably returned to the campsite in skin bags or wove mesh nets. Because of the short distance from the campsite to the shellfish collection area (bay/estuaries), the inhabitants of the site could have easily made several trips during individual collecting forays. Thus, a small group could have brought thousands of grams of shellfish back to the camp with relatively little caloric output and minimal expenditure of time.

McGee noted that the maritime Seri practiced little actual cooking; singeing and charring was common but not formalized cooking (1898:210-211). McGee (1898:215) estimated that three-quarters of the Seri's food was consumed raw. Shellfish were prepared rather than cooked, by tossing the contents of collection receptacles into an open fire. The resultant heat and pressure would force the shell open whereupon the meat was eaten essentially raw (1898:195). Some shellfish were eaten without any preparation and were opened by smashing them with a hammerstone (1898:195). Sharp edged stone flakes may have been used as gougers to extract the meat.

Climatic conditions of SDi-6135 seems to be consistent with present conditions based on pollen samples from the excavated unit. Common species include Asteraceae (Sunflower Family), Pinaceae (Pine Family) and Quercus sp., all common in arid to subtropical climates.

#### Site Dimensions

As Previously Recorded: 40 meters by 60 meters.

Current Assessment: 35 meters by 85 meters.

#### Site Integrity

As Previously Recorded: Impacted by easement roads, transmission lines, structures, and some agricultural activity along SE and NE site boundary.

Current Assessment: Impacts are the same as previously recorded.

#### Site Activity/Type

As Previously Recorded: Light shell midden.

Current Assessment: A major activity at this site, as evidenced by the faunal remains, is the collection and processing of shellfish as a food source. The proximity of the lagoon suggests that the shellfish were not transported far before being prepared and consumed. The paucity of lithics indicates that grinding and flaking are incidental or supplemental to the primary activity.

#### Site Cultural Affinity

As Previously Recorded: None assigned.

Current Assessment: Shellfish are known to have been exploited by both Early Milling and Late Milling peoples. For a more specific identification of time or culture, radiocarbon dating should be implemented. The presence of manos at this site also supports a Milling Horizon.

#### Site Significance

As Previously Recorded: Not stated.

Current Assessment: This shell midden is significant in that it has datable non-cultural material in association with artifacts. This would enable the site to be placed within a time frame and allow for comparative studies in the lagoon area.

Site Settlement Pattern

As Previously Recorded: Not stated.

Current Assessment: Agua Hedionda Lagoon is surrounded by numerous archaeological sites, several of which are primarily shell middens. Through time, different species of shell were available in the lagoon and can be a way of dating and comparing these sites.

10.2.34 SDi-6133

Site Documentation

Previously Recorded By: M. Rogers (1930s).

Secondary Recordation(s): L. Eckhardt (1979a). R. Carrico (1978).

Temporary/Other Site Designations: CPO-42 (Carrico 1978). SDM-W-120

Site Location

As Previously Recorded: Southeast side of Hedionda Slough on the 200 foot contour. Site pitches to the west which is most unusual; most highland coastal middens are on the lea sides of ridges and pitch to east. Trace of site on talus wash.

Current Assessment: Above the southeast bank of the Agua Hedionda Lagoon.

Site Vegetation

As Previously Recorded: Not noted.

Current Assessment: Vegetation on this site indicates Grassland plant communities, however, the vegetation pattern appears to be heavily disturbed.

Surface Cultural Material

As Previously Recorded: Usual number of hearths and granite manos and metates. Y-III (Yuman) midden without sherds.

Current Assessment: Surface assessment of this site revealed 90 artifacts and 59 shellfish fragments of Chione sp. and Pecten sp. (Table 10-34). The primary activity at this site was flaking; 80 percent of artifacts are associated with waste production. Lithic material includes basalt and felsite and based on the range in size of the flakes (mean length and width were 4.1 and 3.0 cm respectively) it is likely that core reduction or tool production took place here. A smaller range of flake size would suggest retouch or use, although this was also probably taking place.

Table 10-34

SDi-6133  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped	1	1	1.1
Unifacial, Wedge-Shaped	1	1	1.1
Bifacial, Unshaped	1	2	2.2
Metates	2	2	2.2
Cores		4	4.4
Flakes		49	54.4
Debitage		18	20.0
Typological Blade		1	1.1
Sidescrapers		3	3.3
Endscraper		1	1.1
Biface		1	1.1
Non-Diagnostic Biface		1	1.1
Chopper		1	1.1
Hammer-pounders		3	3.3
Composite Tool		1	1.1
Ceramic		<u>1</u>	<u>1.1</u>
<b>TOTAL:</b>		<b>90</b>	<b>100.0</b>

SDi-6133  
SURFACE SHELLFISH REMAINS

	<u>Total</u>	<u>%</u>
Shell		
<u>Chione</u> sp.	31	53
<u>Pecten</u> sp.	28	47
<b>TOTAL:</b>	<b>59</b>	<b>100</b>

The remaining task categories include grinding (6.7 percent), cutting and scraping (6.7 percent), chopping and pounding (5.5 percent), and cooking or storing activities (1.1 percent). In the grinding category, unifacial and bifacial mano fragments are found and two metate fragments exhibiting surface wear. These fragments could not be determined to be either slicks or basins.

#### Subsurface Cultural Material

As Previously Recorded: A test trench was excavated at base of hill, no San Dieguito in trench. Greatest depth 38 inches (97 cm) with basal 2 inches cemented.

Current Assessment: Because Rogers had previously tested this archaeological site and determined the vertical extent of cultural material, no further impact through excavation was performed during this study.

#### Site Dimensions

As Previously Recorded: 2 acres.

Current Assessment: 140 meters x 165 meters (5.7 acres).

#### Site Integrity

As Previously Recorded: Not stated by Rogers.

Current Assessment: Aside from natural erosion that has taken place on this slope, the knoll top is a hub for several SDG&E lines and associated access roads. In addition, some agricultural activity occurs on the slopes occasionally. Presently there are tomato plants growing sporadically. This site has been subjected to relic collection over the years, however, large areas appear to remain intact.

#### Site Activity/Type

As Previously Recorded: Highland permanent camp rests on gray sandstone.

Current Assessment: Based on the variety of task categories represented by the artifacts, SDi-6133 is was an extractive campsite on the south side of Agua

Hedionda Lagoon. Procurement and processing of local vegetation and shellfish is evident; tool manufacturing and maintenance were also accomplished there.

#### Site Cultural Affinity

As Previously Recorded: SD-III, Lit. II and Y-III.

Current Assessment: No San Dieguito type tools were located at the time of this assessment, although heavily patinated flakes were noted. Artifacts associated with the Milling Stone Horizon are more numerous, specifically manos, metates and ceramics.

#### Site Significance

As Previously Recorded: Not discussed by Rogers.

Current Assessment: SDi-6133 is significant for several reasons. Not only does it have a subsurface component but this site represents at least two, potentially three, cultural horizons. Located along the south edge of Agua Hedionda Lagoon, it is densely surrounded by other archaeological sites. This area was a major source of subsistence and shows evidence of occupation over a long period of time.

#### Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: Prehistorically, the archaeological record shows numerous sites, representing various time frames, flanking the shores of the lagoon and main drainage, Agua Hedionda Creek. As documented historically, the Portola party travelled near the eastern edge of Agua Hedionda Lagoon on July 16, 1769, and noted a deserted Indian village (Palori 1966). It has been hypothesized by Carrico (1978) that the site was temporarily abandoned while its inhabitants foraged for food. The area was known to the Luiseno as Palimai (Sparkman 1908:187-188). During the Mexican period, the Indian Village at Agua Hedionda was occupied and known as Los Ojitos.

10.2.35 SDi-6149

Site Documentation

Previously Recorded By: M. Rogers (1930s).

Secondary Recordation(s): J. Thesken and R. Franklin (1978), R. Franklin (1980).

Temporary/Other Site Designations: SDi-4358, SDM-W-954, SDM-W-108, SDM-W-1880, SDi-8195.

Site Location

As Previously Recorded: Located on a ridge one-third mile west of the intersection of El Camino Real and Alga Road and one-half mile north of Batiquitos Lagoon. Adjacent to an SDG&E power pole.

Current Assessment: As previously recorded.

Site Vegetation

As Previously Recorded: Coastal Sage Scrub. Vegetation included chamise, sumac, prickly pear and yucca.

Current Assessment: Inland Sage Scrub community with coast sage, monkey flower, black sage and sugar bush most abundant.

Surface Cultural Material

As Previously Recorded: Site consisted of numerous flakes, sherds, bone manos, metate fragments, scrapers, choppers and blades. Features included at least two areas of rock concentrations, possible hearths. Shell was observed over the entire area, which included Chione sp., Pecten sp., Ostrea sp. and polinices.

Current Assessment: Includes the identification of 202 lithic and ceramic artifacts (Table 10-35). Because of a high density of artifacts scattered over the upper portion of the site, random areas were sampled to enable an assessment of surface

Table 10-35

SDi-6149  
SURFACE ARTIFACTS

		<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped	fragment	1	.5
Bifacial, Unshaped	fragments	3	1.5
Non-Diagnostic		4	2.5
Metate	fragments	2	1.0
Portable Basin		1	.5
Core		1	.5
Flakes		53	26.2
Debitage		77	38.1
Sidescrapers		3	1.5
Endscraper		1	.5
Blade	fragment	1	.5
Chopping Tool		2	1.0
Composite Tool		1	.5
Retouched Flake		1	.5
Ceramics		<u>51</u>	<u>25.2</u>
<b>TOTAL:</b>		<b>202</b>	<b>100.0</b>

SDi-6149  
PRESENCE OF SURFACE SHELLFISH REMAINS  
WITHIN SAMPLING AREAS A-G

Area:	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>
Shell:							
<u>Chione</u> sp.	X	X	X	X	X	X	X
<u>Pecten</u> sp.	X	X	X	X	-	-	X
Sea Snail	-	-	X	-	-	-	X
Cowrie	-	-	X	-	-	-	-
Oyster	-	-	-	-	-	-	X
Olivella	-	-	-	-	-	-	X

Table 10-35 (Continued)

SDi-6149  
SUBSURFACE ARTIFACTS BY LEVEL  
(Unit 1)

	<u>Surface</u>	<u>0-10 cm.</u>	<u>10-20 cm.</u>	<u>20-30 cm.</u>	<u>30-40 cm.</u>	<u>40-50 cm.</u>	<u>Total</u>	<u>%</u>
Flakes	-	-	3	1	-	-	4	20.0
Debitage	-	-	2	1	-	-	3	15.0
Ceramics	<u>12</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>13</u>	<u>65.0</u>
TOTAL:	12	1	5	2	0	0	20	100.0

SDi-6149  
SUBSURFACE SHELLFISH REMAINS BY LEVEL  
(Unit 1)

	<u>Surface</u>	<u>0-10 cm.</u>	<u>10-20 cm.</u>	<u>20-30 cm.</u>	<u>30-40 cm.</u>	<u>40-50 cm.</u>	<u>Total</u>	<u>%</u>
<u>Chione</u> sp.	1	6	7	56	8	-	78	43.3
<u>Pecten</u> sp.	-	3	1	83	-	-	87	48.3
<u>Ostrea lurida</u>	-	1	-	9	-	-	10	5.5
<u>Polinices</u> sp.	-	-	-	2	-	1	3	1.7
<u>Mytilus</u> sp.	-	-	-	1	-	-	1	0.6
<u>Gastropod columella</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>0.6</u>
TOTAL:	1	10	8	152	8	1	180	100.0

cultural materials. Artifacts which were relatively isolated were mapped individually when located in areas of thick vegetative cover. Within the sampling areas, designated A through G, shellfish remains were speciated and presence was noted within a one meter by one meter extent (Table 10-35). Density of artifacts was measured and compared with the entire sampling areas.

Evidence of grinding, cutting and scraping, chopping and pounding, flaking, and cooking or storing activities is present. Near Area C were located two rock concentrations, heavily disturbed, that may be the remains of fire hearths reported by previous investigators. Lithic material found at the site is comprised of felsite and basalt with some quartzite. Several pieces of flaking debris and two tools, a chopper and an endscraper, exhibit patination.

Pottery appeared to be a local variety of Tizon Brown Ware. None showed any evidence of decoration, and are probably fragments of utilitarian ollas.

#### Subsurface Cultural Material

As Previously Recorded: "We worked the site which is covered with chaparral shortly after some relic hunters plowed up sections in attempting to turn up relics. They succeeded in tearing out a Lit. II burial which was so greatly deteriorated that they did not notice it. Uncovering more we found that it rested on bare sandstone... The greatest thickness (depth) is 13 inches" (Rogers 1930s).

Current Assessment: A single unit was excavated to 50 centimeters. The cultural material was comprised of flakes, debitage and ceramics, and all were found from surface to 30 centimeters. The remaining 180 items were shellfish fragments of which 77 percent was present in the 20 centimeter to 30 centimeter level.

The predominant shell species found subsurface were Chione sp. and Pecten sp. The 12 ceramic pieces found on the surface of this unit were probably from a single

pot. The unit was abandoned when only a single shell fragment was located at 40 to 50 centimeters and soil became a hard clay, gray-brown in color.

#### Site Dimensions

As Previously Recorded: 400 feet long; core are is 70 feet by 200 feet (1930s). 330 meters by 430 meters (1980).

Current Assessment: 370 meters by 280 meters.

#### Site Integrity

As Previously Recorded: The site had been disturbed by relic collectors, a housing tract, dirt bike trails and transmission towers.

Current Assessment: In addition to previously noted disruption to this site, a housing tract is just to south of site and may rest on the southern extent of the site. Percolation tests indicate potential development.

#### Site Activity/Type

As Previously Recorded: Highland accretion midden (Rogers 1930s).

Current Assessment: The varied activities present at this site include grinding, cutting, scraping, chopping, pounding, flaking, and cooking or storing, and suggest a major extractive campsite along the Batequitos Lagoon. In combination with information gained from earlier reports it may be postulated that SDi-6149 is probably a maintenance or base camp.

#### Site Cultural Affinity

As Previously Recorded: SD II (trace), Lit. II and Yuman III. Rogers reported intrusives such as Carriso Buff Sherds, a brown jasper knife, probably from Colorado Desert, one Canalino chalcedony spearpoint all from surface.

Current Assessment: No diagnostic tools for the San Dieguito horizon were identified. Some heavy patination was noted on the lithics. No indication of Early

Milling is present unless shellfish remains are the criteria. Mytilus sp. is associated with this time period, prior to the lagoons silting, but only a single fragment was found subsurface. Grinding implements are also indices of both Early and Late Milling but the fine line between the two has yet to be discerned. The presence of ceramics does indicate that the Late Milling Dieguenos were occupying the site.

#### Site Significance

As Previously Recorded: Lithic items are scarce here for all periods when one considers the extent of the site (1930s).

Current Assessment: Significance is based on previously gained information about the site as well as the present assessment. Rogers identified a Lit. II burial and intrusive materials suggesting trade. The data from the current study identifies the site as containing artifacts associated with a variety of activities and centered in a dense archaeological community. As such it offers data for inter- and intra-site studies (future research potential).

#### Site Settlement Pattern

As Previously Recorded: On the La Costa Block, scattered SD flaking and tools could be found anywhere having been eroded out in ravines. Here they camped only to a minor degree previously to Lit. II campers moving in. The latter did not leave more than ten inches of midden matter. Following this period Y-III people augmented the midden to some extent but did not use as much shellfish (1930s).

Current Assessment: Within one mile of W-1955 there are in excess of 25 recorded archaeological sites. They include quarries, and other extractive areas, shell middens, lithic scatters, and maintenance camps with a wide range of activities present. All of these sites are inter-connected and probably represent the remains of a population depending on the lagoon and its associated habitat for livelihood.

10.2.36 SDi-6150

Site Documentation

Previously Recorded By: C. Briggs (1978).

Secondary Recordation(s): None.

Temporary/Other Site Designations: SDM-W-1956.

Site Location

As Previously Recorded: Site located on the southern bank of Escondido Creek, approximately 25 feet east of the power lines (SDG&E). Large boulders from the creek are approximately 40 feet away.

Current Assessment: SDi-6150 is located on the north bank of Escondido Creek immediately east of the westernmost power lines (SDG&E) on a granitic outcrop with a large boulder above.

Site Vegetation

As Previously Recorded: Eucalyptus, sycamore, sumac, toyon, moss, ferns, watercress, beavertail cactus, and a variety of dudleya.

Current Assessment: Riparian Woodland and Southern California Grassland are both represented at SDi-6150. Common plants include sycamore, grasses, buckwheat and laurel sumac.

Surface Cultural Material

As Previously Recorded: Site consisted of two slicks on bedrock on southern bank of the creek.

Current Assessment: The site contains a total of two slicks and one basin, located on two granitic bedrock outcrops. One boulder contains a single irregularly shaped slick measuring 28.6 centimeters by 19.8 centimeters and 1 oval basin measuring 44.0 centimeters by 23.7 centimeters, with a depth of 1.3 centimeters. The second

boulder, located southeast of the first, contains 1 irregularly shaped slick measuring 37.0 centimeters by 27.5 centimeters. These milling areas have been termed Feature A. No surface artifacts were noted in association with the bedrock features.

#### Subsurface Cultural Material

As Previously Recorded: No indications of subsurface cultural deposition were recorded.

Current Assessment: The lack of surface cultural material in association with the bedrock milling as well as no evidence of culturally darkened soil precluded the necessity for subsurface test excavation.

#### Site Dimensions

As Previously Recorded: 10 by 10 meters.

Current Assessment: The site is approximately 5 meters by 5 meters in size.

#### Site Integrity

As Previously Recorded: The site was undisturbed, although recent trash was present in the site area.

Current Assessment: The site is undisturbed. SDG&E transmission line is approximately 600 feet west of the site.

#### Site Activity/Type

As Previously Recorded: Milling activity.

Current Assessment: Activities relating to the processing of plant foods are implied from this milling feature.

#### Site Cultural Affinity

As Previously Recorded: Cultural affinity was not noted.

Current Assessment: Bedrock milling features are usually associated with Early Milling/Late Milling Horizon. However, the lack of diagnostic artifacts inhibits true assessment.

Site Significance

As Previously Recorded: Site significance was not discussed.

Current Assessment: Site SDi-6150 most likely represents a limited extractive/procurement activity area.

Site Settlement Pattern

As Previously Recorded: Not noted.

Current Assessment: No other sites are recorded in association with site SDi-6150.

10.2.37 SDi-6151

Site Documentation

Previously Recorded By: L. Eckhardt (1979a).

Secondary Recordation(s): None.

Temporary/Other Site Designations: SDM-W-1957.

Site Location

As Previously Recorded: Site located directly northwest of Del Dios Road, between two knolls. A large horse ranch was nearby.

Current Assessment: The site is located between two knolls northeast of the San Dieguito Reservoir, at an elevation of 420 feet.

Site Vegetation

As Previously Recorded: Grasses.

Current Assessment: Two plant communities are represented at SDi-6151; Southern California Grassland and Inland Sage Scrub. Ground visibility was fair.

Surface Cultural Material

As Previously Recorded: Lithic scatter containing one bifacial mano, one chopping tool, one pushplane, and several flakes.

Current Assessment: A total of nine artifacts were surface mapped at SDi-6151 (Table 10-37). They include one core, three flakes, two retouched flakes, two sidescrapers and one blade fragment. Lithic material includes five artifacts of felsite and four of basalt.

Subsurface Cultural Material

As Previously Recorded: No subsurface material was noted.

Current Assessment: No subsurface testing was conducted at SDi-6151. The paucity of surface artifacts, being so widely scattered, most likely indicate isolated

Table 10-37

SDi-6151  
SURFACE ARTIFACTS

		<u>Total</u>	<u>%</u>
Core		1	11.1
Flakes		3	33.3
Sidescrapers		2	22.2
Blade	fragment	1	11.1
Retouched Flakes		<u>2</u>	<u>22.2</u>
TOTAL:		9	100.0

activity occurrences. This evidence, combined with a lack of culturally darkened soil, precluded a necessity for subsurface testing.

#### Site Dimensions

As Previously Recorded: 70 meters by 70 meters.

Current Assessment: Surface artifacts cover an area 110 meters by 200 meters.

#### Site Integrity

As Previously Recorded: The site had been previously cleared (farming), and an SDG&E access road extended through it.

Current Assessment: SDi-6151 (total site area) is bisected by two SDG&E access roads, and two towers are located to the east of one of the access roads.

#### Site Activity/Type

As Previously Recorded: Not discussed.

Current Assessment: Tools associated with cutting and scraping comprise 55.5 percent of the total collection, while those artifacts associated with waste production comprise 44.4 percent of the collection. Activities involving both on-site processing relating to extractive techniques and those involving the related tool manufacturing and maintenance probably occurred at SDi-6151.

#### Site Cultural Affinity

As Previously Recorded: Not noted.

Current Assessment: The paucity of cultural material and lack of diagnostic artifacts limits determination of site cultural affinity. However, the previously recorded evidence of milling ( a mano) may be indicative of either Early Milling or Late Milling Horizons.

Site Significance

As Previously Recorded: Not noted.

Current Assessment: Surface artifact material at SDi-6151 most likely represents isolated occurrences of pre-European activities. As isolates, the artifacts have been more conveniently located within a single site boundary.

Site Settlement Pattern

As Previously Recorded: Not discussed.

Current Assessment: No other sites are recorded in association with site SDi-6151.

10.2.38 SDi-6130

Site Documentation

Previously Recorded By: M. Rogers (1930s).

Secondary Recordation(s): L. Eckhardt (1979a).

Temporary/Other Site Designations: "Stone Crusher Site." SDM-W-185.

Site Location

As Previously Recorded: On the mesa above the San Dieguito River Canyon (north) just west of where it breaks through the coast range (1930s). Located on a small knoll, a lemon grove, near the 220 foot contour immediately north of the San Dieguito River (1979).

Current Assessment: Located on knoll and knoll slopes overlooking San Dieguito River to the south.

Site Vegetation

As Previously Recorded: Probably riparian, since "San Dieguito River never goes dry at this point" (1930s). Disturbed by clearing and agriculture (1979).

Current Assessment: Agriculture and Southern California Grassland community. In lemon grove.

Surface Cultural Material

As Previously Recorded: Notes infer felsite flakes (or tools?) and an occasional mano fragment (1930s). Several unifacial manos, various Tizon Brown Ware sherds and shellfish remains (Pecten sp.).

Current Assessment: 397 artifacts were located on the surface of this site (Table 10-38). Waste production (cores, flakes and debitage) comprised over 84 percent of the assemblage. Hammerponders, manos (unifacial, bifacial, shaped and unshaped), sidescrapers and other unifacially flaked tools, choppers, a composite tool and retouch

Table 10-38

SDi-6130  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Manos,			
Unifacial, Unshaped	2	6	1.6
Unifacial, Shaped		1	.3
Bifacial, Unshaped	2	3	.8
Bifacial, Shaped	1	2	.5
Non-Diagnostic	2	2	.5
Cores		23	5.9
Flakes		210	53.6
Debitage		99	25.3
Sidescrapers		8	2.0
Non-Diagnostic Unifaces		2	.5
Choppers		3	.8
Inverse Chopper		1	.3
Hammer-pounders		20	5.1
Composite Tool		1	.3
Retouched Flakes		9	2.3
Ceramics		<u>7</u>	<u>1.7</u>
<b>TOTAL:</b>		<b>397</b>	<b>100.0</b>

SDi-6130  
SURFACE SHELLFISH REMAINS

	<u>Fragment</u>	<u>Total</u>	<u>%</u>
Shell			
<u>Chione</u> sp.	1	1	50
<u>Pecten</u> sp.	1	<u>1</u>	<u>50</u>
<b>TOTAL:</b>		<b>2</b>	<b>100</b>

Table 10-38 (Continued)

SDi-6130  
SUBSURFACE ARTIFACTS BY LEVEL  
(Unit 1)

	<u>0-10 cm.</u>	<u>10-20 cm.</u>	<u>20-30 cm.</u>	<u>Total</u>	<u>%</u>
Metate	1	-	-	1	4.3
Core	-	1	-	1	4.3
Flakes	5	4	1	10	43.5
Debitage	-	2	-	2	8.7
Sidescrapers	-	2	-	2	8.7
Hammer-pounder	2	3	-	5	21.7
Composite Tool	-	1	-	1	4.3
Retouched Flake	-	<u>1</u>	-	<u>1</u>	<u>4.3</u>
TOTAL:	8	14	1	23	100.0

flakes complete the lithic types present. In addition, though uncounted, shellfish remains were observed on the surface and identified primarily as Chione sp. and Pecten sp.

The majority of lithic material is identified as felsite or basalt. Jasper, quartzite, chert, andesite, appelite and rhyolite comprise less than 2 percent. Approximately 97 percent of the lithic artifacts observed on the surface exhibited varying degrees of patination. Moderate patination was the norm but some objects showed very heavy patination.

Flakes cataloged at SDi-6130 varied in length from 1.1 centimeters to 10.5 centimeters, with a mean of 3.6 centimeters. Characteristics associated with the soft hammer percussion flaking technique were observed on 19 flakes.

#### Subsurface Cultural Material

As Previously Recorded: No record of subsurface testing.

Current Assessment: A single unit was excavated on top of the knoll in an area previously cleared for cultivation. This unit reached a very hard clay and sterile soil at a depth of between 20 and 30 centimeters.

From the unit was retrieved a total of 23 artifacts (Table 10-38); the heaviest concentration located between 10 to 20 centimeter level (almost 61 percent). Artifacts were similar to those found on the surface. Although no manos were recovered, a metate, representing grinding activities, was part of the subsurface assemblage. No shell or ceramics were found subsurface.

#### Site Dimensions

As Previously Recorded: "Scattered camping without concentration" (1930s). Eckhardt (1979a) stated site size as 10,000 meters square.

Current Assessment: 95 meters by 135 meters.

### Site Integrity

As Previously Recorded: Not discussed.

Current Assessment: Presently, the knoll is planted with lemon trees and dirt roads lead to houses as well as provide access to SDG&E transmission lines. The unit excavated showed that disking had occurred to approximately 15 centimeters.

### Site Activity/Type

As Previously Recorded: San Dieguito II people camped here occasionally, apparently while making visitations to the felsite gravels in the river bed below as manifested by the many work shops uncovered at W-198. Later, Littoral II camped some on this mesa as shown by an occasional mano (1930s).

Current Assessment: Several activities can be attributed to this site. Grinding is evidenced by the manos, metates, and possibly the hammerpounders. Stone working, both manufacturing and sharpening, is suggested by the presence of cores as well as a wide range of flake sizes exhibiting prepared platforms. Both percussion and pressure flaking techniques were used. Cutting, scraping and pounding activities are identified with scrapers, other unifacial tools, retouched flakes, and choppers.

### Site Cultural Affinity

As Previously Recorded: San Dieguito II and Littoral II (1930s).

Current Assessment: A Late Milling horizon is suggested by the presence of ceramics (though few in number) and milling equipment, manos and metate. In addition, heavily patinated flaking debris was present and corresponds to Rogers' assessment that a San Dieguito horizon comprised a large part of the site. At this time no diagnostic San Dieguito tools were located, and it is now being questioned whether grinding implements are solely a Late Milling trait.

### Site Significance

As Previously Recorded: "This area is of no importance except as a further illustration of the type of terrain preferred by San Dieguito" (1930). This site, according to Eckhardt (1979a) "...may represent ill-defined, but probably unique and significant cultural resources."

Current Assessment: The paucity of San Dieguito type sites remaining, even partially intact, adds importance to this resource. In addition, the site exhibits a large surface extent of artifacts, some depth and is in proximity with a known quarry area. All of these attributes suggest that the site should be studied further and that the resource has not been exhausted.

### Site Settlement Pattern

As Previously Recorded: Rogers suggests that the area was a collection of camping areas while in transit between activity areas nearby. Eckhardt calls it a temporary campsite.

Current Assessment: Site SDi-6130 is approximately one-quarter mile downstream from the Harris Site, along the San Dieguito River. It is a documented San Dieguito occupation area. Comparative studies of sites along this drainage may better define patterns of movement, kinds of exploitation and, possibly, seasons of use or occupation. As it is known now, the San Dieguito people traveled along the ridges, knolls and slopes flanking the river, exploiting the resources and having a tool technology of primarily blades, scrapers, and choppers. The sparseness of information about the kinds of dwellings they constructed, the frequency that they returned to their campsites and whether or not they were really as nomadic as it was first speculated, creates a gap in the literature about these people.

The later cultures have more documentation and the presence of milling and ceramics indicate a Northern Diegueno occupation. These people also were exploiting the resources along the river, moving from the coast to the inland area, seasonally, to catch fish or shellfish or gather acorns. Site SDi-6130 is significant for its future research potential.

10.2.39 SDi-6131

Site Documentation

Previously Recorded By: M. Rogers (1930s).

Secondary Recordation(s): L. Eckhardt (1979a).

Temporary/Other Site Designations: SDM-W-281.

Site Location

As Previously Recorded: Site was located on a knoll and slope, directly under SDG&E power lines, south of San Dieguito River and approximately one mile west of San Dieguito Valley.

Current Assessment: SDi-6131 is located on a northwest-southeast trending knoll on adjacent slopes, south of the San Dieguito River at an elevation of 300 feet.

Site Vegetation

As Previously Recorded: Vegetation consisted of grasses.

Current Assessment: Vegetation consists of Southern California Grassland, with the majority of plants being foxtail, black mustard, and sweet clover.

Surface Cultural Material

As Previously Recorded: Site consisted of scattered lithics, heavily patinated, and included scrapers, flakes, and debitage. Milling activity was represented by the presence of at least one metate and mano.

Current Assessment: A total of 52 artifacts was observed on the surface of SDi-6131 (Table 10-39). Due to the denseness of the ground cover, four areas near the access road were cleared of vegetation to aid in locating possible artifact concentrations. No cultural resources were located in these areas. The primary type of artifact recorded was lithic waste material. Flakes, debitage and cores totaled 32 pieces or 61.5 percent of the total surface collection. Fourteen flaked lithic tools

Table 10-39

SDi-6131  
SURFACE ARTIFACTS

	<u>Fragment</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped	1	2	3.8
Cores		8	15.4
Flakes		19	36.5
Debitage		5	9.6
Sidescrapers		6	11.5
Endscraper		1	1.9
Domed Scrapers		3	5.8
Non-Diagnostic Biface		1	1.9
Hammer-pounders		4	7.7
Utilized Flake		1	1.9
Retouched Flakes		<u>2</u>	<u>3.8</u>
TOTAL:		52	100.0

SDi-6131  
SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

Unit	<u>0-10 cm.</u>		<u>10-20 cm.</u>		<u>20-30 cm.</u>		<u>30-40 cm.</u>	<u>Total</u>	<u>%</u>
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>		
Flake	-	1	-	-	-	-	-	1	50
Debitage	-	<u>1</u>	-	-	-	-	-	<u>1</u>	<u>50</u>
TOTAL:	0	2	0	0	0	0	0	2	100

Table 10-39 (Continued)

SDi-6131  
SURFACE SHELLFISH REMAINS

Shell	<u>Fragments</u>	<u>Total</u>	<u>%</u>
<u>Chione lurida</u>	2	2	66.6
<u>Aquiptecten circularis</u>	1	<u>1</u>	<u>33.3</u>
TOTAL:		3	100.0

accounted for 26.8 percent of the material and included endscrapers, sidescrapers, and domed scrapers, a biface and utilized and retouched flakes. Four hammer-pounders (7.7 percent) were also present. Artifacts associated with milling consist of two bifacial, unshaped granitic manos, one of which is a fragment. The primary lithic material for artifacts is basalt, followed by felsite and quartzite.

Besides lithic artifacts, surface cultural material also included shellfish remains. Two species, Aquipten circularis (Speckled Scallop) and Ostrea lurida (Native Oyster) were identified during the surface mapping of SDi-6131. A total of two fragments of Aquipten circularis and one fragment of Ostrea lurida were observed (Table 10-39).

#### Subsurface Cultural Material

As Previously Recorded: Any previous testing by Rogers was not noted.

Current Assessment: Two test units were excavated at SDi-6131. Unit 1, which was excavated to a depth of 40 centimeters, was placed adjacent to the SDG&E access road. No artifacts were recovered from this unit. Unit 2 was placed on the north side of the unimproved dirt road. One flake and one debitage were recovered from the 0 centimeter to 10 centimeter level (Table 10-39). A maximum depth of 30 centimeters was excavated in Unit 2. Soil for both units consisted of a tan sandy loam. In addition, Unit 2 contained compacted clay at 30 centimeters.

No shellfish remains were recovered from the subsurface testing.

#### Site Dimensions

As Previously Recorded: Total site area covered 100 meters by 100 meters, with two loci being present. SDi-6131 covered 18 by 61 meters and (SDM-W-281-A) covered an area 15 by 91 meters.

Current Assessment: 65 meters by 430 meters. Separate loci were not discernable.

### Site Integrity

As Previously Recorded: The site had been disturbed by past grazing activity, clearing of vegetation for access roads and SDG&E power lines (1979).

Current Assessment: An unimproved dirt road extends throughout the eastern portion of the site, which is the area of highest artifact density. The western portion, while highly disturbed by the construction of an SDG&E tower and grading of the access road, contains fewer cultural resources. This site had been disked within the past week of current fieldwork.

### Site Activity/Type

As Previously Recorded: Site was probably used as a limited campsite by San Dieguito II, and as a more intensively occupied camp by Littoral II groups (1930s).

Current Assessment: The large percentage of artifacts associated with waste production indicates that tool manufacture and tool maintenance were the predominant activities at SDi-6131. The number of tools with cutting and scraping abilities also imply on-site processing associated with extractive activities. Subsurface cultural deposition is not appreciable.

### Site Cultural Affinity

As Previously Recorded: Littoral II cultural material was observed on the surface and on the east end of the site. San Dieguito II material was recorded at a subsurface depth of 12 inches (1979).

Current Assessment: Milling stone objects may represent Early Milling Horizon activities.

### Site Significance

As Previously Recorded: Not stated.

Current Assessment: Site significance of SDi-6131 lies in its contribution, as now recorded, to the knowledge of sites in San Diego County. Comparative studies

with these numerous sites have defined exploitative areas and temporal placement within a culture. SDi-6131 is similar to other similar sites that have already been assessed, including full mitigation/salvage measures.

Site Settlement Pattern

As Previously Recorded: Not noted.

Current Assessment: A number of archaeological sites, including similar small lithic scatters and single bedrock milling features, have been recorded in a distance from SDi-6131. It is possible that these sites are related temporally and share extractive areas.

10.2.40 SDi-6152

Site Documentation

Previously Recorded By: L. Eckhardt (1979a).

Secondary Recordation(s): None.

Temporary/Other Site Designations: SDM-W-1958.

Site Location

As Previously Recorded: Site located on a knoll immediately south of SDi-6131. Located on four section corners (35,2,34,3), directly along and to the W/NW of a power pole.

Current Assessment: SDi-6152 is located on a north-south trending knoll south of the San Dieguito River.

Site Vegetation

As Previously Recorded: Ruderal grasses.

Current Assessment: Southern California Grassland.

Surface Cultural Material

As Previously Recorded: Observed cultural material consisted of scattered lithics (flakes and scrapers) and shellfish remains (Chione sp.).

Current Assessment: Artifacts located during the surface mapping total 115 and include flakes, debitage, scrapers, a chopping tool and a mano (Table 10-40). The majority was waste production material which consisted of 107 specimens representing 93 percent of the total surface collection. Cutting/scraping activities are indicated by the presence of 5 sidescrapers and 1 domed scraper equaling 5.2 percent of the collection. One basalt chopping tool and one unifacial, unshaped mano fragment completed the surface cataloging. The primary materials for lithic artifacts, basalt and felsite, occur almost equally. Only one rhyolite and two chert artifacts were observed.

Table 10-40

SDi-6152  
SURFACE ARTIFACTS

	<u>Fragment</u>	<u>Total</u>	<u>%</u>
Manos			
Unifacial, Unshaped	1	1	.9
Flakes		54	47.0
Debitage		53	46.1
Sidescrapers		5	4.3
Domed Scraper		1	.9
Chopping Tool		<u>1</u>	<u>.9</u>
TOTAL:		115	100.0

SDi-6152  
SURFACE SHELLFISH REMAINS

	<u>Total</u>	<u>%</u>
Shell		
<u>Chione</u> sp.	4	66.4
<u>Aquiptecten</u> sp.	1	16.4
<u>Ostrea</u> sp.	<u>1</u>	<u>16.4</u>
TOTAL:	6	100.0

Table 10-40 (Continued)

Ora-6152  
 SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

Unit	0-10 cm.		10-20 cm.		20-30 cm.		30-40 cm.	Total	%
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>		
Flakes	3	1	3	1	6	-	3	17	60.7
Debitage	<u>2</u>	-	<u>2</u>	-	<u>6</u>	-	<u>1</u>	<u>11</u>	<u>39.3</u>
TOTAL:	5	1	5	1	12	0	4	28	100.0

In addition to lithic artifacts, shellfish remains were also noted during the surface mapping of SDi-6152. They include a total of four Chione sp. fragments (Cockle), one Aquiptecten circularis fragment (Speckled Scallop), and one Ostrea lurida fragment (Native Oyster) (Table 10-40). In addition, one unidentified fragment of shell was located which may have been either Ostrea sp. or Haliotis sp. The three shellfish species conclusively identified at SDi-6152 are common to the bay/estuary environment.

#### Subsurface Cultural Material

As Previously Recorded: Not noted.

Current Assessment: Two test units were placed at opposite ends of the site. Unit 1 was located east of the access road in the northern portion, and was excavated to 40 centimeters. A total of 26 flakes and debitage was recovered from Unit 1 (Table 10-40). Soil consisted of fine silty loam, brown to light grey in color to 30 centimeters. Below 30 centimeters was sandstone. Unit 2 was excavated to 30 centimeters. Artifacts from this unit consisted of two flakes; one recovered from the 0 centimeter to 10 centimeter level and one from the 10 centimeter to 20 centimeter level. Soil for this unit was tan sandy loam throughout. Unit 2 was located near the south edge of the site, west of the access road. No subsurface shellfish was noted.

#### Site Dimensions

As Previously Recorded: 100 by 100 meters.

Current Assessment: Surface artifacts indicate that the site extends 65 meters east/west by 165 meters north/south.

#### Site Integrity

As Previously Recorded: The site had been disturbed by grazing and clearing of the land as well as from access roads and SDG&E power lines.

Current Assessment: An SDG&E access road runs north-south through the center of the site with a tower being located at the southeast edge of the site. A fenceline parallels the access road on the east. Site disturbance also includes past agricultural activities.

Site Activity/Type

As Previously Recorded: Not discussed.

Current Assessment: The quantity and type of flakes and debitage present at this site are indicative of both initial manufacturing of new tools and the finer work often associated with retouching or sharpening existing tools. Other possible limited activities at SDi-6152 include those associated with food procurement as evidenced by the shellfish remains.

Site Cultural Affinity

As Previously Recorded: Not noted.

Current Assessment: SDi-6152 could be either a Early Milling or Late Milling site. The lack of pottery found does not serve as a determination factor.

Site Significance

As Previously Recorded: Not discussed.

Current Assessment: SDi-6152 appears to have been a minimal extractive camp as indicated by the artifact assemblage and the presence of shellfish. SDi-6152 is similar to other, already fully mitigated, work camps located in San Diego County. As now assessed, this site indicates no further research potential.

Site Settlement Pattern

As Previously Recorded: Not noted.

Current Assessment: Numerous sites have been recorded at a distance from SDi-6152. It is possible that these sites show an inter-relationship in terms of resource exploitation and temporal assignment.

10.2.41 SDi-5444

Site Documentation

Previously Recorded By: R.H. Norwood (1978).

Secondary Recordation(s): WESTEC Services, Inc. (1978); L. Eckhardt (1979a).

Temporary/Other Site Designations: SDM-W-1528.

Site Location

As Previously Recorded: The site was recorded as located on a relatively level mesa with arroyos to the west and north. The site was situated about 40 meters north of Carroll Road on the eastern property boundary within a powerline easement (Norwood 1978) in agreement with above. Later, site was identified as located 70 meters west of the subject right-of-way and 60 meters north of Carroll Canyon road (1978) and (1979).

Current Assessment: As previously stated.

Site Vegetation

As Previously Recorded: Vegetation was listed as Coastal sage scrub, coastal sage, Rhus sp., and non-native weeds (1978). Eckhardt (1979) lists the following species as prominent in the study area: willow, chamise, scrub oak, lilac, holly-leaf cherry, toyon, sugarbush, gooseberry, squaw bush, engelmann oak, live oak, California juniper, manzanita, jimsonweed, miner's lettuce, prickly pear cactus, wild rose, white sage, black sage and elderberry.

Current Assessment: Vegetation consists of introduced species due to heavy disturbance, including black mustard, haplopappus, filaree, oleander, California pepper and Pinus sp.

### Surface Cultural Material

As Previously Recorded: The site consisted of a few scattered artifacts with no discernable midden (1978). Artifacts included 2 manos, approximately 10 flakes, and 2 flaked stone tools. Approximately 10 flakes and 2 flaked stone tools were seen on the adjacent property east of the easement. Both manos lying within the easement were collected and are curated at RECON. Mano #1 was bilaterally symmetrical measuring 11.5 x 10.5 x 6.0 centimeters. It is bifacial, shouldered on both sides, and seems to have been shaped. This tool does not appear to have been battered and is made of pink granite. Mano #2 is also bilaterally symmetrical measuring 11.7 x 8.5 x 4.2 centimeters. This mano is more ovoid than Mano #1 and has a very subtle shoulder on only one of its two faces, on the smoother surface. It appears to have been shaped. One of the faces appears to have been sharpened or intentionally roughened by pecking. This tool has not been damaged by battering but is heavily plow scarred. It is made from grey granite (1978).

Later investigations (1979) located additional cultural debris in the subject right-of-way and immediately to the east and west of an SDG&E access road. The artifacts included assorted felsite and basalt flakes and tool fragments (20+), one small domed scraper, one pushplane, one sidescraper, one hammerstone pounder, a single bifacial mano, and a limited amount of shellfish remains (Chione sp., Ostrea sp.).

Current Assessment: A total of 125 artifacts was observed on the surface of SDi-5444 (Table 10-41). Waste production accounts for 85 percent of the total assemblage, and included 8 cores, 26 debitage and 72 flakes. Material composition was primarily felsite, with 67 examples. Next in order of occurrence were basalt, with 29, and quartzite, with 5. Four flakes were of an unidentified material. Three of the flakes exhibited soft hammer percussion.

Table 10-41

SDi-5444  
SURFACE ARTIFACTS

	<u>Fragments</u>	<u>Total</u>	<u>%</u>
Mano			
Bifacial, Unshaped	1	1	.8
Non-Diagnostic	2	2	1.6
Cores		8	6.4
Flakes		72	57.6
Debitage		26	21.0
Sidescrapers		9	7.2
Endscraper		1	.8
Pushplane		1	.8
Choppers		2	1.6
Inverse Chopper		1	.8
Hammer-pounder		1	.8
Retouched Flake		<u>1</u>	<u>.8</u>
TOTAL:		125	100.0

SDi-5444  
SURFACE SHELLFISH REMAINS

	<u>Total</u>	<u>%</u>
Shell		
<u>Chione sp.</u>	<u>3</u>	<u>100</u>
TOTAL:	3	100

Table 10-41 (Continued)

SDi-5444  
SUBSURFACE ARTIFACTS BY UNIT AND LEVEL

Unit	0-10 cm.		10-20 cm.		20-30 cm.		30-40 cm.		Total	%
	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>		
Mano										
Bifacial, Shaped, (fragment)	-	1	-	1	-	-	-	-	2	5.0
Flakes	-	9	-	14	-	4	-	-	27	67.5
Debitage	-	<u>4</u>	-	<u>7</u>	-	-	-	-	<u>11</u>	<u>27.5</u>
TOTAL:	0	14	0	22	0	4	0	0	40	100.0

Flakes had the following size distribution:

	<u>Length (cm)</u>	<u>Width (cm)</u>	<u>Thickness (cm)</u>
Range	0.6-6.8	0.4.-5.0	0.1-2.6
Mean	4.8	2.5	1.0

Artifacts representing cutting/scraping activities comprise 9.6 percent and include 9 sidescrapers, 1 endscraper, 1 pushplane, and 1 retouched flake. The retouched flake was unifacial, unilateral, and of basalt material. The pushplane was felsite, unifacial, and double convergent. The endscraper was felsite. The sidescrapers consisted of five unifacial, double convergent (three felsite, two basalt), one unifacial, unilateral (felsite) and three non-diagnostic (felsite) specimens.

The artifacts in the chopping/pounding category, 3.2 percent of the assemblage, consisted of 1 quartzite hammer-pounder, 1 basalt inverse chopper, and 2 choppers, 1 felsite and 1 quartzite.

Artifacts involved with grinding activities, 2.4 percent, consist of 3 manos, 1 of which is bifacial and shaped, and the other 2 are non-diagnostic. All are fragments.

In addition to artifacts, three Chione sp. shellfish fragments were identified during the surface mapping of SDi-5444 (Table 10-41). One additional species, Ostrea sp. was reported during the survey.

#### Subsurface Cultural Material

As Previously Recorded: Site not excavated (1978). Where avoidance was not feasible, Eckhardt (1979) recommended surface collection and controlled, limited subsurface testing to assess the resource's subsurface extent.

Current Assessment: Two test units were excavated at SDi-5444. Unit 1, which was located 5 meters west of the access road, was excavated to 40 centimeters.

Soil consisted of tan, silty sand. No artifacts were recovered from this unit. Unit 2 was excavated adjacent to the eastern edge of the access road. Soil in this area consisted of dark brown compact sandy loam to 20 centimeters where a combination of sandy loam and clay continued to 40 centimeters. Artifacts recovered from this unit include 1 bifacial, shaped mano fragment, 9 flakes and 4 debitage, from the 0 centimeter to 10 centimeter level. The 10 centimeter to 20 centimeter level contained 1 bifacial, shaped mano fragment, 14 flakes and 7 debitage. The 20 centimeter to 30 centimeter level contained 4 flakes. No artifacts were recovered from the 30 centimeter to 40 centimeter level (Table 10-41). No shellfish remains were found subsurface.

#### Site Dimensions

As Previously Recorded: 5 meters by 40 meters (1978). 35 meters by 125 meters (1979).

Current Assessment: 75 meters by 145 meters.

#### Site Integrity

As Previously Recorded: The site area had been graded and was highly disturbed. The site had been severely graded and disked. Site was partially within a SDG&E easement running north to south along the eastern property boundary. The site might have extended onto the private property east of the easement (1978).

Site disturbance has been extensive; beyond grading activities, the site is additionally impacted by the subject right-of-way, easement roads, domestic shrubs and trees, a single building and material refuse. The site is situated within proposed staging location and could be adversely impacted by the SDG&E proposed project (new construction or conductor stringing operation sites) (1979).

Current Assessment: In agreement with the above; this site has been extensively disturbed by SDG&E construction activities. Private development of the property has virtually eliminated all site evidence.

#### Site Activity/Type

As Previously Recorded: Not stated (1978). Food processing, as evidenced by milling technologies, was noted at W-1528. Stone working, or evidence of sharpening, using or making stone tools was observed at the site. The site may have represented a small, satellite camp or special use area occupied sporadically as a support camp for larger, more permanent camps or villages located nearby. The cultural resources appeared to be representative of a well-developed hunting and gathering group exhibiting a limited range of diverse technologies (1979).

Current Assessment: The percentage of artifacts (85 percent) associated with waste production indicates that tool manufacture and tool maintenance were the predominant activities at SDi-5444. Cutting and scraping tools, representative of 9.6 percent of the artifacts were of the same material type as the waste lithics. These tools, along with the chopping/pounding tools (3.2 percent) and the grinding implements (2.4 percent) indicate on-site processing associated with extractive activities.

#### Site Cultural Affinity

As Previously Recorded: Not stated (1978).

Current Assessment: The only diagnostic artifacts present at SDi-5444 were mano fragments, which places this site in the Milling Horizon. The lack of pottery suggests an Early Milling time frame but is not definitive.

#### Site Significance

As Previously Recorded: Not stated (1978). Eckhardt (1979) states that the site may possess information about prehistoric lifeways including diet, seasonality, lithic technology, settlement patterns, regional dispersal and cultural change.

Current Assessment: The heavy degree to which this site has been impacted has hindered the assessment of significance. This site may have been extensive at one time but locating cultural material in situ here would not how be possible.

Site Settlement Pattern

As Previously Recorded: Not stated (Norwood 1978).

Current Assessment: The settlement pattern in this area is not well defined for the early horizons. Just to the west of SDi-5444 and in Sorrento Valley is a major Late Milling village. If SDi-5444 was a Late Milling site, it was probably an outlying extractive camp associated with the village.

SECTION XI  
EVALUATION OF POTENTIAL  
NATIONAL REGISTER STATUS/SITE SIGNIFICANCE

11.1 INTRODUCTION

During the current assessment program, 41 archaeological sites were evaluated for National Register potential. On the basis of evaluation results and using site significance criteria as outlined below, 22 archaeological sites are evaluated as being potentially eligible for National Register nomination (Table 11-1). The remaining 19 sites are not, in our opinion, considered potentially eligible for National Register nomination (Table 11-1).

11.2 CRITERIA USED TO ASSESS AND DETERMINE SITE SIGNIFICANCE

11.2.1 Introduction

It is assumed that every archaeological site or locale has significance as a unique source of information, however, archaeologists traditionally disagree upon type, degree and definition of such significance. The following discussion is based upon the concept that each site under consideration is significant, but that the type, degree, and definition of significance will vary.

11.2.2 General Types of Site Significance

In recent years, archaeologists and cultural historians involved in contract archaeology and cultural resource management have been rethinking and more clearly defining concepts of site significance (Lipe 1974:213-245; Moratto and Kelly 1976:193-201; Raab and Klinger 1977:629-634; Sharrock and Grayson 1979:327-328; Barnes, Briggs and Neilsen 1980:551-553; Klinger and Raab 1980:554-557). In the case of federally funded or federally administered projects, site significance guidelines have been defined through regulations 36 CFR 63 (Federal Register 1977) or through criteria provided in 36 CFR 60.6.

Table 11-1

ASSESSMENT OF NATIONAL REGISTER POTENTIAL FOR  
SITES INCLUDED WITHIN CURRENT PROGRAM

<u>Site Number</u>	<u>National Register Eligibility</u>	
	<u>Yes</u>	<u>No</u>
*Ora-831, *Ora-830, *Ora-829	District	
*Ora-787		X
*Ora-832		X
*Ora-828, *Ora-827, *Ora-825, *Ora-826 *Ora-905, **(*Ora-438, *Ora-725, *Ora-447)	District (to be included within Upper Aliso Creek Historic District)	
*Ora-786		X
*Ora-785		X
*Ora-784		X
*Ora-782		X
*Ora-499, *Ora-495, *Ora-496	District	
*Ora-824		X
*Ora-419		X
*Ora-823		X
*Ora-498	Individual	
*Ora-700		X
*Ora-640		X
*SDi-6693		X

\*SCE

\*\*Sites presently within District

Table 11-1 (Continued)

ASSESSMENT OF NATIONAL REGISTER POTENTIAL FOR  
SITES INCLUDED WITHIN CURRENT PROGRAM

<u>Site Number</u>	<u>National Register Eligibility</u>	
	<u>Yes</u>	<u>No</u>
***SDi-4538	Individual	
***SDi-6136		X
***SDi-6137		X
***SDi-6138	Individual	
***SDi-6140, ***SDi-6135, ***SDi-6133	District	
***SDi-6149	Individual	
***SDi-6150		X
***SDi-6151		X
***SDi-6130	Individual	
***SDi-6131		X
***SDi-6152		X
***SDi-5444		X
<hr/>		
***SDG&E		

Authors such as Raab and Klinger (1977:629-634) imply that National Register criteria are not adequate for determining site significance as it applies to explicit, problem-oriented research strategies. However, we concur with Barnes, Briggs and Neilsen (1980:551) that as:

...the National Register criterion allows archaeologists to formulate statements of significance based on national, state, and local levels of significance. In short, it allows and promotes the development of regional approaches to understanding archaeological site significance.

Although the above cited authors were defending criterion (d) only (see below), we think that as combined, all four criteria for inclusion in the National Register create "an open-ended system which can be applied to changing developments and advancements in archaeology" (Barnes, Briggs and Neilsen 1980:551).

To determine site significance through application of National Register criteria, several levels of potential significance which reflect different (although not necessarily mutually exclusive) values must be considered. As provided in 36 CFR 60.6 and 36 CFR 64 (draft):

The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

(a) That are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) That are associated with the lives of persons significant in our past; or

(c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) That have yielded, or may be likely to yield, information important in prehistory or history.

Under criterion (d), virtually all sites may potentially be eligible for inclusion to the National Register. However, to apply criterion (d) in an arbitrary manner serves neither the evaluator nor the manager who relies on the evaluation expertise to protect cultural resources. Site significance under criterion (d) should infer that substantive research potential is present and therefore the data from a specific site or locality can significantly enhance the body of knowledge presently possessed by archaeologists. Guidelines used in this study to assess site significance include the following, based on 36 CFR 60.6, Moratto and Kelly (1978:1-26), and Guidelines for Level of Documentation...National Register (Federal Register 1977):

(1) Integrity - Is the site in poor, good or excellent condition as to amount of disturbance and degree of preservation? How does any disturbance affect the resource base?

(2) Documentation - Has the site been previously reported in a site record or cultural resource report? Is the site well-known to the scientific community? Has there been analysis of data from this site or sites in the region which would help explain culture processes or function at this site?

(3) Uniqueness - Does the site possess qualities that are not present in other sites? Is this site rare or out of context with the norm for the area?

(4) Value to the Public - Would the public, including Native Americans, readily find this site important (identifiability)? Can this site be used for public interpretation?

(5) Native American Concerns - Native Americans are concerned about many archaeological localities and especially about petroglyph, pictograph localities, ceremonial sites, sacred places, places of power, burial and cremation sites. A discussion of Native American concerns can be found in Section 6.5.

It should be remembered that significance is a value judgment made for varying purposes, including direction of research, comparative anthropology, and management and administration of cultural resources. Significance is not an inherent property of an archaeological or historical resource; it is ascribed.

### 11.2.3 Project Specific Site Significance

Our assessment of site significance employs the broad criteria cited above and more specific levels which lend to these broader categories. For example, we have assessed each site using 36 CFR 63 National Register Guidelines for Level of Documentation, including:

(a) The kinds of information known or thought likely to be present...types of data that might be recovered if the property were thoroughly investigated...(and) reasons for believing that given categories of information are present and have been preserved....

(b) Relationships between the information believed to be present in the property and topics that might be studied there....

All of the archaeological sites under investigation were assessed for significance using criterion (d) and the guidelines cited above. Using this criterion and guidelines, each site was evaluated in relation to regional research questions. Every effort was made to consider the research interests of other scholars and to solicit comment from them regarding regional significance of archaeological sites.

Based on a synthesis of previous fieldwork in the region, coupled with our own research and evaluation, a theme or mode of significance particular to the sites currently under assessment is suggested. As discussed more specifically below, the overall significance of the National Register potential sites is that they can: (1) significantly contribute information about natural resource exploitation within the study area; (2) clarify correlations between nearby sites, (3) provide further documentation of site

specific cultural affiliations; and (4) provide data about site specific function and use within larger settlement systems.

### 11.3 SITES CONSIDERED ELIGIBLE FOR INCLUSION IN THE NATIONAL REGISTER

Using criteria discussed previously, the following 22 sites are considered potentially eligible for inclusion in the National Register of Historic Places: Ora-831, Ora-830, Ora-829, Ora-828, Ora-447, Ora-827, Ora-825, Ora-826, Ora-905, Ora-438, Ora-725, Ora-499, Ora-495, Ora-496, Ora-498, SDi-4538, SDi-6138, SDi-6140, SDi-6135, SDi-6133, SDi-6149 and SDi-6130. Of the 22 cultural resources, 5 will be considered individually; the remaining 17 sites will be considered within district definitions.

#### 11.3.1 Individual Site Eligibility and Possible Scientific Importance

Of the 22 sites considered to be potentially eligible, 5 archaeological sites qualify, in our opinion, for listing individually in the National Register: Ora-498, SDi-4538, SDi-6138, SDi-6149 and SDi-6130. Using criterion (d) of 36 CFR 60.6 and 36 CFR 64 (Draft), we assume that they "have yielded, or may be likely to yield, information important in prehistory or history". More specifically, application of federal Guidelines For Level of Documentation... For Determination of Eligibility For Inclusion in National Register can be used to better document the significance and National Register potential. These sites afford a wide range of potential research topics, contain much raw data and represent a particular mode or type of activity within the study area.

- Ora-498: As discussed in Section X, this extractive/procurement campsite offers unique attributes which set it aside from other sites. The majority of artifacts (77 percent) encountered at Ora-498 represent milling/grinding implements (manos and metates) and within this artifact category, numerous differentiations of

design exist, e.g., slab, basin, unifacial, bifacial, shaped, and unshaped. Current assessment resulted in recordation of these individual artifact types similar to recordation at other sites, but does not explain artifact differentiation caused by methods of construction, selection of artifact design for use during specific activities or relation to lithic material selected. In contrast to previously recorded sites complemented by milling items, site Ora-498 offers a unique opportunity for investigation of numerous milling artifacts (84 surface total) located in one area; manos and metates are usually found in lesser total numbers because of original site context or due to their being preferable items for relic-collection. Additional in-depth examination of milling typology would create greater research potential for identification of possible cultural or subcultural design preferences in construction, due to shifting procurement practices or resources exploited, having changed through time. Further data analysis at site Ora-498 may also enable researchers to construct a more complete picture of culture change and progression in the area and to develop a pre-European cultural sequence based on more substantive information.

● SDi-4538: Site SDi-4538 represents a relatively intact, La Jolla (Early Milling) site composed of substantial surface and subsurface cultural deposition. La Jolla campsites located near coastal environs are becoming increasingly scarce due to the fact that private land developers often prefer these coastal locations for housing construction. Thus, site SDi-4538 is particularly necessary for thorough documentation of these increasingly damaged and destroyed sites. Further data recordation at this site could enable researchers to construct a more accurate artifact inventory since current tentative extractive/work campsite status is based on general survey documentation rather than in-depth evaluation. Future assessment of SDi-4538 may provide a more complete picture of intra-site variables and inter-site relationships which could better

explain an as yet ill-defined coastal settlement system pattern and thus develop a culture history based on more substantive information.

- SDi-6138, SDi-6149 and SDi-6130: Each of these cultural resources has yielded information important to prehistory. Based on previous documentation by Malcom Rogers during the early 1900s, sites SDi-6138, SDi-6149 and SDi-6130 are associated with cultural patterns, processes and activities significant in the past and have already contributed to formulation of a regional culture history. As described in Section X, the sites each comprise a multi-component artifact inventory revealed by substantial surface and subsurface cultural deposition. The sites may be valuable in explaining cultural patterns and processes as yet ill-defined. Although presently more disturbed than when previously investigated, the cultural resources represent major study locales for current researchers in areas becoming increasingly damaged or destroyed. Potentially, these sites may yield stratification of artifact material demonstrating temporal sequences or documentation of artifact types used in formulation of Rogers' pre-European cultural sequence (see Section III) which as yet is not completely understood or evaluated.

#### 11.3.2 District Site Eligibility and Possible Scientific Importance

Of the 22 archaeological sites considered potentially eligible for National Register inclusion, 17 have been incorporated into 4 specific districts. When considered collectively rather than as separate units, sites within the proposed districts will better provide cohesive information.

The following cultural resources, as districts, are considered to be unified activity areas, sharing common resources, with cultural patterns and processes that contribute to the understanding of the prehistory of the study area by enabling present

and future researchers to view the region holistically through documentation of inter-site relationships (settlement systems), surpassing limited ethnographic sketches or general hypothetical archaeological interpretation. The following districts are proposed (Table 11-1):

- Santiago Creek District (Ora-831, Ora-830, Ora-829): Based on current evaluation (Section X) and as documented through artifact assemblages, sites Ora-831, Ora-830 and Ora-829 are most likely related within the context of a settlement system, having potentially similar cultural affinity. These sites, viewed holistically, appear to be significant in terms of the potential for obtaining intra/intersite definitions and contributing to a formulation of an as yet ill-documented pre-European culture sequence for the surrounding area. Additionally, site Ora-830 exhibits individual potential for providing data relevant to an understanding of the processes involved in the formation of bedrock mortars.

- Upper Aliso Creek District (Ora-828, Ora-447, Ora-827, Ora-825, Ora-826, Ora-905, Ora-438, Ora-725): Archaeological sites Ora-447, Ora-438 and Ora-725 were previously assessed from surface survey and considered eligible for inclusion in the National Register to be placed within the Upper Aliso Creek Historic District. As currently assessed, cultural resource Ora-905 also lies within designated district boundaries (Appendix F, Figure 4-solid line). Site Ora-905, as well as sites Ora-828, Ora-827, Ora-825 and Ora-826 are all newly recorded locales since formulation of the Upper Aliso Creek Historic District. Evaluation of these sites (Section X), however, indicates a potentially contemporary time frame for the sites in addition to a continuing physical manifestation of multiple activities or use of common resources within an expanded district outline (Appendix D, Figure 4-broken line).

- San Joaquin District (Ora-499, Ora-495, Ora-496 and Site Ora-494): Described in Section X, these sites are considered to be part of a proposed district

(Appendix D, Figure 8). Although located beyond the project right-of-way, and only briefly visited during the current program, Ora-494 is also considered to be a significant, relatively intact component of the suggested settlement system. District significance lies in potential intra/intersite variables seen in a settlement pattern.

- Agua Hedionda District (SDi-6140, SDi-6135, SDi-6133): Agua Hedionda Lagoon is surrounded by numerous sites, several of which are primarily shell middens. Sites SDi-6140 and SDi-6135 are significant in that they contain datable non-cultural material in stratigraphic association with lithic artifact material. Additionally, documentation of site SDi-6133 by Rogers, provides a basic multi-cultural framework from which further intersite variables may be analyzed. Future research at these three sites will potentially establish documentation of the Agua Hedionda Lagoon being a major source of subsistence showing evidence of occupation over a long period of time.

### 11.3.3 Possible Native American Importance

An archaeological site can provide information about Native American ethnic values by substantiating land claims or antiquity of territorial possession. In this sense, an archaeological site can be a significant resource as an ethnic reference point, as proof of pre-European occupation or as a source of ethnic identity. Ethnographic and ethnological research for current assessment of the project rights-of-way has revealed that Native Americans, particularly the Juanenos, are concerned about continued loss, damage, or destruction of archaeological sites as they are now in the process of trying to document and define territorial areas in Orange County to establish federal band recognition. Sites Ora-831, Ora-830, Ora-829, Ora-828, Ora-447, Ora-827, Ora-826, Ora-905, Ora-438, Ora-725, Ora-499, Ora-495, Ora-496, and Ora-498 may lack the scientific spectrum of data necessary to document ethnic identity, however, the Juanenos hold these sites to be within traditional use areas and to be

places of ancestral activities. Additionally, Native American spiritual values may make archaeological sites SDi-4538 and Ora-495 highly significant. The presence of a recorded human burial (SDi-4538) or suggestion of rock cairns as possible burials (Ora-4915) dramatically increase the threshold of site significance. Spiritual or sacred significance can transcend the physical manifestation and go beyond scientific potential of a site when the presence of human bone is considered as evidence of significant cultural values.

Native Americans have expressed the desire for formulation of their cultural history. Future research and study at sites SDi-6138, SDi-6140, SDi-6135, SDi-6133, SDi-6149 and SDi-6130 may provide archaeological data for verification of what is now only known ethnographically and for provision of additional documentation of Native American heritage.

#### 11.3.4 Additional Substantiation of Site Significance

Field observations by present day and previous field researchers clearly indicate that there is a general lack of uniformly retrieved data existing for the study area. Both as individual sites and as districts, the proposed National Register eligible sites possess the types of data crucial to further research. Previous fieldwork and research has necessarily been largely descriptive; these potentially eligible sites could be studied in a more theoretical, systematic framework. Cultural materials at the sites are plentiful, often diagnostic and generally in good condition. These sites offer a laboratory-like situation in which researchers could conduct varied studies.

#### 11.4 SITES NOT CONSIDERED ELIGIBLE FOR INCLUSION IN THE NATIONAL REGISTER

The following sites are not considered eligible for National Register inclusion: Ora-787, Ora-832, Ora-786, Ora-785, Ora-784, Ora-782, Ora-824, Ora-419, Ora-823, Ora-700, Ora-640, SDi-6693, SDi-6136, SDi-6137, SDi-6150, SDi-6151, SDi-6131,

SDi-6152, and SDi-5444. Although each site does possess at least some degree of scientific significance, the type and quantity of available data are not likely to yield information important to a better understanding of prehistory or history as required under criterion (d). While analysis and research at these sites may well contribute some significant data about the sites themselves and perhaps about an overall settlement system, much of that data has been retrieved or is meager.

Application of 36 CFR 63 guidelines including categories (a) and (b) reveal that the 19 sites are lacking information specific to a data base. Even very thorough investigation of the sites would not produce more categories of information that could contribute substantially to the overall data base. For the most part, these sites possess some research potential for the study of small artifact scatters, but they are limited in the quantity and type of available data. It is unlikely that scientific or Native American values of National Register quality will be significantly aided by preservation or further research. We anticipate only minimal, and perhaps repetitive, information from these sites.

SECTION XII  
DETERMINATION AND CRITERIA OF EFFECT

12.1 INTRODUCTION

The following discussion of determination of effect follows definitions provided in 36 CFR 800.2 and criteria of effect and adverse effect defined in 36 CFR 800.3 (Federal Register, January 30, 1979). In general terms, two large categories of effect are defined and evaluated: direct effect and indirect effect. Specific activities that may cause direct and indirect effects are defined and assessed for their potential to adversely affect significant cultural resources (Table 12-1). Descriptions of project components, i.e., towers, access roads and pulling stations, are synopsised in Section I from more definitive statements contained in previous cultural resource survey statements (Bean 1979; Eckhardt 1979a and 1979b).

As stated in 36 CFR 800.3, adverse effects to National Register or eligible properties may occur under conditions to include:

- (1) Destruction or alteration of all or part of a property;
- (2) Isolation from or alteration of the property's surrounding environment;
- (3) Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
- (4) Neglect of a property resulting in its deterioration or destruction;
- (5) Transfer or sale of a property without adequate conditions or restrictions regarding preservation, maintenance or use.

For the present evaluation and assessment, project criteria (1) and (4) are most applicable, although each criterion will be considered. A listing of archaeological sites

Table 12-1

## POTENTIAL ADVERSE IMPACTS/PROPOSED MANAGEMENT MEASURES

<u>Site Number</u>	<u>Maintenance/Operation Effects</u>	<u>Construction Effects</u>	<u>Management Measures</u>
ELIGIBLE:			
*Ora-831	Access Road	None	Surface Mapping (Access Road)
*Ora-830	Access Road	None	Surface Mapping (Access Road)
*Ora-829	None	None	None
*Ora-828	None	None	None
*Ora-447	Access Road	None	Surface Mapping (Access Road)
*Ora-827	None	None	None
*Ora-825	Access Road	None	Surface Mapping (Access Road)
*Ora-826	None	None	None
*Ora-905	None	None	None
*Ora-438	Access Road	None	Surface Mapping (Access Road)
*Ora-725	Access Road	None	Surface Mapping (Access Road)
*Ora-499	Access Road	None	Surface Mapping (Access Road)/ Stabilize Access Road Erosion
*Ora-495	Access Road	None	Surface Mapping (Access Road)
*Ora-496	Access Road	None	Surface Mapping (Access Road)

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\*SCE

Table 12-1 (Continued)

## POTENTIAL ADVERSE IMPACTS/PROPOSED MANAGEMENT MEASURES

<u>Site Number</u>	<u>Maintenance/Operation Effects</u>	<u>Construction Effects</u>	<u>Management Measures</u>
ELIGIBLE:			
*Ora-498	Access Road	None	Surface Mapping (Access Road)
XX SDi-4538	None	None	None
XX SDi-6138	Access Road	Yes	Surface Mapping/ Surface Collection/ Test Excavation
XX SDi-6140	Access Road	Yes	Surface Mapping/ Surface Collection/ Test Excavation
XX SDi-6135	Access Road	Yes	Surface Mapping/ Surface Collection/ Test Excavation
XX SDi-6133	None	None	None
XX SDi-6149	Access Road	Yes	Surface Mapping/ Surface Collection/ Test Excavation
XX SDi-6130	None	None	None
NOT ELIGIBLE:			
*Ora-787	Access Road	None	Recordation Suffices
*Ora-832	None	None	None
*Ora-786	Access Road	None	Recordation Suffices
*Ora-785	None	None	None

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\*SCE  
XX SDG&E

Table 12-1 (Continued)

## POTENTIAL ADVERSE IMPACTS/PROPOSED MANAGEMENT MEASURES

<u>Site Number</u>	<u>Maintenance/Operation Effects</u>	<u>Construction Effects</u>	<u>Management Measures</u>
NOT ELIGIBLE:			
*Ora-784	None	None	None
*Ora-782	Access Road	None	Recordation Suffices
*Ora-824	Access Road	None	Recordation Suffices
*Ora-419	None	None	None
*Ora-823	None	None	None
*Ora-700	None	None	None
*Ora-640	None	None	None
*SDi-6693	Access Road	None	Recordation Suffices
XX SDi-6136	None	Yes	Avoidance
XX SDi-6137	None	None	None
XX SDi-6150	None	None	None
XX SDi-6151	Access Road	None	Recordation Suffices
XX SDi-6131	Access Road	None	Recordation Suffices
XX SDi-6152	Access Road	None	Recordation Suffices
XX SDi-5444	Access Road	Yes	None (Recordation Suffices)

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\*SCE  
XX SDG&E

currently being assessed and their potential to be adversely affected are provided as Table 12-1.

## 12.2 DIRECT EFFECTS

As defined in 36 CFR 800.3 (Federal Register, January 30, 1979), direct effects are "caused by the undertaking and occur at the same time and place." For the purpose of this study, direct impacts or effects are defined as construction activities/operation and maintenance activities.

### 12.2.1 Construction Activities

Construction activities are defined as those alterations in landform or altered land use that are a function of proposed installation of new wooden structures/steel lattice towers, replacement of existing wooden structures, and the proposed impact zones (conductor stringing operation sites) due to the addition of a circuit to existing towers.

- Tower Sites: Archaeological sites SDi-6138, SDi-6140, SDi-6135, SDi-6149 and SDi-5444 could potentially be adversely impacted by proposed new tower installation.

- Conductor Stringing Operations: Archaeological site SDi-6136 is situated within a proposed staging location and could be adversely impacted by the proposed project.

The remaining archaeological sites described in this report will not be adversely impacted by proposed new construction or conductor stringing operation sites.

### 12.2.2 Operation/Maintenance Activities

Operation and maintenance activities are defined as those post-construction activities associated with use and improvement of access roads. Proposed access road use and maintenance may cause potential adverse effects as a result of road grading.

● Access Roads: The following potentially eligible sites may be adversely affected by maintenance/use of access roads: Ora-831, Ora-830, Ora-447, Ora-825, Ora-438, Ora-725, Ora-499, Ora-495, Ora-496, Ora-498, SDi-6138, SDi-6140, SDi-6135, SDi-6149. The following non-eligible sites may also be adversely affected by maintenance/use of access roads: Ora-787, Ora-786, Ora-782, SDi-6693, SDi-6151, SDi-6131 and SDi-6152. For illustrations of the relationship between sites and access roads, refer to specific maps as noted in Section X. Criteria (1) and (2) of 36 CFR 800.3 are applied unless otherwise stated.

### 12.3 INDIRECT EFFECTS

As defined in 36 CFR 800.3 (Federal Register, January 30, 1979), indirect effects are "those caused by the undertaking that are later in time or farther removed in distance, but are still foreseeable." For the current study, indirect effects include impacts by erosion of site area through deterioration of existing access roads. All access roads were examined during in-field assessment in relation to site areas; erosion of an access road at Ora-499 may eventually contribute to disturbance of that site locale.

### 12.4 NO EFFECTS

The sites or cultural resources specifically discussed as follows will not be adversely affected by the proposed project. Current assessment determined these sites to be either beyond the project rights-of-way (Ora-828, Ora-826, Ora-823, Ora-640 and SDi-6137) or to have no existing access roads/new construction activities within site context (Ora-829, Ora-827, Ora-905, SDi-4538, SDi-6133, SDi-6130, Ora-700 and SDi-6150). Additionally, artifact evidence at sites Ora-832, Ora-785, Ora-784, and Ora-419 could not be located during program evaluation. Although site SDi-5444 is also an area proposed for a staging location and new tower location, this resource has been

effectively destroyed by private development and any research value beyond site recordation has been exhausted.

SECTION XIII  
CULTURAL RESOURCE MANAGEMENT PLAN

13.1 INTRODUCTION

The following proposed Cultural Resource Management Plan for the study area is a program designed to avoid or mitigate potential adverse effects cited in the previous section. Emphasis is placed on cultural resource site avoidance and preservation although mitigation through data recovery is considered a viable alternative.

Based on current proposed construction plans (SDG&E) and location of existing access roads to be maintained, 14 potentially eligible National Register sites and 9 non-eligible sites would be impacted (adversely affected). The following Management Plan is based on the assumption that tower site location and access road realignment are not feasible within existing rights-of-way. All sites listed in Section 12.4 as being unaffected can be avoided in the future by utility crews.

13.2 MITIGATION THROUGH AVOIDANCE

As currently understood, it should be possible to mitigate potential adverse effects to cultural resources at site SDi-6136. Proposed conductor stringing operations can be moved to an existing paved road outside recorded site boundaries, thus avoiding the cultural resource.

13.3 MITIGATION THROUGH DATA RECOVERY

Mitigation through avoidance does not appear feasible at the remaining sites subject to potential adverse effects. Potentially eligible cultural resources Ora-831, Ora-830, Ora-447, Ora-825, Ora-438, Ora-725, Ora-499, Ora-495, Ora-496, Ora-498, SDi-6138, SDi-6140, SDi-6135 and SDi-6149 will be affected by maintenance/use of existing access roads and as such, mitigation (salvage) of access road impacts is warranted. However, collection of surface artifacts within the limited scope of an access

road would undoubtedly create an unrealistic, biased, disturbed cultural inventory which has already been recorded as such. Mitigation of total site areas is not warranted nor is it recommended since resource preservation is preferable; i.e., archaeological techniques may also potentially adversely affect site resources (MOA 1979). Rather, it is suggested that remaining surface artifacts within the context of existing access roads could offer positive research potential by demonstrating the effect of continued disturbances, i.e., movement of artifacts by heavy rains or vehicular traffic documented through time. Documentation of surface artifact distribution has taken place during current assessment. Recordation of an additional time lapse and re-micromapping of the artifacts in access roads may define future site disturbances.

The above discussed research possibility for "road" artifacts should be exhausted by sampling the previously described 14 sites. For those sites considered to be potentially ineligible (Ora-787, Ora-786, Ora-782, Ora-824, SDi-6693), SDi-6151, SDi-6131 and SDi-6152) the benefit to be derived from recordation of any artifacts located within access roads is limited and recordation as prepared during the current assessment program should suffice.

For those sites determined to be potentially eligible (SDi-6138, SDi-6140, SDi-6135 and SDi-6149) and where new tower construction could adversely impact site resources, surface collection and subsurface test excavation should be implemented. Although subsurface excavation during current evaluation was directed towards testing archaeological site areas proposed for tower locations, no tower sites were specifically staked or marked in the field. Therefore, when specific tower locales are chosen and identified, said locales should be rechecked and evaluated in light of previous testing. If no surface artifacts or subsurface deposition were indicated by current assessment (as when assessment coincides at true tower location), no further testing or surface

collection is warranted. However, should mitigation of adverse impacts due to construction activities be necessary, surface artifact material at tower locations should be micromapped and collected for laboratory analysis. It is further suggested that subsurface testing be based on type and size of tower to be constructed in order to adequately sample potentially affected site area, on a site-by-site basis during in-field inspection.

#### 13.4 MITIGATION OF EROSIONAL EFFECTS

Erosional gullies within an existing access road, created by recent heavy rainstorms, may potentially adversely affect portions of site Ora-499. Stabilizing of the access road, as feasible and effective, should be initiated.

#### 13.5 MITIGATION SUMMARY

In summary, as currently proposed, construction activities and operation/maintenance activities will have a potentially adverse effect on significant cultural resource sites (both eligible and non-eligible sites). Mitigation of potential impacts through avoidance and site preservation is the preferred means of alleviating adverse effects. When site preservation/avoidance is not feasible, systematic data recovery programs are recommended. Specific work scopes including Native American participation, research goals and data recovery goals should be prepared prior to initiation of any data recovery program field phase.

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