CULTURAL RESOURCES

and the

HIGH VOLTAGE TRANSMISSION LINE FROM SAN ONOFRE TO SANTIAGO SUBSTATION AND BLACK STAR CANYON

A Study of the Ethnography, Archaeology,
and History of the Vicinity of the Line

Report Submitted

by

CULTURAL SYSTEMS RESEARCH, INCORPORATED

to

SOUTHERN CALIFORNIA EDISON COMPANY

Contributing Scholars:

Lowell John Bean, Ph.D.
Theodore G. Cooley, B.A.
Marie G. Cottrell, M.A.
John F. Elliott, B.A.
Alain A. Jourdier, B.A.
Barbara Jourdier, B.A.
M. Kay Martin, Ph.D.
Lee Gooding Massey, B.A.
Joan Oxendine, B.A.
Charles Rozaire, Ph.D.
Florence C. Shipek, Ph.D.
Helen C. Smith, B.A.
Sylvia Brakke Vane, M.A.

Submitting Officers and Editors:

Lowell John Bean, Ph.D.
President, CSRI

Sylvia Brakke Vane, M.A.
Vice President, CSRI

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MANAGEMENT SUMMARY

Cultural Systems Research, Incorporated, under contract to Southern California Edison Company (Purchase Order No. S3338001) has conducted a study to determine the impact that a construction program, involving several modifications to transmission lines from San Onofre Nuclear Generating Station by SCE and SDG&E, may be expected to have on the cultural resources of the area involved. Specific resources investigated were archaeological sites, historical sites, and Native American values as determined by ethnographic investigations. The transmission lines run from the San Onofre Nuclear Generating Station to Santiago Tap, from Santiago Tap to Santiago Substation, and from Santiago Tap to Black Star Canyon. In many instances, the rights-of-way, access roads, and other construction areas that were the subject of the archaeological part of the study run through land being developed for housing and other purposes.

The construction application for the modifications to the transmission lines was filed with the Nuclear Regulatory Commission on May 28, 1970, and was issued October 18, 1973. The present study was undertaken in response to recent legislation requiring ethnological as well as historical and archaeological investigations and its implementation by regulatory agencies. CSRI contacted numerous Native Americans and has consulted with the Native American Heritage Commission, several tribal business committees and councils, many individual Native Americans and various scholars, in order to assess and evaluate the potential impact within the Study Area as defined by SCE. These sources have provided input so that impacts and potential impacts may be assessed.

NATURAL SETTING AND PREHISTORY

CSRI's report describes the natural setting within the Study Area. Geological factors that have influenced the environment have been considered as a background to the study. In addition, climatic conditions and biotic communities relevant to Native American concerns and archaeology are described. Following this, the prehistory of the area, placed in a context of a more general prehistorical overview of southern California, is presented. This prehistory is significant, because Native American concerns reach as far

back into the past as they have knowledge. For example, oral traditions as well as ethnic maintenance procedures among present-day Native American populations cause any archaeological resource to be of great concern to them.

CSRI points out the significance of the archaeological data base within the Study Area, describing possible Pleistocene and early post-Pleistocene occupations, the Milling Stone period, the introduction of acorn-process technology, and the arrival of Shoshonean-speaking peoples. In this way the area is placed in perspective among the various prehistoric cultural complexes that developed on the California coast and in inland California deserts during several thousands of years.

HISTORY

The chapter on the area's history, in addition to providing a basis for determination of the San Onofre project's impact on historical resources, provides a discussion of the first entrance of Hispanic peoples into the Study Area, notes the major travel routes, and locates major mission sites and ranchos. This historical overview ranges from the first Spanish contact to the present.

The historic component of the study was carried out by Helen Smith, B.A., an experienced Orange County historian, who was assisted by cultural historian John F. Elliott, B.A. CSRI does not consider that SCE's project has had a negative impact on any historical site in the Study Area.

ETHNOGRAPHY

The major tribal groups known to have contemporary historical interest in the area are the Luiseño-Juaneño and the Gabrielino. A traditional ethnographic description is presented of the Luiseño-Juaneño, which describes such things as territory, material culture, social organization, economics,

religion, and values that may be pertinent to understanding Native American sensitivity to the Study Area. Where pertinent, Juaneño (historically identified with Mission San Juan Capistrano) are separately described. The ethnography of the Gabrielino, who occupied territory within the Study Area immediately north of Aliso Creek, is briefly summarized.

In order to understand contemporary Native American reactions and strategies for survival, it is necessary to understand the nature of their historical contact with Europeans. Native American strategies for survival have varied among the groups associated with the Study Area. The Gabrielino and Juaneño demonstrate considerable cultural persistence without having had the supportive base of federally protected land or a history of federally supported programs. The Luiseño have been a more rural people, with land bases at the four Luiseño reservations--Pechanga, Pala, Rincon, and Pauma.

Juaneño persistence seems to have been based on a close connection with Mission San Juan Capistrano, and on a very deliberate educational program in which traditional values and knowledge about their traditional territory have been passed from one generation to another ever since mission times. In recent years this persistence has been further supported by federally funded programs that have ethnic or economic conditions as part of their criteria for involvement.

It is significant to point out that Juaneños have a strong desire not only to maintain their traditional culture but to revive parts of it and to solidify the maintenance of their ethnicity for future generations. Because of perceived damage to resources important to their heritage as a result of transmission line construction activities, and because of their many years of close involvement with environmental impact work, the Juaneños have been more assertive than were the Native Americans whom CSRI has previously studied with respect to attitudes toward transmission lines. Juaneños expressed very specific mitigation recommendations to CSRI, which they wish to have passed on to SCE; an example of this is the potential funding of cultural resource centers.

The Luiseño who were interviewed in this study evidenced a somewhat different degree of interest in the Study Area. They have less specific knowledge of the area, which is some distance from their reservations, but they maintain a generalized concern for impact on any traditional Luiseño and Juaneño area--and, for that matter, on any Native American traditional areas.

The Gabrielino who were interviewed had little specific knowledge of the Study Area, although a number of them remembered attending events at Mission San Juan Capistrano in years past. They are eager to be put more closely in touch with

their traditional culture and suggest that SCE contribute to a Gabrielino cultural center as a public relations gesture. They generally support the San Onofre project's goals, being concerned that southern California increase its energy supply.

ATTITUDINAL SURVEY

The ethnographic component of CSRI's study included an ethnographic survey of Native Americans who, on the basis of these studies, were judged to have an interest in or concern for the Study Area. Although anthropologists have traditionally categorized the Luiseño and Juaneño as a single ethnic group, the Native Americans interviewed in this study tended to place the two groups in separate categories.

The CSRI ethnographic team conducted interviews with Juaneños in the San Juan Capistrano area, with Luiseños associated with Pechanga and Rincon Reservations, and with Gabrielinos in Los Angeles.

Included among concerns expressed in CSRI's interviews with Juaneños, Luiseños, and Gabrielinos are botanical resources (medicinal plants, basketry plants, food plants). Native Americans are generally concerned that these materials be preserved for posterity, and they point out that their access to them for practical uses in today's world is decreasing rapidly.

Sacred sites are particularly sensitive. These include burial and cremation sites, village sites and the ceremonial places they may contain, and petroglyphs. These sites are today closely identified not only with continuing religious values but with maintenance of ethnicity as well; thus, impact upon them elicits a very high degree of anger and hostility.

Informants expressed considerable concern about archaeological sites. Trails and gathering sites were also of concern. There is a feeling that the loss of any cultural component is significant at this time because so little remains of the Native American heritage. Animal resources in the area, like plants, are sensitive issues. Some of the animals are considered sacred (eagles, coyotes, wildcats, mountain lions). Deer and others are remembered as significant food resources, and the inability to acquire them because lands are closed off to hunting is a matter of great concern. Mines and mineral resources remain of concern,

although specific mineral resources were only occasionally reported. The visual impact of the line was considered serious by many of those interviewed.

The Native Americans interviewed share a general concept of maintaining the environment in as pristine a condition as possible. This is essentially a sacred concept, as well as an ecological and recreational one, and should be remembered when evaluating their concerns.

There was some concern for possible effects that the line might have on health. Employment potential for Native Americans was frequently mentioned by informants, most of whom did not feel they would benefit, however.

ARCHAEOLOGY

The archaeological work on this contract was under the joint direction of Principal Investigator Charles Rozaire, Ph.D., curator of archaeology at the Los Angeles County Museum of Natural History, with Lowell John Bean, Ph.D., and Sylvia Brakke Vane, M.A., as Research Coordinators. (Bean and Vane are respectively president and vice president of CSRI.) Archaeological field work was under the direction of Joan Oxendine, a graduate student in archaeology at the University of California (Riverside) and Theodore Cooley, a graduate student in archaeology at California State University, Los Angeles.

CSRI examined the archaeological literature pertaining to the Study Area (which was defined as an area extending five miles on either side of the transmission line), collected site records on known archaeological sites within this area, had these mapped on U.S. Geological Survey topographical maps, and evaluated each site with respect to its apparent ethnographic significance. In this evaluation, the highest sensitivity was judged to pertain to sites associated with burials, villages, and rock art.

A 300-foot-wide area of right-of-way along the San Onofre-Santiago Tap and Santiago Tap-Black Star Canyon transmission line corridors, as well as access roads and other construction areas associated with the project, were subjected to a 100 percent reconnaissance and survey, except for a section of the line that had recently been surveyed by crews under the direction of Marie Cottrell, president and chief archaeologist of Archaeological Research Management Corporation (ARMC) of Garden Grove, California, who acted as

consultant to CSRI. Cottrell's data on two sites that had existed within the right-of-way, in an area being developed by the owner of the property (not SCE), have been incorporated in this study. One site is now completely destroyed; the other is being excavated as a mitigation measure by ARMC.

Previously reported sites, as well as access roads, in the Santiago Tap-Santiago Substation portion of the project were surveyed.

CSRI's survey was made in late December 1978 and early January 1979. The weather was cool and wet, with teams often in the field immediately after a heavy rain. The terrain was muddy wherever the plant cover was thin. The plant cover of much of the area investigated was so heavy that it made surveying difficult, however.

Thirty-three sites were found to have been impacted to some degree by the project. Twelve of these are sites that CSRI rates as highly significant, recommending that they be preserved and their eligibility for the National Register be determined unless test investigations support an alternate recommendation. Six sites, equally significant so far as can be determined by surface investigation, should probably be excavated fully to acquire as much data as possible.

Nine sites are of smaller size and are somewhat less significant. For six other impacted sites, CSRI recommends "no action." These sites have been partially or fully destroyed by an agency other than the present project.

CSRI field teams could not determine whether impacts to sites in the Santiago Tap-Santiago Substation and Santiago Tap-Black Star Canyon areas have been caused by this project or by earlier work on the transmission lines. Site descriptions presented here provide what information could be gained by observing where the sites are, what surface features were found, and what kind of impact the sites appear to have been subjected to. It should be noted that the regrading of existing roads appears to be a source of continuing impact on sites. It seems likely that regrading has been associated with the reconductoring project.

Mitigation measures recommended by CSRI are based upon those that a team of archaeologists at a conference assembled for the purpose recommended as appropriate from an archaeological point of view. The fact that in most instances the power companies do not own the right-of-way, but only have easements, has not been taken into consideration; that is, the mitigative measures recommended are those CSRI considers to be archaeologically best for the particular site, irrespective of property rights or who is the owner of those rights.

With respect to the sites found within the rights-of-way, access roads and other construction areas, CSRI has distinguished between small and relatively insignificant sites and larger, more significant ones, and between those that are largely intact and those that have been partially or completely destroyed.

For sites that have largely maintained their integrity, CSRI has adhered to the principle that the preferred means of mitigation is determination of eligibility for the National Register and preservation of the site. CSRI's recommendations should be reevaluated after test-level investigation, taking into consideration the difficulty of finding any sure means of preservation as well as the special circumstances that apply to each site.

CSRI has involved Native Americans in its study, and has made specific suggestions for the inclusion of Native Americans in all subsequent action with respect to impacts to archaeological sites.

ACKNOWLEDGMENTS

CSRI gratefully acknowledges the assistance of John King, President of the Capistrano Indian Council, Inc.; Harry Lawton, University of California (Riverside), a southern California ethnohistorian; Richard Logan, Ph.D., Department of Geography, University of California (Los Angeles); and William Marvin Mason, Curator of History at the Los Angeles County Museum of Natural History.

We cannot here acknowledge by name all the Native Americans who have been participants in the study, inasmuch as anonymity has usually been guaranteed to those who have consented to interviews or have otherwise provided us with information and help. We take this opportunity to express appreciation to both the individuals and the groups who have so generously given of their time, their wisdom, and their accumulated knowledge of traditional culture and present-day reality in order to provide us with guidance and help.

CSRI was particularly fortunate in having on its staff three Native Americans who in addition to being professional archaeologists and/or anthropologists are also familiar with the Study Area: Frank Lobo, a Juaneño who has a Master's degree in Anthropology; Bruce Crespin, a Juaneño with a Bachelor's degree in Archaeology; and William J. Pink, a Cupeño who has had extensive experience in field archaeology.

We also want to express appreciation for the assistance of Dr. David R. M. White, Anthropologist, and Mr. Dennis Cox, Senior Engineer, of Southern California Edison's Environmental Affairs Division.

CSRI also wishes to thank Dorothy Poole, M.A., for helping us make contact with Los Angeles area Gabrielino.

CULTURAL SYSTEMS RESEARCH, INC.

Staff for the San Onofre Study

Submitting Officers and Editors:

Lowell John Bean, Ph.D. (President, CSRI)
Sylvia Brakke Vane, M.A. (Vice-President, CSRI)

Contributing Scholars:

Lowell John Bean, Ph.D.
Theodore G. Cooley, B.A.
Marie G. Cottrell, M.A. (President and Principal Archaeologist, Archaeological Research Management Corporation)
John F. Elliott, B.A.
Alain A. Jourdier, B.A.
Barbara Jourdier, B.A.
M. Kay Martin, Ph.D.
Lee Gooding Massey, B.A.
Joan Oxendine, B.A. (Ph.D. candidate, University of California, Riverside)
Charles Rozaire, Ph.D. (Curator of Archaeology, Los Angeles County Museum of Natural History)
Florence C. Shipek, Ph.D. (Assistant Professor of Anthropology, University of Wisconsin-Parkside)
Helen C. Smith, B.A.
Sylvia Brakke Vane, M.A.

Field Investigation:

Archaeology

Theodore G. Cooley, B.A.
Marie G. Cottrell, M.A.
Daniel F. McCarthy
Joan Oxendine, B.A. (Ph.D. candidate, University of California, Riverside)
*William J. Pink
Crew Chiefs: Larry Allen, Virginia Bickford, Joyce Clevenger, Alan Schilz
Crew Members: Johann Anderson, Debra Digua, Larry Grove, Bruce Jenkins, Larry Sullivan

*Native American

Ethnography

*Bruce Crespin, B.A.
Alain A. Jourdier, B.A.
Barbara Jourdier, B.A.
*Frank Lobo, M.A.
Susan Lobo, Ph.D.
M. Kay Martin, Ph.D.
Jackson Young, B.A.

Coordination and Research Support:

Joan Altick, M.A.
Jane W. Kilkenny
Daniel F. McCarthy
Arthur B. Vane, E.E.
Jackson Young, B.A.

Editorial Production:

Joan Altick, M.A.
Elizabeth Read Kenney, B.A.
Lee Gooding Massey, B.A.
Rosalie Walker, M.P.A.
June Yamashita, B.Ed.

*Native Americans

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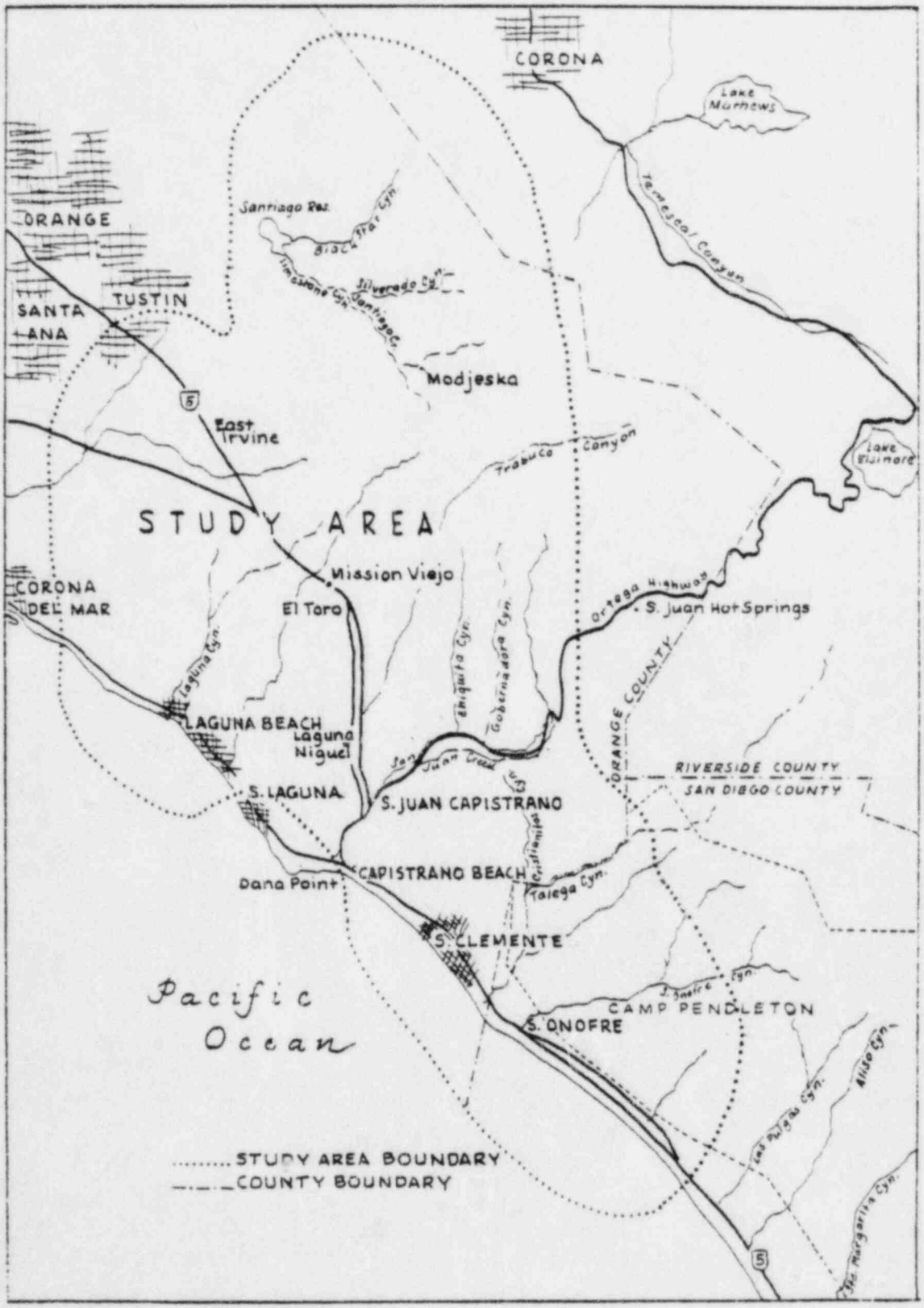
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Santiago Res.
Black Star Cyn.
Limestone Cyn.
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CAPISTRANO BEACH
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STUDY AREA BOUNDARY
COUNTY BOUNDARY

CHAPTER I. INTRODUCTION

Enclosed herewith are the results of a study performed by Cultural Systems Research, Inc. (CSRI) for Southern California Edison Company (SCE) and San Diego Gas & Electric Company (SDG&E). The purpose of the study was to determine the impact that a construction program may be expected to have on the cultural resources of the area involved. Specific resources investigated were archaeological sites, historical sites, and Native American values as determined by ethnographic investigations.

So that there is no misunderstanding, it is important to note that the construction program involves the construction of new transmission lines and the reconductoring of existing transmission lines. All work is in existing transmission line corridors that were originally established in the early 1960s, and existing access roads are utilized. The original transmission lines were completed in 1965. This construction program is more fully described in the paragraphs to follow.

The current status of the construction program as of mid-February 1979 is as follows:

New Construction

A. San Onofre - Santiago Tap (15 miles)

Foundations - complete
Tower erection - complete
Conductor stringing - 80% complete
Scheduled completion date - 4/1/79

B. San Onofre - Talega Substation (7 miles)

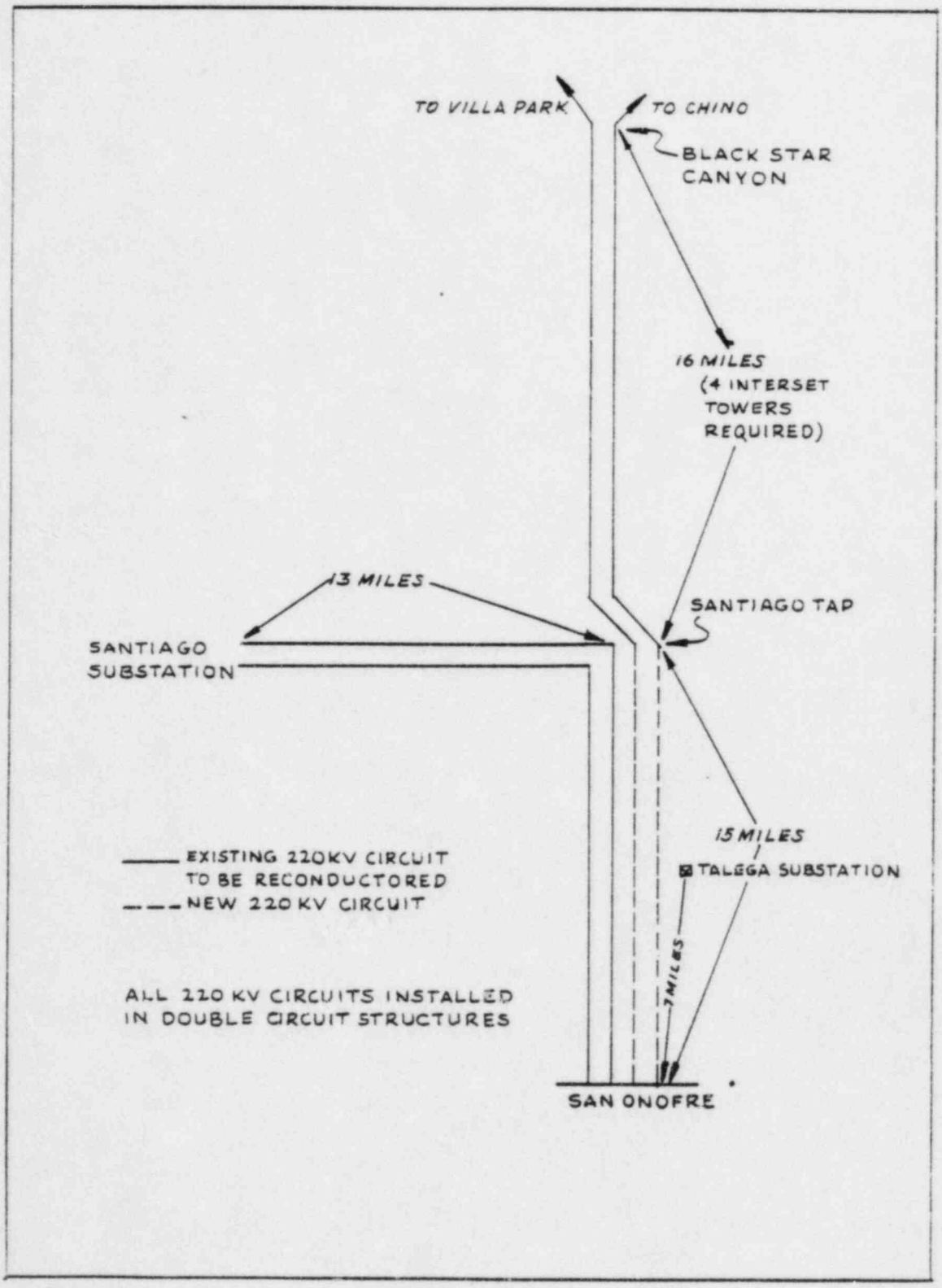
Foundations - in progress
Tower erection - no progress to date
Conductor stringing - no progress to date
Scheduled completion date - 8/1/79

Reconductor Existing Lines

A. Santiago Tap - Santiago Substation (15 miles)
All work is complete.

B. Santiago Tap - Black Star Canyon (16 miles)
All work is complete.

C. San Onofre - Santiago Tap (15 miles)
Work to be completed between 4/1/79 and 6/1/79.



MAP I-I. SCHEMATIC DRAWING OF PROJECT
(After F.A. Romero 5/15/78)

The construction program is being assessed at this time as part of the regulatory proceedings before the Nuclear Regulatory Commission regarding the issuance of an Operating License for San Onofre Nuclear Generating Station, Units 2 and 3. Environmental assessments at the operating license stage are intended to review changes in the project since the Construction Permit was issued by the Nuclear Regulatory Commission (1973). Thus it should be understood that any impacts that might be expected to occur as a result of the transmission line construction programs have essentially occurred prior to this assessment because of the advanced state of construction.

Description of Construction Program

The proposed construction program (Map 1-1) includes a new line of 230 kV double-circuit steel towers from San Onofre to the Santiago Tap, some 15 miles to the north. Conductors will be strung on both sides of the new towers. The new line of towers will parallel an existing 230 kV transmission line, and the existing access road will be used. An Environmental Impact Report (EIR), submitted for this part of the program in conjunction with an application for a California Public Utilities Commission (CPUC) certificate, was reviewed by the State Historic Preservation Office. Construction of the new line began shortly after the CPUC certificate was granted in April 1977.

The proposed program also includes construction of a new line of 230 kV double-circuit steel towers from San Onofre to Talega Substation, a distance of approximately seven miles, with conductors to be strung on only one side of these towers. This second line will parallel the existing line and the previously described new line, also using the existing access road. A CPUC certificate was obtained for this line in 1972, and construction is in progress.

In addition to the two new transmission lines described, other miscellaneous transmission work associated with the San Onofre Project includes:

Reconductoring (replacement of present conductors by larger ones) as follows:

- --Santiago Tap to Santiago Substation (15 miles)
- --Santiago Tap to San Onofre (15 miles)
- --Santiago Tap to Black Star Canyon (16 miles)

Installing 4 interset steel towers between Santiago Tap and Black Star Canyon.

The archaeological and historical investigations were to encompass a search of the literature, including work previously performed by SCE and SDG&E. The "Study Area" was defined as extending for 5 miles on either side of the transmission lines, with archaeological reconnaissance and survey to be confined to a strip approximately 300 feet wide, directly in the path of the lines. Some sections of the strip to be investigated archaeologically were later extended to 600 feet, and access roads were added to the study.

Prior to CSRI's involvement with this project, several archaeological surveys were made for portions of the Study Area addressed in this report. These included:

1. Paul E. Langenwalter's investigations of archaeological and paleontological resources along the San Onofre-Santiago 220 kV transmission line corridor (1974).

2. Wirth Associates' archaeological survey of the Talega Substation Site, prepared for SDG&E (1978).

3. William A. Dodge's Archaeological Assessment of Eight Cultural Localities Along the San Onofre-Santiago 220 kV Transmission Line, prepared for SCE, submitted 11 September 1978.

4. Carol J. Walker's and Charles S. Bull's Cultural Resource Reconnaissance of the Talega Substation to San Onofre Nuclear Generating Station-A 230 kV Transmission Line Corridor, prepared for SDG&E, dated 18 October 1978.

The report submitted herewith includes a chapter on theory, methods and technique, as well as chapters pertaining to the Study Area's natural setting, prehistory, history, ethnography, and archaeology. There is a chapter on the impact that the transmission line may be predicted to have on archaeological, historical, and ethnographic resources, and a final chapter summarizing conclusions.

Although portions of this study have been performed for both SCE and SDG&E, and concern both SCE and SDG&E projects, for convenience this report refers to the construction program as "the SCE project" in some instances.

CHAPTER II. THEORY, METHOD AND TECHNIQUE

The preservation of cultural resources, to which this study is addressed, is vitally important to all members of a society. Cultural remains are a storehouse of primary data to which human beings can turn for information when it is necessary to check the accuracy of oral or written records. They also have great symbolic significance, facilitating the ritual return to the mythic past, "in illo tempore."

Peoples everywhere have felt it important to preserve a record of the past. In preliterate societies, bards and religious leaders sang or told stories about the Creation, or the adventures of cultural heroes. A recapitulation of the history of humankind is part of the healing ritual in many societies--it re-creates the world, leaving out the "mistakes." When people began to write, they preserved their history as part of their sacred literature, the Bible being an example. Sacred history, whether spoken or written, very often associates events with specific places, and pilgrimages to those places became part of the sacred ritual of religious groups. For Native Americans of the Study Area, this is their sacred land, the site of the events in their sacred oral literature.

The Study Area, having provided the setting for many events important in the 200-year history of California, is also important to non-Indian Californians, especially those whose ancestors came before the Anglo-Americans of the United States, but not excluding those who have arrived more recently. The Study Area is rich in California history and many Californians have an attachment to sites there.

Although modern Americans think of secular history as something quite different from sacred history, it can be argued that the difference is one of degree rather than kind. For example, whatever their specific origins may be, Americans trek to Europe to look at Greek temples, English country houses, and the palace at Versailles--places associated with the development of the culture of the United States. In Europe, they can realize more fully the events that occurred in those places. Americans also visit such sites as Mount Vernon, Bunker Hill, the reconstructed remains of California missions, even Hollywood and Vine. Sites of local significance may not attract visitors from afar, and their importance may not be widely remembered or recognized. But it is important that such locations be recorded and that they be preserved, for the sake of those who do recognize

and appreciate their significance, as well as for future scholars seeking to check the accuracy of oral and written history.

Contemporary events provide human beings with so much information that only selected parts of it are abstracted by the historian, or even the social scientist. When enough years have passed, the shape of past events may seem easier to see--but the information preserved in memory or written records may be so skewed by the biases of the time that the perceived shape is not the true one.

Because humans tend to make decisions about the future on the basis of what they think they know about the past, this skewing can lead to decisions quite different from those that decision-makers may expect. It is for this reason that scholarly reevaluations, based on archival and artifactual data, are essential.

The study reported here has been conducted in response to legal requirements (in themselves a formal recognition of the value of cultural resources). It has presented a rare opportunity to examine the gamut of an area's cultural resources: prehistoric, historic, and contemporary. Although the contemporary aspects of the study have been confined to Native Americans, these are the people whose ancestors were the first humans to live in the Study Area.

The Study Area is particularly significant, because it has been held by a relatively small number of owners for a long time. This has helped to preserve the records of its past. Public access to an area inevitably leads to the disappearance of potsherds, beads, and other artifacts in short order. Yet a single artifact, out of context, has little meaning. In its original site--where its distance and direction from other artifacts, its relationship to sources of the material from which it was made, the depth at which it was recovered, and other data can be recorded--an artifact can provide insight into the life-style of the person who used it.

To the archaeologist, and increasingly to the cultural anthropologist, human societies are "systems," to which certain general principles apply. As living systems, they are "open," with inputs and outputs of matter-energy and information. The societies have boundaries, which set them off from the environment and from other systems. They have subsystems, and are themselves subsidiary parts of more extensive systems. And they are, like other systems, more than the sum of their parts (Miller 1965; Buckley 1968; Hill 1977). Human societies have homeostatic mechanisms, which retard change and tend to keep them stable. Yet, when outside stimuli exceed the limits that its homeostatic

mechanisms can handle, a society can undergo irreversible change, which may lead either to a new accommodation with the environment or to the death of the system (Hill 1977:89-97).

It is possible to arrive at an idea of how a particular social system may have functioned at a given time. In reconstructing past systems, researchers may measure such variables as the distances between settlements. They may estimate the amount of food that was available--by examining present-day fauna and flora and extrapolating to the past, by examining fecal remains, by counting bone or shell remains, or by other means. They analyze the nature of artifacts, and carefully consider their time and space relationships. By studying changes at different levels of the same site, or at different sites dating to successive periods, it is possible to verify hypotheses about culture change or to prove them false.

Every change in society and culture cannot be deduced from artifacts--a change in social structure is not necessarily reflected in a change in the style of a cooking vessel, for example--and information gained from interviewing people whose ancestors lived in the area where an archaeological site is located can often enrich understanding of the prehistoric past. In the Study Area, 200 years have passed since Spaniards introduced Christianity and a new way of life, but it has been discovered during the investigations carried out in this study that some vestiges of traditional life still remain. Descendants of the people who long ago became converts at Mission San Juan Capistrano still identify themselves as Native Americans, still identify with their ancestral lands, and still use natural resources of the area (and remember their grandparents using even more).

It is not surprising that this should be so. Ethnic boundaries of minority peoples tend to persist, especially if there is a homeland with which they are associated and if they have been dominated and treated badly by a majority people (Spicer 1971).

In the Study Area, where the Roman Catholic "Californio" culture of the 1820s and 1830s has been superseded by the culture of the United States, Native Americans have retained a strong sense of identification with the Catholic church. Many of them identify themselves not only as Native Americans but also as Mexican-Americans.

METHOD AND TECHNIQUE

In organizing a staff for this study, the Research Coordinators--Lowell John Bean, Ph.D., president of Cultural Systems Research, Inc., and Sylvia Brakke Vane, M.A., executive vice-president--drew heavily on the experience gained in the Devers-Palo Verde study (Bean et al. 1978). Tasks that required library research and familiarity with the Study Area were delegated to individual scholars, after consultation with a number of people who knew Orange County archaeology, ethnography, and history well and could make recommendations as to possible personnel. Florence C. Shipek, Ph.D., assistant professor of anthropology at the University of Wisconsin (Parkside), agreed to write an overview of the ethnography and ethnohistory of the Study Area. Shipek is one of the leading authorities on Luiseño and Juaneño ethnography and ethnohistory.

Helen Smith, a well-known historical consultant who specializes in Orange County, made a search of historical literature and wrote the first draft of the chapter on history. She recruited John F. Elliott, a cultural historian, to assist her.

Marie Cottrell, who has had extensive recent experience in Orange County archaeology, acted as an archaeological consultant, making contributions to the natural setting and prehistory chapters of this report and participating in impact and mitigation decisions. Lee Gooding Massey, geographer and editor, also contributed to the natural setting chapter.

A team consisting of Frank Lobo, Bruce Crespin, Alain Jourdier, and Barbara Jourdier was assembled for the ethnographic field work and began work in late November. Lobo, Jourdier, and Jourdier met first with Bean and Vane in Oakland for a briefing on ethnography and technique. Lobo, a Juaneño who has an M.A. in anthropology, has done considerable field work among his own people and was able to provide information about past and present social structure, and other facets of Juaneño ethnography not to be found in the literature. It was decided that the research schedule previously used for interviewing Native Americans with respect to the Devers-Palo Verde project (Bean et al. 1978) should be modified and used for this study.

Jourdier and Jourdier, who had interviewed Luiseño people at Pechanga Reservation, for the Lamb Canyon-Mira Loma study, were assigned to interviewing Luiseños. Lobo, with Susan Lobo, Ph.D., also an anthropologist, interviewed Juaneños, as did Bruce Crespin, a Juaneño archaeologist. The interview schedule used by the Lobos was slightly different from that used by the

Jourdiers, having been modified in response to somewhat different circumstances prevailing among the various groups interviewed. For example, Juaneño interests reflected the fact that they live near the coast, and nearer the Study Area. (Copies of the interview schedules are included in Appendix A of this report.)

Jackson Young had been sent to southern California to coordinate archaeological and ethnographic field work. When the Jourdiers returned to the Bay Area to write their report, Young took their place on the ethnographic team, continuing to act as coordinator of all the field work.

On December 16, following up on a contact made previously by Jackson Young, Bean and Vane met in Los Angeles with Dorothy Poole, M.A., a radio commentator who has a background in natural and social sciences. She had been in touch with a number of people whose ancestors were Gabrielinos--a group previously thought to have no descendants today. Bean, Vane, Massey, and Young subsequently attended a meeting with over 40 Gabrielino, and Young conducted interviews with members of the group.

The ethnographic field work was written up by Jourdier and Jourdier. Data were sent to Martin as they came in, so that she could begin writing the draft of the ethnographic impact chapter. Martin again conferred with Bean and Vane in Los Angeles on December 29.

Archaeological research proceeded under the joint direction of Principal Investigator Charles Rozaire, Ph.D., curator of archaeology at the Los Angeles County Museum of Natural History, and Bean and Vane. Field work began under Joan Oxendine, a graduate student in archaeology at the University of California (Riverside). Bruce Crespin, William J. Pink (a Cupeño), and Daniel McCarthy made up the field crew. When it became obvious that there was more field work than this crew could finish in time for a January 5 report, nine additional people, organized into three crews, were recruited to work under the direction of Theodore Cooley, a graduate student in archaeology at California State University (Los Angeles). Cooley's group surveyed a considerable portion of the Black Star Canyon part of the line. Field notes written by Oxendine and Cooley were principal sources on archaeological field work results.

In addition to his work on the field crew, McCarthy assembled archaeological site records from various institutions, mapped the sites, and put together the information on charts for the use of SCE engineers.

Many of those involved in this study were able to attend a symposium on Orange County archaeology presented by the department of anthropology at California State University

(Fullerton) on December 3. The symposium was extremely useful, in that it provided an understanding of the problems currently being addressed in Orange County archaeological studies.

The significance of the archaeological field work was discussed at a conference in Orange County on December 29, which was attended by Rozaire, Bean, Vane, Cottrell, Oxendine, Pink, Cooley, and McCarthy. Agreement was reached on what the principal impacts were and on what recommendations to make as to mitigation, with Rozaire in charge of the conference. Bean and Vane took charge of writing the chapter on archaeological impact and mitigation, having taped discussions at the conference. The recommendations were discussed with Lobo and several other Native American advisers. Rozaire, Bean, and Vane perfected the chapter on archaeological results on January 6 and 7.

The ethnographic field work in this study was addressed primarily to finding out how Native Americans in and near the Study Area felt about the construction of the transmission lines. The present-day situation of Native Americans in the area was also noted. In-depth interviews with several Native American leaders were very useful in gaining an understanding of the dynamics of the present. For comments on the interpretation of the attitude surveys done for this study see the Devers-Palo Verde report (Bean et al. 1978:2-20, 2-21).

The archaeological field work consisted of a full survey of a 300-foot-wide strip under the transmission line from San Onofre to Black Star Canyon, a check of all previously recorded sites from Santiago Tap to Santiago Substation, and an examination of access roads to determine whether these cut through any sites.

CHAPTER III. NATURAL SETTING

GEOLOGY

The highest elevations in the Study Area are those of the Santa Ana Mountains, northernmost range of the Peninsular Range Province (Jahns 1954a). The rather narrow ranges making up this province extend from the southern tip of the peninsula of Baja California northwestward to the San Bernardino area in the United States, where they are abruptly interrupted by east-west ranges.

The Santa Ana Mountains extend from the Santa Margarita River northwestward to the Santa Ana River. They are bordered on the east by complex fault zones, where terrain has been uplifted into long fault escarpments facing generally northeast. The crests of the ranges are nearer this uplifted eastern side.

The Elsinore fault zone, which defines the Santa Ana Mountains on the east, extends from the head of the Gulf of California northwestward into Los Angeles County (Iacopi 1964:154). Vertical movement of the Elsinore fault has elevated the Santa Ana Mountain block some 4000 feet (1200 m) above sea level. There are two major peaks: Santiago, at 5695 feet (1730 m), and Modjeska, at 5470 (1670 m). East of the range and lying parallel to it is a long graben, or low area between two faults, the Elsinore and Temescal rift valleys.

The topography of the western side of the Peninsular ranges is less rugged, forming what Jahns (1954a:29) has called "remarkable combinations." Although there are prominent ridges and peaks, upland surfaces are in general subdued. Major canyons of the Study Area are Bell, Black Star, Hot Spring, San Juan, San Mateo, Santiago, Silverado, and Trabuco. The major streams lie roughly parallel to one another, angling toward the ocean from the crest of the range. The irregular coastal plain between foothills and the Pacific varies in width from a few hundred feet to many miles.

Underlying most of the length of the Peninsular ranges is the southern California batholith, composed of complex granites that were probably formed during the Cretaceous Period, some 90 to 100 million years ago (Jahns 1954a). The intrusion of this great batholith caused some of the region's older rocks--volcanics and sedimentary rocks of late Paleozoic-

early Mesozoic age (200-300 million years ago)--to be metamorphosed, or markedly altered by heat and pressure.

Sedimentary rocks, formed at about the same time as the great batholith and some 6000 feet (1830 m) in maximum thickness, overlie the volcanic rocks of Santiago Peak, which were apparently formed earlier. There are outcrops throughout the Santa Anas of the Silverado formation, made up of sediments as much as 4000 feet (1200 m) thick deposited around 60 million years ago. The Santiago formation, with a maximum thickness of 2700 feet (820 m), consists of sandstones and overlies the Silverado sediments.

Widely distributed over the region are complex rock sequences representing volcanism as well as both marine and non-marine sedimentation, formed between 60 and 35 million years ago. Notable is the San Onofre breccia, some 2500 feet (760 m) thick and consisting largely of fragmental sediments, many of them 5-foot-long slabs. This formation is believed to have derived from a source to the west, which is now beneath the ocean.

Sea level was not static during the Pleistocene, which began 1 to 3 million years ago. The present coast of the Study Area has been alternately above and below sea level. Marine terraces formed during this time are characterized by beach bars and cobble deposits.

Along the western edge of the Santa Anas, where there are marine and non-marine sediments of varying depth and hardness, the predominant landforms are parallel canyons with few tributaries, separated by flat or rounded mesas sloping toward the ocean (Jahns 1954a). Canyon walls may be alternately gentle or steep for short distances, depending upon the local rock structure. Water is occasionally forced to the surface in large springs, such as San Juan (Ortega) Hot Springs. Springs are not randomly located but are associated with faults and the underlying batholith.

In the foothills around San Juan Capistrano and Camp Pendleton, river valleys are up to three miles (4.8 km) wide. Their lower stretches are filled with alluvium eroded from higher elevations, and water flow is often beneath the surface. While terraces and mesas were being uplifted along the coast during Pleistocene times, rivers cut channels down through them to maintain base levels. Rising sea level at the end of the Pleistocene inundated the channels, creating a series of coastal estuaries. These lagoons eventually began filling with alluvial materials brought down from the mountains, forming broad valleys like those of San Mateo Creek and the old Santa Ana River Channel.

CLIMATE

The climate of coastal southern California, like that of the rest of the state, was cool and moist during the immediate post-Pleistocene. About 7000 B.C. a warming trend began, and the climate of the area has since been generally mild, although there are indications that various fluctuations in the overall climate of the earth have been reflected in the temperature and moisture history of the area. (Climatic changes that pertain to the interpretation of the prehistory of the Study Area are discussed in Chapter IV. Moratto et al. [n.d.] have provided a recent study of California climatic changes that would be useful for a more detailed consideration of the effects of climatic change on human cultural systems.)

The southern California coastal climate fits into Koeppen's Mediterranean classification. Temperatures of the coldest month range from 26.6° to 64.4° Fahrenheit (-3.3° to 18° Celsius); average for the warmest month is above 50°F (10°C). The dry season is in summer, with at least one month having less than 1.2 inches of precipitation. Winters are mild and relatively rainy, but there is a high percentage of sunshine throughout the entire year. Fog is common in spring and summer.

Prevailing winds in southern California are from the northwest, and most storms that affect the Study Area originate in the Gulf of Alaska (Bailey 1966). Winter storms frequently sweep along the Pacific Coast, dropping precipitation as they move inland. During summer, an area of high pressure in the Pacific moves northward, deflecting storms to the north and east.

In southern California, as elsewhere, topographic relief influences rainfall. Precipitation at any given weather station is directly related to elevation, distance from the ocean, and the number and character of barriers between it and the ocean (Aschmann 1959). Coastal stations such as Newport and Oceanside receive less rainfall than any other areas on the western side of the mountains. Inland stations like Santa Ana and Escondido receive more moisture than the coast, while those still farther inland on mountain elevations receive the greatest amount. Precipitation at Mt. Palomar, for example, averages 40 inches. Snow can sometimes be seen on Modjeska and Santiago peaks, where it may fall thinly during the winter, but most of the area's precipitation is in the form of rain.

Runoff from major streams and rivers in the Study Area, measured since the 1930s, varies dramatically, as is characteristic of drier lands. In 1891, maximum runoff from the

San Luis Rey River (largest stream in the area) was 128,000 cubic feet per second, comparable to that of sizable rivers in less arid regions. In both 1951 and 1956, however, there was no runoff at all (Young and Cruff 1967).

Temperature, another important factor of climate, affects vegetation and consequently animal life. Temperatures along the coast of the Study Area are modified by the Pacific Ocean. Evaporation of ocean water tends to cool the area in summer, and heat retained by the sea is a warming influence in winter. In inland regions, both seasonal and diurnal fluctuations in temperature are greater.

BIOTA

Studies of the flora and fauna of southern California indicate that many species of animals are symbiotically associated with specific vegetational communities (Sweet 1930; Pequegnat 1951; and Cogswell 1947). Wright (1974) has proposed that because of this correlation, the floral and faunal communities can be classified as biomes, which are closely associated with both geography and climate. Although a number of classificatory systems for the flora have been presented (Aschmann 1959; Bailey 1954; Jensen 1947; Pequegnat 1951; Kuchler 1964), the one most commonly used is that devised by Munz and Keck (1959), which has been used in modified form in the material that follows.

Coastal Strand

This habitat consists of the sandy beaches and dunes of the outer coast, where rainfall is low and fluctuations in diurnal and seasonal temperatures are small. Vegetation--which is sparse, low, and often succulent--includes beach sagewort (Artemisia pycnocephula), ice plants (Mesembryanthemum sp.), sand verbenas (Abronia sp.), saltbush (Artiplex leucophylla), various lupines, and others.

Small land mammals inhabit this zone. Various species of clams and other shellfish are common to the shore, and the sea provides a habitat for both fish and animals.

Coastal Saltmarsh - Estuary

This tidal environment includes mud and sand flats, and may extend as far as ten feet above sea level. Climate is similar to that of the adjacent coastal strand. Barrier beaches parallel the coastline, pierced by channels connecting estuaries with the ocean. Flora of this biome include various grasses and pickleweeds. Land animals include rodents and reptiles. Shellfish and worms are abundant on the tide flats. Migratory and transient birds common to this zone include ducks and various types of wading birds.

Freshwater Marsh

This zone is located inland from the brackish areas, and borders ponds, lakes, and slow-moving streams (Jaeger 1966); climate is similar to that of the coast. The plant community is dominated by rushes and sedge, with heaviest growth where water is abundant. Tule and other marsh plants dominate bottomlands; willow, sycamore, and poplar may border lakes, and also streams that feed into the marsh area. Small animals and birds are abundant.

Grasslands

Usually located at elevations below 1500 feet (45 m), grasslands are generally confined to flatlands or gentle slopes that have deep clay soils. In most places, these areas have been disturbed by farming and ranching activities in recent times. The native perennial bunchgrasses, such as needlegrass (*Stipa* sp.) and bluegrass (*Poa*), are now rare, having been replaced by annual fescue, brome, and wild oats. Jackrabbits and badgers, once common, have also been displaced, but coyotes and rodent species remain.

Coast Sage Scrub

This zone is usually situated on gravelly or rocky slopes, at elevations below the chaparral areas. Rainfall is slightly higher than along the shore, temperatures are slightly more extreme. Vegetation is shrubby and includes sages (*Salvia* sp.) and wild buckwheat (*Erigonum latifolium*), along with cacti. A wide variety of small animals live in this habitat.

Chaparral/Woodland

These zones are well developed on the coastal side of the Santa Ana Mountains at elevations between 1000 and 4000 feet. Rainfall averages 15 inches; summers are hot and dry, winters cool but not cold. The dominant plants are evergreen shrubs and trees. Some woody species occur as trees in woodland areas but as shrubs in the chaparral (Shelford 1978:241). Chaparral shrubs include chamise (Adenostoma fasciculatum), buckthorn (Rhamnus californica), California scrub oak (Quercus dumosa), manzanita (Arctostaphylos sp.), and others, along with yucca.

Chaparral is often difficult, or even impossible, to penetrate on the upper slopes of the Santa Ana range (Hudson 1969:14). Characteristic of this region are various oaks, chamise, berries (Rhamnus), California lilac (Ceanothus), and sumac (Rhus), along with numerous sages. At lower elevations, yuccas, cacti, currants (Ribes), and lupines are also present.

Woodlands may be interspersed in the chaparral (as well as in coastal sagebrush regions), in places where water reaches the surface. Trees, the defining flora of the zone, include oaks, pines, sycamores and cottonwoods, and in protected areas elders and willows. Vegetation growing beneath the trees may include wild grapes, berries, and roses, along with herbaceous plants that sometimes form meadows.

Animals inhabiting chaparral and woodland included, in the past, the grizzly bear, brown bears, antelopes, and wolves (Sleeper 1976:6). Still present are deer, California mountain lions, coyotes, raccoons, cottontails, jackrabbits, and rodents.

CHAPTER IV. PREHISTORY

The prehistory of the southern California coastal region presents a number of interesting problems for the scholar. Skeletal remains found along the coast and possible artifacts from ancient geological formations have suggested to some that humans may have lived in the area as long as 70,000 to 100,000 years ago. The most firmly dated are the skeletal remains known as "Los Angeles Man" and "Laguna Woman," which have radiocarbon dates of approximately 24,000 and 17,000 respectively (Berger et al. 1971). The latter remains were recovered at Laguna Beach, which is north of San Onofre and just outside the Study Area.

Other skeletal materials from Los Angeles County, north of the Study Area, and from San Diego County, to the south, have been dated at 28,000, 44,000, and 48,000 years ago by amino acid racemization techniques (Bada and Helfman 1977). Artifactual remains have included hand tools of the "chopper-chopping tool" tradition, found in association with what some researchers have viewed as ancient hearths, which are weathering out from San Diego canyons. Tools that seem to be of the same tradition have been found on Santa Rosa Island and at the Calico site on the Mojave Desert (Carter 1957; Orr 1968; Simpson and Shuiling 1970).

One major problem associated with some of the finds is that of authenticity. Archaeologists continue to disagree as to whether in every instance the dating techniques were reliable or the geological contexts correctly determined. There is not even general agreement that all the stones were actually modified by humans and/or used as tools. If the dating, the associations, and the artifacts prove to be authentic, many of the prevailing ideas about how and when humans first came to the American continents will have to be revised.

No evidence of extremely early human occupation has yet been found in the Study Area. Nevertheless, it is within the bounds of possibility that such evidence could be discovered in this region, supporting the credibility of those who are convinced that humans inhabited southern California in very ancient times.

A second problem in reconstructing the prehistory of the southern California coastal region is that there is no very satisfactory synthesis of all that the archaeological record has to say. Changes in artifacts and their assemblages have usually occurred gradually, so it is difficult to devise

systems of classification. Moreover, many archaeological projects have not has yet been reported in the literature, and some important finds have never been written up. Thus, a large data base still remains unavailable for scholarly interpretation. Many sites have been vandalized, and great numbers of artifacts have disappeared into the hands of private collectors. All too often artifacts have disappeared from museum collections, and sufficient provenience data are often lacking for the materials remaining in museums (Chace 1965).

One significant problem that archaeologists, linguists, and ethnologists have been working on is to determine why, and at what time, the peoples who spoke Shoshonean languages arrived in southern California. When first encountered by Spaniards, the Native Americans of San Diego County and across the Colorado River in Arizona were speaking Yuman languages, which were distantly related to the Chumash languages of the Santa Barbara area.

Both Yuman and Chumash belong to the Hokan language family. When the Spaniards arrived, these two blocks of Hokan-speakers were separated by people who spoke Shoshonean (or Takic) languages, of the Uto-Aztecan family. This so-called wedge of Shoshonean-speakers spread from the Great Basin to the California coast, into the area that now includes Los Angeles and Orange counties as well as northern San Diego County. The California Shoshonean languages are known in the ethnographic literature as Cahuilla, Cupeño, Gabrielino, Juaneño, Luiseño, and Serrano. Of these, Gabrielino, Juaneño, and Luiseño were spoken in the Study Area. (Present designations for these groups, which date from the mission period, were given the peoples associated with missions San Gabriel, San Juan Capistrano, and San Luis Rey.)

Many researchers believe that Shoshoneans reached the southern California coast between 1500 and 1000 years ago. These dates are not definite, however, because there is no agreement as to which artifacts distinguish Shoshoneans from the peoples who were living in the area when they arrived. It has been suggested that Shoshonean-speakers entered the area gradually, over many centuries (Koerper 1976). The time of their arrival may be established more firmly by intensive research. One notable effort in this direction has been made by True (1966), whose work supports the theory that the Shoshoneans arrived rather late, at least in San Diego County. (It should be pointed out that Native Americans living in the area today, who are descendants of the Shoshoneans, do not subscribe to these notions. They view their origin as having occurred in situ.)

Another and final problem pertaining to this investigation is to determine how changes in the environment of the

Study Area during various periods of the prehistoric past may have contributed to changes in settlement patterns, artifact assemblages, plant and animal use, social structure, and other phenomena. To establish these relationships, however, it is necessary to have access to sophisticated archaeological technology, to develop a research design for the total system of humans and environment represented by a site or set of sites, and to examine the ethnographic data.

It is probable that prehistoric population movements and observed differences in artifact assemblages are closely related to changes in climate, although it is presently impossible to present a complete account of what kinds of climatic changes occurred and how human populations responded to them. At the present time, only the outlines of events that took place throughout thousands of years can be traced. Any statement that seems true today may be proved false tomorrow, if significant new data are discovered.

HUMAN SEQUENCES

If the skeletal materials, hearths, and tools that some researchers have assigned to very early times prove to be authentic, then it follows that humans first lived on the southern California coast long before the end of the Pleistocene or glacial age. It is unlikely that coastal occupation was continuous throughout the Pleistocene, however, because the level of the sea apparently rose and fell several times during the epoch. During warmer periods when little water was locked in glacial ice, sea level was high and coastal California appears to have been under water. During colder periods when the seas fell, parts of the continental shelf were exposed as dry land.

Apparently the level of the sea was very low around 13,000 B.C. When the great glaciers subsequently melted, the oceans arose rapidly until about 5000 B.C., then more slowly for the next thousand years. The sea gradually inundated the mouths of rivers, forming estuaries where conditions were favorable for a variety of plants and animals. Then, as materials were eroded from higher elevations, the estuaries were filled in with sediments, creating still another environment. These processes provided resources that had different energy potential for human use.

The effects of the rising sea on shorelines varied. In southern California, where the continental shelf is narrow,

the sea is estimated to have advanced only three miles (5 km) or less. In the San Francisco Bay region, where the shelf is broader, the ocean is believed to have advanced twelve to fifteen miles (20-25 km). These eustatic changes have had consequences for anthropological research. Many early habitation sites are buried deeply under deposits of silt and sand and rock. Others, inhabited when the sea had retreated, are difficult to investigate because they are now submerged.

The content of the archaeological record has also been influenced by the fluctuating level of the sea, because these changes affected human life. A rising sea would have forced people to move inland toward the mountains, changing their subsistence and settlement patterns in ways that have yet to be fully investigated. Only recently have archaeologists come to realize the significance of eustatic changes in the prehistory of California. Bickel, whose 1978 work is the basis of much of the information included in the last three paragraphs, must be given credit for summarizing available data and relating it to the archaeological record. She has focused on the San Francisco Bay and San Diego data, but points out that changing sea level has important implications for all of coastal California.

While the sea was at its height, hunting peoples of inland North America were using finely crafted fluted points of the Clovis and Folsom tradition to kill mammoths, bison, and other large game. Although it is still uncertain whether some large fluted points found in inland California belong to this tradition, there is general agreement that between 10,000 and 5,000 B.C., inland California and the Great Basin were populated by lakeshore dwellers, whose material culture has been classified as the "Western Pluvial Lakes Tradition" (Hester 1973).

In San Diego County, a number of sites have yielded an artifact assemblage that has been designated as San Dieguito (Warren 1967). This assemblage is characterized by scrapers of several different kinds; leaf-shaped, percussion-flaked knives; leaf-shaped projectile points, lenticular to plano-convex in cross section and short bladed; slightly shouldered projectile points with apparent long tapered stems; engraving tools; cobble choppers; pebble hammerstones; cores and core hammers (Warren 1967:173-174).

This kind of assemblage has a widespread distribution across southern California and northward, possibly as far as Mono Lake. Its dating has not yet been definitely established, although Warren felt that the evidence suggested dates between 6000 and 8000 B.C. (1967:180). These are the earliest post-Pleistocene remains known from coastal southern California.

It is significant that the percussion-flaked tools of the San Dieguito and similar assemblages display a degree of craftsmanship that did not reappear until much later, and that they do not include manos and metates ("milling stones"), an indication that large quantities of food were not prepared by grinding. The assemblages are consistent with the hypothesis that coastal southern California at this period was still rather moist and heavily forested, forming an ecological zone that would provide game and plant foods which were eaten without being ground.

A site that has yielded "eccentric crescentics," considered diagnostic of the San Dieguito tradition, has been excavated in Orange County (CA-Ora-64). These crescents were in a midden that was situated above a lense containing shell, rock, charcoal and artifacts. Material in the lens, which was located almost a meter below the surface on a bluff overlooking Newport Back Bay, has been radiocarbon dated at approximately 6500 B.C. The ecological adaption represented by this earlier occupation was oriented toward exploitation of bay resources.

At the climate warmed, inland lakes evaporated and began to disapper, and surrounding areas gradually became desert lands. The archaeological record suggests that inland peoples moved toward the coast. Concomitantly there was a very significant addition to human technology--the development of milling stones. People of the "Milling Stone Horizon" dominated the southern California coast from 6000 B.C. to 3000 B.C. (Wallace 1978:28-30).

The earliest known artifact assemblage characteristic of this horizon is from Diablo Canyon in San Luis Obispo County and has been dated at about 7300 B.C. (Greenwood 1972). It is impossible to say if this evidence means that the Milling Stone technology spread southward from this region, or whether more southerly sites for this era have simply not yet been identified. At any rate, the presence of milling stones means that people had begun to grind seeds and small animals before eating them.

The percussion-flaked tools of the Milling Stone people were less finely crafted than were those of the early San Dieguito people. The large mammals of the Pleistocene had become extinct, and subsistence may have become more difficult. It is also possible that the Milling Stone people were an intrusive population that had never developed the techniques for fine percussion flaking.

Coastal peoples of this era were consuming shellfish, which had to be dug as root foods were and cracked open as nuts were. Warren postulates that this was a "food collecting" stage of cultural development (1964:38-39). It is quite

likely that at this time, Hokan-speaking peoples occupied all of coastal southern California from San Luis Obispo County southward, exploiting marine resources if they lived on the coasts. Grinding would have permitted a more complete utilization of foods that were otherwise unpalatable or indigestible. Thus, the cultural potential of the human groups would have been significantly expanded.

Apparently, the human population of the coastal province increased rapidly between 6000 and 4000 B.C. Warren suggests that as the number of people increased, the number of fires deliberately set to obtain food (insects, animal drives) may also have increased--and that burning, along with the warming climate, may have gradually brought about a change in the flora of the area (1964:88-104). In San Diego County and to some degree farther south, trees such as Torrey pines, other conifers and oaks--abundant in the immediate post-Pleistocene--were gradually replaced by chaparral, coastal sage scrub, and grasses. The result was a more varied biota.

In addition to milling stones, the people who lived along the southern California coast during this period made hammerstones, large projectile points, discoidals, "doughnut" stones (possibly used to weight digging sticks), and "cogstones" (possibly used ceremonially). Flexed burials were common and metates were often placed over burial sites (True 1966:217). Warren in his chronology of the southern California coast has called this cultural complex the Encinitas Tradition (1968).

From Milling-Stone times on, it is not uncommon to find burials in occupation sites, and occasionally shell beads and other ornamental goods. The "order" and "meaning" in sites increases. People apparently began to stay longer in one place, and as their numbers increased they dispersed to new sites, expanding their exploitation of various ecological niches.

There are various interpretations of settlement patterns. Davis (1976:39) views evidence along the San Diego coast as indicating that people gathered pine nuts and hunted rabbits and quail on bluffs above the coast in late autumn, and fished and gathered molluscs in winter, and that in late spring, summer, and autumn they hunted and gathered plant foods on the inland ranges. Warren, True and Eudey (1961) have interpreted similar archaeological data as indicating that coastal populations migrated seasonally to the foothills of the Peninsular Range. Munoz (1975) excavated a site in Orange County and inferred from the artifact assemblage and the size and depth of the cultural deposit that it was not a seasonal camp but a base camp, suggesting that in this location people lived on the coast most of the year.

The archaeological record of San Diego County estuaries indicates that by 5000 B.C., the shellfish common to a rocky habitat were being replaced by those adapted to sandy beaches and mudflats, as sediments filled the tidal inlets (Warren 1964:117). Gradually, even these forms disappeared. Human populations adapted to the depletion of their shellfish subsistence base in several ways. An increase in the number of milling stones suggests an increasing dependence on the grinding of seeds and nuts, and an increase in projectile points indicates that hunting became more important. In San Diego County, the population decreased. Little is known about this period in the Study Area because relevant sites in Orange County have not been fully investigated.

About 3000 B.C. mortars and pestles begin to appear in the archaeological record. Because these specialized grinding stones are associated with acorn processing, it is assumed that by this time people had learned to render acorns edible by leaching and grinding. Inasmuch as acorns became a major subsistence item throughout most of California, this was a revolutionary technological advance. The earliest mortars and pestles known from the Study Area apparently date to 2000 B.C.

Changes usually interpreted as evidence of the arrival of Shoshonean-speakers into what are now Orange and Los Angeles counties apparently occurred between 1500 and 1000 years ago, although there are neither firm data nor firm dates for this assumption. During this relatively recent period, the peoples of San Diego County were apparently in fairly close touch with other speakers of Yuman languages (derived from Hokan) and through them had access to certain cultural traits derived from the Hohokam of Arizona. For example, the California Yuman-speakers began to practice cremation, burying the ashes in urns and marking the burial place. They acquired pottery and began to use it in place of basketry for some purposes. They made pottery rattles, miniature pottery vessels, and small pottery effigies. They adopted the use of the bow and arrow, and made Desert Side-notched projectile points. They exploited steatite deposits in their territory and made Milling Stone vessels and tools in a variety of forms (True 1966).

Meanwhile, there was no longer one cultural continuum from Point Concepcion south into Baja California, as there had been in Milling Stone times. The intrusive peoples had brought with them a marked sense of private property. Each group owned territory and took offense at any trespass. By the time Europeans arrived, they practiced cremation, burning corpses on the ground or in shallow pits, and at least sometimes ritually drinking a potion of the ashes and water to increase personal power. Burned bones were scattered or buried in midden. It is uncertain when cremation was adopted. There is a suggestion that it was a late development in the fact that many burials

in Orange County are flexed burials, as they had been since Milling Stone times. Unfortunately, few Orange County burials or artifacts have been dated.

The Shoshoneans apparently acquired pottery later than their neighbors to the south, and perhaps from them. They used a smaller variety of forms for pottery and used pottery for fewer functions. Their ceramic pipes were straight and tubular. It is possible that pottery was used mainly for storing food in caches. They adopted the Desert Side-notched projectile point, but used it more sparingly than did the Diegueño. They made artifacts of crystalline quartz, which was found in their own territory, rather than importing felsite or other materials (even though the quartz was very hard to work). They apparently used datura ritually at an earlier date and passed it on to the Diegueño. The Shoshoneans were apparently more rigid in following ritual tradition, and drank the concoction from the sacred vessel in which it was prepared. The Diegueño were more flexible in this regard (True 1966).

Hudson (1969) has analyzed data from archaeological excavations of the 1930s in Santiago Canyon. These data suggest that from about 1750 A.D. on, the cultural patterns of the peoples of the intermontane areas were distinct from those of people nearer the coast. The subsistence economy of the inland groups appears to have been based on semi-sedentary hunting and gathering. They made pendants and awls of slate, whistles of deer tibia, flat-rimmed mortars of stone and mortars trimmed with shell inlay. They did not use pottery. They cremated their dead and buried the remains in either stone bowls or baskets (apparently an indication of diffusion from the Diegueño). These traits were distinct from those of their neighbors in areas near the coast. Hudson suggests that the mountain environment may have provided a more stable subsistence, allowing the Gabrielino in the mountain canyons to maintain a semi-sedentary life style in contrast to those in the coastal-prairie region, who migrated seasonally.

In 1796 the peoples of the Study Area entered written history. Yet the Native Americans described in ethnographic and historical accounts lived far more complex lives than the literature indicates. The archaeological evidence still locked within the Study Area could reveal much information, enriching the heritage of these first Americans. It is important that this record not be destroyed before it is "read."

CHAPTER V. HISTORY

The route of the transmission lines from the San Onofre Nuclear Generating Station cuts across a part of Orange County that has many historic sites. In the vicinity of the route lie seven of the major Spanish or Mexican land grants made between 1810 and 1846. In addition, the Study Area contains the site of a major mission, nine officially designated California State Landmarks, and five of the Orange County sites nominated to the National Register of Historic Places. According to the state publication California Inventory of Historic Resources (1976a), 34 of the county's 107 historical sites are within the Study Area.

The San Onofre Nuclear Generating Station, where the transmission lines originate, is located in the northwest corner of the territory once held by Rancho Santa Margarita y Las Flores, the largest land grant made in San Diego County and one of the largest in the state. From there the lines pass San Juan Capistrano and an early town, El Toro; both areas are now being developed at a rapid rate.

THE MISSION PERIOD

The Portolá Trek

The historic period of the area included in this study began with the 18th-century Portolá expedition, which was sent out with the intent of extending the frontier of the Spanish empire to Monterey. With 63 men, including two Franciscan priests, Gaspar de Portolá marched from Baja to Alta California, choosing an inland route northward from San Diego--partly to avoid the coastal mountains and swamps, partly because fresh water would be more abundant in the foothills. Four of the Portolá expedition's seven campsites are within the Study Area. (Helen Smith reported on their approximate locations in 1965, and most of the data included in the following brief summaries are based on her surveys.)

Cristianitos Canyon (July 22, 1769). The Portolá expedition reached what is now the southern part of Orange County in the summer of 1769, and on July 22 encountered a village of more than 50 Indians in a canyon. Among the

Native Americans were two young children so ill they seemed near death. Their baptisms--the first recorded in Alta California--gave the canyon the name Cristianitos [Little Christians].

For about a mile before the transmission lines from San Onofre reach Talega Substation, they run roughly northeast-by-southwest, paralleling the trend of Cristianitos Canyon. At the Talega station the transmission lines turn sharply toward the west, and the boundary between Orange and San Diego counties turns sharply eastward. The canyon crosses the county boundary about six-tenths of a mile (a kilometer) east of the substation, and the site of Portolá's 1769 camp is just north of the county line. A monument commemorating the baptism of the two children has been placed within the U.S. Marine Corps' Camp Talega, a part of Camp Joseph H. Pendleton. The Capistrano Test Site is located south of the historic campsite, and the Tierra Colorado Clay Company's mines are in Gabrino Canyon, to the north.

"Old Mission" Site (July 23, 1769). Portolá's party camped on July 23 near this site, which is in San Juan Canyon, almost four miles (6 km) north of the previous day's camp. The site's name is misleading, because the building that once stood there was probably an out-building belonging to the 19th-century Rancho Mission Vieja, not to the early Franciscan mission of San Juan Capistrano. It was constructed of sun-dried adobe and burnt adobe bricks with a tiled roof. After many plowings of the field in which it stood, all that remains of the structure are fragments of brick, tile, glass and wood, and a low mound. The site lies about two miles (3 km) east of where the transmission lines cross San Juan Canyon.

The exact location of Portolá's camp in this area is unknown. If the party entered San Juan Canyon down a ridge west of Trampas Canyon, the "high hill" recorded as the campsite could have been any of several elevations on the banks of the stream, but was probably on the flat-topped grassy hill.

The "Old Mission" site is not far from the corrals of Rancho Mission Vieja. Several archaeological sites are within two miles.

Trabuco Mesa (July 25, 1769). From the "Old Mission" campsite, Portolá's party probably travelled up Gobernadora Canyon (or possibly Chiquita Canyon). The explorers appear to have reached Plano Trabuco by evening and camped on its eastern edge. Here they found a spring (now dammed to form a small lake), which supported the growth of trees and other lush vegetation. There are many archaeological sites in this

area. An adobe nearby was built about 1830, and occupied until about 1900.

The Trabuco Mesa site is less than a mile east of the Santiago Tap-Black Star Canyon transmission lines (a short distance north of the territorial boundary between SCE and SDG&E).

Tomato Spring (July 26, 1769). From Trabuco Mesa, Portolá's party travelled northwest, crossing Arroyo Trabuco, Oso Creek, Aliso Creek, Borrego Canyon and Agua Chinon Wash, arriving finally at a site the soldiers called El Aguaje de Padre Gomez. Formally named San Pantaleon, it has since become Tomato Spring--apparently because "wild" tomatoes were found there by hunters in the historic period. The area is now part of the Irvine Ranch. Abundant vegetation still surrounds the spring, even though it has long been boxed in. There is a small seep about a hundred feet (30 m) down the draw, which remains moist until midsummer after winter rains.

Artifacts are abundant on the surface of the marine terraces to the east of the spring, attesting to a long period of human occupancy. Artifacts made of materials not found in the locality indicate that there was trade with desert areas some distance away.

Tomato Spring is northeast of the end of the Santiago Tap-Santiago Substation transmission lines, between these lines and the Santiago Tap-Black Star Canyon lines.

Importance of the Expedition. The Portolá party, failing to recognize Monterey Bay from the map made by Vizcaino in 1602, pushed northward and explored San Francisco Bay before returning. Some of the place names given by this expedition are still in use. The route it took through canyons and across plains was used by wheeled carts during rancho days, and later by soldiers, bandits, settlers in covered wagons, and stagecoaches (Stephenson 1930:16).

The Portolá expedition provided the initial reconnaissance of territory that later became the lands of California's 21 Franciscan missions. One of these, Mission San Juan Capistrano, "Jewel of the Missions," is located within the Study Area.

Mission San Juan Capistrano

Spaniards did not return to San Juan Valley until 1775, when Padre Junipero Serra was granted permission to found a seventh California mission (Hallan 1975:11). Serra designated padres Fermin de Lasuén and Gregorio Amurrio to found this new

mission, which was to be named for the Italian saint, John of Capistrano.

José Ortega, who had been a scout under Portolá, accompanied Lasuén and helped select a site for the headquarters of the mission. Located near the Arroyo de la Quema [Burnt Arroyo] and a little more than two miles (3 km) from El Camino Real in the direction of the coast, the site was officially dedicated on October 30, 1775 (Hallan 1975:12). A week after the founding, however, word was received that a priest had been killed in a revolt of the Indians at Mission San Diego, and the San Juan Capistrano site was abandoned (Engelhardt 1930:192). The mission was formally reestablished on November 1, 1776, when Serra conducted the first Mass on the original site (Engelhardt 1930:236).

Local historians do not agree on the exact site where the mission's first church was built. Roberts (1936:130) and others have argued that it was located almost two-and-a-half miles (4 km) above the present mission church and below Gobernadora Canyon, where the old Camino Real crossed Arroyo de la Quema.

On October 7, 1778, the mission church was moved to its present site. Documents discovered and transcribed by Father Maynard Geiger, late curator of the Santa Barbara Mission Archives, seem to indicate that the site was changed because of lack of water (Geiger 1967:37). These documents support the possibility that there may be additional sites of historical significance within the San Juan Valley.

According to a letter written to Padre Serra by Padre Mugartegui, the first buildings constructed at the new site were a church, living quarters, and a cowshed. Geiger's evidence substantiated the fact that a temporary church, located outside Mission Square, remained in service from 1778 until 1782, when Serra's chapel was completed (Geiger 1967). A few local historians have believed that this first building might be the Montanez Adobe, located west of the mission, but excavations by Roberts in 1936 did not support this claim (Hallan 1975:15).

The primary objective of all missions was to attract Indian converts. In this effort, San Juan Capistrano was successful. Records of 1786 listed a population of 544; by 1796 the number of converts had spiraled to 994. Housing was a constant problem, with most of the live-in population crowded into rows of attached adobe buildings.

For a time, Mission San Juan Capistrano prospered. In 1794, two granaries and forty adobe huts were constructed. Three years later, padres Vicente Fuster and Juan de Santiago initiated the construction of a great stone church. Isidro

Aguilar, a master mason, was employed to direct the project, with labor provided by the resident Native American converts. Completed in 1806, three years after the death of Aguilar, the huge church stood only 6 years before being destroyed by an earthquake (Hallan 1975:17).

Mission records clearly reveal that 1811, the year preceding the temblor, was the most successful year in its history. Mission farms produced 5000 pounds of wheat; 190,000 pounds of barley; 202,000 pounds of corn and 20,000 pounds of beans--in addition to 14,000 head of cattle and a herd of about 740 horses (Hallan 1975:19). Numerous sailing vessels anchored at the embarcadero now called Dana Cove, and their crews transferred mission produce from the cliffs to the shore. Richard Henry Dana described the process graphically in Two Years Before the Mast (1964:141). Dana Point, 4 miles (6 km) southwest of Mission San Juan Capistrano, was known to mariners of early days as Point San Juan. The cliff site and cove are designated an official California Historical Landmark.

Mission San Juan Capistrano also had unwelcome visitors. Most notable was the Argentine privateer Hippolyte Bouchard, who landed with his crew at the mouth of San Juan Creek in 1818. From contemporary accounts it appears that Bouchard came under a flag of truce, seeking supplies. The request was denied by Santiago Argüello, who was in charge of the town's defense. The settlement was sacked and partially destroyed by Bouchard's men, but the padres had already removed mission valuables to an Indian rancheria near the plain of Trabuco. Rumors abound even today as to the whereabouts of treasure that was buried in this area but never returned to the mission. The Bouchard Invasion site at the mouth of San Juan Creek is listed in the California Inventory of Historic Resources, but its potential has yet to be fully developed (Hallan 1975:19).

A mission hospital with a walled enclosure was built in 1814, and an adjoining chapel was added 3 years later. Early records reveal that these were tragic years. Smallpox and other epidemics decimated the Native American population, and as the population declined, so did the mission. By 1829 the area's historical focal point--Mission San Juan Capistrano--and its grounds were in a ruinous state. With the onset of secularization, the Mexican government confiscated the property of this and other missions.

Secularization, which came by official decree in 1833, was in part a political ploy of the financially troubled Mexican government. Mission holdings of livestock and grazing land appeared particularly attractive to people who held valid claims against the government. Ostensibly, the intent of secularization was to divide these huge tracts of land between the native population and certain of the claimants. In reality, however, most of the beneficiaries were political figures and their relatives. In effect, secularization ushered in the "Days of the Dons."

Most of the acreage that had previously been under the jurisdiction of Mission San Juan passed into the hands of private citizens between 1834 and 1846, through grants vested in the authority of Mexican governors. By 1850 less than 500 Native Americans were left in the entire San Juan administrative district, with about one-fifth of this total residing in the pueblo of San Juan Capistrano (Hallan 1975:25).

Many factors contributed to this phenomenon. The Native American residents of southern California did not adjust to the concept of property ownership that prevailed among non-Indian intruders. And non-Indian "Californios," taking advantage of the political chaos of secularization, quickly claimed the most productive lands and constructed homes for their families.

The use of adobe, the most common building material during the mission period, continued well into post-mission times. Many of the best examples of adobe construction remaining from the past have been extensively remodeled, and other notable adobes have disappeared. Only three adobe historic structures within the Study Area (the Montanez, Parra, and Serrano houses) have been accepted in the National Register.

Within the transmission corridor, nine properties were directly affected by secularization. The brief summaries that follow are based primarily on two sources: Old Spanish and Mexican Ranchos of Orange County (Robinson 1950); and The Romantic History of San Diego County Ranchos (Brackett 1947).

Boca de la Playa [Inlet on the Shore]

This tract, the most southerly rancho established in what is now Orange County, fronted the ocean along Doheny Park,

Capistrano Beach, and part of San Clemente. The 6610 acres* (2675 hectares) were granted in 1846 to Emigdio Vejar by Mexican governor Pio Pico. Vejar had served briefly as a judge, and also as justice of the peace, at San Juan Capistrano. In 1860 he sold the ranch to Juan Avila, whose heirs conveyed it after 1878 to Marcos Forster.

Lomas de Santiago [St. James Hills]

This scenic tract, traversed by Santiago Creek, lies between Rancho San Joaquin and the Cleveland National Forest. The rancho was initially granted by Pico to Teodocio Yorba in 1846. Its American patent, issued in 1868, assessed the property at more than 47,000 acres (19,000 ha). Teodocio, the son of Portolá trek veteran José Antonio Yorba, served as an alcalde [mayor] in the Santa Ana area in the 1830s and as late as 1847. Later the property was owned by William Wolfskill, who sold the deed to Flint, Bixby, and Irvine for $7000 in 1866.

Mission Vieja [Old Mission] or La Paz [Peace]

An inland rancho, this property was granted to Agustín Olvera, who had been a lawyer and a judge, by Pio Pico in 1845. Juan Forster purchased the property soon after, and his title to 46,035 acres (18,640 ha) was confirmed in the 1850s.

Potrero de los Pinos [Pasture in the Pines]

This minor grant, which was within the present Cleveland National Forest, originally was pastureland of Mission San Juan Capistrano. Juan Forster, to whom Potrero de los Pinos was granted (by his brother-in-law, Pio Pico), was the only non-Spaniard to receive a grant within the territory that later became Orange County. The property later was enveloped by other Forster holdings.

Rios Tract

Another minor grant of ex-mission land was this 8-acre (3-ha) parcel, which lay within the present city limits of

*Areas included in this chapter have been rounded to the nearest 5.

San Juan Capistrano. The tract was granted to Santiago Rios by Governor Manuel Micheltorena in 1843, to furnish legal title to the site of the Rios adobe. Rios had served as justice of the peace at San Juan Capistrano.

Trabuco [Blunderbuss]

This property consisted of more than 22,000 acres (9000 ha) in what is now south-central Orange County. Its name has endured since the Portolá expedition, when a soldier lost his weapon there. The tract on Trabuco Creek was granted initially to Santiago Argüello, who soon afterward sold it to Juan Forster.

(Three of the post-mission rancho properties contain numerous sites of register potential; therefore, these grants are considered here in greater detail.)

Rancho Santa Margarita y Las Flores [St. Margaret and the Flowers]

The Portolá expedition in 1769 made camp on July 20--the day of Santa Margarita--beside a marshy stream, naming its valley after the saint. Next day's camp was in a canyon where flowers were blooming so profusely that the soldiers called it Las Flores. In 1798 Mission San Luis Rey established a cattle ranch at Santa Margarita, and in 1823 a mission substation was established for the Native Americans then living in two large villages at the mouth of Las Flores Canyon.

The main building of the small mission substation at Las Flores consisted of a series of rooms enclosing three sides of a patio 30 by 40 yards wide, opening toward the east. A tower 40 feet high topped a chapel at the southwest corner of the building, which faced the ocean. Sleeping quarters, storage rooms, and granaries made up the rest of the structure; there was a two-story section on the western wing. The building was constructed of adobe bricks with a tiled roof, and its long axis ran north/south.

In 1833 when Mission San Luis' lands were secularized, a tract of 20 square miles (5180 ha) was declared a pueblo libre (free city) and was set aside for the use of Indians. Pío Pico was assigned to administer the rest of the lands belonging to the mission.

Two years later Governor José Figueroa died, and a period of political chaos ensued. In 1837, troops led by Juan Bautista Alvarado of Monterey met soldiers led by Carlos

Carrillo of San Diego, in a one-cannon-shot battle at Las Flores. Following the battle, it was agreed that Alvarado would be governor. The treaty of Las Flores, signed on April 22, 1838, brought political peace for several years.

In response to a petition, Governor Alvarado in 1841 granted Pio and Andrés Pico (to whom he was related by marriage) Rancho Santa Margarita, former San Luis Rey land that had been under Pio Pico's administration. The free city of Las Flores was not included, but Pico convinced the Native Americans of Las Flores to trade him the land that had been set aside for them, in exchange for Temecula, which he claimed to own. Thus, the Picos came into possession of immense acreage, which they named Rancho Santa Margarita y Las Flores (Meadows 1967).

Some of the lands included in this rancho had belonged to Mission San Juan Capistrano. The coastline of the grant, which was the largest ever made in what is now San Diego County, extended from Oceanside to San Clemente. Total area exceeded 90,000 acres (35,000 ha). In 1864, title was transferred to Juan Forster. (For subsequent history of this ranch, see "English Speaking Settlers" in this report.)

Rancho Niguel

The name Niguel came from a Native American ranchería that was located in this area. In 1842 Governor Alvarado issued a grant of 13,000-plus acres (5260 ha) to the widow Concepción Avila de Sanchez and her brother Juan Avila. The land was southeast of Laguna Canyon, near the mouth of Aliso Creek.

The Avilas (or Abilas) had been reared in Los Angeles and were the children of Antonio Avila, who had come to California from Sonora in 1783 as a youngster. Widely known throughout southern California business circles, the Avilas were interrelated with the Picos, Sepulvedas, Serranos, and Yorbas--also the Forsters (Rischard 1969:23). Antonio's eldest son, Juan, was the first of the family to settle in the Saddleback area. He married Soledad Yorba in 1833, and three of their four children lived to marry and have families (Rischard 1969:23).

Evidence indicates that Juan may have been living on Rancho Niguel as early as 1834, and about that time had constructed an adobe house on the west side of El Camino Real at Aliso Creek. With its strategic location along the main route from San Diego to Los Angeles, the first Avila adobe functioned as a way-station for weary travelers. Juan Avila was widely recognized as a mediator. During the U.S.-Mexican

war he provided hospitality to General Stephen A. Kearney and Colonel John C. Frémont; some years later he interceded in a dispute with the outlaw Flores, and possibly saved the life of Juan Forster (Rischard 1969:22).

When the Niguel grant was initially ratified by the U.S. Land Commission in 1857, it did not include the northern parcel on which the first Avila adobe had been built. (The ungranted land was later opened for homestead and eventually became part of the Moulton Ranch.)

Juan Avila moved to San Juan Capistrano, where he built a larger home. During the troubled '60s, Avila--popularly known as El Rico [The Rich One]--managed to stay afloat financially. Although 90 percent of his livestock was lost through the sale of small parcels of land, he retained some of the Niguel acreage until the 1870s. His spacious home at San Juan Capistrano was razed by fire in 1879, and only a part of it was rebuilt. Avila lived with various family members in the San Juan Capistrano area until his death in 1888 (Rischard 1969:26).

Rancho Cañada de los Alisos [Alders Canyon]

Bounded by the Santa Ana Mountains on the northeast, this grant had common boundaries with Rancho Trabuco on the southeast, and with the properties that later became the Irvine Ranch on the northwest. The original grantee of its 10,700 acres (4320 ha) was José Serrano, who received the tract from Governor Alvarado. The grant was added to by Governor Pico in 1846.

The Serranos, like the Avilas, were well known throughout southern California. Francisco Serrano came to the area in 1780 as a soldier, first assigned to the garrison at San Diego and later moving to the pueblo of Los Angeles. The Serrano and Yorba families were joined by marriage about 1880, and their ensuing histories are closely interrelated.

José Serrano, Francisco's youngest son and original grantee of Rancho Cañada de los Alisos, served as a judge in Los Angeles in 1835, and for a time lived there with his wife, Petra Avila de Serrano. His first grant in the Saddleback area was received in 1842 from Governor Alvarado (Rischard 1969:60).

During the Serrano tenure (1842-70), five adobes were constructed on the rancho. In an attempt to reverse financial setbacks of the early '60s, José borrowed at exorbitant rates with the land as security; by 1870 the mortgage was foreclosed and the family forced to vacate. José then acquired a small

parcel of government land in the foothills, some four miles (6 km) east of the adobe near the present Cook's Corner area. Here the family started ranching anew. José died in 1870, and Serrano relatives still operate a ranch on this historic property (Morgan 1973:204).

In the '80s, a new era began. Rancho Cañada de los Alisos underwent its first major subdivision in 1881. Three years later Dwight Whiting acquired most of the remaining acreage, and the first town-building scheme gradually took shape (Morgan 1973:204). The area has importance, as the site of the early town of El Toro.

ENGLISH-SPEAKING SETTLERS

The secularization of the California missions, with the subsequent availability of large tracts of good land, did not pass unnoticed in the eastern United States. To people who had never seen oranges growing on trees, California was far more impressive than it had been to either Spaniards or Mexicans. Entrepreneurs of various types began arriving from the north and east, several years before California's destiny became manifest.

One of the most successful of these early-day settlers was the Englishman John Foster, who arrived in California in 1883. He applied for and received Mexican citizenship, hispanicizing his name, as was the custom, to Juan Forster. For a time he worked as a shipping agent at San Pedro. His marriage in 1837 to Ysidora Pico cemented a relationship with one of California's most prominent families. Forster moved his family to the San Juan Valley in 1844. A year later he bought Rancho Mission Vieja, nearly 47,000 acres [19,000 ha], from its Mexican owner, and was also granted the tract El Potrero de los Pinos by his brother-in-law, Governor Pio Pico. As noted before, this grant was the only one ever awarded a person of non-Spanish descent within the area that is now Orange County (Rischard 1969:42).

Forster also played a role in the annals of San Juan Capistrano. In December of 1845, he and an associate purchased the mission in an auction held by Pico, for $710. For the next two decades the Forster family occupied the apartments that had formerly been used by resident priests. During the American invasion Forster provided hospitality and supplies to Americans--while aiding the escape of Pico to Mexico. Like many settlers in California--both Mexican and American--

he was willing to support any government that offered stability, caring little which colors were raised on the town flagstaff (Rischard 1969:43).

California became part of the United States in 1848, at the end of the conflict called the Mexican War (in the United States) or the War of Intervention (in Mexico). The discovery of gold brought adventurers as well as miners, and violence was common during the '50s and '60s. The activities of such bandits as Flores and Murietta provided a wealth of material for writers and historians, and the locations where their escapades occurred (for example, Barton Mound and Flores Peak) provide additional sites of register potential.

The change of federal government brought with it a change of laws. In 1855 the U.S. Land Commission declared that the sale of mission properties by Pio Pico had been fraudulent. The lands and buildings of Mission San Juan Capistrano were officially returned to the Catholic Church in a patent signed by President Lincoln in 1865 (Engelhardt 1922:169). Many families that held large grants could not afford the expensive legal work required to prove their titles, and thus lost their land.

Juan Forster gained title to Rancho Santa Margarita y Las Flores in 1864. In 1867 Forster's son Marcos married Guadalupe Avila, daughter of Juan Avila of San Juan Capistrano, and was given permission to build a home anywhere on family property. He chose Las Flores, near the abandoned free city, where he could salvage building materials from the homes of the former Native American settlement. Marcos Forster's adobe house, whose completion was celebrated with a great fiesta, stood for a hundred years.

In 1872 Juan Forster borrowed $207,000 in an attempt to found a colony similar to the one that was being promoted at Anaheim; but Forster City was a failure. After Juan's death in 1882, his sons sold Rancho Santa Margarita y Las Flores to pay his debts.

Richard O'Neill, one of the purchasers of Rancho Santa Margarita, moved into the Santa Margarita ranch house, but the home at Las Flores remained empty for some time. In 1888 O'Neill suggested to Jane Magee, orphaned daughter of a soldier and a member of the prominent Pedrorena family, that she move into the Las Flores house and farm the adjacent acreage; here Jane raised her numerous brothers and sisters. In 1942 the U.S. government bought 120,000 acres of the ranch for more than $4 million and established Camp Joseph H. Pendleton, a Marine Corps base. President Franklin D. Roosevelt inspected the base and visited Las Flores, where Ruth Magee, last member of her family, told him that even though the property had been sold, she would like to remain in the house. The President

issued a directive permitting this. The hundred-year-old Las Flores adobe was abandoned after her death in 1967 (Meadows 1967). The Santa Margarita ranch house, once the Forster family home, now functions as the residence of Camp Pendleton's commanding general.

LATER HISTORICAL SITES

Key figures at San Juan Capistrano in the '90s were Marcos Forster and "Judge" Richard Egan, who is credited with bringing law and order to the area (Payne 1962:80). Egan had bought Trabuco land (at $1.25 an acre) where he raised barley, which he sold for 50 cents a bushel. A frequent visitor to the area was the Shakespearean actress Madame Helena Modjeska, who often took friends from her Santiago Canyon home to visit at the Egan ranch, a day's journey away.

The Modjeska home is one of the many sites of historical value within the upper reaches of the transmission corridor. (This area has been neglected by local historians, with the exception of Stephenson and Sleeper.) Tales of grizzlies and ghosts abound, in the rugged terrain of the Santa Ana Mountains. The scenic strip from Limestone Canyon to Silverado has a number of potential register sites. Limestone Canyon, where there was once a large Indian village, is also the site of the Chinon adobe, built in the 1840s, and the kilns where Samuel Shrewsbury once produced lime commercially (Stephenson 1931:100).

At Cañada de las Precitas [Ravine of the Condemned] General Andres Pico and a posse hanged two members of the notorious Flores gang. A clump of sycamores is pointed out today as the hanging site.

The canyon originally called Cañada de los Indios [Ravine of the Indians] was renamed when the Black Star Coal Mining Company began operations after coal was discovered in 1876. In this canyon is Hidden Ranch, site of a battle between Native Americans and non-Indians in 1831. One of the earliest homesteaders, Pancho Carpenter, constructed an adobe in the area around 1870 (Stephenson 1931:107).

Boom towns came into existence overnight during the late 1800s. Carbondale and Silverado had dwellings, saloons, and post offices. After a few years Carbondale disappeared, leaving scarcely a trace; there are still ruins at Silverado (Sleeper 1976:82).

Orange County as a political entity is young, having been formed from southern Los Angeles County in 1889. Santa Ana, which became the county seat, had been laid out in 1868, when the Yorbas' Rancho Santiago de Santa Ana was subdivided and sold. Anaheim, established in 1857 on a part of Rancho Cañon de Santa Ana, is the second oldest settlement in the county but is far antedated by San Juan Capistrano, which celebrated its bicentennial in 1976.

Change occurred slowly in Orange County through the first third of the 20th century. With the end of World War I came a western migration that gave rise to the boom of the 1920s; during this period the county became a part of the Metropolitan Water District, the State Highway was improved, and the Coast Highway was built. Except for the communities of San Clemente and Dana Point, however, little effect was felt in southern Orange County. Both of these communities barely survived the ensuing Great Depression.

Through the Depression years of 1930-1940, the settlements of the late 19th century, principally in the northern half of the county, remained small agricultural and marketing centers. Preparation for World War II did not have the impact here that it did in Los Angeles and San Diego counties. The three principal military centers then established were the Los Alamitos Naval Ammunition Depot, the Santa Ana Army Air Base in Costa Mesa, and El Toro Marine Corps Air Station (the only military installation in the Study Area). Defense-related industries were minor; there were no aircraft factories and only one shipbuilding firm, at Newport Beach.

Illustrative of the static condition of Orange County is the USGS map, Corona Quadrangle, edition of June 1902 (based on surveys made in 1894 and 1899). Reprinted in 1930, this map was still adequate. Crossing from La Habra on the north to San Juan Capistrano on the south is El Camino Real, which became Highway 101 and eventually Interstate 5 with only minor realignments. (On an 1840 diseño it was named Camino de San Juan, on a 1915 promotional map simply State Highway.)

From mission times to the present, this road has given access to both sides of the county. Pacific Coast Highway was not completed until 1926; before that a muddy track led around the south side of Newport Bay to Corona del Mar, and Laguna was reached only through Laguna Canyon or Aliso Canyon. In the Study Area, access inland was by El Toro Road (formerly Los Alisos) or Ortega Highway (formerly Hot Springs Road).

Far from being a dividing barrier through the length of the county, this highway of many names has been a corridor between the coastal hills and the Santa Ana Mountains--not only for people but also for the animals that have always

existed in the area. Mule deer still manage to make their way to the shore; the Irvine Company still holds autumn deer hunts for its employees. Residents of the southern communities complain of the depredations or presence of raccoons, badgers, foxes, skunks, opossums, coyotes, bobcats, and rattlesnakes. Only the antelope, the grizzly bear, and the mountain lion have disappeared.

Four of the original rancho grants in the Study Area have born the brunt of post-World War II expansion. Parts of Boca de la Playa have been annexed and developed in the towns of San Clemente and San Juan Capistrano; unincorporated Capistrano Beach lies between them. Rancho Niguel's hills and valleys are now the unincorporated enclaves of Laguna Niguel and Laguna Hills Leisure World. The last 2700 acres (1090 ha) of Niguel were sold in 1975 by Lewis Moulton's heirs and are to be developed as Aliso Viejo. Owners of Mission Vieja continue to hold the southeast section in agriculture and cattle-ranching, while the northwest part is being sold and developed as the town of Mission Vieja, also unincorporated.

El Toro, in the Cañada de los Alisos, was a quiet village with groves of citrus, olive, and eucalyptus trees until several thousand acres were sold in 1959 to Occidental Petroleum. Because of the development of the Lake Forest residential community, the intersection of El Toro Road and Interstate 5 has become one of the busiest in southern California.

Impacts of the rapid development of these communities are now being felt in increased traffic congestion, air and noise pollution, and difficulty in providing adequate water and sewage facilities. These pressures, reinforced by the California Environmental Quality Act of 1970, are beginning to slow the exploitation of yet-undeveloped land and to encourage preservation of open space and natural and historical resources.

The corridor of the proposed transmission line from San Onofre to Black Star Canyon involves a segment of the county whose history is crucial to the understanding of Orange County's origins. Most of the significant sites discussed in this report appear on one or another historic inventory. In addition, two districts in the Mission San Luis area have been submitted--unsuccessfully, so far--for nomination to the National Register of Historic Places: Los Rios Street and San Juan Hot Springs Road (Ortega Highway). Many other locations are also worthy of preservation. None, however, appears to be directly impacted by the transmission line right-of-way.

HISTORIC SITES

The historic sites within the Study Area listed here are keyed to the map. Letter symbols in parentheses refer to the following:

NR National Register of Historic Places (1976)

CHL California Historical Landmarks (1976b)

CIHR California Inventory of Historic Resources (1976a)

OCHL Orange County Historical Landmarks (1969)

M Meadows, Don. Historic Place Names in Orange County (1966)

NL Not listed on any register.

1. Aliso School Site–School established in 1896, demolished about 1927. (M 22)

2. Barton Mound-Destroyed by freeway construction, scene of a tragic confrontation between lawmen and bandits. (CIHR, CHL, M 48, OCHL)

3. Black Star Canyon–Former Cañada de los Indios, name changed with discovery of coal in 1897; one of two routes crossing the Santa Ana Mountains. (CHL, M 69, 70)

4. Blas Aguilar Adobe–Surviving part of the home of Aguilar, last alcalde [mayor] of the village, it may contain a section dating to 1794. (CIHR)

5. Bouchard Invasion Site–Where Argentine pirate Hippolyte Bouchard began his raid on San Juan Capistrano in 1818. (CIHR, OCHL)

6. Carbondale–Town established in 1878 as Harrisburg, changed 1881; name based on discovery of coal, which was mined briefly. (NL)

7. Cook's Corner–Jose Serrano's family resettled here after foreclosure of Rancho Cañada de los Alisos. (M 145)

8. Cristianitos–Portola campsite and place of first recorded Christian baptisms in California. (NL)

9. Dana Point and Cove–Memorialized by Richard Henry Dana in Two Years Before the Mast. (NL)

10. Domingo Yorba Adobe—Home of a grandson of José Antonio Yorba of the 1769 Portolá party. (CIHR, OCHL)

11. East Irvine—Formerly Irvine, established 1888 as a railroad shipping point; also stagecoach transfer point to Laguna Beach. (CIHR, OCHL, M 263)

12. El Toro—Early settlement associated with José Serrano, grantee of Rancho Cañada de los Alisos; Juan Avila of Rancho Niguel; and Dwight Whiting, subdivider and colonizer. (M 183)

13. Flores Peak—Scene of the temporary escape of bandit Juan Flores after the killing of Sheriff Barton and his posse. (CHL, CIHR, OCHL, M 196)

14. Forster City—Unsuccessful subdivision planned by Juan Forster. Its failure led to his loss of Rancho Santa Margarita y Las Flores. (M 199)

15. Gavilan—Stagecoach stop, later Santa Fe whistle-stop. Near site of a pre-contact village, listed as Putuidum in mission records. (M 39,211,410,444)

16. Gobernadora Canyon—Portolá campsite, July 23, 1769, near San Juan Creek. (CIHR, OCHL)

17. Heritage Hill—Serrano Community Park, containing Serrano Adobe and 3 later buildings moved to the site (St. George's Episcopal Chapel, El Toro School and Bennett Ranch House). (NL)

18. Hidden Ranch—Site of pre-contact Indian village, scene of skirmishes by later Indians and whites. (CIHR, OCHL, M 71,247)

19. Juan Avila Adobe—Contains the three remaining rooms of the largest home of the grantee of Rancho Niguel. (CIHR)

20. Juzgado Adobe—Combined courtroom and jail of early San Juan Capistrano, now incorporated into El Adobe Restaurant. (CIHR)

21. Laguna Hills Leisure World—Area includes the site of adobes of Juan Avila and José Serrano, and early 20th century ranch home of Lewis Moulton. (M 183)

22. Las Flores—Site of the July 21, 1769, camp of the Portolá expedition; mission substation of San Pedro (ca. 1823); and the 1867 house built by Marcos Forster. (NL)

23. Limestone Canyon–Home of early mountaineers; takes name from lime kiln installed 1862. (NL)

24. Manuel Garcia (or Garfias) Adobe–Impressive two-story building erected by this Portuguese trader about 1849. (NL)

25. Marcos Forster Home Site–First terra-cotta brick house in San Juan Capistrano (1883), razed in 1967 for a shopping center. (NL)

26. Mission Kiln site–General location, origin of name of Horno (Sp. "oven") Street. (M 253)

27. Mission San Juan Capistrano–Church built in 1806 for mission founded in 1776. (NR, CHL, CIHR, OCHL, M 348)

28. Mission Vieja Ranch–Still a cattle operation. (NL)

29. Modjeska Home–Occupied intermittently by the famed Polish actress between 1888 and 1906. (NR, CIHR, CHL, OCHL, M 357)

30. Montanez Adobe–Around 1794, possibly built for mission Indian converts. To be restored. (NR, CIHR)

31. "Old Mission" Site–Misleading name, because site was probably an outpost of 19th-century Rancho Mission Vieja. (NL)

32. Parra Adobe–Still in good condition, associated with mission ranching activities. (NR, CIHR)

33. Pryor Adobe–A probable mission outpost where hides were stored to await shipment from Dana Point. (NL)

34. Richard Egan Home–Built in 1883 for the Irish "Judge" Egan, a civic leader and arbitrator of disputes. (CIHR)

35. Rios Adobe–Said to date to 1794 and distinguished as having been owned continuously by descendants of the original owner. (CIHR)

36. Saddleback Mountain–Composed of Santiago Peak and Modjeska Peak, each about 5500 feet elevation. (M 356, 535)

37. San Juan-by-the-Sea–Subdivision, developed in 1887 during the land boom, that did not survive the ensuing depression. (OCHL, CIHR, M 506)

38. San Juan (Ortega) Hot Springs–NE of Study Area, it was on the ex-mission rancho of Agua Caliente. (OCHL, M 512)

39. San Onofre–Only location carrying the original name of former rancho of Mission San Luis Rey. (NL)

40. Santa Fe Depot–Built in 1907, now a restaurant and whistle-stop on the rail line to San Diego. (CIHR)

41. Santiago Reservoir (Irvine Lake)–Impounds Santiago Creek. (M 533)

42. Serrano Adobe–Built around 1860; preserved and augmented, and now a focal point of Serrano Community Park and Historical Complex, Orange County. (NR, CIHR, CHL, OCHL, M 543)

43. Silvas Adobe–A surviving example of the simple one-room homes lining Los Rios Street and built during early mission tenure. (CIHR)

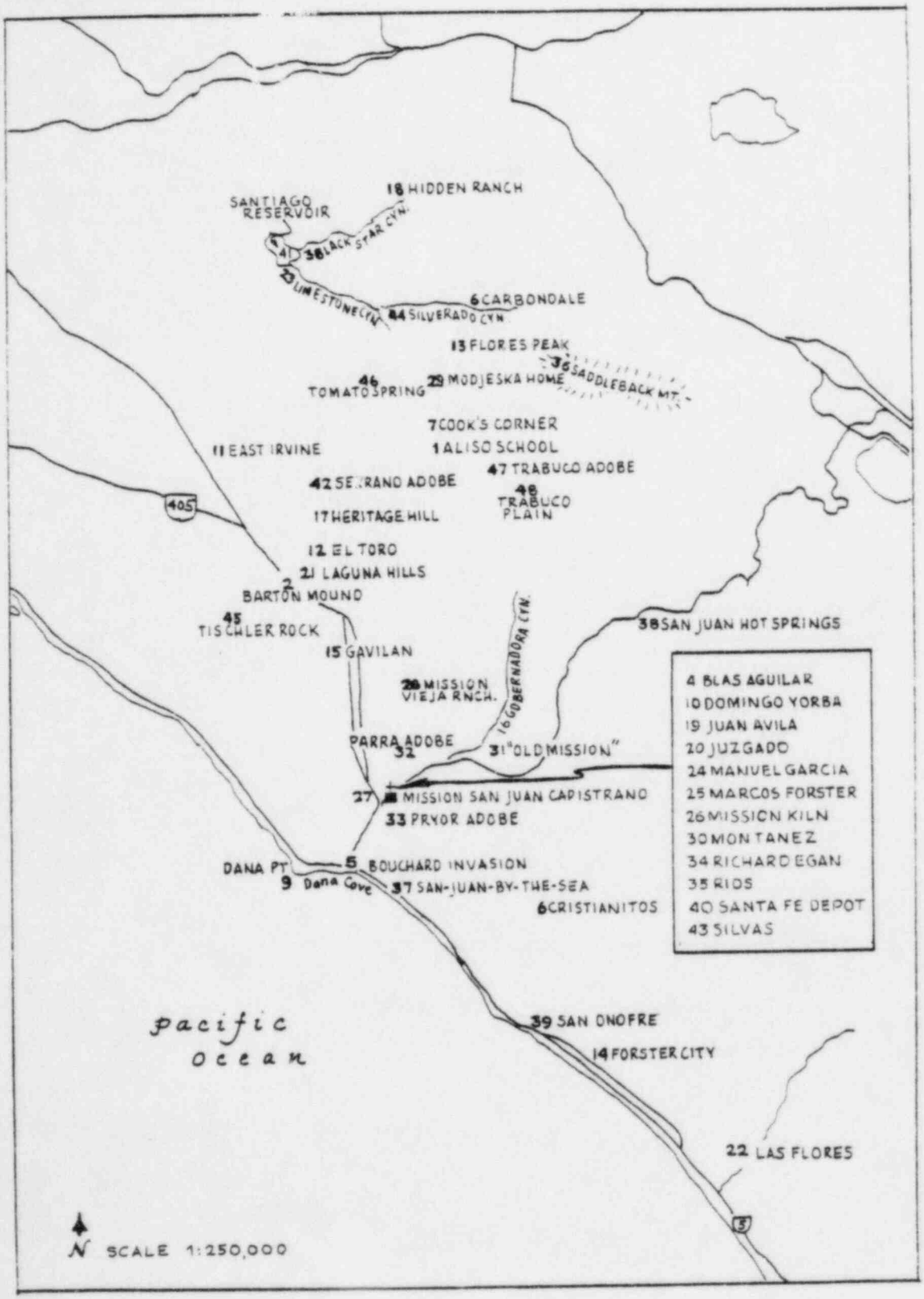
44. Silverado Canyon–Site of purported 1877 silver strike, which changed name from Cañada de la Madera. (CIHR, CHL, OCHL, M 563)

45. Tischler Rock–Has a post-contact painted cave, an adobe site, and an inscribed boulder. (M 606)

46. Tomato Spring–Fourth Portolá campsite in what is now Orange County (CIHR, M 607, OCHL)

47. Trabuco Adobe–A mission structure on the ex-mission rancho of Cerro de Trabuco, occupied until about 1900, when it fell to ruin after roof was removed. (CIHR, OCHL)

48. Trabuco Plain–Portolá campsite, praised by the expedition's chroniclers for its verdure. (CIHR, OCHL, M 611)



MAP 5-1. HISTORIC SITES

CHAPTER VI. ETHNOGRAPHIC OVERVIEW AND ETHNOHISTORICAL BACKGROUND

THE SAN LUISEÑO*-JUANEÑO

By Florence C. Shipek

The San Luiseño-Juaneño are members of the Takic-speaking branch of the Uto-Aztecan family. When Europeans first arrived, they were living in a region bounded by Aliso Creek and Agua Hedionda Creek on the southern California coast and extending inland some fifty miles. The present names of these groups derive from the two missions to which some of their people became attached. Mission San Juan Capistrano was founded in the northern part of their territory in 1776; San Luis Rey de Francia was founded in the south in 1798.

If these people ever used an ethnic or national name for their group, it has been lost through time. Several names that have been suggested do not appear applicable. Acagcheman (Boscana 1933) means the people of the village beside which Mission San Juan Capistrano was established. The term "Capistraneño" (Kenneally 1965:II 380) was initially used by Spaniards to designate the group that came to be called "Sanjuaneño" some time after 1800 (Tac 1952:87). Later, they were designated "Juaneño" by Kroeber (1907).

Puyumkowitchum (True 1966:43) is presumably the word for "westerners" and was probably used by inland people in referring to coastal dwellers.

Quechnajuichom (True 1966:43) is thought to have been the name of the village at which Mission San Luis Rey was located. Quech or Quechla, with variant spellings has been used as the name for this village, but the term means "house" and is more likely a result of faulty communication between Spaniard and Indian. (The Spanish questioner may well have appeared to be pointing at a house when he asked the place name, with the error never being corrected.)

During the mission period, the term "Luiseño" was applied to the Chumash living at San Luis Obispo (Arroyo de la Cuesta 1821), while "San Luiseño" meant those of San Luis Rey (Tac 1952:87). Since the secularization of this mission in 1832, both "San Luiseño" and "Luiseño" have been used interchangeably by various writers (Bean and Shipek 1978:562).

*Corresponds to "Luiseño" in other chapters.

Presently, the people themselves use the term "San Luiseño" when referring to themselves as a group beyond reservation or lineage identity, and their usage is retained in this report.

SOCIAL AND CULTURAL BOUNDARIES

The Juaneño section of the territory extends inland from Aliso Creek on the northwest coast to Santiago Peak, southeast along the crest of the southern continuation of the Sierra Santa Ana, then southwestward to the coast between San Mateo and San Onofre Creeks. San Luiseño territory extends from the last-named point southward along the coast to Agua Hedionda Creek, then inland to the southwestern crest of the San Luis Rey River drainage, crossing the river just below Lake Henshaw Dam. The boundary turns northeast around the southern base of Palomar Mountain, then trends northwest around the eastern base of the mountain and along the eastern side of Elsinore Valley back to Santiago Peak.

The habitat of both peoples included every ecological zone from ocean to mountain: sandy and rocky beaches, shallow inlets, marshes, chaparral, lush grass valleys and slopes, to the large oak groves on the upper elevations of the mountain slopes. San Luiseño territory also included the pine and cedar zones on top of Mount Palomar. The average annual rainfall, ranging from 15 inches along the coast to more than 40 inches on Mount Palomar, nourished flora and fauna that provided a more abundant subsistence than did adjacent regions to the south and east, which received less precipitation.

Although the San Luiseño-Juaneño were bounded on the south by Yuman-speaking Kumeyaay (Diegueño), their other neighbors were all closely related Takic-speakers: to the southeast, the Cupeño; on the east and northeast, the Cahuilla; and to the north, the Gabrielino, who also controlled the offshore islands of Santa Catalina and San Clemente.

In the archaeology, there is evidence of a distinct San Luiseño culture by 1400 A.D. The precontact archaeological complex has been divided into San Luis Rey I (1400-1750 A.D.) and San Luis Rey II (1750-1850 A.D.) by Meighan (1954). True, however, has estimated that the San Luiseño entered the region more than a thousand years ago (personal communication). At the time of European contact and during the next hundred years, the San Luiseño had a policy of aggressive expansion, using both marriage and warfare as means of extending their territory (White 1963; Shipek 1977). By 1850 their boundaries had

expanded since early mission times by 5 to 25 miles to the east and south. Therefore, the boundaries identified for the historic period may also have been expanding during the pre-contact period.

Like the other ethnic nationalities, the San Luiseño-Juaneño were organized into sedentary and autonomous village groups, or bands. Each band had several specific hunting, harvesting and fishing areas, located in diverse ecological zones. These usually included valley floors, slopes, oak groves, and some coastal strand. According to White (1963: 104), when the Spaniards arrived there were approximately fifty villages with populations averaging at least 200. These villages were usually located in sheltered coves on the side slopes, which provided a warm thermal zone, with defensive locations and sources of water nearby. For several weeks of each year, inland groups migrated to their fishing and harvesting spots on the coast. Conversely, coastal groups annually went inland to their mountain territories, where they gathered acorns and pine-nuts and hunted for several weeks during late fall. The major portion of each village's territory had an area of approximately thirty square miles, usually along one drainage basin.

SAN LUISEÑO CULTURE

Subsistence

Within each village territory, land was divided into communally owned areas and family-owned plots. Each family and group restricted its economic activity to the areas it owned, unless permission of another owning group had previously been obtained. Evidence from explorer's journals written in the early contact period indicates that San Luiseño land, like that of the Kumeyaay, was totally managed and that the environment was manipulated to provide sufficient food for populations averaging 6 to 7 persons per square mile (Shipek 1977). Spanish accounts describe most valleys, slopes, and mesas as being covered with grass (Teggart 1906:21-23; Bolton 1927:131-142), while identifying chaparral and wild roses as limited in extent. There were willows, alders, and reeds along river bottoms. Abundant groves of live oak were observed along the routes taken by the Spanish, which followed major Indian trails. A short distance inland from San Juan Capistrano toward Aliso Creek, one of the oak groves was so regular and well-cared-for that it resembled a fig orchard (Bolton 1927:137).

In several places, grass had recently been spot-burned in late July (for example, just north of San Onofre, and a short distance beyond San Juan Capistrano). In the San Luis Rey Valley, Padre Crespi commented in his journal that the valley was so lush it looked as if it had been planted. Regular annual burning is now known to be necessary to maintain grass in this semi-arid part of California (Humphry 1958; Lewis 1973; Stewart 1956).

Grass seeds probably provided 40 percent of the diet in the coastal villages, acorns some 25 to 30 percent. These proportions would have been reversed in the small interior mountain valleys. Bulbs and roots, along with seeds from many annuals and perennials, provided supplemental and emergency foods, particularly carbohydrates. Cacti, yucca, wild grapes, and other plants provided fruit and berries; cactus and yucca blossoms and cactus pads were also eaten. Many broad-leafed annuals and some perennials (such as white sage tips) provided greens, which were eaten both raw and cooked. Mushrooms and tree fungus were favorite delicacies. Teas, some used medicinally, were made from a variety of flowers, stems, bark, leaves, and roots.

Women collected most of the plant foods and men hunted, but this division of labor was not rigid. Men aided in the heavier labor connected with important seed resources, collected plant foods while hunting, and probably managed much of the controlled burning (as did Kumeyaay men). Women occasionally hunted and trapped small game, and collected shellfish, assisted by small children. Women dug bulbs and roots, and prepared mush or pinole by parching, grinding, and cooking various seeds. Large quantities of seeds and nuts were stored, as were large quantities of dried greens and berries.

Major sources of meat were deer, antelope, rabbits, mountain sheep, woodrats and ground squirrels, which were hunted by the men. Whenever a community desired large quantities of meat, all its members participated in deer, rabbit, or antelope drives. Most of the time men hunted alone or in small groups, tracking animals and sometimes running them down; deer were stalked with deerhead decoys. Small game was taken with curved throwing sticks, slings, nets, or traps. In mountain streams, men and boys caught trout and other freshwater fish. Birds that were eaten included quail, doves, ducks, migratory birds, and some songbirds. Along the coast, men hunted marine mammals and caught many types of fish, while women gathered crustaceans and molluscs. All participated in catching grunion.

Men used shoulder-height bows for both hunting and warfare. Arrows had either fire-hardened wood tips or points made of local quartz or felsite. A few obsidian points were obtained from the north and east by trade. Other weapons

included slings, lances, broad-bladed thrusting sticks, and hardwood war clubs. Although men frequently made their own weapons, most of the tools used by both men and women were made by the old men and the lower classes (Boscana 1933:56).

Most tools were made from local materials. In the northern part of San Luiseño territory, however, women prized the steatite cooking bowls obtained in trade from Santa Catalina Island. In the southern and central areas, women used the paddle-and-anvil technique to make brown pottery bowls and jars, which were used for cooking, for storage, and as water containers. Many women excelled in making coiled or twined baskets, which varied in size and shape depending on use: small containers for gathering berries and bird eggs, bowls for cooking and serving, jars for carrying water, shallow trays for winnowing, storage containers, large carrying baskets with round bottoms, and very large intertwined willow-bough granaries (which were generally constructed on a large flat rock). The fine, tightly woven coiled baskets were tan in color and were decorated artistically with designs in black, brown, and red.

Women ground small seeds with oval handstones or shallow-basin metates. They pounded acorns or oily seeds with a pestle in a mortar. All these grinding tools were made from fine-grained local granite. Bedrock mortars and metates were used, when suitable rock formations were available near a village. Other utensils used in preparing food included wooden food paddles, tongs, and digging sticks; dishes and cups of shell; bone awls or prys, and antler wedges. A variety of percussion or pressure flakes, and ground stone tools, were used for cutting, sawing, scraping, prying, drilling, and pounding.

Shelter at night and in inclement weather was provided by conical or hemispherical structures made of reeds, brush or bark, with thatched roofs. However, most domestic activities were carried out nearby in open rectangular structures roofed with brush. Round semi-subterranean sweathouses served for purification and other curing rituals. Although no obvious arrangement of houses was apparent in villages (Boscana 1933: 37), houses were probably grouped by lineages, as they are on reservations today. Centrally located within the village was the house of the chief, or noot (orthography based on Hyde 1971:226). Nearby was the wamkish, or ceremonial structure (Boscana 1933:37), which was encircled by fencing and contained a raised altar with a skin-and-feather image. Only those people who had been initiated into the Chinigchinich cult could enter the fenced area. Inside this enclosure, ritual leaders held ceremonies, including those requiring sand paintings. The ritual leaders made a variety of ceremonial equipment and clothing, which was considered extremely valuable, dangerous, powerful, and sacred. These officials

wore special clothing denoting their rank.

Women wore double aprons of twined cedar bark, in addition to clothing and ornaments denoting their rank. In cold weather, everyone wore deer and otterskin robes, or robes made of strips of rabbit skin wound on lengths of fiber fastened together with twined weft. Feet were protected with yucca-fiber sandals and deerskin moccasins. All wore bracelets, necklaces, and nose and ear ornaments, which were made of shell, bone, stone, or clay.

Life-Cycle

A full round of ceremonies, with impressive rituals, punctuated every event of the San Luiseño life-cycle: birth, boyhood naming, puberty, marriage, curing, death, and several successive memorials after death. In addition, there were ceremonies to put knowledge into a promising child and to take it out of an incompetent one (White 1957:3). Calendrical rites included ceremonies for increasing crops, for dew, for rain-making and rain-stopping; undoubtedly included were solstitial observations. Ceremonies began a war and celebrated a victory. Peace-making ceremonies marked the cessation of hostilities between individuals, between lineages, between factions in a village, and between villages. Intervillage ceremonies occurred when an old noot announced his successor, at his death, at the memorial services later held for him, and for the installation of his successor.

Some of the rituals included in these ceremonies could be viewed by the public and were held outside the fence enclosing the wamkish. The initiations into the Chinigchinich cult, and the rituals that were so sacred that only initiates of this cult might see them, were held inside the enclosure. Only the appropriate ritual leaders entered the wamkish. At the close of the girls' initiation ceremony, the girls, their sponsors, and the appropriate ritualist went away from the village a short distance to a hidden rocky area, where symbolic rock paintings were made for each girl.

Social and Political Organization

The socio-political-religious-economic organization of all the southern California ethnic groups was superficially similar. Thus, the Spanish and later casual observers were unable to discern differences in kinship organization, and major differences in the power and authority of the village chiefs and their associated bureaucracy, or shaman specialists.

Among the San Luiseño, each village was an autonomous

tribelet with a hereditary chief, or noot, who was called the capitan by the Spanish. The noot managed all group activities, religious, economic, and political--including offensive and defensive war (Boscana 1933:43,67). He was assisted by a council of ritualists and shamans, all of whom were initiated members of the Chinigchinich religious cult. All shared access to religious and supernatural powers, but each official was responsible for a different aspect of the economic, political, and religious well-being of group life, as well as for each member of the group.

Their positions, authority, and power were validated by the Chinigchinich religion. Once a decision for some course of group action was made by the noot in council with the ritualists, this decision was communicated to the people by the noot's assistant, and all the people obeyed whatever instructions they had received. They might be told to get ready to go to the mountains, the seashore, or one of their gathering grounds; or to prepare for a group hunt, for war, for peace, or for some ceremony.

Because the population was first displaced and then decimated, some aspects of social and kinship structure have not been clearly defined. However, the society was male- and age-oriented. Patrilineages controlled the inheritance of land and of official positions. Patrilocal residence was preferred, but in the absence of a male heir, inheritance could pass through a daughter to a grandson. Although some researchers have suggested that there was a moiety arrangement at the contact period, this apparent moiety was the result of displacement and depopulation, and the consequent loss of many ritual leaders and noots (Shipek 1977). All available evidence indicates that there were a number of patrilineages in each large village, and that the capitan recognized by the Spanish was the leader of the largest, most powerful patrilineage.

Traditions

The traditions and folklore of the San Luiseños are intimately tied into their religious beliefs and myths. The origin myths of the coastal peoples (Boscana 1933) seem to indicate that they came from the region of the Salton Sea at some long past period (Shipek 1978a). Similarly, the origin myths of the inland San Luiseño seem to indicate that they came from the immediate north/northeast of their present location along the San Luis Rey River, but had moved around to a number of hot springs in the San Jacinto-Perris-Temecula region before settling along the river.

For both peoples, the time of origin is legendary, and for the coastal people, at least, the time was probably more

than a thousand years in the past. Again, the traditions indicate that as villages and lineages prospered and populations increased, part of their people would go on to found a new village, thus advancing the territorial control of the San Luiseño.

Knowledge-Religion

Again, all the systematic knowledge--weather, medicine, and star lore; environmental knowledge of plants, animals, and seafood; as well as philosophy, world view, child rearing, and educational practices--was thoroughly integrated into religion. The extremely complex and abstract philosophy reflected in the Chinigchinich religion, mythology, and sand paintings impressed DuBois (1908:74), Kroeber (1925:656,664) and others who have studied it. Boys and girls, initiated into the cult at puberty, were taught about the supernatural beings who governed, watched over, and punished any infractions of the behavioral rules. The appropriate ritual priests instructed the boys and managed their ceremonies, which included drinking datura for its hallucinogenic effects, ritual dancing, sand painting, learning songs and rituals, and a series of ordeals. During the girls' ceremony--which included ritual dancing, "roasting" in warm sand, sand painting, and rock painting--several old women gave instruction in the knowledge necessary for married life and child rearing.

The rituals performed and conducted by the shaman-priests included a dramatic reenactment and recitation of the sacred oral literature, in which rituals had been ordained that not only described the origins of the world and the creation of plants, animals and humans, but also controlled their subsistence. Strict rules and procedures governed all ceremonies: all must be performed perfectly and upon the appropriate occasions. The various life-cycle ceremonies generally lasted from several days to a week; several villages were invited, and each day's (and night's) ritual was conducted by the ritualist and noot from a different village (DuBois 1908:82,100). All ritualists were paid by the family or group for whom the ritual was given.

This reciprocating network of officials maintained the sacred ritual paraphernalia, which circulated among them as required gifts (DuBois 1908:98); in essence, "money" was being exchanged for food. The village sponsoring the ceremony distributed food and valuables to all guests attending from other villages.

The religion centered about a dying god, Wiyot (Ouiot), teacher of most cultural knowledge, son of Earth Mother, and one of the first creations. Variant versions exist (Boscana 1933:27-36; DuBois 1908:128-147) but contain the same primary

features expounding the same world view. Wiyot, creator and teacher, gave knowledge about the world and subsistence to the elders. One type of knowledge--about a specific food resource, or how to control the weather, or some other aspect essential for the well-being of the people--was given to each elder. Thus, a body of specialists was created, who managed all knowledge necessary for subsistence. Upon dying, however, Wiyot "threw away" knowledge that he had not yet given out. This "thrown away" knowledge was scattered about, but could be acquired only by those who searched for it and who had the proper qualifications.

HISTORY

Mission Period

Although there had been earlier explorations along the coast by Cabrillo and Viscaíno, the first permanent contact with Europeans began in 1769, when Portolá and Crespi explored northward from San Diego in search of Monterey harbor. The mission and presidio at San Diego were established at that time, followed by the presidio at Monterey. The coastal route north followed well-defined Indian trails from San Diego, through San Luis Rey (Oceanside), San Onofre, and San Mateo to San Juan Capistrano, where it turned inland and went north to San Gabriel. This route eventually became known as El Camino Real. Missions were spaced about a day's journey apart along this route between San Diego and Monterey. San Gabriel, founded in 1771, was one of the first intermediate missions. Preparations to found Mission San Juan Capistrano in 1775 were delayed by the uprising at Mission San Diego in November; it was founded late in 1776 with supplies and aid from San Gabriel.

San Juan Capistrano was operated in standard mission fashion, by bringing Indians from surrounding villages into the mission compound, training them in the new religious forms, and teaching them to plant crops imported from Europe and Mexico--wheat, barley, various vegetables, fruit trees, and grape vines. They were also taught to care for the imported domestic animals--cows, sheep, goats, pigs, horses, and chickens. The missions taught the entire complement of Spanish laboring-class culture and technology that went with the new crops and animals. Unfortunately, crowding large groups of Indians into small buildings at the mission gave full sway to contagious diseases, particularly during the periods of low nutrition caused by the droughts that began in 1779 and recurred until secularization of the mission in

1832. Population decline resulted.

A different system was used at Mission San Luis Rey, which was not founded until 1798. Padre Antonio Peyri, who founded San Luis and was in charge until its secularization in 1832, followed the pattern used at Mission San Diego, leaving most of the converted Indians in their own villages. He brought them to the mission for their initial training and again during their turns to work for the mission, and he kept at the mission the unmarried girls as well as the trained craftsmen with their families. As a result, the Indian socio-political-religious-economic structure, although modified, continued to function at San Luis Rey.

During periods when the San Luiseños were not performing communal labor for the mission, they were laboring for themselves--planting their own gardens, acquiring domestic animals and fruit trees, and also maintaining some of their aboriginal land-management practices. In contrast to most other missions, at San Luis Rey the birth rate exceeded the death rate (except during the first few years). Depopulation and disease occurred primarily during the extreme droughts of 1779-1783 and 1795-1805 (Shipek 1977).

There are relatively few records for the period of Mission San Luis Rey's secularization, 1832 to 1846. Those that are available indicate this was a period of political turmoil, exploitation by Mexican rancheros, and destruction and despoliation of mission properties. However, a few of the more hispanicized San Luiseño obtained land grants from the Mexican governors of California. (Buena Vista, south of San Luis Rey, was one such grant.)

At least one San Luiseño Indian pueblo was formed, Las Flores. After several years of troubles with Pio and Andrés Pico, the Indians were forced to leave Las Flores, and the Picos were supposed to pay them for the improvements they had made (Shipek 1977:178). The records indicate that Las Flores had 32 families with 54 sheep, 69 horses, 3½ yoke of oxen, and 4 cows and their calves. The Indian families had possibly two leagues of cultivated land, in addition to vines worth $3000, trees worth $100, fencing at $100, and houses worth $100 (Engelhardt 1921:131).

Originally, the Mexican governor planned to move the San Juan Capistrano Indians to an outlying rancho, establishing an Indian pueblo. However, most of the people wanted to remain near the mission, where they had houses and irrigated fields. Therefore, in 1841, a regular pueblo was formed, with both Indian and Mexican receiving house lots and agricultural lands. Because of droughts and floods, however, the Mexicans abandoned their places within two years. The Indians remained, irrigating their fields at least until 1857, when Judge Benjamin Hayes noted that some recently arrived "Sonorans" had

usurped their lands and waters (Wolcott 1929:166).

Other records indicate that for the San Luiseño who were not in the coastal region, the basic tenure system of the ranchería (village) continued, with the new European crops and animals being incorporated into the traditional pattern (Shipek 1977:179). When the American army entered after 1846, officers commented that these were the most comfortably situated Indians they had seen west of the Mississippi. All along the main travel route used by Americans coming to California from the East, the San Luiseño increased their crop acreage, and began selling corn, wheat, flour, fruit, and animal produce (Shipek 1977:189).

American Period

The sale of produce continued, although the Indians' land base was continually being reduced because of pressure from American farmers. By 1860 the San Luiseño still had at least 560 acres given to the production of wheat, corn, beans and vegetables--in addition to fruit orchards, vinyards, and livestock (Shipek 1977:193). The land Americans were farming was land that had been cleared and leveled by Indians, that had been taken--or occasionally purchased--from them. Indians were still working the land, but as laborers for white farmers. As a result of a complex series of conflicting instructions, incomplete instructions and deliberate actions on the part of various officials, few of the Indian rancho grants and none of the Indian pueblo lands were confirmed to Indians.

Those Indians who had been dispossessed of their agricultural lands turned to work in the cities, or on the farms and ranches throughout southern California. San Luiseño officialdom, which had formerly sought knowledge about the natural environment, now sought knowledge about the economic-political environment that surrounded them. They sent petitions to Washington, and attempted to file for their lands under the new procedures; meanwhile, in order to live, they sought new labor opportunities. Many learned where the ranch jobs were and led crews for sheep shearing, cattle drives, fruit picking, plowing, and harvesting. San Luiseño-Juaneño leaders became known throughout southern California as reliable managers of labor forces (Shipek 1977).

Not until 1875 were any lands set aside as reservations by executive order. These reserved land for only a few of the existing San Luiseño villages--Rincon, Pala, Pechanga, La Jolla. Left without land were the villages still surviving at San Juan Capistrano, San Luis Rey, and Los Nietos. The Indian villages still existing on rancho grants were either considered as the rancher's labor force, or were subject to forced removal. (These included the villages at Santa

Margarita y Las Flores, Buena Vista, Guajomita, Temecula, and Pauma.)

By the time reservations were trust-patented under the 1891 Act for the Relief of Mission Indians, only the villagers at Pauma had lands purchased for them on the rancho grant to provide a reservation. No attempt was made to provide San Luiseño-Juaneño Indians still living near the coast with lands; thus, the people at San Luis Rey, Las Flores, Buena Vista, Guajomita, San Juan Capistrano, and Los Nietos were left to fend for themselves.

At least until 1930, the groups at San Luis Rey and San Juan Capistrano were still large enough to participate ceremonially with the reservations and to function economically through the labor-leader system. The intermarriage system still functioned to the extent that members of these coastal groups were intermarrying into inland reservations, including Cahuilla and Kumeyaay, and members from inland reservations were intermarrying and moving into the coastal areas. The San Luiseño-Juaneño reputation as reliable and excellent laborers continued until the Great Depression of the 1930s, when competition for jobs became difficult.

Population

When Europeans arrived, there were probably 10,000 San Luiseño-Juaneño people. Their population had a density of 6 to 7 per square mile--the same density at which commercial plow agriculture began in the United States as the frontier moved westward (Shannon 1945).

Because of extreme droughts and the diseases rampant under the Spanish mission system, the population was reduced to approximately 4080 by 1828 (Shipek 1977:272). By 1832 there were 3834 baptized Indians, with some unconverted people still living in mountain villages. The period from 1830 to 1840 was a time of good rainfall, and in spite of economic and political upheavals, the Indian population increased. From 1840 on, however, there was a series of severe droughts, and political and economic pressures from Mexicans and then Americans increased. As a result, by 1860 only 1643 Indians were counted by the federal census taker. (There may have been several hundred more in Los Angeles and in hidden valleys throughout the mountains, however.) Of those officially counted, 484 were identified as Juaneños: 226 at San Juan Capistrano, 91 nearby at Los Nietos, and 127 at Santa Ana, the remainder scattered. Of the San Luiseños, 107 were at San Luis Rey.

The figures compiled by the Bureau of Indian Affairs have always omitted the people of the coastal villages, for

whom no reservations were set aside; thus, their tallies are always incomplete and should be increased by several hundred. The BIA count of on-reservation Luiseños has been:

1885....1142
1895.... 948
1914.... 983
1940.... 721
1960....1757

The 1973 figure of approximately 1000 (Shipek 1978b:612) represented only enrolled reservation members, and for many reservations does not include the generation born since 1955.

Conclusion

The San Luiseño-Juaneño have occupied their coastal-to-mountain territory in southern California for more than a thousand years, and have learned to survive long and severe droughts as well as floods and earthquakes. Throughout this time, they developed a world view that rewarded the search for new knowledge and the maintenance of beneficial knowledge. This world view and the socio-political-economic structure that it engendered have enabled the San Luiseño-Juaneño to survive the vicissitudes and problems that resulted when their environment was changed by the invasion of first Spanish and then American settlers.

Although these people lost ownership of land and lost political dominance, they have continued to live in the same major villages--though reduced in number and size. Through the years, even the non-reservation peoples have remained near their former villages. By working hard, many have bought homes in the towns that have grown up about their former villages at San Luis Rey, or Oceanside, and at San Juan Capistrano.

It should be noted that many documents in the archives of San Juan Capistrano Mission and in the various J. P. Harrington Collections at Berkeley and the Smithsonian Institution, which have not yet been researched, could change or modify aspects of this report.

THE GABRIELINO

by Lowell John Bean

The Native Americans who were called "Gabrielino," through their association with Mission San Gabriel, occupied territory to the north of Aliso Creek, in the northern part of the Study Area. The density of archaeological materials in the area of Aliso Creek suggests considerable occupancy, although the heartland of their culture was the San Pedro/ Los Angeles area.

The Gabrielino were closely related to, and were allied culturally and politically with, the Luiseño and Juaneño (Bean and Smith 1978). Although Gabrielino subsistence patterns and the general tenor of their social organization were somewhat similar to those of nearby groups, their territory was richer in ecological resources. This richness may account for the fact that Gabrielino subsistence economy and social organization were more complex than those of the Luiseño and Juaneño. They were also engaged more extensively in trade and exchange.

There is some confusion as to which Native American group the missionary Geronimo Boscana was referring to when, between 1814 and 1825, he wrote a description of the Chinigchinich religious cult (published in English in 1933). It has been assumed, however, that major religious concepts originated in the Gabrielino area, including those involved with Chinigchinich, the religious personage upon whom Luiseño and Juaneño religious systems were also focused.

Descriptions of the Gabrielino are not as complete as those of either Luiseño or Juaneño, because their population was apparently decimated earlier and more severely. Primary documentation for the Gabrielino consists of a few random statements by missionaries and the 1852 letters of Hugo Reid, who had married a Gabrielino woman (Heizer 1968).

As a group, the Gabrielino apparently were dispersed several generations ago. Individual Gabrielinos moved into the hinterlands, where they became associated with Cahuilla, Luiseño, and Cupeño people; others remained in the coastal area. The Gabrielino have lacked visible identity as a group, however, and researchers familiar with the area have assumed that these people were "extinct" (Bean and Smith 1978:538).

One of the benefits of this study has been the unexpected discovery that Gabrielinos exist in larger numbers than had previously been recognized. Although they apparently lack the organizational structures that are emerging among the

Juaneño, they have retained personal identification as Gabrielinos. This demonstrates unusual persistence, because they have not had the usual institutional supports for ethnicity that have been available to other groups.

As with the Juaneño, however, the new focus of public and governmental interest on Native Americans has provided a catalyst for increased visibility of these people, who since the secularization of the missions in the 1830s have been dispersed along the coast from San Diego to Monterey as well as in interior regions. Although the Gabrielino have not functioned as a sociopolitical unit, an informal network of Native Americans who identify themselves as Gabrielinos has endured.

CHAPTER VII. RESULTS OF ETHNOGRAPHIC RESEARCH

Three groups of Native Americans--Juaneño, Luiseño, and Gabrielino*--have territorial associations with the Study Area that predate the arrival of non-Indians. CSRI has interviewed an available sample of the Juaneño, Luiseño, and Gabrielino, and reports on their attitudes toward the San Onofre project are included here.

JUANEÑOS

Descendants of Native American converts who were associated with the mission between 1776 and 1833 have continued to live in the vicinity of San Juan Capistrano. Many of them have maintained strong ties with Roman Catholicism and the mission, while at the same time identifying as a Native American group. Although the Juaneño group has never had a reservation to provide a land base, it has been able to persist and maintain a sense of ethnic identity (for discussion, see Chapter VIII).

Despite their maintenance of ethnic identity, Juaneños are comparatively well integrated into the mainstream of American culture. In the absence of a reservation, they have had no continuing relationship with agencies such as the Bureau of Indian Affairs, which has played so dominant a part in the lives of many Native American groups. Juaneños have never had a council that has official status as the governing body of a tribal group. (This situation poses some problems, when it is recommended that an individual or corporation consult a representative Juaneño group.)

There are two organizations that have a number of Juaneños as members, but neither has official standing in the sense that formal tribal councils have. Both were set up in order that programs directed primarily toward Native Americans could be funded by available federal monies. One organization is the Capistrano Indian Council, Inc. (CICI), set up to take advantage of Comprehensive Employment and Training Act (CETA) funds. This non-profit corporation reports that it presently

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*Orthographies from Handbook of North American Indians, Vol. 8, Smithsonian Institution, Washington, D.C., 1978.

has 500 Native American members and 200 supporters, of whom 70 adults and 210 children are Juaneños. The CICI programs are concerned with the preservation of the Native American cultural heritage, as well as with youth development, senior citizens, and legal assistance. It has plans for the establishment of a Juaneño Cultural center.

In accordance with federal guidelines, CICI funds must be dispersed without regard to ethnic identity, with eligibility based on 15 months' unemployment and a previous income below the poverty level. The CICI is therefore not an exclusively Native American organization. Four of the CICI's 29 employees are Juaneños; most, but not all, of the other employees are Native Americans from other groups.

The CICI is actively monitoring the impact of development on archaeological sites in Orange County. Its present concerns are: possible misuses or destruction of the Newland House (site Ora-183) in Huntington Beach, believed to be an Indian burial site; the Aliso Viejo project, which proposes the development of an initial block of 3200 homes along Aliso Creek west of Interstate 5; and the future of a site at Dana Point (Ora-434). This last site in particular has caused controversy. Some Juaneños want to obtain the land (about 5 acres), on which a traditional girls' initiation site is said to be situated, and create a cultural center; other Juaneños want to move the central feature of the site to another place. A group outside the Native American community would like to develop the area commercially.

The preservation of artifacts is a genuine concern of the Juaneño people, most of whom agree that to maintain cultural continuity a permanent structure is needed for their display. Generally speaking, there is also high sensitivity with regard to burial grounds (see Table 7-II).

The other organization that has a number of Juaneños as members is the Parental Advisory Committee (PAC), whose 14-member board, most of whom are Juaneños, administers Title IV-A funds for augmenting Indian education. These funds are provided to the Capistrano Unified School District but are administered and controlled exclusively for Native American children. The PAC brings together parents who sometimes involve themselves in issues beyond their responsibility for administration and control of the Title IV-A funds. In the view of some of the people interviewed by CSRI's staff, PAC members more truly represent the Juaneño community than does CICI.

The primary problem facing Juaneños, as well as other residents of the San Juan Capistrano area, is the rapid population growth and attendant real estate development occurring in the area. Negative feelings toward non-Indian

encroachment were consistently expressed by the Juaneños interviewed by CSRI teams, along with a high degree of despondency because much of their former territory is now privately owned land whose managers do not allow access.

Perhaps because the Juaneño have never had a reservation assigned to them, they have strong feelings that all the land is theirs. They resent having to pay entrance fees to traditional gathering grounds such as Capistrano Beach. Within a span of 10 to 15 years a small community where Juaneños had a well-established sense of place has greatly increased in population, along with the rest of Orange County. Consequently, Juaneños are suffering from culture shock. "Why don't they stop the flow of people?" is a comment frequently heard. Urban expansion provides more jobs for Native Americans, however, and more government funding.

TABLE 7-1. INDIVIDUAL RESPONSES OF JUANEÑO

Symbols are: +, positive response; –, negative response; 0, no opinion or no response; NE, respondent believes there would be no effect. Symbols applying to disposition of human remains and artifacts are: DND, do not disturb; R, rebury; RNA, return to Native Americans; RTL, reroute transmission lines; NAD, allow Native Americans to decide; S, study them; M, place in museum or other repository; and HM, establish historical monument. (P) indicates an activity that occurred in the past.

Respondent	Exchange w. UNTL	Does S. California Need More Energy?	Knowledge of Archaeological Sites	Effects on Archaeological Sites	What To Do with Burial Grounds and Remains	What To Do with Artifacts	Knowledge of Study Area Plant Resources	Effects on Plant Life	Knowledge of Study Area Animal Resources	Effects on Animal Life	Knowledge of Ocean Resources	Effects on Ocean Resources	Effects on Health	Knowledge of Mineral Deposits/Food Sites	Effects on Mineral Deposits/Food Sites	Effects on Rock Art	Knowledge of Sacred Areas	Effects on Sacred Areas	Knowledge of Upgrade Sources	Knowledge of Trek	Knowledge of Past Territory	Knowledge of Migratory Patterns	Effects on Scenery	Effects on Recreation	Effects on Economy
1	+	–	+	–	DND/R	NAD/M	+	NE	+	NE	+	0	NE	+	0	–	–	0	+	–	–	+	–	0	0
2	–	–	–	–	R	R	+	–	+	–	+	–	–	+	–	–	–	0	NE	–	+	–	–	–	–
3	+	0	–	–	DND/R	M	+	NE	+	–	+	NE	–	+	NE	–	–	0	NE	–	+	+	–	–	–
4	–	–	–	–	DND/ R/RTL	M	+	–	+	–	+	–	–	+	NE	–	–	–	+	–	+	–	–	–	–
5	–	+	+	–	DND/R	M	+(P)	0	+(P)	0	–	NE	–	–	0	–	–	–	NE	+	+	0	–	–	0
6	0	+	0	–	DND/R	M	+	0	0	0	+	0	–	0	0	0	0	0	0	0	0	0	0	0	NE
7	–	+	+	–	R	M	–	NE	+	–	+	–	–	+	0	–	–	0	+	–	+	+	–	–	0
8	0	+	+	–	R	S	+	–	+	–	+	–	–	–	0	–	+	–	+	+	+	+	–	–	–
9	–	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	–	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	–	+	+	+	DND/R	S/R	+	0	+	0	+	–	–	+	0	0	–	0	+	+	+	+	–	–	–
12	–	+	–	NE	M	M	+	0	+	0	+	NE	0	–	0	NE	–	0	+	0	+	–	–	NE	+
13	0	0	+	–	R	M	+	0	+	–	+	0	NE	–	–	–	+	0	+	–	+	0	–	NE	0
14	+	+	+	–	DND/R	M	+	0	+	0	+	NE	0	0	0	–	0	0	+	0	+	+	–	–	–
15	–	–	+	0	DND	0	+	–	+	–	+	–	–	+	0	0	+	–	+	0	0	+	–	–	–
16	+	+	+	–	R	M	+	0	+	0	+	0	NE	0	0	–	–	0	+	–	+	–	–	NE	+
17	–	+	+	–	RTL/ DND	M	+	–	+	–	+	–	–	0	0	–	+	–	+	–	+	+	–	–	–
18	–	–	+	–	DND/R	M	+(P)	–	+	–	+	0	0	+	0	–	+	–	+	–	0	+	–	–	–
19	–	0	+	–	DND/R	M	+	–	+	–	+	–	NE	0	0	–	–	0	+	–	+	–	–	–	–
20	–	–	+	–	DND/R	M	+(P)	–	+	–	–	–	–	0	0	–	+	0	+	+	+	+	–	–	–
21	–	–	+	–	DND/R	M	+(P)	–	+	–	+	–	–	+	0	–	+	0	+	–	+	+	–	–	–
22	+	+	+	0	DND/R	M	+(P)	0	+	–	+	–	NE	+	NE	0	+	–	+	+	+	–	–	–	NE
23	–	0	0	–	RTL/R	M	+(P)	–	0	–	0	–	–	0	0	0	0	0	0	0	0	0	–	0	0
24	–	–	+	–	DND/R	M	+(P)	–	+	–	+	–	–	+	NE	–	–	0	+	–	+	–	–	–	–
25	–	+	+	–	RTL/ DND/R	M	+(P)	–	+(P)	NE	+	NE	NE	+	–	–	–	0	+	–	+	–	–	–	0
26	–	0	+	–	DND/R	M	+(P)	–	+(P)	–	+	–	–	–	0	–	–	0	+	–	0	+	–	–	–
27	0	+	+	0	DND/M	M	–	0	–	–	–	NE	NE	–	0	0	–	–	–	–	+	–	–	0	+
28	0	0	0	0	0	M	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0
29	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	+	0	–	NE	R	0	–	0	+	0	0	0	NE	+	NE	0	–	0	–	–	+	–	NE	NE	NE
31	–	0	0	0	0	0	0	0	0	0	0	0	–	0	0	0	0	0	0	0	0	–	0	0	0
32	0	0	0	0	R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+
33	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	–	0	+	–	DND	DND	+(P)	–	0	–	0	0	–	0	–	0	+	0	+	+	+	+	–	–	0
36	–	0	+	–	DND/ RTL	M	0	0	–	–	–	–	–	0	0	0	+	0	+	+	+	+	–	–	–

Table 7-II. Summary of Juaneño Responses (N = 36)

Concerns	Yes		No		No Opinion		No Response	
	No.	%	No.	%	No.	%	No.	%
Favor San Onofre HVTL	8	22	21	58	5	14	2	6
Feel more energy is needed in Southern California	13	36	8	22	3	8	12	34
Negative effects on archaeological sites	22	61	3	8	1	3	10	28
Negative effects on mineral deposits/tool sites	4	11	5	14	2	6	25	69
Negative effects on rock art	18	50	1	3	1	3	16	44
Negative effects on sacred areas, places of power	7	19	1	3	2	6	26	72
Concern regarding burial grounds	29	81	0	0	0	0	7	19
Concern regarding artifacts	27	75	0	0	0	0	9	25
Negative effects on plant resources	14	39	3	8	6	17	13	36
Negative effects on animal resources	19	53	2	6	5	14	10	28
Negative effects on ocean resources	15	42	6	17	2	6	13	36
Negative effects on health	18	50	8	22	2	6	8	22
Negative effects on scenery	27	75	1	3	0	0	8	22
Negative effects on recreation	20	56	4	11	2	6	10	28
Negative effects on economy	15	42	7	19	6	17	8	22
Knowledge of archaeological sites	22	61	5	14	0	0	9	25
Knowledge of mineral deposits/tool sites	13	36	6	17	0	0	17	47
Knowledge of sacred areas, places of power	10	28	15	42	0	0	11	31
Knowledge of plant resources	24	67	3	8	0	0	9	25
Knowledge of animal resources	24	67	2	6	0	0	10	28
Knowledge of ocean resources	21	58	4	11	0	0	11	31
Knowledge of stories, legends	22	61	5	14	0	0	9	25
Knowledge of trek	7	19	16	44	0	0	13	36
Knowledge of migration patterns/trade routes	14	39	10	28	1	3	11	31
Knowledge of past territory	22	61	1	3	0	0	13	36

Attitudes Toward the Project

Of the 36 Juaneños who were asked to comment on the San Onofre project, 21 (58%) were opposed to it, 8 (22%) favored it, and 7 (20%) had no opinion or did not respond to the question. The fact that the project is associated with the economic growth and development of the area appeared to be a major reason for Juaneños' opposing it.

One respondent said, "It is bad enough as it is. There will be more houses and more people. Even the open land will be used, and there will be more people. I'll be moving up north because I think it is very bad here."

Another said, "I don't think they should do these things. They'll just destroy the scenery and everything. It's been good enough until now. I think there are enough people. Why don't they stop the flow of people?"

Four additional comments were:

> "Leave everything like it is, but do not enlarge the power line."
>
> "I'm all for no more people moving into the area."
>
> "There is no reason for it. They have got all the power they need. It is messing up a lot of things."
>
> "They don't have to do it. We don't need nuclear power plants."

Comments from those favoring the project reflected their different backgrounds. Two respondents said that they or their relatives worked at the San Onofre Nuclear Generating Station. One added, "I don't see anything wrong with it. I work at the San Onofre Nuclear Power Plant."

The fact that the line was being built parallel to an existing line appeared important to another respondent, who said he was pleased that they were using a presently established corridor but thought that it would nevertheless impair the visual integrity of the area. Concern about economic growth prompted another respondent to say, "I think they should build it because we do need it. Last summer we had little blackouts. The lines aren't pretty, but I think we need the power."

Several respondents favored the project, with reservations. One said, "Well, the way things are right now, I guess I'm for it. But instead of messing up burial grounds of Indians, they ought to go around them. The burial grounds of Indians are sacred. They should go around them. Bypass them."

Another said, "I'm all for it--if they would protect the land as they go along. But you know how they are--a big company, and they don't care.

Energy Needs

On the subject of more energy for southern California, 13 (36%) of the respondents felt there was such a need, 8 (22%) felt no more was needed, and 15 (42%) had no opinion or no response. Many who felt more energy was needed also expressed concern about the growth that more energy stimulates (that is, about the indirect impact of the project). One respondent said, "We need power lines because the population is getting bigger and bigger and bigger. And what are we to do? It's just getting to be too much here."

Another said, "We do need more. We need all the energy. But they should put a stop to the building, and then we wouldn't need all the energy. As it is, we are running out of what we have now. We should stay with electric energy, but we are using everything up now as it is." Another respondent felt that more power is needed, but not from nuclear power plants.

Additional comments were:

> "We need more energy because there are a lot of new homes in the area, though."
>
> "We need more since there is so much building going on in the area."
>
> "Yes, I think we need more power. I don't want brownout."
>
> "These kinds of things are needed, but should take caution in regard to the land."

The concern about growth was also expressed by those who felt that more energy was not needed. One respondent said, "More power equals more people equals more need for the land. That's why I'm opposed to it. If we needed it for the present population that's one thing. But if they attract more people with it, there goes the area."

One respondent who felt that conservation was needed said, "I believe people should conserve a little bit, and use the power that we do have a lot more efficiently. On the other hand, with the influx of people, you do have to have some sort of growth. But I still think that conservation is more important than adding new power sources to the area."

An additional remark by one respondent summarized the sense of resignation expressed by many: "I wish things were like they used to be. You see the way houses are being built, then more people come in. I think it was better the way we had it in the old days."

Archaeological Sites

Twenty-two (61%) of the respondents named specific sites that had archaeological resources and 5 (11%) said they knew no such sites. Nine (25%) did not respond to the question. Although San Juan (or Ortega) Hot Springs* are outside the immediate Study Area, they were mentioned by 9 respondents who felt this site was important.

The "Old Mission" site, Mission Vieja,* was listed by 6.

Five said there were sites up San Juan Creek,* including grinding stones and rock art, which should not be impacted. They gave no specific locations for these sites.

The Trabuco* area was mentioned by several as containing village sites and campgrounds.

Black Star Canyon was also mentioned as an area where there were habitation sites.

The "girls' initiation site" at Dana Point (Ora-434)* was named by 4 respondents. Additional areas mentioned were O'Neill Park,* O'Neill Ranch* (Tenja Trail), Remmer's Ranch* (no longer extant as a ranch, but is still referred to as a geographical location), a curing site off Del Obispo,* mud baths at Chiquita Canyon,* "Gossip Rock,* and burial grounds near Colony Kitchen.*

The opinion of 22 (61%) of the respondents was that the project would have an adverse effect on archaeological sites. Only 3 (8%) felt there would be no impact, while 10 (28%) did not respond, and one person had no opinion.

The question of effects on archaeological sites often elicited responses regarding burial grounds, with many respondents viewing archaeological sites and burial grounds as the same thing. Although burial grounds will be considered separately, the statement of one respondent about them is included here because it so well expresses the sense of prior and continuing land ownership that is typical of respondents.

> They have no business digging up the old Indian graves. Really, what I think is that they should leave Indian territory alone. They have no business doing that. It belongs to the Indian people. They have taken everything else away from the Indians. Now they want to destroy the old

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*See Ethnographic Site Map.

Indian burials. What more do they want? I don't think that is right. This is Indian land, not white peoples' land.

With regard to effects on archaeological sites, another respondent said:

> Terrible! I have been out there looking at the country before they fuck it up--and the country of the old people is so nice, but the power lines are ugly. If it must be built, they should go around archaeological sites. They should build it where there are no sites.

Another respondent said:

> Due to the nature of access roads and the need for heavy machinery, they would be crushing the subsurface area, and bringing people on their lunch hours who are working on the project to do a little rockhounding and looking for projectile points. There are a lot of indirect effects. I would prefer it go around.

Additional comments were:

"If the power line crosses some sites, then it would affect them. I'm against that."

"I feel that it should be stopped."

Mineral Deposits

Asked if they knew of mineral deposits or tool sites, 13 (36%) said yes, 6 (17%) said no, and 17 (47%) gave no opinion or no response. Clay was listed as an important mineral deposit by 7 people (19%). Several felt clay was important because it had been used in the creation of the Juaneño by Chinigchinich. Others viewed clay as important for pottery and paints.

One person said that the clay paints from Starr Ranch were used by his people to paint the inside walls of Serra Church. He added, "If the power line goes through the middle of the clay, it will ruin it."

Another source for clay was listed as San Juar Creek, which was also discussed as a source for stone tools.

In addition, Black Star Canyon and Trabuco Canyon were described as important areas for mineral deposits and material

for tools. Only 4 (11%) felt there would be negative impact on mineral deposits, 5 (14%) that there would be no impact, and 27 (75%) had no opinion or made no response.

Rock Art

There appeared to be little knowledge of rock art, with only two respondents expressing such knowledge. One person said there was a rock art site near the project right-of-way but was not specific as to location. The other said there were pictographs up San Juan Creek.

Despite the low level of knowledge regarding rock art sites, 18 (50%) of the respondents felt that the project would negatively impact rock art. Only one person felt there would be no effect, and 17 (47%) expressed no opinion or made no response.

A major concern was that the project would increase access to such areas, especially by off-road vehicles, and that this would cause negative impact. One person said, "I wouldn't like that at all. I get a bad feeling out of that. Like Black Star. It would be terrible to destroy that."

Sacred Areas/Places of Power

Knowledge of specific sacred areas/places of power was claimed by 10 (28%) of the respondents. The "whole area" was defined as sacred by 3 (8%). Others claimed to know nothing about sacred places or did not respond to the question.

Burial grounds were specifically listed in response to this question by 3 respondents (8%), but later, in response to specific inquiry, most said burial grounds are sacred.

Mission San Juan Capistrano was described as a sacred site by 2 people, as was the "Old Mission" site, where according to local legend, bells of gold are buried. One person said the swallows were sacred.

Additional sites named were San Juan (Ortega) Hot Springs, a site reputed to be a girls' initiation site (Ora-434), and Stone Hill, near Del Obispo.

Only 7 (19%) felt that the project would have negative effects on sacred sites. This is in contrast to the high degree of sensitivity regarding burial grounds. One respondent

felt there would be no impact. The remaining 28 (78%) gave no opinion or no response. Additional responses were:

> "I'm totally opposed to the line going through these places."
>
> "To us it is something valuable. To the white people it means nothing."
>
> "I think that SCE should be held responsible for any sacred sites destroyed."

Burial Grounds

The highest area of sensitivity among Juaneños was the possible disturbance of burial grounds, with 29 (81%) expressing concern, and the remaining 7 (19%) giving no opinion or no response. The feeling that burial grounds not be disturbed at all was expressed by 18 (50%). Reburial of the remains was suggested as a first choice by 7 (19%). Another 15 (42%) who did not want burials disturbed at all said that if the power companies went ahead and did so, they would want the remains reburied. The feeling that the line should be rerouted if burials were encountered was expressed by 9 (25%) while 2 suggested the remains be placed in a museum or institution.

Overwhelming opinion was that burial grounds should be left alone. Accompanying this was the feeling that if a non-Indian cemetery were encountered, it would not be disturbed. One person said, "I don't think they have any business going through any burial ground. How would the white people feel if the line would go through one of their burial places? They would fight the power company and stop it."

Another respondent said, "If it's in the national interest to dig up Arlington Cemetery for a power line, then dig up Arlington."

Additional comments were:

> "It doesn't seem right to me. They wouldn't do it to a new cemetery or any of their own cemeteries. Hanging power lines over them would not be right."
>
> "These are my relatives being disturbed, and I don't want this. Tell them to run it through the white man's cemetery in San Clemente."
>
> "Disgraceful!"

Many respondents stated--independently of the sacred areas question--that burial grounds were sacred, and as such should not be disturbed. One person said, "I don't think it should be done. It is sacred to us. Enough things have been done to the Indians already. They don't have to do that, too."

Another said, "I would prefer that the lines not even go in the vicinity of burial sites, just by the nature of their spiritual and sacred value. I don't believe the project should be on, near, or adjacent to a cemetery site. I prefer to see the sites not dug or bulldozed, so that they don't need reinterment."

The concern about burials is a general concern. No one mentioned any specific burials that had been disturbed by the San Onofre project.

Artifacts

The other area of high sensitivity was the disposition of any artifacts uncovered, with 27 (75%) expressing concern, and 9 (25%) giving no opinion or no response. One concern was that other people would take the artifacts--either sightseers or workmen on the line. Along with this concern was an interest in retaining their cultural heritage. One person said, "We are interested in retaining Juaneño things. This makes people of San Juan Capistrano feel important. It makes the old people know they're still there."

Another said, "We want to know something about our people--the significance of our culture, of the old people--for educational purposes."

The majority of the respondents (22, or 61%), stated that they wanted the artifacts placed in a museum, preferably an Indian museum or a local museum. Suggestions included giving them to the Capistrano Indian Council, Inc. (suggested by 2 respondents), which hopes to establish a cultural center, to any museum in the San Juan Capistrano area, to the mission, and to Malki Museum. Other suggestions included reburial, and studying the artifacts to obtain more information about Indian culture.

The prevailing theme, however, was, "The artifacts are part of our history. They should be placed on display in our museum."

Plant Resources

Asked about plant resources in the Study Area, 24 (67%) of the respondents said that they had such knowledge, 3 (8%) that they did not, with 9 (25%) giving no opinion or no response. Many of those who had knowledge reported past use of medicinal plants, with several stating they still used plants medicinally. Lack of access was given as the major reason why plant resources are not more widely used. As one respondent said, "We'd like to pick some medicinal plants for school displays, but we can't. It's against the law. We would like to, but we can't, especially inside Camp Pendleton."

Another said, "I'd love to go and get basket material, but they won't let you pick now."

One respondent said:

> We go up the Ortega Highway to get all kinds of stuff. That is, to the parts we are allowed to go into. That's another thing. I don't think that land which is privately owned should be barred to the Indian. We used to get all the plants we wanted from there--yerba buena, cactus tunas when in season. But we can't get into a lot of those areas now. There is all kinds of vegetation we can use, if we are not prevented from getting to it.

Many people said they use plants as food, specifically watercress, acorns, cactus tunas, and mustard greens. Medicinal plants presently used include salvia, salco, manzanita, and yerba buena. Plants used in the past included all of these, plus canotio (bamboo-like highland shrub, possibly a Pluchea sp.), elderberry, malva (a mallow), pine needles, yerba de mayo, yerba mansa, yucca, and verdolaga (a purslane). At the present time, there is said to be a revival of basket-making through the Capistrano Indian Council, Inc., and the availability of materials is a concern.

Negative effects of the project on plant life were seen by 14 (39%); 3 (8%) felt there would be no such effect, with 19 (53%) expressing no opinion or no response. Although only 39% expressed negative views, their statements were often extensive. Further loss of access was expected by one, who

said, "In time the power line would kill the plants by taking their life. Then it would make medicine plants useless."

The view that plants are an integral part of the living universe is an important part of Native American culture. This awareness was expressed by a respondent who said, "I think the line would affect the plants. They can feel."

The problem of growth was seen as a threat to the environment, and linked to the power line. One person said, "I'm against destroying all of those plants. This power line will change everything. There is no stopping them. All the changes they have made. It's got to be stopped now, or we'll never have the chance to preserve anything around here."

Animal Resources

Knowledge of animal resources was claimed by 24 (67%) of the respondents, 2 (6%) said they had no such knowledge, and 10 (28%) gave no opinion or no response. Animal resources mentioned as existing in the past included deer, coyote, rabbit, squirrel, snake, dove, and quail. Fishing, especially for trout, was mentioned. The eagle was referred to as sacred and as a resource for ceremonial purposes. The coyote was also mentioned as a sacred animal. Six people said they still use the Study Area to hunt and fish; hunting is generally limited to deer, quail, and rabbit.

Negative effects of the project on animal life were indicated by 19 (53%), 2 (6%) felt there is no negative impact, while 15 (42%) gave no opinion or no response. Many stated that the line is detrimental to animals because it drives them out of the area. One person said, "It drives them away. I'm sure of that. I don't think they hang around power lines. The peace they have had is not there. Those lines are so noisy."

Another said, "It affects animal life when that big equipment moves in there. Animals don't go where people go." Another comment was, "Construction and such make all the deer go away. All the building in the hills is making the animals run away, and God only knows where they are running to."

There was concern that access roads for the project would lead to further disappearance of game. Two comments were:

> "The people who would go up there on the new access road would chase the game away."

"The road would allow people to chase the game away, and our men would not be able to hunt."

Present inaccessibility was discussed by several people, with the project being seen as an added factor in this problem. One person said, "Now we can't go to the public land there [Camp Pendleton] to hunt." Another said, "I used to go out hunting for rabbits but can't do it any more. Now we have to go by the laws and go by the seasons."

The feeling that as Native Americans they were being deprived of a part of their natural heritage was discussed at length by one respondent:

> That's something I feel strongly about, that they don't let us hunt and fish without a license, and not where we want to. I think that it is part of our land. It was ours before the white man ever came in here. Not only that, but my family and I can't even get in there to hike.
>
> We are denied the opportunity to look at the things that are a part of our history. You can't go into what is your land, the land of your ancestors. Building roads for power lines would give more people access to the area, and off-the-road vehicles would destroy the land.
>
> I would like to hunt there for food for my family, but I'm not allowed to hunt there because it is privately owned and government regulated. My father died early, and in the early 1950s I used to hunt rabbits for us to eat. My mom saved her wages for a week to get me that gun. I shot rabbits and we ate rabbits and beans. That's prohibited now, and I had to get a license.
>
> I got caught once. I told the warden I thought I had a right to hunt since I was an Indian from around here. He didn't agree. Once, too, I was caught fishing up on the Ortega. I said I should be allowed to fish there, but he said no. You see, they think I should only fish during the "season," but I'm the one who knows when we need food.
>
> What I object to is that I can't hunt when I want to, when it's not the season. The area is closed, and much of it is private property. This line would close off even more of our land. A lot of us used to hunt. That was our only means of food.

Today with my kids I like to show them the land, our heritage. It's all fenced off. Even Casper Park, they want you to pay a fee. First they take it from you, and then they want to charge to let you go in. It's not logical.

People have to inspect the power lines, maintain them. There will always be someone up in the area. I don't see why they should be given the right-of-way and not us. They will have locks and keys to that area, and any Indian or anyone from this area won't be able to use it.

They have already ruined the animal life by allowing people to come in here. We are denied special hunts like we had in the old days. We should be allowed to hunt, strictly for food, any time we want!

Ocean Resources

Knowledge of ocean resources was indicated by 21 (58%) of the respondents, disclaimed by 4 (11%), and 11 (31%) expressed no opinion or no response. Respondents implied that most of the use was in the past, although several said that they still used the area for fishing. Resources utilized in the past and to a small extent today include abalone, crab, grunion, mussel, octopus, periwinkle, seal, and squid, in addition to kelp, salt, shells, and tar.

Negative effects on ocean resources as a result of the project were seen by 15 (42%); 6 (17%) felt that there would be no effects, and 15 (42%) gave no opinion or no response. Direct effects on the marine environment were often mentioned as being related to nuclear plants. One person said, "Too much hot water would chase the fish and abalone away." The view that fish are part of a feeling environment was expressed by another, who said, "I think the fish would not like it." Another said, "I think it would create an imbalance in nature."

The greatest concern, however, was that growth in the area would further reduce the availability of ocean resources. This concern was linked to the lack of access to areas formerly used. Several respondents said they used to collect abalone near Dana Point, but that after the harbor was built the abalone supply diminished.

One person said, "We used to go to Capistrano Beach. Not any more. How can you go there, now the white people have taken it over? We have to pay to go in now."

Another said, "There are a lot of places now that we can't go down to and use. If you want to pick basket materials or shells you can't do it. It's against the law."

One respondent said, "Anytime they close a beach, it violates my rights as an Indian." Another summed up several concerns:

> When they were building Dana Point Harbor, they denied us access to the area in the tide-water to get our abalone. There were game wardens there. They just let the animals die.
>
> Also the strand--we can't use that anymore. Even at Capistrano Beach, just to go there to relax you have to pay. I don't agree with that, since that is land they took away from us. I don't agree with that. The rest is private property you can't even get in. I think it's part of our heritage and we should hunt and fish as we please, you know, for food.
>
> But it's forbidden to take shells, especially abalone. Especially in Capistrano Beach, it's a fish and game preserve. We used abalone for food and shells for drinking cups, and cooked abalone in shells, part of the cooking process. Shells were used for bowls and if they were pretty, we just used them for ornaments.
>
> Now so many people go skin diving with scuba suits and have taken them all. You just can't go free diving in a few feet of water to get them like before.

Health Effects

Negative effects on health resulting from the project were seen by 18 (50%), 8 (22%) felt there would be no effects, and 10 (28%) gave no opinion or no response. One concern was that the project was associated with a nuclear plant, which would affect health both now and in the future. One person said:

> Yes, there will be effects, just by having the nuclear plant there. They can be covered as much as they want and we still get radiation. I'm 8 miles from there, and even I will feel it and my family will feel it and all the people around here will. We won't feel it today or tomorrow, but eventually.

Another said, "Sure it would affect health, by radiation. In the future people will die of cancer."

Another comment was:

> Are there any "acceptable" levels? We have the nuclear power plant so near, too near. I known that the Concordia Elementary School was being checked every week for radiation. He had a box and he would open it. Many of us would ask what he was doing, but they would never tell us. But the man with the box came from the nuclear plant.

Two people expressed concern that the project would affect the heart and pacemakers. Several felt that the power lines could be hazardous if they were damaged by a storm or an earthquake. One said, "I think that nuclear energy is unhealthy no matter what form it is in."

The problem of growth and its relation to the project was also seen as affecting health, especially in terms of how the Juaneños feel. One person replied to the question on health as follows:

> Once they put in more power lines, the population will increase. This all makes for a larger crowd, and that sure affects us and our health. I'm used to a small community of 500 or so people, not thousands and thousands of people and smog and all. This sure isn't healthy for me.

Another person said:

> Now in these last days, with it freezing, these heaters are on all the time. And that's not so healthy, to be in a stuffy house with the heat on day and night. Myself, I'd rather go back to wood heat. I think it's a lot healthier. I don't go for this power line. They should just have left Capistrano alone, like an old Indian town. They should not think of putting in the nuclear plant, but should put their thinking into getting the land back to the Indians.
>
> Here the Indians can't even go on their own land. It's now private property. The first thing they would do with those towers would be to put in a fence all around them. If there are deer going through there, they would just shoot it, like that. It is as shooting a person. The power line is to destory, that's all.

Stories/Legends

Knowledge of stories or legends about the Study Area was expressed by 22 (61%), 5 (14%) disclaimed such knowledge, and 9 (25%) gave no response. One person discussed the Juaneño creation myth in which Chinigchinich made beings from clay in the San Juan Basin.

Another discussed the building of the stone mission church by her people, and her ancestors going to the coast to bring large boulders for the construction. This woman's great-grandfather was killed in the church during the earthquake of 1812. The legend of gold mission bells being buried at the mission site, Mission Vieja, was told by one respondent.

Another story involved an old mine that had a tunnel to the coast, where the Indians would hide from the Spaniards. Other people listed stories by title. The most frequently mentioned were La Llorona [The Weeping Woman], The Headless Man, The Black Dog with the Chain, The Man with Chicken Feet, The Round House at Casitas, Woman Turned into Dog, Fire-Breathing Horse, The Dancer from the Trees, and La Pluma.

Trek

Only 7 (19%) of the respondents had heard of a trek from the Mission San Juan Capistrano into the interior. One person said her grandmother had told her this story:

> They went to Pala because of the lack of food at the mission. They had to go back and survive by hunting and gathering. The padres would not give us any food, since they didn't have any left for anyone else. The padres and soldiers would eat the many melons, squash, and watermelons which they grew in their enclosed gardens in the patios, and the rinds they would throw to the Indians. So we had to leave the mission. Also disease was severe--typhoid, venereal disease, and TB. Those that stayed here died from lack of food.

One person said the Indians had gone into the mountains and came to Lake Elsinore. Another said they went into the mountains to hide, but didn't know how far; she added she knew there was a connection between Pala and San Juan Capistrano.

Migration Patterns

Knowledge of migration patterns was claimed by 14 (39%) of the respondents, disclaimed by 10 (28%), and 12 (33%) gave no opinion or no response. The concensus of those who claimed knowledge was that the people would go up to the mountains in the fall for acorns and berries, with alternate migration to the ocean to use resources there. One person said they also went to San Clemente Island, another that in later times they used to herd sheep up into the Pala region.

Past Territory

Knowledge of past territory was expressed by 22 (61%) of the respondents, disclaimed by one (3%), and 13 (36%) gave no response. One person said, "Sure I know where it is, all the way to Elsinore, from Laguna to San Onofre. Goddamn it, it's like asking me if I know where my house is."

The triangle description, from Elsinore to Laguna to San Onofre, was given by several respondents. Several said the Study Area had been their territory. Others included the area up to Santiago Peak, with some extending it to the Black Star Canyon/Silverado area. Two people extended it south to Oceanside, but one of these was part Gabrielino and said the territory's northern boundary was at Long Beach. Several people placed the southern boundary as San Onofre Creek or Camp Pendleton. Four (11%) stated it was mainly around the San Juan Capistrano area.

Scenery

Negative effects of the project on scenery were seen by 27 (75%), one (3%) said it would have no effect, and 8 (22%) gave no response.

Again, the concern regarding growth was evident. One person said:

> They would probably knock all those hills down and destroy all the plants and trees. Those towers are so ugly. You want to see the sky, and only see the towers. They flatten all the hills. Before long it will be a miracle when you see an orange tree. Like the walnut trees are all gone.

Another said, "The lines will affect the scenery. Much of the land has already been ruined by buildings. People sell their land and then they build over it with houses."

The physical impact on the scenery was also a concern. One person described the towers as "monsters of iron." Another said:

> They are ugly, unsightly. I have nightmares every time I go under one of those things. I sure wouldn't want to live near one of them. I think they have done enough damage in putting that power plant down there, and now they want to do this. I don't want that to happen.

One person said, "I go out to the country to look at the scenery, not to look at SCE power lines or listen to the humming." Other comments were:

"They are one big ugly thing."

"The towers and wires would be an eyesore."

"Oh my God! I don't want to see them out my back door."

"The huge towers stand up like a sore thumb."

Recreation

Negative effects of the project on recreation were indicated by 20 (56%), 4 (11%) felt there were no effects, and 12 (33%) gave no opinion or no response. Negative effects on recreation were linked to negative visual concerns by several:

"Yes, it will have an effect by making the land ugly, and it will be bad for kids."

"We couldn't horseback ride in that area."

"Those towers would destroy the looks of the area and those who have land there would be violated."

"Up in the canyons people like to explore and hike, and those big towers . . ."

"That's the only place left to go up to see and be in the wild country."

"When they go out there in the country, people don't want to be around power lines. Why go out there for that? Just stay home and look at a power pole."

Loss of camping facilities was also a concern. One person said, "If it goes through or near a camping ground, it would not be worth going to."

Again, concern about growth was a factor. Said one respondent:

> Yes, any recreation would be stopped in that area. They have enough private property now and there is not enough recreation area. What do the Indian people get out of it? Less land for our use, for the future.

Economy

Fifteen (42%) of the respondents viewed the project as having an adverse effect on the economy, 7 (19%) saw no effect or a positive effect, and 14 (39%) expressed no opinion. The availability of more jobs was not seen as being beneficial to Native Americans, and was often viewed in terms of adding to the growth problem. Opinions expressed by several respondents were:

> "Jobs--no, we won't get the jobs. Other people will come to do the work. It only will cause more inflation."
>
> "These companies have all the workers they need. Besides, they have unions. It's not going to give anyone jobs."
>
> "It would provide for more development in the area, which we can do without."
>
> "It would bring in more people. They will probably throw me out of the yard. They would buy up the land."
>
> "The only effect would be for those in the union. It would make a lot of money for those guys [the power companies]. But for us it would just cause more pollution and traffic."
>
> "We don't need more people. You can't see any of the old people any more. This land is our Indian heritage, but we'll pay for those electric towers."

The concern that people would have to pay for the construction was expressed by several:

> "They might raise the rates to pay for all that."

"Yes, we would pay higher rates."

"We'll have to pay to build up those things. I don't want that. I can't even afford food and if a person wanted to grow food, you can't. Where would they grow it? So many houses and stuff. It wouldn't help anyone in my family to get a job."

Of those who felt the project would have a positive effect or no effect, two said it might provide more jobs. It should be noted that some respondents and their relatives work for the San Onofre Nuclear Generating Station or in the electronics field.

Other Concerns

Two additional concerns were verbalized independently of the research schedule. The first involved a distrust of SCE and SDG&E and big companies, coupled with anger that the project was already well underway. This was linked with the feeling that the CSRI study and what Native Americans had to say would not make any difference. One person said,

> Why are they asking us now? Isn't this research just for the record? This is going to happen anyway. My friends feel the same. They can't stop it. They don't want it, but . . . . I don't want the HVTL up there. That is my opinion. But a few Indians--what have we got to say?

Other comments were:

"If I put down what I'd like to say they wouldn't print it."

"Don't you think it's too late to ask our opinion?"

"Why were the towers built before the environmental impact report?"

"Why wasn't the environmental impact report submitted previously by SCE? The violation of federal and state law will already have its effects."

One respondent said:

> I don't think the study is going to be anything. They buy and sell people like we buy a postage stamp or an ice cream cone.

> Big companies pay too much to buy the politicians. Let's face it, they are going to go ahead and build the power lines and go all over the burial grounds.
>
> Like on Los Rios Street. They surveyed the community on this, and then they came through and did what they wanted. Just because someone with a $200,000 house thinks my place looks bad, they think they can remove it. Just because they don't like it. It's the same old thing. Money talks.

Another concern was that the area was growing too much and too fast, to the detriment of Native American culture and the quality of their life. This concern was associated with many of the questions that were addressed in the interview schedule, as indicated in the analysis. It was discussed often at the end of the interviews, when respondents were asked if they had anything further to say. One person said:

> They wouldn't need the power line if they would stop building. They say they need more and more energy to carry the load. They should put a stop to the building. What once was beautiful country is now nothing but houses all over.

Another said:

> Basically my opposition is this: you get more power, more water, population goes up which means more land use. This area is all we have. This is crappy planning.

Although the problem of growth and its relation to the project has been discussed at length throughout the analysis, one respondent's final statement summarized the feeling of many:

> I'm really against the whole thing. If it hadn't been for all these new homes, this kind of power line thing would not have to start. 'Way back before all these new homes, before all this happened, you never heard about these things happening, tragedies like we have now. All the time there is a body found here or there, and people killing each other.
>
> We weren't afraid to walk through town. No, it's not like the old Capistrano Indian town used to be. You just don't know who your neighbors are going to be. And to

build this thing will just help more homes and people to come in here. It's like an invasion. I just want to stop it now. I'm so against it! Inside I just get so mad. I can't see this power line happening at all. Not with all this nuclear stuff.

The other day we saw those surveyors coming up the road and they just stood, looking at our house. You know they think you and your house are just trash that they can just get rid of. And you know they want to take your land from you or force you to sell it. For example, on a lot like this one where we live, they would just level it off and build a bunch of houses.

They think the Indian people are dumb, that we can't read or write--but they have another think coming. Especially the whites who come in and think they can rule the town. The other day these people from town were looking at our place. It's the land they want, not really the house.

This is our land, our territory. Why should we be kicked out? The white people have no right to tell us these things. The white people look down on us. They should give the Indians more respect, since we're the ones who had the land before they even came here.

I just don't know. For example, when I was little and we had a big rain, we just used to wait until the next day when it stopped raining so we would go look at the river. That was ours, to do that. Now we can't even go there to see the high water. We get kicked out. And besides, it is all cemented in.

And now there are all those new shopping plazas in town, and who is in the stores? White people, not even from around here. You go in there and they think, "What are you doing in here!" They don't even know anything about the Indians from around here.

They probably don't even know that there are any Indians still here. Now they want to tear down Old Town and build something else that will just be a phony "old town"!

These new people are just in it for themselves. They could care less about what the town is and what it represents.

LUISEÑOS

Response from the Luiseño people with regard to this project was sought by contacting the Pechanga, Pala, Pauma, and Rincon reservations, all more than 40 miles by road from the line. As a result, 26 Luiseño people, ranging in age from 17 to 81, were interviewed. All but four of these respondents were associated with Pechanga Reservation, due east of San Onofre and the nearest of the four to the line. A research schedule was used (Appendix A) with most of the interviews being open-ended. To maintain confidentiality, respondents are identified only by number. It should be noted that some of the "no opinion" and "no response" answers resulted in part from the Native American decision-making process, which in the past required that the band speak with one voice.

Interview Contacts

Pechanga Reservation. At Pechanga, the first of the four reservations to be contacted concerning the San Onofre project, the tribal spokesman gave immediate approval for interviews. This was the second study to be conducted at Pechanga within a two-month period (the first dealt with the proposed Lamb Canyon-Mira Loma transmission line).

Pechanga Reservation was established by Executive Order on June 27, 1882. Most of the people were Luiseño refugees who had come from Temecula in 1875. The reservation in 1973 included 2,860.78 acres of tribal land, and 1,228.02 acres of allotted land; at that time 33 of an estimated 220 members were living on the reservation.

During the past two years, the population of Pechanga has more than doubled the 1976 total of 76, and residents are very much aware of the dynamics of growth. The reservation is surrounded by new developments, most notably that of Rancho California. This development, which includes expensive homes, a country club and other amenities, encompasses some 140 square miles--all of it former Luiseño territory. The relationship between Pechanga Reservation and Rancho California, since its formation in 1963, has been less than amicable. In the past Rancho California has attempted to set up its sewage disposal system adjacent to Pechanga, a measure that was defeated. In 1971 Ranch California tried to place a garbage dump on land the reservation believes it owns but has temporarily lost because of survey irregularities; this effort was also defeated.

The dispute with Rancho California also involves land acquisition. The reservation has alleged that a section of Rancho California, off the Pala Road next to Pechanga's Kelsey Tract, was acquired illegally by homestead manipulations. On November 28, 1978, Pechanga Reservation filed a civil law suit against Rancho California seeking title to 320 acres adjacent to the reservation. Pechanga is also pursuing several water suits through the auspices of the California Indian Legal Services.

One of the most vital issues facing the reservation today is the allocation of water. Both Rancho California and Cal/Turf, a new business that grows turf on a recently acquired 1000-acre plot adjacent to Pechanga, have dug deep wells, which Pechanga people claim are depleting the water table of the entire area. A well-drilling project on Pechanga's Kelsey Tract is in progress, but problems have been encountered in obtaining easement across Pala Road to the main section of the reservation.

To effect proper water development, Pechanga in 1976 formed its own water company with a 7-member board. The board, which has authority to make any decisions not detrimental to the band, has ruled that non-members on Pechanga will not be serviced. This year, 21 new households have been hooked up to water lines, but 8 have been dropped for failure to meet water board deadlines dealing with house construction. Because water brings growth, there are conflicting opinions on how much water development should be allowed. The influx of new people places Pechanga in a quandary: There appears to be a desire to grow, and at the same time a desire to retain the

uniqueness of the slower pace of life. Ironically, the life-style is the feature that attracts growth.

Pechanga's growth and threats of encroachment by Rancho California are forcing the reservation to extend itself to the outside world. Many of the people coming back to Pechanga are accustomed to urban amenities. They have higher expectations concerning government programs, and they bring with them an awareness of the vital issues confronting American society as a whole. The traditional role of tribal spokesman is being altered in order to adapt to modern administrative duties. Political and social sophistication are becoming the norm among Pechanga residents.

The tribal spokesman is actively involved in seeking grants for Pechanga. The reservation has recently received a $75,000 grant from H.U.D. to rehabilitate 47 homes, and is attempting to get a grant for a school where Native American crafts could be taught--while there are still people who can teach such skills. The tribe is working on a project with the Soil Conservation District for a pilot planting of jojoba, to assess the possibility of extracting oil from its seeds commercially. Opinions differ, however, on how extensively the reservation should be involved with the federal government. There is distrust of such involvement, because of past experiences with the Bureau of Indian Affairs and other governmental agencies.

In spite of reluctance to participate fully in the outside world, residents go off the reservation, and sometimes out of the Temecula area, for work. Many work in the mobile home factories around Hemet and Perris.

Some Pechanga residents recognize the paradox provided by growth. Growth may be beneficial, in that it requires increasing involvement from the reservation and thus strengthens its bonds. But growth also depletes limited resources and may lead to government interference.

One of the factors that is slowing growth at Pechanga is the inability of people with property to obtain easements for water or electrical lines, and to obtain rights-of-way to their land. Obtaining such easements is dependent on approval from adjacent owners. Because much of the land is co-owned by numerous family groups, reaching agreement is no easy matter.

Another factor involved in growth is the increase on the reservation of non-Indians who have acquired land from Native Americans who have taken their lands out of trust. Pechanga has a complicated system of land use and ownership, which

includes both tribal land and allotments. Of some 4000 reservation acres, it is estimated that only a thousand acres are tribal land--and these are mainly in canyon areas, where uses are limited by steepness of the terrain.

Growth at Pechanga will be stimulated by the open enrollment program, to begin on January 1, 1979, and continue throughout the year. After 1979, tribal rolls will be open for one month of each year, to allow enrollment of new family members. (Previously, there has been no tribal roll. The only available listing has been the mailing list for the band newsletter, which includes around 200 names and is open to anyone over 21 years of age who requests to be placed on it.) Eligibility for enrollment will depend on descent through either male or female lines, and the tribal spokesman estimates that around a thousand people will enroll.

Another concern related to growth at Pechanga is police and ambulance service. Trespassing is a continuous problem, and ambulance service is inadequate for the needs of the reservation. There is talk of reviving the Indian Police, but alleged mistreatment by such policemen in the past causes some residents to question this proposal.

The relationship between residents of Pechanga and those of Temecula has in the past been generally neutral, with each segment going its own way, but the influx of new people from Rancho California is altering this relationship. For example, after the "Indian" bar in Temecula changed hands, it became a social center for non-Indians.

It is significant that Pechanga initiated local protest against the formerly proposed Sundesert project, and that the perceived threat of this nuclear power plant and its transmission lines apparently outweighed local squabbles. Sundesert brought Pechanga, Rancho California, and Temecula together in protest, and the three dissimilar groups united to act against the proposal.

Pala Reservation. On November 29, 1978, the request to interview residents about the San Onofre project was presented to the general council at Pala. There were about 40 people at the meeting, and after being apprised of the project, they decided they were too far removed from the Study Area to be concerned at this time. During the question-and-answer period following the presentation, one person expressed a concern for burial grounds in the Study Area but felt there probably wasn't anything left, anyway, because of real-estate developments and pothunters.

Another expressed concern that eventually San Onofre would "hook up somewhere else and come back to the Pala area."

One person who seemed well-versed in aspects of mitigation, especially in relation to the Santa Barbara-Point Concepcion project, asked what good their input would have for the study. He said that the people at Santa Barbara had expressed negative views about the Point Concepcion project, but were being totally ignored. He repeated, "What good is it going to do?" implying that possible concerns about San Onofre would be ignored as well.

Another person said that reservation people would want to study the project before making a decision on whether they would want to have input.

The tribal spokesman ended the presentation by stating that Pala would go along with the decision made by the other reservations.

It should be noted that all reservations were deeply involved in their own affairs at the time they were contacted. Pala was in the process of completing an election shortly before the presentation, and the council agenda included many fiscal matters that had priority. One person at Pechanga said, "All the reservations are busy until the end of the year."

It should be noted that Pala is primarily a Cupeño reservation, and the fact that the interviews pertained to former Luiseño territory may have affected response. In the presentation, the need to talk with Luiseño people was stressed, although the desire to talk with any Native Americans who felt concern or had knowledge of the Study Area was also expressed.

Pauma Reservation. On November 30 the tribal spokesman at Pauma was contacted at her place of employment. She said the reservation is very busy at this time of year, with elections coming up as well as other matters, but that she would study the material and if time permitted would present the project at the next tribal meeting. When again contacted on December 8, she said the council meeting had been delayed, that they were still very busy, and that she didn't know if there would be time to present the project. She was informed of the immediate time constraints, and also told that input from the reservation was welcome. She said that after studying the project, it was her personal feeling that the reservation would want to have input, once other matters on its agenda were taken care of, but that she couldn't speak for the council.

Rincon Reservation. On November 27 Patty Duro of Rincon, who is a member of the Native American Heritage Commission, was contacted. She said she would approach the council with the request that interviews be scheduled at Rincon. Pertinent information regarding the project was left with her. Contacted again on December 5, Ms. Duro said the council did not mind if individuals associated with Rincon were interviewed but that it had not yet taken a position as to whether Rincon Reservation should have input. After again talking with the council, she said on December 8 that a position had not been taken, but reiterated that individual interviews were permissible. She added that there was currently much activity on the council's agenda but that Rincon wanted to reserve the right to have input at a later date. The immediate time constraints were explained, and she was assured that the willingness to provide future input would be included in the report. Four of the 26 respondents were associated with Rincon.

The Luiseño Organization. The "Luiseño Organization" is an informal group of Luiseño leaders, formed approximately a year and a half ago to present a unified response to the construction of Interstate 15. At the time of its foundation, Patty Duro of Rincon was elected spokesman for the group. No formal bylaws were established, but according to one respondent it was agreed that all reservations involved would be consulted prior to the making of any decision. A semi-official position is said to have been reached regarding the disposition of any burial remains and artifacts that might be uncovered by any project. At the present time, the policy is to rebury all items.

Summary. The response of Luiseño people was limited. Several respondents, interviewed in the course of both the Lamb Canyon-Mira Loma and San Onofre projects, said they felt that the power companies sometimes know of the projects years in advance, but then try to rush the process of getting input from Native Americans.

The interviewing was further hampered by the busy agendas of all reservations at this time of year, as well as by the festivities and family gatherings associated with Thanksgiving and Christmas.

The response was facilitated by peoples' awareness regarding energy issues, by the leadership of the tribal spokesman, and by the relationship established when a previous study was done there.

Analysis of Responses

Most Luiseño respondents expressed negative feelings regarding the San Onofre-Santiago-Black Star Canyon HVTL (Tables 7-III and 7-IV). Although the line does not cross through their present territory, 14 (54%) stated they did not favor the HVTL. One respondent said, "Even if it's over there, I wouldn't like it."

Another said, "I hate to see any of those things go in."

One said that although the HVTL was out of their present territory, a part of the Study Area had been Luiseño territory in the past, and that "our people are buried there."

Ironically, the feeling that the HVTL was out of their immediate territory also seemed to be the prime factor to the 8 (31%) who favored the line. One respondent said, "We're quite a ways from there. This would be helping the people who need energy along the coast."

An additional factor influencing those who favored the HVTL was that there is already an existing 220 kV line. One respondent said, "I will say that at the present time, since they have already established one line and it doesn't seem to bother us, I approve of it."

However, one person who did not favor the HVTL said, "Since it is in already, I feel they should comply with the regulations in order to reduce the impact."

The fact that the line was not near them also seemed to influence those who expressed no opinion. One said, "Well, it won't affect us down here. So far as I'm concerned, as long as it happens 'way up there, I'm not worried about it."

A common concern was that burial grounds not be disturbed. One respondent said, "It's the same as I told you about the Lamb Canyon-Mira Loma line. Don't disturb! It's okay as long as they don't disturb burial grounds."

Two respondents expressed concern that the present project was going to connect with the proposed Lamb Canyon-Mira Loma HVTL, which had been discussed with them the previous month. One said that the capacity of the San Onofre Nuclear Generating Station would be greater than customers' need. He felt that "they" were trying to encourage public demand or were going to

TABLE 7-III. INDIVIDUAL RESPONSES OF LUISEÑO

Symbols are: +, positive response; –, negative response; 0, no opinion or no response; NE, respondent believes there would be no effect. Symbols applying to disposition of human remains and artifacts are: DND, do not disturb; R, rebury; RNA, return to Native Americans; RTL, reroute transmission lines; NAD, allow Native Americans to decide; S, study them; M, place in museum or other repository; and HM, establish historical monument. (P) indicates an activity that occurred in the past.

Respondent	Feelings re HVTL	Does S. California Need More Energy?	Knowledge of Archaeological Sites	Effects on Archaeological Sites	What To Do with Archaeological Sites	What To Do with Burial Grounds and Remains	What To Do with Artifacts	Knowledge of Study Area Plant Resources	Effects on Plant Life	Knowledge of Study Area Animal Resources	Effects on Animal Life	Knowledge of Ocean Resources	Effects on Ocean Resources	Effects on Health	Knowledge of Mineral Deposits/Tool Sites	Effects on Mineral Deposits/Tool Sites	Effects on Rock Art	Knowledge of Sacred Areas	Effects on Sacred Areas	Knowledge of Legends/Stories	Knowledge of Trek	Knowledge of Past Territory	Knowledge of Migration Patterns	Effects on Scenery	Effects on Recreation	Effects on Economy
1	–	–	–	–	DND	DND/NAD	–	–	–	–	–	–	–	–	0	0	–	0	–	–	–	–	–	–	0
2	–	+	–	0	DND/R	RNA	–	–	+	–	+	0	–	–	0	0	–	0	+	–	+	+	–	0	0
3	+	+	–	–	R	M	–	–	–	–	–	0	–	–	–	–	–	0	–	+	+	+	NE	–	NE
4	0	0	–	–	DND	RNA	–	–	–	–	–	0	–	–	0	–	–	0	–	–	+	–	–	–	–
5	0	0	–	–	DND	NAD	–	NE	–	0	–	0	0	–	0	NE	–	0	–	–	+	–	–	0	+
6	–	–	–	–	DND/R	0	+	–	–	–	+	0	–	–	–	–	–	0	–	0	+	+	–	0	0
7	+	+	–	–	DND	RNA	–	–	–	–	0	–	–	–	–	–	+	–	–	0	0	0	–	0	0
8	–	–	–	0	DND	R	–	0	–	0	0	0	–	–	0	0	0	0	–	0	+	+	0	0	0
9	–	–	–	0	DND	R	–	0	–	0	0	0	–	–	0	0	0	0	–	0	+	+	0	0	0
10	–	–	–	0	DND	R	–	0	–	0	0	0	–	–	0	0	0	0	–	0	+	+	0	0	0
11	–	–	–	–	DND	DND/RNA	–	–	–	–	–	0	–	–	0	0	+	0	–	–	+	+	–	NE	NE
12	–	+	–	–	DND	NAD	–	–	–	–	–	0	–	–	–	–	–	–	–	–	–	–	–	–	–
13	+	+	–	0	0	0	–	NE	–	NE	–	0	NE	–	0	0	–	0	–	–	–	–	NE	NE	+
14	–	0	–	0	DND	NAD	–	0	–	0	–	0	0	–	0	0	–	0	–	–	–	–	–	0	0
15	–	+	–	–	DND	DND	–	–	–	–	–	–	–	–	0	–	–	–	–	–	–	–	–	–	–
16	+	+	+	–	DND/R	NAD/M	–	NE	–	NE	–	NE	NE	–	–	–	+	0	–	–	+	+	–	NE	–
17	–	+	–	0	0	0	–	0	–	0	–	0	0	–	0	0	–	0	–	–	–	–	0	0	0
18	+	+	–	–	DND/R	RNA	–	NE	–	NE	–	–	NE	–	–	–	+	0	–	–	+	+	–	NE	–
19	+	+	–	0	DND/R	RNA	–	NE	–	+	–	–	–	–	0	0	–	0	–	–	–	–	0	NE	–
20	+	–	–	NE	RTL/R	M	–	NE	–	NE	–	–	–	–	0	0	–	0	–	–	–	–	NE	+	+
21	0	0	–	–	DND	M	–	–	–	–	–	–	–	–	0	NE	–	0	–	–	–	+	–	–	+
22	+	+	–	0	0	0	–	NE	–	NE	–	–	–	–	0	0	–	0	–	–	–	–	NE	NE	+
23	–	–	+	–	DND	DND	–	–	–	–	+	–	–	–	–	–	+	–	?	+	+	+	–	–	–
24	–	+	+	–	R	R/M	–	–	+	–	+	–	–	–	–	–	+	–	+	+	+	+	–	–	NE
25	0	0	–	0	0	RNA	–	0	–	0	–	0	0	–	0	0	–	0	–	–	–	–	0	0	0
26	–	–	–	–	NM/NAD/R	NAD/HM	–	–	–	–	–	–	–	–	–	–	–	–	+	–	–	–	–	–	0

Table 7-IV. Summary of Luiseño Responses (N = 26)

Concerns	Yes		No		No Opinion		No Response	
	No.	%	No.	%	No.	%	No.	%
Favor San Onofre HVTL	8	31	14	54	4	15	0	0
Feel more energy is needed in Southern California	12	46	9	35	5	19	0	0
Negative effects on archaeological sites	15	58	1	4	4	15	6	23
Negative effects on mineral deposits/tool sites	9	35	0	0	7	27	10	38
Negative effects on rock art	11	42	2	8	3	12	10	38
Negative effects on sacred areas, places of power	6	23	0	0	6	23	14	54
Concern regarding burial grounds	22	85	0	0	4	15	0	0
Concern regarding artifacts	22	85	0	0	3	12	1	4
Negative effects on plant resources	13	50	7	27	6	23	0	0
Negative effects on animal resources	13	50	6	23	7	27	0	0
Negative effects on ocean resources	7	27	3	12	8	31	8	31
Negative effects on health	17	66	5	19	4	15	0	0
Negative effects on scenery	16	61	4	15	3	12	3	12
Negative effects on recreation	9	35	7	27	4	15	6	23
Negative effects on economy	6	23	8	31	7	27	5	19
Knowledge of archaeological sites	3	12	23	88	0	0	0	0
Knowledge of mineral deposits/ tool sites	0	0	26	100	0	0	0	0
Knowledge of sacred areas, places of power	6	23	17	65	0	0	3	12
Knowledge of plant resources	1	4	25	96	0	0	0	0
Knowledge of animal resources	3	12	23	88	0	0	0	0
Knowledge of ocean resources	4	15	18	70	0	0	4	15
Knowledge of stories-legends	4	15	22	85	0	0	0	0
Knowledge of trek	3	12	18	69	0	0	5	19
Knowledge of migration patterns/ trade routes	12	46	13	50	0	0	1	4
Knowledge of past territory	13	50	12	46	0	0	1	4

use the energy in San Diego. He believed more lines could not go south of San Onofre along the coast, because the Coastal Commission would not allow this. He was convinced the company is tryin to find a way to get to the proposed Valley Substation: "They have to come down to Valley, it's a step-down station. Valley is where they have to go. So they're looking for a route." He later said of SDG&E, "They've just thought of another route. They're going to do a 500 kV."

Another person said, "Is this line going to hook up with the other one [Lamb Canyon-Mira Loma]? They've been planning at least 10 years ahead."

Energy Needs. In answer to the question of whether more energy was needed in southern California, 12 (46%) of the respondents expressed the belief that there was a need. More energy was viewed as necessary because of the growth in the Study Area. One respondent said, "They do need energy. It is really growing over there."

Another said, "Without a doubt, yes. They do need energy, especially if the area is to grow."

The problem of growth was also a concern among the 9 (35%) who did not feel more energy was required. One respondent said, "Things are so out of control. That's why we moved back here, to get out of all that congestion."

Another person who felt that more energy was not needed "at this time," added, "We have to have progress, but where is everybody going to live?"

Several respondents felt that increased energy would be linked to increased growth, which would lead to further non-Indian encroachment into Native American territory. One person said, "They're just moving the Indian farther and farther. They find out now that the white man would rather settle out here [pointing to land adjacent to the reservation]. They're going through the easy way. I've noticed a lot of it as Indian land. Now the Indians are trying to fight, and I'm for that."

A concern for conservation was expressed by one respondent who felt more energy was needed: "Well, they need it, but with proper conservation they have enough to last to 1980." He then suggested that after 1980, all the power companies would need to do is update their present facilities.

Conservation was also a concern of one respondent who did not feel that more energy was needed: "I feel they need to live with less. It is possible. They need to set priorities on use. They need to conserve."

Another said, "The more they have, the more they'll use." He stated emphatically that southern California did not need more energy.

Archaeological Sites. Only 3 (12%) of the respondents said they had specific knowledge of archaeological sites. They mentioned Turtle Rock, a burial site, and several sites near San Juan Capistrano and up San Juan Creek. (One respondent refused to discuss the sites.) Despite the small percentage who claimed specific knowledge, 15 (85%) of the respondents expressed the feeling that the HVTL would have negative effects on archaeological sites. This was independent of the concern for burial grounds, mineral deposits, and rock art. Only one respondent felt there would be no effect, with the remaining 10 (38%) expressing no opinion or no response.

A common concern was that a part of the Native American heritage might be destroyed. One person summed up these feelings in saying, "If they destroy the history and heritage, it would indicate that people aren't concerned. It would show how they disregard the dead and other people's culture."

Two additional comments were, "They are going to destroy a lot of things," and, "They are ruining the sites in southern California."

Concern about the destruction of sites included the fear that outsiders would be carrying off Native American artifacts. One respondent said, "It's going to be bad. They are going to start pushing access roads. Pothunters, four-wheelers will be out there to see what they can get."

Another person related an incident involving a man with whom she worked. He had found some artifacts while employed on a construction project and carried them around in a cigar box. She said, "I don't want workers digging things up and taking them home. They shouldn't be carrying artifacts around in a cigar box. They show no respect."

A number of respondents expressed feelings about what should be done about any archaeological sites found in the path of the HVTL. One said, "I'd like to try to preserve some of them." Another felt sites were important, "in order to get a bearing on history." Several respondents thought that archaeological sites are an important heritage not only for Native Americans but for all Americans, because they are a part of the United States history.

The involvement of the Native American community in decisions about sites was expressed by an elder, who said,

"If they come onto a site, they should stop and let the Indians decide what to do. Let each reservation have a representative."

Mineral Deposits/Tool Sites. None of the respondents had specific knowledge of mineral deposits or tool sites, but 9 (35%) felt that any such sites in the Study Area would be adversely affected by the HVTL. The remaining 17 (65%) expressed no opinion or no response.

Rock Art. Only two respondents expressed knowledge of rock art. One said that Turtle Rock, near Irvine, was an important rock art site that would be endangered by an HVTL. She also expressed concern for this site because of increasing real estate development in the area. The other respondent said that he knew there was a rock art site near San Juan Capistrano but could not give the exact location. Of the respondents, 11 (42%) expressed concern that the HVTL would have negative effects on rock art. Two felt there would be no effects, with the remaining 13 (50%) expressing no opinion or no response.

The concern regarding rock art was often linked to concern for archaeological sites in general. Several people felt that the HVTL would lead to further destruction of such sites. One respondent was concerned that easier access would lead to increasing vandalism by users of off-road vehicles.

Another person felt that an HVTL would detract from the aesthetic and spiritual value of sites. The feeling that rock art should be maintained as an important part of Native American culture was expressed by one respondent, who added that in the past, Indian people had been deprived of and cut off from their own culture. She felt that there had been a void and that now "we should be allowed knowledge." She saw the preservation of rock art as an important aspect of the acquisition of cultural knowledge.

Sacred Places/Places of Power. Knowledge of sacred places and places of power was claimed by 6 (23%) of the respondents, with 17 (65%) saying they had no such knowledge. The remaining 3 (12%), who refused to discuss these subjects, were elders; they appeared to feel that discussion would not be proper. The Santa Ana Mountains were listed by 4 people as being sacred, with Santiago Peak described as being especially sacred. San Juan Hot Springs, outside the Study Area, were felt to be sacred by one respondent.

The subject of burial grounds was not discussed in terms of sacred areas, although numerous respondents who said they had no knowledge of such areas stated that burial

grounds were sacred. One person said, "The whole area is bound to be sacred." The opinion that the HVTL would have negative effects on sacred areas was held by 6 (23%) of the respondents, while the remaining 20 (77%) had no opinion or no response.

One respondent said, "Maybe they are going to have trouble with the line, because they are going through sacred country."

Burial Grounds. The highest degree of sensitivity was associated with burial grounds, with 22 (85%) expressing concern that the HVTL would adversely affect these. The remaining 4 (15%) expressed no opinion. The feeling that burial grounds should not be disturbed at all was expressed by 18 (69%). Some comments were:

"Don't disturb!"

"Leave them alone."

"They should be left undisturbed."

"The same as I said before [referring to Lamb Canyon-Mira Loma], do not disturb!"

Two people said that any remains encountered should be reburied. An additional 8 (31%) who did not want the remains disturbed said that if burial grounds were accidentally uncovered, they would want to see the remains reburied. Most seemed to feel that the remains should be reburied on a reservation. One respondent felt that the Indians involved should decide where, another that the remains should be reburied as near as possible to the place where they were encountered. An additional suggestion was that burial grounds be set aside as historical monuments.

The view that burial grounds should not be disturbed was often coupled with the conviction that Native American feelings in this matter would be ignored. This was evidenced in the number of respondents who expressed the feeling that remains be reburied, despite their strong opinion that burials should not be disturbed. An elder said, "Leave burials alone. I don't know how many times I've said it. I get tired of it, all my life. They come in and ask us, but they don't care. We've been saying it over and over. Why don't they go to their own country to dig up their people? They must like our bones."

Another person said, "What if we go to their cemeteries and start digging up their people? I mean, they'd kill us!"

There was no mention of any specific burials having been disturbed by the San Onofre project.

Artifacts. The disposal of artifacts was also a highly sensitive area, with 22 (85%) of the respondents expressing concern. The remaining 4 (15%) expressed no opinion or no response. Opinions as to the disposition of any artifacts uncovered were varied, with 6 (23%) feeling that artifacts should be returned to Native Americans. The desire that artifacts not be disturbed at all was expressed by 4 (15%). Another 4 (15%) felt that Native Americans should be allowed to decide on the disposition at the time artifacts are uncovered. An additional 4 (15%) felt that all artifacts should be reburied.

Those who felt artifacts should be reburied said this solution is what the "Luiseño Organization" presently prefers. The opinion that artifacts should go to museums was held by 3 (12%) of the interviewees; an additional 2 (8%) said that as a second choice, they would want the artifacts to go to museums. They preferred either an Indian museum or a museum in the Study Area; Malki Museum was suggested by several people. Several emphatically stated they did not want the artifacts going to museums in Los Angeles or San Diego.

As stated earlier, concerns about the impact of a HVTL, and consequent access roads, included the possibility that the Native American heritage might be destroyed, that artifacts and the culture would not be respected, and that artifacts would be taken by non-Indians. As one person said, "The artifacts never come back to us."

Plant Resources. Only one respondent had knowledge of plant use within the Study Area. She knew women gathered herbs there, but could be no more specific. Other respondents said they were sure the area was used for this purpose in the past, but that they did not know of anything specific. Regarding present use of the Study Area, not only for plants but for all resources, several respondents noted that the land is no longer accessible to them:

"You can't go any place now."

"Can't use the land now, everything is private."

"It's all private land, we can't use it anyway."

The effect of the HVTL was seen as detrimental to plant resources by 13 (50%) of the respondents. That it would have no effect on plant life was expressed by 7 (27%) with the remaining 6 (23%) expressing no opinion. One person said, "I think it's going to affect the whole live community." Another said, in reference to the existing lines, "It's all bulldozed out. There's nothing native growing there now, just European weeds." Another said, "Our country is being destroyed."

Animal Resources. Three respondents (12%) said they had specific knowledge of animal use in the Study Area. Two stated that deer hunting was still practiced. Another said that the raven was sacred and thus was considered an animal resource. Others said they were sure animal resources had been used in the past, but could not be specific. The effect of the HVTL on animal life was seen as detrimental by 13 (50%). No effects to animal life were foreseen by 6 (23%), and the remaining 7 (27%) expressed no opinion.

Several people were concerned about the possibility of genetic defects:

> "I've seen the reports from New York, studies done on mice. It affects them genetically."
>
> "I heard if animals come too close to the lines, they become sterile."
>
> "I read one report. It will cause the bones to soften, and they won't be able to reproduce."

The idea that effects would be negative, but with no specific details, was often expressed. As one person said, "The line would be very detrimental for animals, just as it is to people."

Ocean Resources. Knowledge of ocean resources was expressed by 4 (15%) of the respondents. Mussels, clams, abalone, and fish were used as food in the past. Abalone shells were used for jewelry and grave decorations. Salt was also collected. One respondent still uses the Study Area for fishing and gathering abalone, continuing to smoke fish in a traditional manner and using the abalone for both food and jewelry. Another person said, "When I was a kid we used to use the coast for mussels and abalone, and we camped along the coast."

Negative effects on ocean resources as a result of the HVTL project were seen by 7 (27%) of the respondents, 3 (12%) felt the project would have no effect, and the remaining 16 (62%) expressed no opinion or no response. Negative effects on ocean resources were viewed mainly in terms of the operation of the San Onofre Nuclear Generating Station. Several respondents said the water temperature would be raised by discharge from the plant, thus disturbing the marine environment. One person who uses the area for fishing was especially concerned about this. Another respondent said, "Our marine life is going, too."

Health Effects. Negative effects on health were foreseen by 17 (66%) of the respondents. Mentioned were possible problems with pacemakers, increased pollution, genetic effects,

and the violation of sacred areas. Several people felt that health problems might develop in the future.

One respondent who favored the line said that her main concern was possible negative effects, especially for construction workers at San Onofre. She added, "But they never let us know."

One respondent said he had heard of a study done in the Soviet Union that showed there were genetic effects on people. He added, "They won't know the effects, at first."

Another person brought out a December 1978 copy of OMNI magazine, which included an article on alleged genetic problems suffered by maintenance workers in the Soviet Union and Spain.

A tribal elder said that Indian observers had been hurt during construction of Interstate 15 because sacred places and burial grounds were violated. Another elder expressed the feeling that HVTL workers might encounter health problems because they were going through sacred areas.

Stories/Legends. Only 4 (15%) of the respondents stated they had knowledge of stories or legends regarding the Study Area. One person said that the Camp Pendleton area used to be part of a large ranch that extended up to El Toro. His father, along with many other Native Americans, had worked on the ranch before his own birth. (This would have been in the late 1890s.) Another person said her mother, who was Juaneño, had told her that her own mother's village was set afire when she was a child, and the people were forced out of their area and had to go to Los Angeles to work. Another person said there were bear stories involving Santiago Peak that were important to the Luiseños who lived in the Temescal Canyon area.

Trek. Three (12%) of the respondents expressed knowledge of a trek from San Juan Capistrano into the Temecula region. One said she had heard of such a trek but could not give any specific information. Another respondent said he had heard how the Indians had escaped from the mission and had come up "the Ortega" (now State Road 70) toward Elsinore. He said soldiers had chased the escapees on horseback, but had gone no further than the horses could go. As a result, the Indians had been able to come down into Elsinore. Another person said his grandfather had told him that his own grandfather (respondent's great-great-grandfather) had left the mission and had gone to Elsinore. Nothing more specific was known.

Past Territory. Knowledge of past territory was expressed by 13 (50%) of the respondents. The Luiseño area was described

as going as far north as Dana Point/San Juan Capistrano by three respondents. One stated that it went to San Onofre, while another said past territory went to Las Flores. Two people said the territory went as far as the Santa Margarita River.

Six respondents (23%) said they know that part of the Study Area was Luiseño territory but could not be specific. One person said that the Juaneño and Luiseño were the same people, that they had been given separate names only because of the missions. An elder said that although the Santa Margarita River was somewhat of a boundary, it was a flexible boundary, as there was much interaction between people in the Study Area. This was supported by several respondents with regard to migration patterns.

Migration Patterns. Knowledge of migration patterns was claimed by 12 respondents (46%), who stated that their people in the past had gone annually to the coast. One person said that when he was a child his family had gone there to camp and gather abalone and mussels. Another said that when her mother was a child, the family would load all its possessions into a horse-drawn wagon and go from Temecula to the ocean, spending several weeks on the coast. This was around the time Pechanga Reservation was formed, in 1882.

Several respondents said that people from Temecula followed the Santa Margarita River through DeLuz Canyon to the sea. Others said they had gone down the San Luis Rey River. One person said that people had used a trail behind his house that went to Rainbow. (This would have led to the San Luis Rey River route.) One respondent said Luiseño people from around Elsinore had come down to San Juan Capistrano, using a trade route that eventually became the Ortega Highway.

Three respondents (12%) said that people went to the coast to trade. This included trade with the people from Catalina Island. One person said the Luiseño used to marry women from Catalina.

The time of the seasonal migration was placed in the fall. One respondent said people went to the coast for the winter, staying in the lagoon areas, and returned inland in the spring.

Scenery. It was the opinion of 16 (61%) of the respondents that the HVTL would have negative effects on the scenery. Four (15%) said there would be no effect on the scenery, with the remaining 6 (24%) expressing no opinion or no response. Typical comments were:

"It will ruin the scenery."

"Bad!"

"Ugly."

"I think it's really unsightly. It's an eyesore. One has the feeling of being wired in."

One respondent said, "I don't like to see those things. Why can't they put the power lines underground?"

Recreation. Negative effects on recreation were foreseen by 9 (35%) of the respondents. The feeling that the HVTL would not affect recreation was expressed by 7 (27%), with the remaining 10 (38%) expressing no opinion or no response. Several people mentioned interference with TV reception.

One said there would be restrictions on how close people could get to the area where the lines are. He felt "they" would be making more roads for recreational vehicles, thus ruining the area around O'Neill Park by bringing more people there.

Economy. Only 6 (23%) of the respondents felt the HVTL would have negative effects on the economy. No effects, or positive effects, were foreseen by 8 (31%), with the remaining 12 (46%) expressing no opinion or no response. One person who felt there would be no effect on the economy said that the line was being built by people who were already hired by the power companies. Another felt that more industry might be attracted to the area, thus helping the economy. One person thought the power line "might make things cheaper."

Additional Concerns. Two additional concerns that were not addressed in the research schedule surfaced independently. One involved the disposal of nuclear waste. A respondent stated that she had read of giant sponges growing off the coast of San Francisco as a result of leakage from waste stored in containers at sea. She said, "Once they build the nuclear plant, they have nothing more to do with it." She felt that nuclear waste was not a matter of concern to "them," adding that "they don't know what to do with it."

Another person felt that nuclear plants were dangerous. He said that power companies don't know enough about waste disposal or safe use of atomic energy, adding, "It leaks, then no one wants to take the blame. Dangerous!"

The concern regarding the effect of nuclear waste in the future was expressed by one respondent who said, "It can affect the lives of our children and our children's children."

Many people felt that the power companies were being deceptive, because the line was largely complete and only

now were people being asked for input. This, coupled with the limited time available for the surveys, caused several respondents to express displeasure with the power companies, which in turn led to a broader discussion of feelings of distrust of big companies and government.

One elder said, "Why didn't they ask first? They keep digging. That's the way they're going. They are going to do what they want."

Another person said, "It seems that anything that is done today is done by robbery and lies. If they get one toehold, then they'll be off."

A respondent who had stated that he had no opinion about the HVTL said, "It's government-run. What good does it do to complain?"

The final statement of one respondent seems to summarize the general feeling of many:

> "They've been planning at least 10 years ahead. The government will push it through. If they'd come out with an honest thing, well--but I think it's too late for that. People wouldn't know what to do if they did that. They're going to put it through anyway. In order to get it built, they have to lie."

It was from William Mason, Curator of History at the Los Angeles County Museum of Natural History, that CSRI learned that there was a cultural revival among Los Angeles people of Gabrielino descent. Mason referred CSRI staff ethnographer Jackson Young to Mrs. Dorothy Poole, who put him in touch with Mrs. Beatrice Alva, a Gabrielino leader. Mrs. Alva was subsequently contacted by Young, and arranged for him to meet or talk on the telephone with various members of the group, which apparently numbers about 200. Estimates by Gabrielinos themselves of the number of surviving people vary considerably. One young Gabrielino, himself a researcher, estimates the number at "several hundred--at least 200," while the Sacramento Land Claims Division of the Bureau of Indian Affairs counts some 2000 on the 1972 rolls who listed Gabrielino as a tribal affiliation. These rolls were put together in connection with the Claims Case, and may contain many who may have genetic ties with the Gabrielino, but do not identify culturally as such.

The unique response of the Gabrielinos is that none of those interviewed opposed the San Onofre project. One respondent stated, "I think that would be a nice thing. Sooner or later it's going to have to be done. They're making all the pipes bigger--water, gas, electricity--because they didn't know all the people would come in." Another said, "If we lived in the area [of the project] or if it was going to be done near here, preservation is the main thing--plus acknowledgement by SCE that the Gabrielino people exist. Reasonable people would see that these requests are not that far out."

Young interviewed 17 members of the Gabrielino group in depth, and talked for varying lengths of time to nearly 30 more, either face-to-face or on the telephone. There was a relatively high percentage in these interviews of "no response" to items on the interview schedule. This may have been because the Study Area is relatively far away from where they have lived and they were reluctant to talk about things they knew little about, or because they were reluctant to express individual opinions without consulting other members of the group. Individual responses are tabulated in Table 7-V and summarized in Table 7-VI.

To some of the Gabrielino, CSRI's study was an opportunity for getting recognition of the fact that Gabrielino still exist. It was suggested that SCE might assist Gabrielinos in their efforts to salvage the rapidly disappearing remnants of their former culture as a public relations gesture. Such assistance might take the form of preserving significant Gabrielino archaeological sites, of preserving and turning over to

TABLE 7-V. INDIVIDUAL RESPONSES: THE GABRIELINO

Symbols are: +, positive response; -, negative response; 0, no opinion or no response; NE, respondent believes there would be no effect. Symbols applying to disposition of human remains and artifacts are: DND, do not disturb;R, rebury; RNA, return to Native Americans; RTL, reroute transmission lines; NAD, allow Native Americans to decide; M, place in museum or other repository.

Respondent	Favor HVTL	More Energy Needed	Knowledge of Archaeological Sites	Concerns re Archaeological Sites	Concern re Burial Sites	Concerns re Newly Discovered Sites/ Artifacts	Knowledge of Plant Resources	Concerns re Plant Resources	Knowledge of Rock Art/Caves	Concerns re Rock Art	Knowledge of Animal Resources	Concerns re Animal Resources	Knowledge of Mineral Deposits	Concerns re Mineral Deposits	Knowledge of Sacred Areas	Concerns re Sacred Areas	Knowledge of Stories/Legends	Knowledge of Past Territory	Concerns re Scenery	Concerns re Health	Concerns re Economy	Knowledge of Trails, Canyons, and Ceremonial Sites	Knowledge of Traditional Events	Concerns re Recreation	Knowledge of Past Interaction with Juaneños
1	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	+	0	+	0	+
2	+	+	0	0	0	0	+	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	+	0	+
3	+	0	-	0	0	0	+	+	0	0	0	0	0	0	0	0	-	0	0	0	0	+	+	0	+
4	0	+	-	0	0	+	-	0	-	0	-	0	-	0	-	0	-	0	0	0	+	-	-	0	0
5	0	+	-	0	0	+	-	0	-	0	-	0	-	0	-	0	-	0	0	0	0	-	-	0	0
6	+	0	-	0	0	0	-	0	-	0	-	0	-	0	-	0	-	0	0	0	0	-	-	0	0
7	+	0	-	+	+	+	-	+	-	+	-	+	-	+	-	+	-	0	0	0	0	+	-	0	0
8	+	0	-	0	0	0	-	0	-	0	-	0	-	0	-	0	-	0	0	0	0	-	-	0	0
9	+	0	-	0	0	-	+	0	-	0	-	0	-	0	-	0	-	0	0	0	0	+	+	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	-	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0
12	0	0	0	+	0	+	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	-	0	0
13	+	0	0	0	0	0	-	0	-	0	-	0	-	0	-	0	-	0	0	0	0	-	-	0	0
14	+	+	0	0	0	0	-	0	-	0	-	0	-	0	-	0	+	0	0	0	0	-	-	0	0
15	+	+	0	0	0	0	-	0	-	0	-	0	-	0	-	0	-	+	0	0	0	-	-	0	0
16	0	0	-	+	+	+	+	0	-	+	-	+	-	0	-	+	+	0	0	0	0	+	-	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	-	0	0

Table 7-VI. SUMMARY OF GABRIELINO CONCERNS (N = 17)

Concerns	Yes		No		No Opinion		No Response	
	N	%	N	%	N	%	N	%
Favor HVTL	10	59	0	0	2	12	5	29
More energy needed	5	29	0	0	0	0	12	71
Knowledge of specific archaeological sites	0	0	7	41	0	0	10	59
Negative effects on archaeological sites	3	18	0	0	0	0	14	82
Concerns regarding the treatment of burial sites	2	12	0	0	7	41	8	47
Concerns regarding the treatment of newly discovered sites/ artifacts	5	29	1	6	0	0	11	65
Knowledge of plant resources	4	24	8	47	0	0	5	29
Negative effects on plant resources	2	12	0	0	6	35	9	53
Knowledge of rock art/caves	0	0	10	59	0	0	7	41
Negative effects on rock art/ caves	2	12	0	0	6	35	9	53
Knowledge of animal resources	0	0	11	65	0	0	6	35
Negative effects on animal resources	3	18	0	0	7	41	7	41
Knowledge of mineral resources	0	0	10	59	0	0	7	41
Negative effects on mineral resources	1	6	0	0	6	35	10	59
Knowledge of sacred areas/places of power	0	0	10	59	0	0	7	41
Negative effects on sacred areas/ places of power	2	12	0	0	6	35	9	53
Knowledge of stories/legends	4	24	10	59	1	6	1	6
Knowledge of past territory	1	6	0	0	0	0	16	94
Negative effects on scenery	0	0	0	0	6	35	11	65
Impact on economy	2	12	0	0	6	35	9	53
Negative effects on health	0	0	1	6	7	41	9	53
Knowledge of trails, canyons, and ceremonial sites	4	24	7	41	0	0	6	35
Knowledge of traditional events	5	29	12	71	0	0	0	0
Negative effect on recreation	0	0	0	0	9	53	8	47
Knowledge of past interaction with Juaneños	5	29	0	0	0	0	12	71

Gabrielinos for curation any artifacts found within territory which was once Gabrielino, and of possibly assisting in the establishment of a Gabrielino cultural center where such artifacts might be stored and displayed. Another suggestion was that SCE assist in developing access to areas traditionally used by Gabrielino people for collecting wild herbs and for hunting. Specific areas known to these respondents were not, however, in the San Onofre Study Area.

Even though most of those interviewed were among the older people in the Gabrielino group, they retained very little information about what the extent of Gabrielino territory had traditionally been. They came for the most part from families which have not been associated with the Study Area within memory, except insofar as they have had contact with Juaneños at Mission San Juan Capistrano. Two respondents recalled having attended Juaneño picnics held traditionally on the site of the present Bank of American in the southern part of San Juan Capistrano.

"We were together--the Gabrielinos and the Juaneños--we used to have pow-wows together when Clarence Lobo was their leader," one respondent reported. Another, brother to the first, added, "It was at a barbecue held at San Juan Capistrano in 1955 that I first met Clarence Lobo.... In 1978 the senior citizens from San Gabriel went to San Juan Capistrano where a barbecue was held just two blocks south of San Juan Capistrano mission." A third respondent reported that Clarence Lobo had represented both the Gabrielino and the Juaneño at congressional hearings held in Washington in 1961. "Clarence Lobo designed an American flag," added this respondent. A fourth respondent noted, "Clarence Lobo is a good speaker."

Several respondents wondered why they were being asked about San Onofre at a time when construction on the project had been nearly completed. Ten (59%) of the respondents indicated that they favored the project, however. Five (29%) made no response to this question, and 2 (12%) said they had no opinion. One summarized his feelings, "I don't know why they can't figure out how to get rid of nuclear waste, but my personal feelings are--I see this as so far removed, I just can't relate...[to it]." Five (29%) acknowledged that southern California needs more energy.

Archaeological Sites

Only two people of those interviewed in depth indicated any knowledge of archaeological sites, and the sites they knew about did not lie within the Study Area. Three (18%) expressed concern that the project not impact any sites, but said they had no knowledge of any sites in the Study Area. Five (29%) said they knew nothing about any sites, and 10 (59%)

did not respond or had no opinion. Five (29%) indicated a concern for newly discovered sites or artifacts.

Burials

Only two (12%) of the Gabrielinos expressed a concern for the treatment of burial sites. Fifteen made no response or expressed no opinion.

Plant Resources

Apparently native plants, although less used by the Gabrielino than by other Native Americans in southern California, are highly regarded as "historic memorabilia." Specific plants mentioned by respondents included yerba talvadia, used for fever and taken as a tea; yerba manso, used for colds; and yerba santa, used for coughs. Although these and other plants were known and used, no one mentioned any sites within the Study Area as sources of them.

Four Gabrielinos (24%) had knowledge of traditional plant resources. Eight (47%) said they knew nothing about plant use, and 5 (29%) made no response. Two people felt that the project would have a potentially harmful effect on plants; 15 (88%) had no opinion or made no response to this question.

Rock Art and Caves

One respondent claimed specific knowledge of a rock art site, but it was not within the Study Area. Nine (53%) said they did not know of any rock art or caves, and 7 (42%) declined to comment. Two were concerned that rock art not be destroyed if it should be in the project right-of-way.

Animal Resources

Animal resources were not of particular concern to the Gabrielino interviewed. No one knew anything about hunting or other uses of animals within the Study Area. Three people (18%) expressed a belief that the HVTL might adversely impact animal resources. The remaining 14 (82%) were evenly split between those who had no opinion and those who declined to respond.

Mineral Resources

None of the 10 (59%) people who responded to the question about mineral resources knew of any within the Study Area. The remaining 7 (41%) declined to respond to this question. One (6%) of those interviewed was concerned that the San Onofre project might have an adverse impact on mineral resources, but the other 16 (94%) had no opinion or made no response.

Areas of Sacredness or Power

Ten (59%) of those interviewed responded to this question. None knew of any areas that were sacred or that were reputed to be associated with supernatural power within the Study Area. Two felt that the project might affect sacred areas adversely, 6 (35%) had no opinion, and 9 (53%) chose not to respond.

Stories, Legends, Traditional Events

Four respondents (24%) said they knew of Gabrielino stories or legends, but did not know of any that involved the Study Area specifically.

The single question in the entire schedule to which all 17 respondents replied was that concerning knowledge of traditional events; 14 (82%) said they had some knowledge of such events, but only 5 (30%) knew of such events in the Study Area. These events were the barbecues and pow-wows described on page 7-48. Three said they did not know of any such events.

Trails, Canyons, Ceremonial Sites

Four people (24%) had some knowledge of trails, canyons, and ceremonial sites, but none knew of any within the Study Area. Seven (41%) said they had no such knowledge and 6 (35%) chose not to respond.

Health and Economy

Most of the Gabrielinos intreviewed expressed no opinion regarding any effect of the San Onofre project on health, but one respondent expressed the opinion that HVTLs in general

have no effect on health.

Two respondents thought the project would have a positive effect on the economy, apparently because of its contributions to meeting energy requirements of the future.

No respondents expressed concern about the project's effect on recreation in the Study Area, or about its effect on the scenery.

Group Meeting

During the course of the fieldwork performed as part of this study, and in fact in response to it, over 40 Gabrielinos assembled at a private residence in San Gabriel on January 28, 1979, to meet with Bean, Vane, Young, and Massey of the CSRI staff. The meeting provided a forum for further discussion of the San Onofre project, and of Gabrielino points of view. Information gained at this meeting corroborated the findings in the interviews, as described in the foregoing account.

CHAPTER VIII. ETHNOGRAPHIC IMPACT

The Juaneño, Luiseño, and Gabrielino are among several coastal California Indian populations who have experienced intense European and Euro-American contact for centuries. The strategic position of their former territories in relation to the sea, and the resources offered by varied climatological and ecological zones within these boundaries, have been persistent attractions for non-Indian settlement. While the history books of intrusive populations allude to conquest, expansion and development, the historical experience of the Juaneño, Luiseño, and Gabrielino is marked by devastating depopulation, missionization, encapsulation, and territorial displacement.

Many of the Luiseño people, whose homeland once included 1500 square miles, are now limited to small inland reservation holdings. There has never been a reservation in the traditional territory of the Juaneño or Gabrielino.

The post-contact and acculturative experiences of the three groups differ in significant ways and have produced contrastive contemporary organizations. To the casual observer it may appear that their acculturation to Euro-American society is nearly complete. The results of CSRI's investigations, however, indicate that indigenous cultural elements and a strong sense of ethnic identity are marked among them. Contemporary sociocultural differences between these populations reflect not only different historical experiences, but different adaptive strategies for cultural persistence. One of the significant factors in the development of different strategies lies in the contrasting policies of Mission San Luis Rey and the other two missions.

Mission San Gabriel, established in 1771, and Mission San Juan Capistrano, established in 1776, instituted a rather intensive program of attaching Indians directly to the mission compound. Ancestors of the Gabrielino and Juaneño who occupied coastal areas were relocated to the missions, where they were instructed in Catholicism, the Spanish language, and European subsistence and technology. The high mortality rate suffered by these early mission peoples from disease and unhealthy living conditions encouraged the mission fathers to incorporate into their fold Indians from increasingly distant interior villages.

The early post-contact experience of the Gabrielino and Juaneño, then, was characterized by immediate territorial displacement and loss of land tenure, significant depopulation,

and intensive acculturative efforts in a foreign setting (a hamlet of essentially European social and technological profile). Some descendants of the original Juaneño mission population continue to occupy an enclave in the city of San Juan Capistrano and to maintain symbiotic relationships with the mission, and some descendants of the Mission San Gabriel converts have survived in what has become the megalopolis of Los Angeles, sometimes submerging their ethnic identity as a strategy for survival or upward mobility.

In contrast, Mission San Luis Rey, established in 1798, instituted a policy more akin to indirect rule. Luiseño villages were left intact, with priests visiting them in rotation. Although depopulation through disease was severe, the Luiseño maintained territorial integrity and greater sociocultural distance from acculturative agents, which promoted the persistence of a separate ethnic identity in relations with mission priests, and later, Mexicans and Anglo-Americans.

Despite the superstructures that have been imposed upon Luiseño communities for purposes of political and economic control, the traditional political structures articulated by religious leaders have continued to predominate in internal affairs. The establisnment of separate reservations in the 19th century only served to underscore the traditional political autonomy of Luiseño bands.

Strategies for Cultural Persistence

The contemporary adaptive strategy for cultural persistence employed by Luiseño bands has been consistent through time. Generally, encroachment and encapsulation by foreign populations were met in the mission period by passive resistance. In the Mexican and early Anglo-American periods there was active military resistance. In the modern period, legislative and litigative measures have been borrowed from, and turned to advantage against, the dominant society. Reservations have thus served as islands, the boundaries of which are maintained by old traditions and defensive strategies. Under such conditions, a significant number of distinctively Luiseño cultural elements could be expected to persist.

But what of the Juaneño? How is cultural persistence to be explained among a population without a land base, and with close ties to Roman Catholicism and the San Juan Capistrano mission? This is an interesting question, worthy of independent study from the standpoint of acculturation theory. One hypothesis is that the Juaneño have maintained their cultural identity not in spite of, but <u>because</u> of their historic and persistent symbiosis with the mission.

In any symbiotic relationship, two mutually distinct entities interact for mutual benefit. In the case of the early priests, resettled Juaneños provided both the mundane and the spiritual commodities--namely, labor and souls--essential to the success of the mission. The Juaneño, decimated by depopulation and cultural anomie, adopted a strategy of passive resistance. They completed the exchange with mission priests by receiving the mundane and spiritual commodities of new technological skills and Catholicism. What perhaps began as a strategy for the physical survival of remaining Juaneños evolved into a true symbiosis, wherein each group not only depended upon the exchange itself but benefited from ensuring the maintenance of distinctiveness between them. As an example, the role of mission bell-ringer --filled historically by a Juaneño who served as a liaison between the mission and Indian communities--is still important today.

Once secularization of the mission began, in 1833, one might expect the cultural patterns underlying this symbiosis to disappear. The Juaneño, however, may have found that despite the tragic beginnings of their mission relations, the cruel treatment exacted by priests was preferable to that of later and more militaristic populations (Mexican and Anglo-American). While some Juaneños fled inland to join Indian refugees, others undoubtedly blended into ranch and town populations where their Catholicism and technological skills promoted surface integration.

For more than a century, ethnic identity seems to have been covertly maintained in the socialization process, and may have served as an important mechanism of solidarity and mutual aid among Juaneño families in their relations with the increasing ranks of intrusive populations. Currently, the Juaneño appear to be undergoing a cultural resurgence, revivifying those traditions that have been maintained over the centuries and seeking knowledge of others that have been lost. Federal funding programs have stimulated these processes.

Whether this or another hypothesis is preferred, the fact remains that significant elements of the Juaneño cultural heritage have persisted to the present day. The Juaneño and Luiseño people have maintained a close spiritual association with their former territories, and with the natural and cultural resources associated with these lands. Their sovereignty, like that of other Native Americans, has been subjected to ongoing erosion. The recent encapsulation of reservations by non-Indian housing projects and the violation of remaining pristine ancestral lands by real estate developers are viewed as merely the latest in a long series of events in which Indians are taken advantage of and Indian sacred areas are defiled by outsiders. It is perhaps

understandable, therefore, that the majority of Juaneños and Luiseños interviewed in this study saw the San Onofre project in a negative light and felt that it would have an adverse effect on cultural and natural resources in the area.

The Gabrielino have had yet another kind of experience. The mission having been established earlier than the others, they are approximately a generation further away from their traditional cultural background. When the mission system broke up, some went to live with Cahuilla, Luiseño, Juaneño and other groups in outlying areas. Others remained in the area near the mission or in increasingly urban Los Angeles, submerging but remaining aware of their ethnic identity as Native Americans during a long period when there was an extreme bias against Native Americans on the part of the dominant society. It appears that they are reasserting their Native American identities now that this bias is weakening. Having lived as urban people for several generations, Gabrielinos interviewed in this study generally supported the San Onofre project as a reasonable means for assuring adequate energy for southern California.

In this chapter, the relative impact of the San Onofre project on Native American values is summarized, and Native American suggestions for the mitigation of the negative impact of the project on natural and cultural resources are presented.

First, however, some elements peculiar to the timing of the San Onofre construction must be examined for possible impact on the values of Native Americans in the Study Area. A significant factor is that the construction for the San Onofre project, consisting of the construction of new lines parallel to those built in 1965 in the San Onofre-Santiago Tap section, and improvements to the line in other sections, had largely been completed before the Juaneños and Luiseños were approached for comment. Consequently, many of these people viewed the data request as a mere window-dressing effort, and as an indication that Native American concerns would not be seriously addressed. This generalized distrust of the motives of large corporations and government agencies is based on the historical experience of being exploited by outsiders.

Several Luiseño respondents viewed with suspicion the contrast between the considerable advance notice given for SCE's Mira Loma project and the late, post-construction timing for the San Onofre project. Others among those interviewed felt that SCE and SDG&E were withholding information about future plans, and alleged that they intend to connect those two lines.

Given the inclination of Native Americans to relate

change--particularly change without advance notification and input--to the compromising of their own interests, the timing of the data request may be viewed as having a negative impact on the establishment and maintenance of an effective dialogue between the power companies and the Juaneño-Luiseño communities.

RESOURCES SUBJECT TO IMPACT

Physiographic Features

For Native Americans in the Study Area, physiographic features are associated with the creation of the universe and of all life forms in mystic times. Mountain peaks and ranges, canyons, rocks, springs, watercourses, native flora and fauna, and humans are balanced elements, in a unitary spiritual network. By virtue of their association with traditional cosmology, certain features of the natural environment are particularly significant as sacred areas. Such significance is attached to the homes of supernatural beings and other sources of power, as well as to sites associated with ancestral occupations. Because violation of the landscape and its life forms upsets the original spiritual balance of the universe, "development" is a source of both disdain and anxiety for contemporary Juaneños and Luiseños.

Santiago Peak and the Santa Ana Mountains are regarded as sacred by the Juaneño and Luiseño. Neither of these areas is directly impacted by the San Onofre project or by the existing transmission line from Santiago Tap to Black Star Canyon.

Several of the Native Americans who were interviewed regarded the entire Study Area as a sacred shrine, because of its association with traditional cosmology and ancestral occupation. The region traversed by the transmission line from the San Onofre Nuclear Generating Station to Black Star Canyon Tap is a subject of concern on several counts:

1. archaeological sites in the existing San Onofre corridor, which have already been impacted by construction of transmission line towers;

2. archaeological sites in and adjacent to the transmission line corridor, which are subject to impact by the construction of new towers and replacement of conductors;

3. possible Native American burials if they were to be found throughout the Study Area, which may be disturbed by tower excavations and reconductoring activities, and

4. gathering grounds for plants used traditionally for food, medicine, and basketry, located within the transmission line corridor and presently unavailable to local Native Americans.

Native American respondents consistently related new developments not only to destruction of the natural environment and cultural resources, but also to decreased access to areas of cultural significance. Juaneños were particularly disturbed by their diminishing ability to enter ancestral lands for traditional activities because of the increase of private ownership and easements. Any new development that places further restrictions on the movement of Native Americans into these areas simultaneously threatens the ability of these populations to maintain their cultures as "persistent peoples."

Mineral Resources

No significant contemporary use of mineral resources in the Study Area by Native Americans was indicated, although several people noted former uses of stone materials for tools and sacred objects, and of clay for pottery and paints. Suitably shaped stones are still collected from the San Juan River for use as manos, or grinding stones. As with other resources in the Study Area, access to ancestral lands may determine the extent to which mineral resources are still exploited. Manos and metates made by earlier Juaneño populations, for example, are often washed down from high ground by streams during seasonal rains, and were formerly collected and used by contemporary Juaneños for grinding acorns. Access to areas where these tools may be found has now been sharply limited, so this source is no longer exploited.

Important clay veins, such as those on the Starr Ranch, have historic importance as a paint source for the Juaneño, and at least one respondent felt that the clay would be "ruined" if the transmission line were to bisect the deposits.

Water Resources

The Luiseño and Juaneño share with other Native Americans a particularly close spiritual association with hot springs. Such sites are uniformly regarded as sacred, both for their curative powers and as a symbolic link with mystic times. Access to and use of hot springs by Native Americans, and the maintenance of their sanctity as shrines, are highly sensitive issues.

San Juan Hot Springs, noted by both Juaneños and Luiseños as a sacred shrine, is just outside the Study Area. Although it apparently will not be directly impacted by the San Onofre project, CSRI feels this site of sufficient cultural importance to be considered in this report. The springs are on land now owned by Orange County and have been capped. Native Americans have been denied access to this site, and some have been arrested for trespassing in their attempts to reach this sacred area. The proposed 5500-acre Casper Park will include San Juan Hot Springs within its boundaries, but restoration of the springs and their use by Native Americans are still in question.

Like all other Americans, Native Americans tend to carry over previous experiences--whether pleasant or unpleasant--and attitudes generated in one instance may affect subsequent situations where further erosion of access rights is a potential issue.

Biological Resources

The flora and fauna of the Study Area have already been significantly impacted by the encroachment of ranching, housing, and other commercial developments in wilderness areas. Selected native plants and animals, however, still survive in remote regions. Several native plants continue to be exploited by Juaneño and Luiseño individuals who have retained traditional knowledge of their use as well as access to the habitats in which they are found. Two Gabrielino claimed such knowledge.

Unfortunately, most areas where important food and medicinal plants may be gathered are privately owned and restricted. The combination of increasing real estate development and decreasing access by Native Americans has created a biological and cultural crisis, in which extinction of native species and the extinction of important cultural traditions go hand-in-hand.

Flora. Traditionally, Native Americans of the Study Area collected a wide variety of plants for food, medicinal purposes, and basketry materials. Primary foods included several species of acorns, seeds of various grasses, greens, fruits, cactus, bulbs, roots, and tubers. In addition, at least twenty species are known to have been used medicinally (Kroeber 1925:649-651).

Contemporary Luiseños and Juaneños attach considerable cultural importance to the harvesting of acorns, still available on selected public lands in the Study Area. Other traditional food and medicinal plants they desire, however, are less accessible. CSRI field crews noted that a wide variety of native flora survives within the SCE right-of-way. The following perennials were noted: chamise, opuntia, wild buckwheat, elderberry, Baccharis, live oak, sycamore, willow, black sage, white sage, scrub oak, toyon, coastal sage, wild tobacco, yucca, laurel, sumac, deer bush, bush mallow, Jimsonweed, malva, rushes, various ferns, "live forever," cholla, "monkey flower," nolina, nightshade, wild cucumber, and lupine. All of these plants were observed growing in restricted areas, however, where they are unavailable to Native Americans.

Respondents expressed considerable concern that traditional medicinal plants they desire are inaccessible to them in the wild state and cannot be obtained from commercial outlets. Others complained that traditional plants, including basketry materials, are needed for educational purposes but cannot be obtained because there is no access to their remaining natural habitats. The SCE project was seen as a factor that would limit access still further.

Fauna. Native Americans in the Study Area formerly exploited a wide variety of land and marine fauna for subsistence. Deer, antelope, cottontails, jackrabbits, ground squirrels, mice, quail, doves, ducks, and other birds were important food sources. Freshwater fish were also taken in streams. The ocean provided sea mammals, molluscs, crustaceans and fish, as well as a number of important secondary products such as shells (used for bowls, paint, sacred objects, and ornaments) and tar.

In addition to their role in subsistence, native fauna have an important place in the traditional cosmologies of the Juaneño and Luiseño. Prominent in this respect are the eagle, deer, coyote, raven, and hummingbird. Since the mission period, the seasonally migrating swallows of San Juan Capistrano have taken on sacred significance for the Juaneño people.

The extent to which fauna are exploited in the traditional manner by Native Americans in the Study Area relates, once again, to access. The taking of major marine resources, such as mammals and abalone, is now restricted by law. The hunting of traditional game animals, a culturally significant activity to the Native American, is limited by seasonal restrictions as well as lack of access to wilderness areas. This situation has led to instances of poaching and subsequent arrests for trespass and license violations. Juaneños complain bitterly that such restrictions deny not only a valuable food source to Native Americans, but the continuation of activities essential to their culture as well. In the words of one respondent, "Today with my kids I like to show them the land--our heritage. Now it's all fenced off. We are denied special hunts like in the old days." CSRI field crews noted that traditional Juaneño and Luiseño game animals are unusually abundant in areas adjacent to the project right-of-way, to the extent that some species, such as deer, are beginning to expand into populated areas.

It is important to distinguish the symbolic content for Native Americans of traditional hunting, fishing and gathering, from the attitudes of non-Indians in the larger society. Whereas other Americans engage in these activities primarily for recreation, for the Juaneño and Luiseño they represent an important link with the past--a past when the spiritual balance among all living things created during mystic times held sway.

The denial of access to undeveloped areas and the gradual crowding-out of native flora and fauna by development are thus not only physical but spiritual in content and effect.

Burials and Artifacts

Interview data, published literature, and field reconnaissance indicate that a large number of burial and other archaeological sites are located in the Study Area. Because of the proximity of some known sites to the San Onofre lines, and the likelihood of dense scatter of other previously unrecorded burial and occupation sites throughout the area, the probability of disturbance during tower excavation and conductor installation is high. These sites are of tremendous significance to contemporary Native Americans.

Burial sites are consistently regarded by Native Americans as sacred. The uncovering of ancestral remains not only constitutes an act of desecration, but is viewed by some

respondents as dangerous. Exposure of ancestral remains is spiritually polluting and constitutes a hazard to the welfare of contemporary Native Americans. The Luiseño people have already taken a public position on this issue with regard to disturbance of burials on the Interstate 15 construction project. Juaneños are also adamant in their objections to the disturbance of burials. Such remains may contain artifacts that are themselves sacred, which require careful handling and proper disposition by religious specialists. No specific instances of burials being disturbed by the San Onofre project were cited.

Disturbance of occupation sites in and adjacent to the San Onofre right-of-way is also a concern. Juaneños are currently in the process of establishing a museum and cultural center. Like many other Native American peoples, however, they find that access to the artifacts of their own ancestors is a persistent problem. Construction of the transmission line thus has a dual negative impact for Native Americans. That is, not only are sites essential to the reconstruction of Juaneño, Luiseño and Gabrielino culture history subject to disturbance or destruction, but the associated artifacts are themselves in the hands of non-Indians.

Trails

Trails are another feature that link contemporary Juaneños, Luiseños, and Gabrielinos with historic, prehistoric, and mystic times. These paths were used by ancestral populations for subsistence activities, communication and trade, warfare, and travel to sacred places and places of power. Trails are often associated with grinding-rocks, petroglyphs, and shrines, and are symbolically equated with the sacred activities for which they were used. Trails are additionally important as markers of migration routes that were followed by mythological personages and ancestral populations noted in traditional legends.

Certain trails in the Study Area have historical significance for Native Americans, Mexicans, and Anglo-Americans as well. One example is the trail between San Juan Capistrano and Elsinore (now the Ortega Highway), which is associated with the flight of Indians from the mission to the interior following secularization in the 19th century. Today as in the past, major trails of the Study Area serve non-Indian populations as highways for travel.

The project crosses some of the trails extending from San Onofre to San Juan Capistrano, and from San Juan Capistrano to San Juan Hot Springs (some of the archaeological sites discussed in Chapter IX are associated with trails).

Rocks and Rock Art

Six petroglyphic sites are known within the Study Area and it is probable that there are others which have not been recorded. These sites are a matter of concern to Native Americans, and should be regarded as shrines or sacred sites. Petroglyphs are symbolic representations of the traditional cosmology and cultural history, and are therefore significant and irreplaceable records of Native American heritage.

Petroglyphic sites have had a persistent attraction for non-Indians, and for inexplicable reasons are often defaced or removed by vandals and pothunters. The likelihood of wanton destruction increases as residential and commercial areas are developed nearby or as roads make remote regions more accessible.

Maintenance roads are associated with transmission lines, and the general public may traverse such roads, whether legally or illegally--if not in vehicles because of locked gates, then on foot. The project carries with it the potential for negative impacts via the provision of new access to undisturbed rural areas.

In addition to rock art, bedrock with circular depressions associated with acorn processing is culturally significant to Native Americans in the Study Area. Such grinding-rocks are distributed throughout the hill and canyon areas, in most cases adjacent to former or existing acorn groves and streams. They remain as monuments to a traditional subsistence cycle of ancestral populations, and are themselves often associated with former village, petroglyphic, or other sacred sites. It is difficult for non-Indians to fully comprehend the symbolic nature of such rocks, and their emotional and spiritual content for Native Americans. One Juaneño said, "There are some old Indian villages toward O'Neill Park. Also a big rock and grindstones. When you go there, it's as if Indians are just coming over the hills again. It would be terrible if they had to take down those rocks for the power lines."

CONCLUSION

Although Gabrielino who were interviewed favored the San Onofre project, most Juaneño and Luiseño respondents whose concerns are addressed in this study are opposed to it. To a large extent, this opposition is based on their historical experience with previous situations in which non-Indians have

encroached on areas of cultural significance. They have also observed that commercial development on ancestral lands has resulted in the destruction of cultural resources or the loss of access to them.

A second factor in Juaneño and Luiseño opposition to the San Onofre project is the belated solicitation of Native American response to the project. Aside from the fact that the original lines were completed in 1965, many years prior to legal requirements for consideration of possible impacts on Native American cultural resources, a signifcant part of the additions and improvements to the line to which this study is addressed had largely been completed before interviewing began. Native American respondents and consultants suggested several measures which might recognize Native American concerns for protecting and preserving areas of cultural significance.

1. That Juaneños, Luiseños, and Gabrielinos be involved in the planning stages of any future SCE and SDG&E development that will directly affect their cultural resources, and that sufficient time be allowed for them to formulate official positions on these matters according to the traditional Native American decision-making process. Such involvement must be preceded by proper notification of Juaneño and Gabrielino groups and of spokespersons for each Luiseño reservation.

2. That SCE and SDG&E make a more concerted effort to preserve Native American archaeological sites and associated artifactual materials, and that financial restitution be made to local Native American groups for each instance of site destruction for which prior knowledge was available.

3. That SCE and SDG&E undertake every possible measure to aid Juaneños, Luiseños, and Gabrielinos in the procurement and curation of cultural resources such as artifacts and traditional plants.

4. That SCE and SDG&E intensify efforts to recruit Native Americans for career blue- and white-collar positions within the corporations.

Mitigation with Respect to Biological Resources

Traditional uses of native flora and fauna by Native Californians have been restricted increasingly by non-Indian land acquisitions and development. Important game animals and traditional plants survive in considerable numbers in the Study Area but are generally limited to large privately held ranchlands. Historically, Juaneños and Luiseños have seen open range with free access to biological resources become gradually replaced by private reserves where native flora and fauna are sustained but inaccessible. Today, these large landholdings are themselves rapidly succumbing to subdivision and development. The critical issue for Native Americans has thus become not only one of access to biological resources, but of preservation as well.

Native Americans point out that the San Onofre project involves some destruction of native flora in the right-of-way. These species appear to be well distributed locally in remaining undeveloped areas and are therefore not subject to immediate extinction as a result of the project. The fact that scores of native plant species desired by Native Americans, but locally unobtainable by them, are growing freely in the project easement inspires them to suggest that the power companies negotiate with private landholders for sample removal of selected species in the right-of-way. They indicate that this is not only a reasonable gesture but a rare opportunity for restitution to Juaneños, Luiseños and Gabrielinos for loss of cultural resources at minimal cost.

Native American consultants point out that the use of native plants for food, medicines, and textiles is of tremendous importance to them, and that a conscious effort ought to be made to preserve these species in plant resource parks. They believe that the establishment of such a park or botanical garden in the San Juan Capistrano area with SCE aid has several advantages:

1. Selected plants may be immediately identified and removed without construction interference or delays.

2. Removal of selected species and their transportation to a local site can be accomplished by a supervised team of Native Americans at minimal cost to SCE.

3. Transplanting of removed species can be undertaken by Native Americans themselves at a site to be designated for their use by Orange County. Two such sites, one in Aliso Creek and one in Casper Park, are currently under negotiation by the Capistrano Indian Council, Inc. No site or maintenance costs would therefore accrue to the power companies.

4. The establishment of such a Native American botanical garden in San Juan Capistrano can serve as a small-scale, low-cost experiment by the power companies on the feasibility of this type of mitigation in other areas.

Native American consultants further point out that plant removal in the existing right-of-way, under existing permit conditions, will require suitable negotiations between SCE and private landholders with whom easements are held. The number of plants involved is small, and their market value minimal. A list of desired traditional plants might be drawn up by local Native Americans, who could select people knowledgeable of indigenous flora to arrange for removal and transportation to a new site.

Mitigation with Respect to Cultural Resources

The most direct and serious impact of the work associated with the SCE project lies in the disturbance and destruction of archaeological sites. Ideally, projects should be designed to avoid all such sensitive and valuable remains. In this instance, however, CSRI's archaeological study shows that many sites have been impacted. (A full report on this part of the study follows in Chapter IX.)

CSRI mitigative suggestions for specific sites in the project right-of-way are focused in significant part on Native American attitudes toward the disturbance or destruction of cultural remains, and the ways in which damage to these resources may be mitigated.

Native Americans in the San Juan Capistrano area have a sophisticated knowledge of archaeological resources in the Study Area, from both traditionalist and scholarly viewpoints. Individuals have access to and knowledge of site reports, previous impact reports and associated mitigative recommendations, and the locations of specific sites in relation to the San Onofre project.

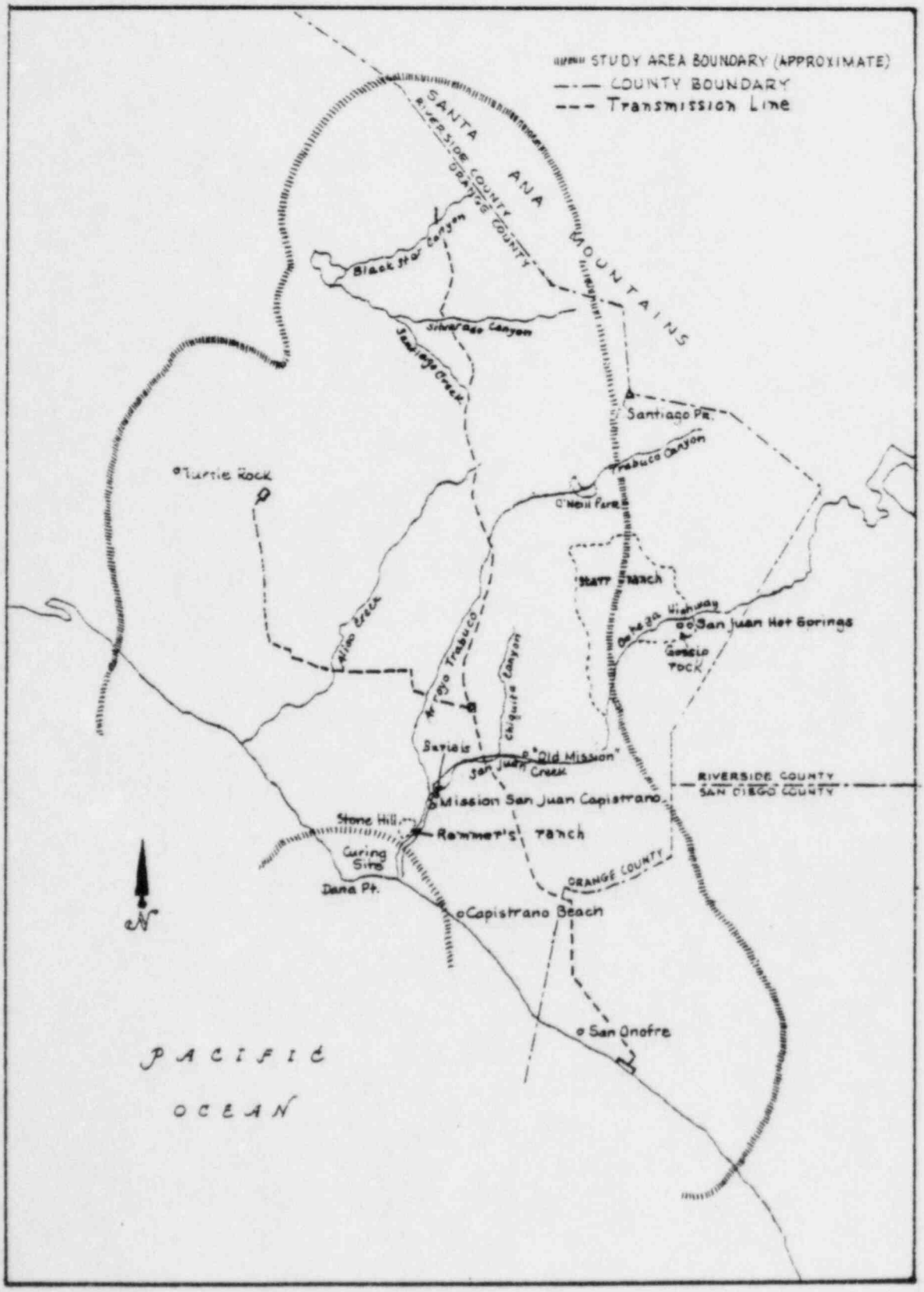
Native American respondents suggested that direct SCE and SDG&E aid to Juaneño and Luiseño cultural history projects be given to mitigate the impact that has already resulted from disturbance and destruction of archaeological sites. The Capistrano Indian Council, Inc., for example, has plans to establish both a small museum and a Juaneño Cultural Center. The museum will be housed in the Parra Adobe, to be restored by the City of San Juan Capistrano and leased to the CICI in early spring. Funds for museum display cases have already been committed by the Bank of America.

A more ambitious project, the Juaneño Cultural Center, is proposed for construction on one of three possible sites (Ors-434, Aliso Creek, or Casper Park) now under negotiation. The Center will require considerable funding, and plans to establish a foundation for this purpose are now under way. General mitigation suggestions made by Juaneño respondents include SCE monetary contributions to the Center Foundation and SCE engineering aid in the designing of a solar energy system for the proposed center building. Luiseños interviewed also expressed a desire to establish a local museum, in addition to a library focusing on Luiseño culture history and ethnography and on Native Americans in general.

The Native American consultants who attended a conference to make recommendations for the mitigation of impacts to archaeological sites (see Chapter IX) expressed the opinion that power companies should not be permitted "to gain financially" from neglecting to have surveys done before construction, or from failing to follow the recommendations of archaeologists who have done surveys. The consultants proposed that recompense should be made to the Native American people, for damage to sites that they value, by donations to a Juaneño cultural center or by putting funds in trust until such an institution can be founded. Such an institution, they suggest, should be given the responsibility for curating artifacts from the sites in question. The amount of financial compensation recommended was the difference between the cost of avoiding the impact, or mitigating it as recommended, and the cost of mitigation under the actual circumstances. CSRI recognizes that once sites have been impacted or partially destroyed it might be very difficult to determine what the approximate costs of mitigation would have been. If this recommendation is pursued by SCE, CSRI recommends that archaeologists who were working in the project area prior to the construction of the transmission line be consulted regarding reasonable costs that might have been incurred had mitigation been accomplished at that time.

From information available to them at the time, participants at the conference drew the conclusion that Langenwalter (1974) had made mitigation recommendations with respect to some sites in danger of being impacted in the Santiago Tap-Santiago Substation section of the San Onofre project, and that these recommendations had not been followed. CSRI has since been informed that SCE made a careful effort to place towers so that sites noted by Langenwalter would not be impacted. The observed impact to sites is apparently a consequence in some instances of construction which took place before legal requirements for archaeological studies were in force, and in other instances of the fact that the full extent of sites was not determined as part of the mitigation. The reasoning behind CSRI's recommendations that, in most instances, test excavations be made to determine the full extent of sites is illuminated by the fact that these sites were impacted despite mitigation measures which seemed adequate in the light of information gained from surface survey.

The disturbance of human burials is a very serious matter to Native Americans. Although there is some disagreement among those interviewed, most Juaneños and Luiseños indicated that uncovered human remains must be immediately reburied in a proper manner by Native Americans. The final disposition of any exposed skeletal remains must in each case be decided and carried out by members of the local Indian community. CSRI is unaware that any skeletal remains have been uncovered during this project.



Map 8-1. Ethnographic Locations

CHAPTER IX. ARCHAEOLOGICAL RESEARCH RESULTS AND RECOMMENDATIONS FOR THE MITIGATION OF NEGATIVE IMPACT

INTRODUCTION

A number of federal laws have been passed and regulations formulated in order to preserve and protect the nation's historic and cultural properties. These statutes, which include the National Environmental Policy Act (NEPA), the National Historic Preservation Act of 1966 (NHPA), Executive Order 11593, and the Archaeological and Historic Preservation Act(AHPA) of 1974, apply to any property under the jurisdiction and control of federal agencies, and require the owners or lessees to take appropriate measures to comply with these laws through avoidance and/or mitigation. Archaeological materials come under the jurisdiction of the above as a non-renewable resource; therefore, their eligibility for inclusion in the National Register of Historic Places should be determined. This is the mechanism prescribed for providing that eligible sites be preserved by means of physical protection or the recovery of data (King et al. 1977:83-90).

In this chapter CSRI presents the results of its reconnaissance and survey of the San Onofre-Santiago Tap section of the San Onofre project (SCE and SDG&E), and the Santiago Tap-Santiago Substation and Santiago Tap-Black Star Canyon sections of the project (SCE). The survey has been made and the report written with the requirements of the above-mentioned legislation in mind.

RESULTS OF FIELD RECONNAISSANCE AND SURVEY

Sites and Loci Defined

In discussing the results of CSRI's field reconnaissance and survey, a distinction is made between loci and sites. Loci are defined as containing not more than three items of debitage (cores and flakes showing no definite signs of use) and/or no more than one artifact. Sites are defined as containing more than three items of debitage and/or one or more artifacts.

No mitigation is deemed necessary for impacts upon loci, although it is important for the archaeological record that their locations be noted.

Summary of Findings

CSRI field survey teams found that several loci and sites were situated on or near transmission line rights-of-way and access roads, or in other construction areas associated with the project.

San Onofre-Santiago Tap. The field survey teams found that two previously recorded sites and one newly discovered site had been impacted, or were likely to be, by the construction of new transmission lines. Five previously recorded loci were also discovered.

Santiago Tap-Santiago Substation. CSRI field teams found that six previously recorded sites and two newly discovered sites had been impacted, or were likely to be, by the reconductoring and other improvements to the line. It should be noted that it was not possible to differentiate between impact from work done for the present project and impact resulting from regular maintenance of the line.

One of the six previously recorded sites could not be evaluated because admission to the site was denied. This site was examined and discussed by Langenwalter (1974:5) and Dodge (1978).

Santiago Tap-Black Star Canyon. The CSRI survey teams found four previously recorded sites and thirteen sites not previously recorded. Surface artifacts from one other previously reported site lay at the very edge of the right-of-way, and may impinge upon it.

In one or another part of the project area, six previously recorded sites have been destroyed in the course of housing development by landowners. In one instance salvage archaeology has been carried out; in another, the site was destroyed during the course of archaeological investigations.

As noted earlier, CSRI field teams could not determine whether impacts to sites in the Santiago Tap-Santiago Substation and Santiago Tap-Black Star Canyon areas have been caused by this project or by earlier work on the transmission lines. Site descriptions presented here provide what information could be gained by observing where the sites are, what surface features were found, and what kind of impact the sites appear to have been subjected to. It should be noted that the regrading

of existing roads appears to be a source of continuing impact on sites. Regrading has been associated with the reconductoring project.

Mitigation measures recommended by CSRI are based upon those that a team of archaeologists at a conference assembled for the purpose recommended as appropriate from an archaeological point of view. The fact that in most instances the power companies do not own the right-of-way, but only have easements, has not been taken into consideration; that is, the mitigative measures recommended are those CSRI considers to be archaeologically best for the particular site, irrespective of property rights or who is the owner of those rights.

In making recommendations for mitigating adverse impact on a site, CSRI has adhered to the principle that the preferred means of mitigation is preservation of the site.

SITE DEFINITION

The definition of an archaeological site is not standardized throughout the country. In Orange County surface materials tend to be thinly scattered, in contrast to regions where artifacts are found in greater densities. As Schiffer and Gumerman have noted, the methods used in surveying areas not technically classifiable as sites have assumed importance, because isolated artifacts and diffuse scatters may provide data about prehistoric cultures that are not available from other sources (1977:184).

Therefore, in assessing prehistoric material of the Study Area, which is located within Orange County, CSRI has taken cognizance of any location where such materials have been observed. CSRI numbers have been assigned to every such location, followed by archaeological clearing house numbers where these have already been designated. Previously unreported locations are designated by capital letters as either new loci or new sites.

"New loci" are locations where not more than three items of debitage (flakes and cores not showing definite evidence of having been utilized) and/or one other artifact are found within a single topographic unit and not more than several hundred feet apart. For example, two flakes found 200 feet apart on the same ridge constitute one locus, whereas a flake on a hilltop and another on the bank of a nearby stream constitute two loci.

"New sites" are locations where more than three items of debitage and/or more than one other artifact are found within a single topographic unit and not more than several hundred feet apart. The cultural materials constituting a site may consist of features such as rock cairns, petroglyphs, or bedrock mortars; or of features in association with artifacts; or of artifacts alone.

Loci are potential sites. A locus containing one metate fragment is more apt to be a part of a site than is a locus containing one item of debitage. CSRI has recommended "no action" for loci. These should be further investigated, however, if additional construction should be undertaken in areas where they have been noted.

SUGGESTED RESEARCH DIRECTIONS FOR SAN ONOFRE MITIGATION

CSRI's field survey crews found twelve sites which are judged important sites, perhaps eligible for the National Register because they are relatively intact. Six other sites of importance are probably not eligible for the National Register because their spatial integrity has been destroyed by construction activity, either by the present project or by previous construction. Nine small sites do not appear to be eligible for the National Register, but are relatively intact and contain information which should be retrieved. Six other sites within the right-of-way or on access roads have been so completely destroyed by agents other than the present project that "no action" is recommended.

The sites listed above include several which may be the sites of prehistoric villages. "Milling Stone" sites appear to predominate. CSRI No. 37, Ora-700, contains a discoidal, a rare artifact in this area. Rock cairns, rarely recorded in Orange County, were noted at CSRI No. 205, Ora-419; CSRI No. 249, New Site B; and CSRI No. 321, Ora-495. These may be very significant sites, but it will be necessary to investigate them to find out what they represent.

This collection of sites would appear to have considerable potential for adding to the knowledge of Orange County prehistory, which is at present not extensive.

Archaeologists' attitudes toward impacts to prehistoric sites by modern construction and other activity are motivated by a concern that irreplaceable information not be lost to humankind. The recovery of every available "bit" of information

is extremely expensive, however, and some of the data from sites is not information in the technical sense, in that it is redundant and removes no uncertainty. It is "old news." Although the criterion for eligibility for the National Register of Historic Places which applies to archaeological sites is "sites...that possess integrity of location, ...setting ...and association, and ... (4) that have yielded, or may be likely to yield, information important in prehistory or history" (U.S. Govt., 36 CFR 800.10), not every site which meets this criterion is, in practice, placed on the National Register. This status is reserved for those sites which have enough information to contribute to justify preservation.

CSRI has evaluated sites tentatively, on the basis of surface findings. A further investigation to determine the full extent of sites will be necessary before requests can be made for the determination of their eligibility for the National Register. CSRI recommends that the test investigations be carried out as part of a research design which includes recovery of data from both the large sites which may be eligible for the National Register and smaller sites which are probably not eligible, but which contain data that may be valuable to an understanding of the prehistory of Orange County. It should be noted that sites of National Register status may vary in superficial appearance from one region to another, and that important sites in southern coastal California will not have the impressive appearance of important sites in, for example, the southeastern United States.

In several instances, the most appropriate measure may be to consider whether whole areas where sites cluster should be placed in the National Register as districts rather than as individual sites. In this part of southern California, as in other parts of the western United States, some of the most important contributions to prehistory come from a consideration of how a number of sites relate to each other rather than from a consideration of data from only one site.

The research design for the mitigation of the prehistoric potential impacted by the San Onofre project should take into consideration the significant questions concerning aboriginal residency in Orange County. Therefore, CSRI recommends that mitigating procedures be directed by anthropologists specializing in archaeology, linguistics and Native American ethnography, who share a theoretical approach based on ecological or "systems" theory.

Contributions to the chronology of southern California prehistory are vitally important. In this region many questions remain unanswered, because of the paucity of significant research in the past and the lack of adequate methodological procedures. Few sites in Orange County have been accurately dated, for example, and full advantage should be taken of any site that contains material potentially useful for radiocarbon

dating, obsidian dating, seriation, or other techniques. Recent advances in dating technology raise the possibility that some of the sites impacted by the project may yield accurate dates.

The research design should include a study of the relationships between human settlement and land-use patterns, and the micro-environmental niches that have existed over time. Recent data on climatic change and its implications for the prehistory of Orange County should be considered fully.

Anthropologists whose field of expertise is linguistics should examine the chronological potential of linguistic data available in the literature and the archives, and among contemporary populations. These data should be assessed comparatively with what is known about related languages throughout the Southwest.

Ethnologists should examine the cultural differences noted in the archaeological material, and compare variations in tools and technology with differences in plant and animal remains. The relationships that groups in the Study Area may have had to other groups in southern California as well as the interior should be examined. This can be done by looking at trade goods and materials that have been brought in from other sources.

A paleobotanist and ethnobotanist should study the plant remains. Known uses of local plants at the present time should also be investigated, and these findings compared to those yielded from archaeological sites. The paleozoology should be subjected to similar intensive study. From these data, it may be possible to reconstruct rather precise settlement patterns.

The result of these combined investigations--a multifaceted chronological study analyzing the processes of change that have occurred among the cultures of this area--will place in perspective the specific sites being studied in Orange County. Even more significantly, such a study will either answer questions or raise new research hypotheses, which in turn will provide answers to more extensive questions regarding the cultural processes in prehistoric southern California and the Southwest in general.

CSRI has not specified how many test excavations of impacted sites should be made. However, enough test pits to determine the significance of sites should be dug, with the research design so constructed that the sampling needed to acquire the desired information can be predicted. Data from the first test pits excavated, for example, might be used to predict findings at similar sites, thus decreasing the amount of excavation necessary. No decisions that would compromise

the highest professional standards of research should be made, however.

Professional advice should be provided by whatever institution takes on the responsibility of curating the artifactual material.

The study should include a thorough investigation of the literature. In particular, the materials collected on the Luiseño, Juaneño, and Gabrielino by John Peabody Harrington should be examined, and data from them considered in the evaluation of the archaeological materials. A general study of the material culture of the area using these data should be included in the research design.

It is particularly important that a full report of the results of the study be published and made available not only to the Native American community but also to the general public.

THE ARCHAEOLOGICAL SURVEY

CSRI teams surveyed the right-of-way of the transmission line, as well as access roads and associated construction areas. The survey was made in December 1978 and early January 1979. A swath at least 300 feet (91 m) wide was surveyed under each transmission line. Where two transmission lines ran parallel, the width of the section surveyed was at least 600 feet (183 m). One-hundred percent of the length of the San Onofre-Black Star Canyon right-of-way was walked. Previously recorded sites between Santiago Tap and Santiago Substation were reexamined, and access roads were walked.

The weather was cool and wet during much of the survey, with teams often in the field immediately after heavy rain. The terrain was muddy wherever the plant cover was thin. The plant cover of much of the area investigated was so heavy that surveying was difficult, however. Such field conditions may account for discrepancies between various reports done in this area (Langenwalter 1974; Dodge 1978).

RECOMMENDED MITIGATION PROCEDURES

After field surveys were completed, CSRI assembled a team of archaeologists and Native American consultants (see "Methods and Technique" in Chapter II) to consider the impact to each site that had been located within the rights-of-way, access roads or other construction areas of the project, and to make recommendations for the mitigation of impact.

Although there was a consensus that sites should be preserved, it was recognized that it is difficult to ensure that in every instance an adequate preservation strategy can be devised. In the past many sites intended for preservation have been inadvertently destroyed. Another concern which emerged was that on the basis of surface inspection alone, field survey teams were often unable to determine the true extent of a site. This information is necessary if a site's eligibility for the National Register is to be determined. For these reasons, test-level investigations were recommended for most sites.

Such investigations serve two purposes: (1) the collection of as much information as possible, and (2) the establishment of the true size and significance of the site.

Details of techniques recommended for test investigation vary, depending on the circumstances of the site and the requirements of the research design. CSRI suggests that the investigation include the plotting of surface artifacts and features, and in certain instances surface collection and/or test pit excavation. In some instances the purposes of the investigation may be best met by clearing vegetation through mowing or disking (where previous disking has already disturbed artifact arrangement). In other instances, the fact that artifacts may be more apparent at one time of the year than another should be exploited. For example, vegetation may be less luxuriant in late summer, and in some areas artifacts are most apt to become apparent after rains. (CSRI discovered artifacts in some locations after it had rained, where SCE's archaeologists had found nothing last summer.)

Information necessary for documentation to accompany a request for determination of eligibility for inclusion in the National Register should be collected for those sites judged to be of National Register potential, and requests for determination of eligibility should then be submitted. It is suggested by CSRI's Native American consultants that the requests be routed through the Native American Advisory Council to the California Department of Parks and Recreation, the California Native American Heritage Commission, and local Native Americans.

The data resulting from the test-level investigation should be analyzed, and the findings published in the scientific literature. In this way the facts to be gleaned from the various levels of investigation (degrees, extent) of the site will have been preserved, even if the sites should be damaged, impacted further, or disappear. Artifacts recovered in the process of further investigation of the impacted sites should be maintained in a local institution. The choice of such an institution should be in compliance with the guidelines printed for comment in the Federal Register, January 28, 1977, which have to do with compliance with the terms of the Archaeological and Historic Preservation Act, or with whatever other guidelines have superseded these. The 1977 guidelines (U.S. Department of the Interior 1977) to which reference is made state:

Section 66.3. Protection of Data and Materials

1. Data recovery programs result in the acquisition of notes, photographs, drawings, plans, computer output, and other data. They also often result in the acquisition of architectural elements, artifacts, soil, bone, modified stones, pollen, charcoal, and other physical materials subject to analysis, interpretation, and in some instances display. Analytic techniques that can be applied to such data and material change and improve through time, and interpretive questions that may be asked using such data and material also change and develop. For these reasons, and to maintain data and material for public enjoyment through museum display, it is important that the data and material resulting from data recovery programs be maintained and cared for in the public trust.

a. Data and materials recovered from lands under the jurisdiction or control of a Federal agency are the property of the United States Government. They shall be maintained by the Government or on behalf of the Government by qualified institutions through mutual agreement. A qualified institution is one equipped with proper space, facilities, and personnel for the curation, storage, and maintenance of the recovered data and materials. The exact nature of the requisite space, facilities and personnel will vary depending on the kinds of data and materials recovered, but in general it is necessary for a qualified institution to maintain a laboratory where specimens can be cleaned, labeled and preserved or restored if necessary; a secure and fireproof archive for the storage of

photographs, notes, etc.; and a staff capable of caring for the recovered data and material.

b. Data recovered from lands not under the control or jurisdiction of a Federal agency, as a condition of a Federal license, permit, or other entitlement, are recovered on behalf of the people of the United States and thus are the property of the United States Government. They should be maintained as provided under section 66.3(1)(a) above. The non-federal provider of funds should be provided with copies of such data upon request. Material recovered under such circumstances should be maintained in the manner prescribed under section 66.3 (1)(a) insofar as it is possible.

2. Data and material resulting from a data recovery program should be maintained by a qualified institution or institutions as close as possible to their place of origin, and made available for future research.

(36 CFR Part 66: Draft)

Native American museums or other institutions meeting these criteria should be chosen in preference to institutions having little or no relationship to local Native Americans. CSRI calls attention to the fact that artifacts recovered from privately owned land as a condition of "license, permit, or other entitlement" are the property of the government and should be maintained as close as possible to their place of origin.

With respect to the final mitigative disposition of sites, it is one thing to say that preservation of a site is recommended and another to make a recommendation as to how it shall be preserved. There is no consensus within the archaeological profession about what measures are adequate for the preservation of a site. (In fact, it is almost impossible to devise means of preserving a site indefinitely, especially if the public has access to it or if it is in the path of development.) In the present instance, however, most sites are on private land to which the general public does not have access, and the primary dangers to these sites are the inadvertent damage caused by bulldozers, graders, and other heavy equipment. Sites on grazing land are vulnerable to damage by cattle. For these reasons, it was the consensus of CSRI's archaeologists and Native American consultants that in most instances the method of choice for preservation was surrounding sites with chain link fences at least 6 feet high. Where roads

bisect sites, it was recommended that fences surround the parts of the site on either side of the roads.

The matter of how sites can best be preserved should be reconsidered after test level investigations have been carried out. The final recommendations should be determined by the anthropologists and Native Americans who have carried out the mitigation project in accordance with the research design, and have availed themselves of the data so generated. They should consider preservation procedures in concert with SCE (its Engineering Department, in particular). In view of the cost of fencing, the fact that digging post holes may be destructive to sites, and the fact that fences may call the attention of vandals to sites, there may be better ways to preserve sites than fencing. A possible alternative might be posting of sites along with periodic field inspection. This would involve placing heavy metal posts, imbedded in concrete, at the periphery of sites. These would need to be strong enough to impede the passage of whatever vehicles or heavy equipment might threaten a site. In view of past, and potential further, damage or destruction, it would be essential that there be periodic monitoring of site areas to assure the continued good condition of the posts to prevent inadvertent damage to the site terrain. The preservation and protection of sites could be made more certain if SCE personnel (especially Power Supply Department personnel who are responsible for maintaining the transmission lines) were made aware of the importance of preserving sites and the responsibilities imposed by NEPA, the California Environmental Quality Act (CEQA), etc.

It is CSRI's intent to emphasize that sites <u>should be protected</u> against further impact, and that this may take stringent measures, rather than to recommend precisely what those procedures may be. Sites will be adversely impacted unless it is more "costly" in terms of time and effort to impact than not to impact. The method to use to prevent a further adverse impact may vary from site to site.

In making decisions with respect to protection, the effectiveness of the measure, the ultimate cost to the consumer of electric power, and concerns of Native Americans who have demonstrated a very alert concern for cultural resource management in the project area, should all be considered.

NATIVE AMERICAN PARTICIPATION

The preceding mitigation recommendations were determined at a conference that included two Native Americans, a Cupeño and a Juaneño. Native American consultants from local groups should participate in all decisions with respect to how sites are to be treated. One or more should be present whenever any mitigating activity with respect to the sites is carried out, and should participate in the decision as to the significance of a site when test-level investigations are performed. The California Native American Heritage Commission, the Native American Advisory Council (California Department of Parks and Recreation), and local Native American groups should be consulted as to procedures and criteria to be used in choosing Native American consultants.

Local Native American groups should be informed of the results of test-level investigations, and should be consulted about methods used to preserve sites.

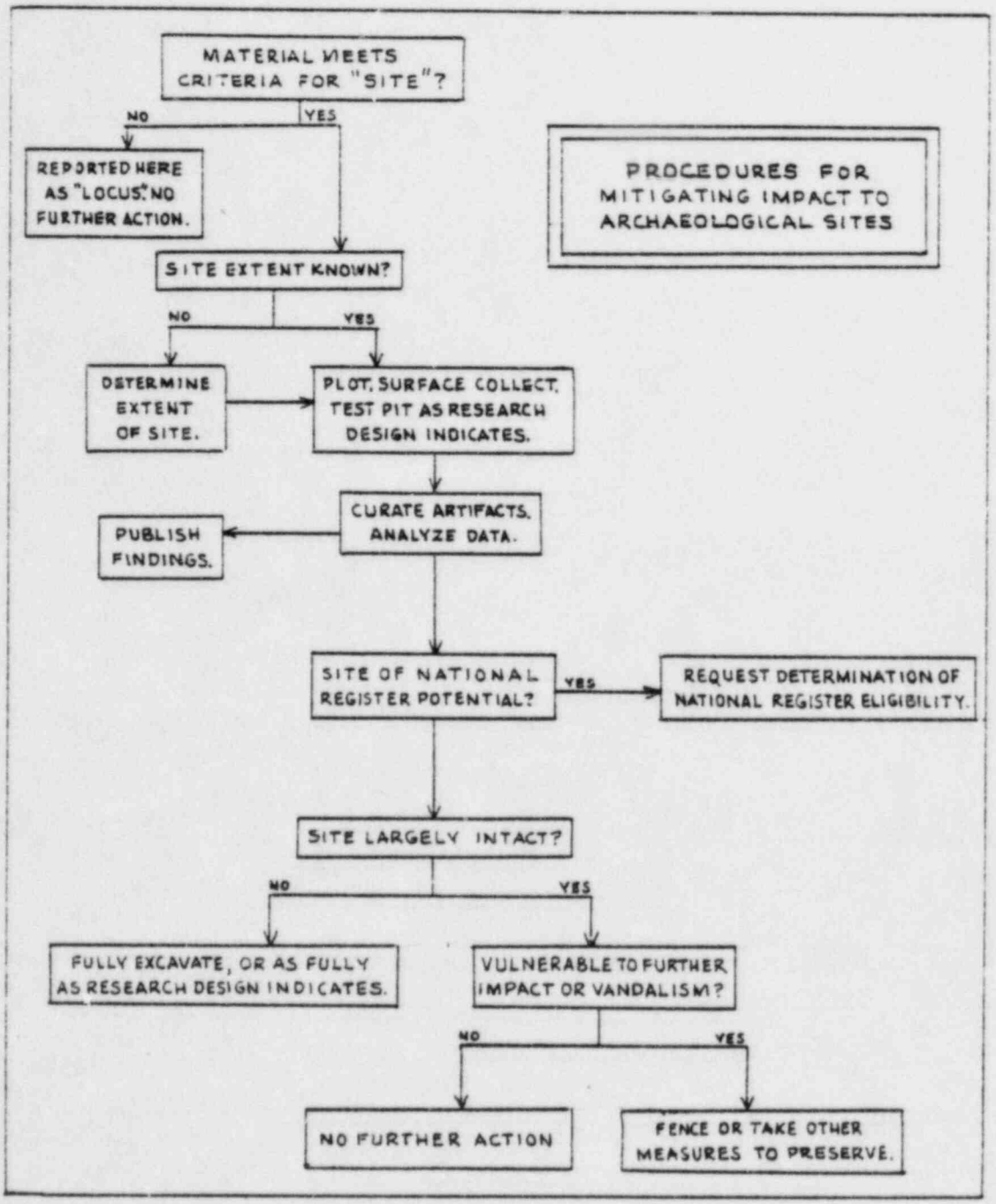


Fig. 9-1. This chart assumes the creation of a Research Design as suggested in the text. Information from this report and from other sources should be considered in the development of the Research Design, and it should be open to modification as information from sites is received.

IMPACT EVALUATION AND MITIGATION RECOMMENDATIONS

In this section, each site impacted by the San Onofre project is listed. Both CSRI numbers and Archaeological Clearing House numbers are given, with order based on CSRI numbers. New sites and loci, which have no clearing house numbers as yet, are designated by capital letters. A cross-referenced summary list is included in Appendix B to facilitate location of information about sites known by Archaeological Clearing House numbers.

Mitigation recommendations in this section are designated by the letters A, B, C, D, and NA. They reflect CSRI's evaluation of the significance of the site and of the impact it has suffered. They are intended to be in accord with the more complete recommendations presented in the preceding section, and summarized on the Flow Chart on page 9-13.

A. Very significant site with one or more of the following traits recorded:

Important features (such as cairns, burials, rock art, structures)

Important diagnostic artifacts

Large area

Fairly well, to well preserved

Mitigation: Based on the information accumulated by CSRI's reconnaissance survey, it is recommended that this site be preserved and that its eligibility for the National Register of Historic Places be determined. First, however, a "test-level investigation" should be conducted. This investigation would include mapping, surface collecting, and the excavation of test pits--the number of test pits to be determined by the size of the area involved and the requirements of the research design under which the mitigation is proceeding. Unless a qualified archaeologist, having made this investigation, recommends otherwise, the site should then be preserved. The method of preservation should be chosen after the test-level investigation.

B. Very significant site meeting the qualifications for "A," but damaged or partially destroyed.

Mitigation: It is recommended that this site be investigated fully, in order to salvage information that may be available. The investigation would include mapping, surface collection, test excavation, and whatever further salvage

measures are deemed advisable after these procedures are carried out.

C. Less significant site. Contains more than three items of debitage and/or more than one artifact, but does not meet the criteria for "A."

Mitigation: It is recommended that a test-level investigation be carried out to determine more precisely its extent and significance. The investigation should include plotting, and possibly surface collecting and test pits--the number of test pits to be determined by the size of the area involved and the requirements of the research design under which the mitigation is proceeding. Further measures, as recommended by the qualified archaeologist conducting the investigation, should then be taken.

D. Locus, containing not more than three items of debitage and/or not more than one artifact.

Mitigation: No action. Locus should, however, be reexamined should further construction in its vicinity be planned.

NA. The recommendation "No Action" (NA) has been made with respect to sites which have been destroyed by agents other than the San Onofre project.

SUMMARY OF CSRI MITIGATION RECOMMENDATIONS
(In order of CSRI numbers)

CSRI No.	ACH Site No.*	Recommended Mitigation	CSRI No.	ACH Site No.*	Recommended Mitigation
36	Ora-640	A	321	Ora-495	A
37	Ora-700	A or B	322	Ora-496	C
47	Locus O	D	323	Ora-499	B
48	Site P	C	334	Ora-79	NA
49	Locus Q	D	339	Ora-385	NA
50	Locus R	D	343	Ora-438	B
51	Locus S	D	352	Ora-447	A
109	Ora-370	NA	358	Ora-458	A
205	Ora-419	A	410	Ora-725	B
223	Ora-472	NA	418	Site D	C
225	Ora-474	NA	419	Site E	B
227	Ora-497	NA	420	Site F	B
228	Ora-498	A	421	Site G	A
249	Site B	A	422	Site H	B
250	Site C	A	423	Site I	C
251	Site T	C	424	Site J	C
253	Site V	C	425	Site K	C
254	Site W	C	475	Locus L	D
255	Locus X	D	476	Locus N	D
256	Site Y	A	480	Locus M	D
257	Site Z	A	481	Locus O	D
303	Ora-341	-			

Meanings of Mitigation symbols are explained in the text.

*Letter designations are given new sites and loci.

CSRI No. 36, Ora-640 O-ST

This site is on a southeast-trending slope below transmission towers immediately above a stream, at the intersection of the north and east forks of Visbeck-Mission Viejo boundary. It consists of a light scatter of artifacts on the slope of a natural amphitheater that faces south-southeast above a stream. Artifacts include edge-ground parallel bifacial manos, schist choppers, and basalt flakes. These are scattered over a 25 x 30 m area.

Impact: This site is located beside an access road where it is susceptible to indirect impact by heavy equipment.

Mitigation: A. Vegetation cover a problem for accurate assessment. Reinvestigate when vegetation is minimal (late summer).

CSRI No. 37, Ora-700 O-ST

This site is on a flat bench overlooking Prima Deschecha Creek, partly obscured by heavy weeds. It is a milling station with flake scatter. Artifacts include one-half schist basin metate, a discoidal fragment, a metate fragment, two basalt flake scrapers, basalt flakes, and a quartz flake.

Impact: Access roads cut the east edge of this site.

Mitigation: A, possibly B. The discoidal is a rare find. Test excavation should be made to determine depth of the cultural material.

CSRI No. 47, New Locus O O-ST

Here, on a ridgeline descending east toward Cristianitos Creek, 2 basalt cores were found along graded areas of the access road to an SCE tower. The distance between finds is roughly four meters. Vegetation cover very heavy.

Impact: The graded access road impacts this area.

Mitigation: D.

CSRI No. 48, New Site P O-ST

At this site, located along a broad, flat ridgeline descending east toward Cristianitos Creek, were 2 cores (one of green rhyolite, the other of a black basaltic-appearing rock), and 3 basaltic flakes. They were found in a graded area and along a graded access road to SCE towers. The site occupies approximately 100 x 100 meters. Vegetative cover very heavy.

Impact: Access road and grading within this site have impacted it.

Mitigation: C. Vegetation cover is a problem for accurate assessment. Reinvestigate when vegetation is minimal (late summer).

CSRI No. 49, New Locus Q, Ora-779 O-ST

Two volcanic porphyritic flakes were found here in an access road cut, along a narrow east-west trending ridge overlooking Cañada Segunda Deschecha. The flakes were found within 5 meters of each other. Vegetation cover very heavy.

Impact: This locus has been impacted by the access road.

Mitigation: D.

CSRI No. 50, New Locus R, Ora-780 O-ST

At this location there was one mortar fragment, found in the ravine north and below Locus Q. Vegetation cover very heavy.

Impact: This locus is in the right-of-way between towers. It is subject to indirect impact.

Mitigation: D.

CSRI No. 51, New Locus S, Ora-781 O-ST

At this location there was one andesite porphyry core, found on the flat along a westerly descending hillside adjacent to an SCE tower. Vegetation cover is heavy.

Impact: This locus is in the right-of-way. It is vulnerable to indirect impact.

Mitigation: D.

CSRI No. 109, Ora-370 ST-S

This site consisted of two rock shelters that ended in cobble-boulder sandstone of sespe formation. The main shelter was at the mouth of the wash with a smaller shelter above to the northeast. Midden fanned outward from the shelter mouth. Artifacts included points, scrapers, cores, ornaments, charmstone-and-shell and bones. The site has been excavated by Briggs Morris-Smith, California State University (Fullerton) graduate student, whose report is to be embodied in a master's thesis.

Impact: None by SCE.

Mitigation: No action (site destroyed).

CSRI No. 205, Ora-419 ST-S

This site was recorded by Cooley and Hall in 1972 as a "slightly sloping area on ridge running down to spring; small Milling Stone site" (ASSR 1/25/73), 60 x 30 meters in area and containing "some manos (one bifacial), large metate fragment, chopper." Langenwalter in 1974 noted that "it appears to be in the same condition as it was when first located" (1974:D-5). In 1978 Dodge could find no trace of this site but noted that the area had been recently plowed and planted. CSRI's team discovered a site a short distance outside the archaeological Study Area that fitted the Cooley and Hall description of the site. A new site record will be filed for it. The site record for Ora-419 will be amended to include two rock cairns found there by the CSRI team. These features have not been previously recorded. Beside one cairn is a depressed area, which may indicate the ruins of a house.

Langenwalter (1974) asserted that Ora-419 and the other sites he had located would be impacted by the construction of the new 200 kV transmission line along the San Onofre-Santiago corridor with towers paralleling existing structures. He made no specific recommendation for mitigating the impact to Site Ora-419. The site, which in fact contains the aforementioned rock cairns, is close to the access road, but the cairns are still intact. However, it is unlikely that they will long survive unless measures are taken to protect and preserve them. Moreover, lest even the most careful efforts to preserve them fail, it is important to investigate them to discover, if possible, what they represent. Native American consultants suspect that the cairns may be very significant ethnographically.

Impact: This site is vulnerable to indirect impact from

users of the access road.

Mitigation: A.

CSRI No. 223, Ora-472 ST-B

Situated on a flat knoll on a high bluff overlooking Trabuco Arroyo. Soil color and vegetation of site contrast to surrounding area. Site 200 x 200 m. Many manos, metate fragments, hammerstones, scraper planes and flakes. Two possible rock features.

This site, which touched on the right-of-way, has been excavated and salvaged in connection with the development of the land.

Impact: None by SCE.

Mitigation: Salvaged. No action.

CSRI No. 225, Ora-474 ST-S

A scatter of artifacts and flakes over a large area, about 200 x 400 m; included are scraper planes, a mano fragment, many flakes. Touched the SCE right-of-way. The site was totally destroyed in the course of development of the property (not by SCE). Some mitigation (salvage and test excavation) was done by Archaeological Research Management Corporation prior to destruction.

Impact: None by SCE.

Mitigation: No action.

CSRI No. 227, Ora-497 ST-B

This site was discovered by Langenwalter (1974:D-6), who reported: "Site 4 is situated east of the San Diego Freeway in one of the branches of the Oso Creek drainage. The locality consists of a surface scatter of artifacts without a developed midden. Ground surface modification and grading in the immediate area have destroyed the site. The remaining evidence that the site existed are a modicum of displaced artifacts." Since the site had been "effectively destroyed," he recommended "no mitigation."

Dodge (1978:17) reported: "Ora-497 (Langenwalter's field no. 4) was recorded in 1974 and described as a surface artifact scatter (hammerstones, core, mano, and scraper) disturbed by access road grading. Langenwalter reported the site as essentially destroyed although artifacts could still be observed. The present study confirms Langenwalter's observations and adds that no artifacts were found. The access road is used to service the SCE transmission line and apparently the construction of this road destroyed the site sometime between 1965 and 1967. Since that time regrading of the road has resulted in the lateral displacement of artifacts to such an extent that they are no longer found near the original site location."

Impact: CSRI's team found that no artifacts are visible at present. Soil has been dumped on the site from the hill above, which has been graded. There is a transmission tower and access road on the site. The site has been destroyed. The destruction was probably caused by the soil that was dumped over it rather than by the transmission tower and access road, because in 1974--after the tower and road were in place--Langenwalter found artifacts at the site. The soil had not apparently been dumped over the site in 1974, because he did not mention it.

Mitigation: No action.

CSRI No. 228, Ora-498 ST-S

This site was discovered by Langenwalter (1974:D-6), who reported: "Site 5 occurs in the drainage of Trabuco Arroyo on a hillside knoll. The locality consists of a surface scatter of artifacts assignable to the Milling Stone Horizon. The site is crossed by access roads which have partly disrupted the site and displaced some artifacts. There was no discernible midden development. However, several rock features may be present on the edge of the site. They are in such a condition that it is impossible to estimate whether or not they are cultural features or oddly distributed natural features.

"...it is recommended that the site be intensively surface collected and the tower pad area be excavated from ground surface to sterile soil (providing that a preliminary excavation indicates the presence of midden). If such procedures are deemed infeasible or excessively costly, then an alternate to this procedure would be the redesigning of projected tower positions in such a manner that they are not placed on a site.

"The costs involved in the first alternative cannot be projected until depths of the middens, if any, are ascertained.

The first alternative is recommended since the localities appear to have little or no depth and may be easily collected. It is in view of the fact that population flows into the region will imperil the site existence during the next several decades via pothunting and increased use of open land area for recreation."

Dodge (1978:6) reported: "Ora-498 (Langenwalter's field no. 5) is a widely dispersed surface scatter of artifacts located on the first terrace above the Trabuco Arroyo at an elevation of 510 feet (Figure 2). The artifact assemblage consists entirely of ground stone and a few hammerstones. The site covers an area of approximately 120 x 60 meters.

"A transmission tower is situated within the site boundaries (Figure 5). The main access road and a stub road to the tower also transect the site. A few artifacts were found along the graded stub road; however, the primary concentration is to the west and southwest of the tower towards the edge of the terrace."

CSRI found this to be a large site in good condition, although it has been slightly damaged by a transmission tower and access road.

Impact: This site has been impacted by the tower and roads and is subject to further direct and indirect impact.

Mitigation: A. A major concern is that the site not be further impacted.

CSRI No. 248, New Site A ST-S

This site, which appears to contain the artifacts formerly described for Site Ora-419, is outside the SCE right-of-way and is not impacted by the transmission lines.

Impact: None.

Mitigation: None.

CSRI No. 249, New Site B ST-S

This site contains a total of 22 rock cairns on one side of the access road near a tower. It is of potential National Register significance, because of the size of the site and the presence of the cairns.

Impact: This site is subject to indirect impact from users

of the access road.

Mitigation: A. This site is apt to have great significance for local Native Americans.

CSRI No. 250, New Site C ST-S

This site consists of cores and flakes on the access road, and, just off the access road, a large round circle in which the ground is so hard that disking will not penetrate it. There is a softer section in the center, suggesting a hearth. This feature has been identified by a Native American consultant as a possible house or sweatlodge floor. There is a quartz outcrop in the area, and the site appears to be a quartz quarry.

Impact: The site has been partially disturbed by the access road. It is vulnerable to further direct and indirect impact.

Mitigation: A.

CSRI No. 251, New Site T ST-B

Found here, along an old stream terrace on the east bank of Trabuco Arroyo just below the SCE tower, were one metate fragment and two utilized chert flakes. The area of the site is indeterminate. Materials were all found within the 320-foot right-of-way. This is a "site," rather than a "locus" because the chert flakes, having been utilized, are artifacts rather than debitage.

Impact: This site is spanned and is minimally vulnerable to indirect impact.

Mitigation: C. Vegetation cover is a problem for accurate assessment. Reinvestigate when vegetation is minimal (late summer).

CSRI No. 252, New Site U ST-B

This site, located on a bluff on the east side of Trabuco Arroyo near a small unnamed drainage to the north, is well outside the SCE right-of-way. There has been no impact to it. It consists of a biface, 2 manos, a metate fragment, several cores and utilized flakes, and chipping debris. It is mentioned only to call attention to its existence, so it can be avoided in future planning.

Impact: None.

Mitigation: No action.

CSRI No. 253, New Site V ST-B

This site, located on a terrace along the west bank of Trabuco Creek, consists of 3 metate fragments, found among cobbles. The site area is estimated at 100 x 40 meters. It apparently is a surface site. SCE's tower is to the south and the materials are not in the tower pad area. They have not been impacted.

Impact: This site is vulnerable to indirect impact from users of the access road.

Mitigation: C.

CSRI No. 254, New Site W ST-B

This site is on a knoll below the bluff on the west bank of Trabuco Arroyo. It consists of two metate fragments and one core tool, in the pad area graded for an SCE tower and access road. The area of the site is estimated at 50 x 50 meters.

Impact: Site has been impacted by grading.

Mitigation: C.

CSRI No. 255, New Locus X ST-B

In this location, on the west bank of Trabuco Arroyo and approximately 20 meters from the stream, one large metate fragment was found in the cobble layer.

Impact: Site is subject to indirect impact from users of the access road.

Mitigation: D.

CSRI No. 256, New Site Y ST-B

This site, on two low knolls adjacent to the west bank of Trabuco Arroyo, consists of 6 metate fragments, 4 manos, 4 cores, and 3 flake tools. Most of these were found in

the graded area of the SCE tower and access road, but some artifacts were also found on the natural ground surface. The site area is estimated at 400 x 150 meters, and it is estimated to be at least 30 cm in depth.

The site may extend beyond the right-of-way onto Mission Viejo land, where small artifacts would be obscured by vegetation. The site may well be eligible for the National Register. The "c" in CSRI's significance rating (Appendix C) is based on present rather than potential findings.

Impact: Site has been impacted by grading for tower and by access road. It is vulnerable to further direct and indirect impact.

Mitigation: A.

CSRI No. 257, New Site Z ST-B

This site, on top of a knoll and along the swale of an east-trending ridgeline, consists of 7 metate fragments, 4 manos, and 2 core tools. The materials are found in erosion areas on the cobble-covered knoll and in the cut of the SCE access road to an adjacent tower. No materials were found around the tower. The site area is approximately 250 x 100 meters and is at least 40 cm deep.

This is 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. Thus, it is very likely that CSRI site 257 will probe eligible for the National Register.

Impact: Site has been impacted by access road and is vulnerable to both direct and indirect impact.

Mitigation: A.

CSRI No. 303, Ora-341 ST-S

This site, recorded in 1972 by the Pacific Coast Archaeological Society, was said to consist of a scatter of artifacts that included "hammerstones, manos, a dart point and tools located on top of a low hill" (Dodge 1978:15). The artifacts were assigned to the Milling Stone Horizon, Encinitas tradition. An SCE tower had been built on the hill before the PCAS report. The hill is now fenced, and the site is used by the Irvine Wholesale Nursery, which has disked it, brought in fill, and presumably destroyed much of the integrity of

the site. CSRI has been unable to gain access to the property.

The question of gaining access is complicated. CSRI has been informed that SCE owns a 90-foot right-of-way along the eastern edge and has only easement rights to the rest of the right-of-way. These easement rights are being interpreted by the nursery as not including the right of admission for archaeological purposes.

Mitigation: Until it is possible to gain access to this site, no evaluation can be made of what effect the project being studied here may have had.

CSRI No. 321, Ora-495 ST-S

This site was first reported by Langenwalter (1974:D-5) as "situated along a ridge crest on the north side of Laguna Canyon. This is the largest site encountered, it being as much as 3,000 feet in length along its north-south axis. It is represented by an extensive scatter of artifacts of the Encinitas tradition. The artifact scatter appears to be relatively uniform over the site area and broken only where access roads or tower pads have been placed. There is no apparent development of midden."

Dodge (1978:18) wrote that Ora-495 "is an artifact scatter situated on top of a long ridge above the north end of Laguna Canyon at an elevation of 400 feet. The artifacts are widely dispersed within a 200 x 90 meter area. There is no midden development or other cultural features. Artifacts can be found in small clusters near sandstone bedrock outcrops, but no mortars were observed. The artifacts are primarily bifacial manos, oval and oblong in shape. Hammerstones are present, but other chipped stone was rare. One crudely made scraper was found.

"The SCE 220 kV transmission line runs through the site, with two towers located within site boundaries. An access road transects the site from north to south and numerous artifacts were found along the road. A cluster of artifacts was also found in the vicinity of the tower to the north end of the site, where a good deal of land modification had taken place during tower construction."

CSRI's team found that the site had been impacted by the access road and possibly by the transmission towers. Numerous artifacts were observed on the access road, which had been graded. These artifacts had been exposed by the grading, and they indicate a subsurface deposit of cultural materials. The site is extensive and includes quartz, quartzite, chalcedony and igneous flakes, and tools, manos, and metates.

There are nine apparent rock cairns at the site and an alignment of small boulders, including a mano, on exposed bedrock. The rock cairns and alignment were not previously reported for the site, although they appear to be old and do not appear to have been constructed recently in the course of farming or other activities at the site. It is possible that this site contains burials.

Impact: One cairn may have been partially destroyed by construction activity. The access road cuts through the center of the site for about 950 m (length of the site). This site is vulnerable to further direct and indirect impact.

Mitigation: A.

CSRI No. 322, Ora-495 ST-S

This site was first reported by Langenwalter (1974:18) as being a "surface artifact scatter of manos and chipped stones which appears to represent the Encinitas tradition. Some shell was located during the survey, but there is no apparent midden. Most of the artifactual material was located on slopes where it had been subject to slope wash." Dodge (1978) noted that "artifacts within the 75 x 30 meter area include manos and metates (usually fragmentary), hammerstones, and some chipped stone." Dodge found no shell.

The CSRI team found that the site is on a slope below the transmission line tower and access road. Artifacts observed consisted of five manos, two quartzite cores, and a metamorphic tool. Thermally altered rocks were intermixed with the artifacts. One core was observed on the access road, indicating that some damage to the site was caused by the construction of the road.

The site is near CSRI Site 321 (Ora-495) and is probably related to it. It may be a secondary deposition from the top of the slope. This is an area in which there has been an archaeological survey, but no further archaeological work.

Langenwalter (1974:D-6) recommended that the expected impact to this site by the construction of the new transmission line be mitigated by intensive surface collection, and by excavation of the tower pad from ground surface to sterile soil, should a preliminary excavation indicate the presence of midden.

Impact: This site has been impacted by the access road and is vulnerable to further direct and indirect impact.

Mitigation: C.

This site was first reported by Langenwalter (1974: D-5). It was situated, he wrote, "on a grassy slope near the Poh Ranch headquarters" in the Laguna Canyon drainage. "It is represented by a sparse scatter of manos and other artifacts. The surface materials have been disrupted by disking of the field on which the site is located."

Although Dodge (1978:16) says that an SCE tower was "said to be located on the site," Langenwalter made recommendations for mitigating the impact of proposed construction of the tower, rather than saying that a tower had already been built there. Dodge goes on to say, "An examination of the site by the author revealed only two mano fragments within a 120-sq.-meter area. This artifact density does not conform to the definition of a site established for this study. The area is part of the Irvine Ranch and there was evidence of recent disking in the area. It is likely that this activity destroyed this small artifact center.... Since the transmission line had already been constructed when the site was recorded, it is not likely that SCE was involved in the site's destruction."

The CSRI team found that this site was larger than previously recorded, and that it extends north of tower M1/T4. Artifacts observed include manos, a metate fragment, quartzite core, igneous tools, and chalcedony flakes. The distribution is scattered, and the density is low. The site might have been minimally impacted by towers, which are on the site, but no artifacts were found beneath the towers.

The field had been recently disked again when CSRI made its investigation. The difference between Dodge's finding and CSRI's findings may result from the fact that Dodge visited the site in summer when the field was dry, and the CSRI team visited it in winter when it was wet and muddy. It has been noted that artifacts are easier to find in a disked field after a rain.

CSRI's "c" significance rating (Appendix C) is based on presently known, rather than potential, findings at this site.

Impact: The site is vulnerable to continuing direct and indirect impact.

Mitigation: B. Langenwalter had recommended that this site be intensively surface collected, and that the tower pad areas be excavated from ground surface to sterile soil if a preliminary excavation indicated the presence of midden.

CSRI No. 334, Ora-79

This is Santiago Cave--a lost site, not located where plotted. Artifacts only on knoll where eroded; probably a deep site, according to the site record.

Mitigation: No action.

CSRI No. 339, Ora-385

Site consists of manos, metate fragments, scraper planes, chipping waste core. Preliminary analysis indicates site may have been older Milling Stone manifestation. This site has been totally destroyed in the course of development of the property by the owner (not SCE).

Impact: None by SCE.

Mitigation: No action.

CSRI No. 343, Ora-438 ST-B

This is a large site which has artifacts over an area approximately 335 meters x 150 meters. Artifacts observed include chalcedony cores, manos, a blade, and lithic flakes. The site appears to be a deep one, artifacts being visible in the road cut. This may be the site of a village.

Impact: This site has been directly impacted by an access road, and is vulnerable to further direct and indirect impact.

Mitigation: B. There should be no further construction in this area until test investigation procedures and attendant recommendations are carried out.

CSRI No. 352, Ora-447 ST-B

This site is located along a narrow ridge overlooking Serrano Creek to the west. There is a medium grey midden on the ridge, with artifacts and detritus scatter beyond the midden. The area measures 425 x 100 meters. Artifacts noted include a scraper, core, hammerstone, and manos. The artifactual material is visible only in the road cut and eroded areas. The site is intact.

Impact: This site has been impacted by the access road and is vulnerable to further direct and indirect impact.

Mitigation: A.

CSRI Site 358, Ora-458 ST-B

This site is larger than previously recorded, measuring 500 x 340 meters. Triangular in shape, it is located north of CSRI Site 410 (Ora-725), and extends from the south edge of El Toro Road to tower 23-1.

On the surface of an SCE access road on the south bank of Aliso Creek, there are chalcedony and quartzite flakes. One flake has been exposed approximately 20 cm below the ground surface in a road cut, and another has been exposed approximately 40 cm below the ground surface in a road cut. On the north side of Aliso Creek there is a flake on top of soil that has been pushed aside by road grading. There are chalcedony flakes under tower 22-4. On the access road heading east from this tower, there are a quartzite core and flakes, chalcedony flakes, and a chalcedony tool. Soil removed during road building ranged from approximately 5 to 45 cm, so these artifacts were formerly covered by 5 to 45 cm of soil. On the access road west of tower 23-1, a metamorphic core was displaced by grading. The positions of these artifacts indicate that there is a subsurface deposit of cultural material at the site.

Other artifacts observed at the site include numerous chalcedony and quartzite flakes, cores, and tools.

On the slope to the south and below tower 22-4 there is a small depression surrounded by rocks. This appears to have been a spring that was enlarged and lined with rocks, possibly to provide water for range cattle. Another rock mound that is now covered with cactus could also have been formed to retain water from a spring.

The site has been disturbed only by the construction of the towers and access roads. Only one edge of this site was discovered and reported in a previous study (Scientific Resource Surveys 1977:15).

Impact: This site has been impacted by grading for towers and access roads, and is vulnerable to further direct and indirect impact.

Mitigation: A.

CSRI No. 389, Ora-629 ST-B

This site was previously reported to contain midden deposits, cores, manos, and flakes, and was probably a small habitation site. The CSRI field survey team found a small number of artifacts between the transmission line right-of-way and a small pond. Some tools lie on the very edge of the right-of-way, but the partial destruction of the site does not appear to have resulted from the San Onofre project.

Impact: Apparently none by SCE.

Mitigation: No action.

CSRI No. 410, Ora-725 ST-B

This site is located on a high ridge between Oso and Aliso creeks, south of El Toro Road and near the sites of several major villages. A trail may very likely have run along here. The site is larger than previously recorded, measuring 400 x 60 meters.

Artifacts observed by the CSRI team include one whole and one broken bifacial mano, two whole unifacial manos, and a fragment of a portable metate; also a chalcedony core and flakes, metamorphic cores and flakes, and a basalt core, tool, and flakes, in addition to several hammerstones. The soil has been disked. This has caused slight displacement of the artifacts, but has not significantly disturbed the site.

Impact: Tower 22-3 and an SCE access road have been built on the site and have impacted it. The site is likely to be subjected to further impact when the nearby El Toro Road is widened, as it is expected to be in the near future.

The disking in some places cuts into the bedrock. This appears to be a shallow deposit, perhaps one from which the soil has been deflated.

Mitigation: B.

CSRI No. 418, New Site D ST-B

This site is on a slope overlooking a stream that flows southwest into Aliso Creek. It is at an elevation of 860-800 feet, southeast of tower 23-3. The remaining part of the site measures 17.5 x 18 meters and consists of metamorphic flakes and tools and manos.

There is a chalcedony flake, approximately 4 meters east of tower 23-3 in an area that has been bulldozed, which would formerly have been covered by soil removed by bulldozing. Its appearance indicates that there is a subsurface deposit of cultural material and that part of the site has been destroyed by the construction of the tower.

Impact: Site has been impacted, probably not by this project. It is vulnerable to further direct impact by maintenance activities.

Mitigation: C. Map and surface collect. The slope on which the site rests should not be disturbed.

CSRI No. 419, New Site E ST-B

This site measures approximately 260 x 40 meters and is on a ridge top. Cultural materials include large core and flake tools, cores, and manos of quartzite and igneous materials. The artifacts are intermixed with non-artifactual cobbles. Tools were also found on an access road cut into the hillside below the ridge and below transmission tower 23-2. The position of the tools suggests that this access road and possibly the tower were built on part of the site. Another road, which leads to tower 23-2 but is not positively identifiable as a road built by SCE, cuts through the middle of the ridge and subsequently the site.

Impact: This site has been directly impacted and is vulnerable to further impact.

Mitigation: B

CSRI No. 420, New Site F ST-B

This site is on a slope southeast of Tower 23-4 at an elevation of 920-940 feet, and has been partially destroyed by construction of this tower. The part of the site remaining measures about 17 x 16 meters and is concentrated below the bulldozed hilltop. Artifacts observed at this site include chalcedony and quartzite flakes and tools. Thermally altered rocks suggestive of cooking and heating are mixed with the artifacts.

Impact: This site has been directly impacted and is vulnerable to further impact.

Mitigation: B.

CSRI No. 421, New Site G ST-B

Discovered by CSRI crews, this site is located on the bank and adjacent slope on the north side of a creek, and measures about 60 x 32 meters.

Artifacts are clustered throughout the site, more densely on the slope than on the stream bank. They include quartzite flakes; igneous, metamorphic, and chalcedony cores; quartzite tools, and manos. Thermally altered rocks are intermixed with the artifacts.

Impact: This site is vulnerable to indirect impact from users of the access road, which passes near it, but not through it.

Mitigation: A.

CSRI No. 422, New Site H ST-B

This site is on a hill that was apparently used to store equipment during the construction of the transmission towers. The hill has been graded and part of the site (75.5 x 50 meters) has been damaged. On the surface, which has been graded, there are flakes and tools of chalcedony and an igneous material, indicating a subsurface deposit of cultural material.

The undisturbed part of the site has an area of about 49 x 18 meters. Artifacts include chalcedony, quartzite, igneous flakes and tools, and mano fragments. A Cottonwood Triangular projectile point, and the tip of another projectile point, associate at least some of the activities at the site with the period after A.D. 1300.

It should be noted that the presence of projectile points suggests a relatively recent occupation in an area where most sites are much older. Thus, the site may be highly significant. This site appears to have been 90 percent destroyed.

Impact: This site has been directly impacted and is vulnerable to further indirect impact.

Mitigation: B.

CSRI No. 423, New Site I ST-B

This site is below and to the north of CSRI No. 422, new Site H. There are mortars hollowed in a boulder in

the stream, metamorphic and igneous flakes and tools, and a whole portable metate northeast of the stream. The metate is beside an SCE access road, which runs through the site. The artifact scatter appears to be light. There is a heavy plant cover, however, consisting primarily of grasses that might have covered some artifacts.

Impact: This site is vulnerable to both direct and indirect impact from users of the access road.

Mitigation: C.

CSRI No. 424, New Site J ST-B

This site, located on Irvine Mesa, between two transmission towers, consists of chalcedony and metamorphic flakes and tools scattered over an area 80 x 50 meters. The density of artifacts is low.

Impact: An SCE access road runs through the site, and artifacts were found on the soil pushed aside when the road was graded.

Mitigation: C.

CSRI No. 425, New Site K ST-B

Cultural materials at this site consist of 4 cores and a mano. There is also a core tool on a trail that leads from the site. Site dimensions are approximately 50 x 25 meters.

Impact: This site is subject to indirect impact.

Mitigation: C.

CSRI No. 475, New Locus L ST-B

At this location one chalcedony flake was found.

Impact: This locus is vulnerable to indirect impact.

Mitigation: D.

CSRI No. 476, New Locus N ST-B

There is a single quartzite flake on soil pushed aside by grading for an access road. A dense cover of Australian saltbush and grass made it impossible to see if any other artifacts are present. The flake is located on an access road, on a slope above San Mateo Creek and above a major road in Camp Pendleton.

Impact: This locus has been directly impacted.

Mitigation: D. Further investigation of the locus when the vegetation is less dense, as in late summer, is suggested.

CSRI No. 480, New Locus M ST-B

At this locus one scraper was found in the right-of-way between two towers.

Impact: This locus is vulnerable to indirect impact.

Mitigation: D.

CSRI No. 481, New Locus O O-ST

There is a large basalt flake tool and a quartzite flake on an access road near Tower MOT3, and a large flake of igneous material on the same road near Tower MOT2. The road has been cut into a slope, and much soil has been removed in its construction. The artifacts near Tower MOT3 could have fallen onto the road from the slope above. A dense ground cover of grass and Australian saltbush may have concealed other artifacts. The site is on a slope northeast of the San Onofre Nuclear Generating Plant.

Impact: This locus has been impacted by access roads.

Mitigation: D.

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APPENDIX A

INTERVIEW SCHEDULE USED WITH JUANEÑO

The following questions were used as guidelines in open-ended interviews.

1. What part of the Study Area was used by your people in the past? Was it considered part of their territory?

2. How do you feel about power lines being built from San Onofre Nuclear Station to Santiago Tap?

3. What do you think of the energy needs of southern California?

4. Were you involved in the Sundesert project, and if so how?

5. We know of a number of archaeological sites within the Study Area. How would you feel about power lines going through these areas?

6. Do you have any knowledge of the following kinds of traditional sites: sacred sites, village or habitation sites, old trails, hot springs, or rock art sites?

7. How do you feel about power lines going through or near burial sites?

8. If any burial sites were uncovered, what would you want done with the remains?

9. What would you want done with any artifacts uncovered?

10. Do you know of any Native Americans who are now using the Study Area, or portions of this area, to gather plants for food, for basket materials, or for medicine? What about in the past? Do you feel that power lines in the Study Area affect plant life? If so, how?

11. Do you know of any Native Americans, past or present, who used animal resources of the Study Area, either for food or for ceremonial purposes? Do you feel that power lines in the Study Area affect animal life? If so, how?

12. Do you know of use of the Study Area, in either past or present, for coastal resources? How do you feel power lines affect coastal resources?

13. Do you know of use of mineral deposits in the Study Area--for example, for tools or ceremonial objects? How do you

feel power lines affect these mineral deposits?

14. Do you feel that power lines in the Study Area affect people's health? If so, how?

15. Are there any shrines or other sacred places in the Study Area, which might be affected by power lines. If so, how do you feel about the San Onofre project in relation to these sacred areas?

16. Do you know of any legends or stories about the Study Area?

17. Do you feel additional power lines in the Study Area affect the scenery? If so, how?

18. Do you feel that additional power lines in the Study Area affect its economy and if so how? Do they affect you?

19. Do you feel that power lines in the Study Area affect the recreational use of the area? If so, how?

20. Do you know of seasonal migrations in the past, from the mountain areas to the coast?

21. Do you have knowledge of a trek in the 1820s or 1830s, when Native Americans escaped from the mission at San Juan Capistrano and went to Temecula and Pala?

22. Do you have anything else to say regarding the San Onofre project?

INTERVIEW SCHEDULE USED WITH LUISEÑO

The following questions were used as guidelines in open-ended interviews.

1. How do you feel about high voltage transmission lines (HVTLs) being built in the Study Area?

2. Do you think southern California needs more energy?

3. Do you have any knowledge of ceremonial sites, habitation sites, trails or rock art sites near where the line is being built?

4. We know of a number of archaeological sites within the Study Area. How do you feel about HVTLs going through these areas?

5. How do you feel about HVTLs going through or near any burial sites?

6. What would you want done with any remains that might be uncovered?

7. What would you want done with any artifacts uncovered?

8. Do you know of any Native Americans who are now using any parts of the Study Area in gathering plants for food, basket materials, or medicines? What about in the past?

9. Do you know of any Native American use, either past or present, of the Study Area for animal resources--either as food or for ceremonial purposes?

10. Do you know of any use for mineral deposits in the Study Area, such as for tools or ceremonial objects? How would you feel if HVTLs went through such areas?

11. Do you feel the HVTLs in the Study Area affect plant life? If so, how?

12. Do you feel the HVTLs in the Study Area affect animal life? If so, how?

13. Do you feel the HVTLs in the Study Area affect people's health? If so, how?

14. Are there any sacred places or places of power in the Study Area that might be affected by HVTLs? If so, how do you feel about the HVTLs in relation to these sacred places?

15. Do you know of any legends or stories about the Study Area?

16. What part of the Study Area was used by your people in the past? Was it considered part of their territory?

17. Do you feel HVTLs in the Study Area affect the scenery? If so, how?

18. Do you feel HVTLs in the Study Area affect the economy there? If so, how? Will it affect you?

19. Do you feel HVTLs in the Study Area affect the recreational use of the area? If so, how?

20. Do you have any knowledge of use, in the past or present, of the Study Area for coastal resources? Do you feel HVTLs affect coastal resources? If so, how?

21. Do you have any knowledge of past migration patterns and trade routes in the Study Area?

22. Do you have any knowledge of a trek in the 1820s-1840s, when Native Americans escaped from the mission at San Juan Capistrano and came up into the Temecula/Pala area?

23. Do you have anything else to say regarding HVTLs being built in the Study Area?

24. Do you have any questions you'd like to ask us?

INTERVIEW SCHEDULE USED WITH GABRIELINO

The following questions were used as guidelines in open-ended interviews:

1. How do you feel about an HVTL being built in the Study Area?

2. Do you think southern California needs more energy?

3. Do you know of any ceremonial sites, habitation sites, trails, or rock art sites that are located near where the preferred or alternate routes will go?

4. There are a number of archaeological sites within the Study Area. What are your concerns about an HVTL going through or near these areas?

5. Are there burial sites in the Study Area about which you are concerned?

6. What would you want done with any human remains that might be uncovered?

7. What would you want done with any artifacts uncovered?

8. Do you know of any Native Americans who are now using the Study Area, or parts of it, in gathering plants for food, basket materials, or medicines? What about this kind of use in the past?

9. Do you know of any Native American use--either past or present--of the Study Area for animal resources, for either food or ceremonial purposes?

10. Do you know of anyone using mineral deposits of the Study Area, for either tools or ceremonial objects? How do you feel about an HVTL going through such areas?

11. Do you think an HVTL in the Study Area will affect plant life? If so, how?

12. Do you think an HVTL in the Study Area will affect animal life? If so, how?

13. Do you think an HVTL in the Study Area will affect people's health? If so, how?

14. Were you involved in the Sundesert project? If so, how?

15. Are there any sacred areas or places of power in the Study Area that the line should avoid? Where?

16. Do you know of any legends or stories about the Study Area?

17. What part of the Study Area was used by your people in the past? Was it considered part of their territory?

18. Do you think an HVTL in the Study Area will affect the scenery? If so, how?

19. Do you think an HVTL in the Study Area will affect the economy there? If so, how? Would it affect you?

20. Do you think an HVTL in the Study Area will affect the recreational use of the area? If so, how?

21. Do you have anything else to say regarding an HVTL being built in the Study Area?

22. How long have you lived here? Where were you living before?

23. Do you remember any occasions when you or your family has interacted with Juaneño people?

24. Do you have any questions you'd like to ask?

APPENDIX B

NUMBER CROSS REFERENCE FOR SITE DESIGNATIONS

(Archaeological Clearing House - Cultural Systems Research, Inc.)

*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.
4	52	25	258	79	334	132	450
5	53	26	259	101	22	133	170
7	54	27	166	103	23	134	289
13	55	28	260	109	57	135	58
14	56	29	261	111	280	161	290
15	159	30	426	117	281	176	335
16	160	32	427	118	282	177	59
17	161	33	167	119	283	178	291
18	162	34	262	120	284	179	292
19	163	36	474	121	285	180	293
20	164	37	329	122	286	188	7
21	5	38	330	123	287	196	294
22	21	39	331	124	288	197	295
23	6	40	332	126	168	202	60
24	165	42	333	131	169	203	61

*All are Ora except as noted.

*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.
221	96	247	455	286	79	318	459
222	297	248	172	295	80	319	460
224	298	255	67	303	456	320	461
225	299	266	68	304	457	321	462
226	300	267	173	305	81	324	93
227	62	268	174	306	82	325	94
228	301	269	69	307	83	326	95
232	63	270	70	308	84	327	96
234	64	271	71	309	85	328	97
235	65	272	72	310	86	329	98
236	66	273	73	311	87	330	99
237	451	274	74	312	88	331	100
238	452	275	75	313	89	332	101
239	453	280	76	314	90	333	102
240	454	281	77	315	91	334	103
243	171	284	302	316	92	335	104
244	336	285	78	317	458	336	105

*All are Ora except as noted.

*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No	CSRI Site No.
337	106	375	177	395	182	412	199
338	107	376	310	396	183	413	110
341	303	377	311	397	184	414	200
342	304	378	312	398	185	415	201
343	305	379	313	399	186	416	202
344	306	380	178	400	187	417	203
345	108	382	314	401	188	418	204
350	307	383	315	402	189	419	205
352	308	384	316	403	190	420	206
354	175	385	339	404	191	421	473
355	176	386	317	405	192	422	207
361	337	387	318	406	193	423	208
362	24	388	179	407	194	424	209
363	25	389	180	408	195	425	210
370	109	391	319	409	196	426	211
373	309	393	340	410	197	427	212
374	338	394	181	411	198	431	341

*All are Ora except as noted.

*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.
432	213	452	353	469	362	491	372
433	214	453	354	470	222	493	226
434	8	454	355	471	363	494	320
435	342	455	356	472	223	495	321
438	343	456	357	473	224	496	322
439	344	457	112	474	225	497	227
440	345	458	358	476	364	498	228
441	346	459	359	477	113	499	323
442	347	460	360	478	365	500	114
443	348	461	215	479	463	501	115
444	349	462	216	484	9	502	116
445	350	463	217	485	366	503	117
446	351	464	218	486	367	504	26
447	352	465	219	487	368	505	229
448	479	466	220	488	369	507	430
450	428	476	221	489	370	508	324
451	429	468	361	490	371	509	230

*All are Ora except as noted.

*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.
511	373	538	232	565	273	602	386
512	231	539	233	566	383	604	239
513	325	540	234	573	434	605	240
514	374	544	380	574	435	606	241
515	472	545	381	578	120	607	242
520	375	549	10	579	235	610	243
521	376	550	119	580	236	612	387
522	377	551	382	588	464	616	121
523	378	553	326	589	465	617	122
524	379	554	327	590	466	618	123
529	263	558	431	591	467	619	124
530	264	559	432	592	468	620	125
531	265	560	269	594	384	621	244
534	266	561	433	598	237	623	436
535	267	562	270	599	27	624	437
536	268	563	271	600	238	625	469
537	118	564	272	601	385	626	470

*All are Ora except as noted.

*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.
627	11	650	392	674	133	695	396
628	288	651	393	675	134	696	397
629	389	652	394	676	135	697	398
630	438	653	274	677	136	698	399
631	439	654	275	678	137	699	400
632	228	655	276	679	138	700	37
633	29	656	477	680	139	701	38
634	30	657	277	681	140	703	246
635	31	658	278	682	141	704	401
636	32	659	245	683	142	705	146
637	33	662	126	684	143	706	147
638	34	668	127	688	144	707	148
639	35	669	128	689	145	708	149
640	36	670	129	690	111	709	150
641	440	671	130	691	441	710	443
647	390	672	131	692	442	711	444
648	391	673	132	693	395	712	445

*All are Ora except as noted.

*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.
713	446	730	151	749	43	L	475
714	447	731	152	750	471	M	480
715	448	732	153	751	417	O	47
716	449	733	154	752	44	P	48
717	402	734	155	753	45	Q	49
718	403	735	156	754	46	R	50
719	404	736	157	A	248	S	51
720	405	737	158	B	249	T	251
721	406	738	247	C	250	V	252
722	407	739	413	D	418	W	253
723	408	741	414	E	419	W	254
724	409	742	415	F	420	X	255
725	410	743	416	G	421	Y	256
726	411	745	39	H	422	Z	257
727	412	746	40	I	423	SDi-N	476
728	279	747	41	J	424	SDi-O	481
729	328	748	42	K	425	SDi-1074	12

*All are Ora except as noted.

*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.	*ACH Site No.	CSRI Site No.
SDi-1075	13						
SDi-4282	14						
SDi-4283	15						
SDi-4411	16						
SDi-4412	17						
SDi-4413	1						
SDi-4414	2						
SDi-4535	18						
SDi-4538	4						
SDi-5093	3						
SDi-5925	19						
SDi-5926	20						

*All are Ora except as noted.