STATE OF CALIFORNIA – THE RESOURCES AGENCY ARNOLD SCHWARTZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

January 27, 2004

In Reply Refer To
COE031003A

David J. Castanon
Chief, Regulatory Branch
Department of the Army
Los Angeles District Corps of Engineers
P.O. Box 532711
Los Angeles, California 90053-2325

RE: SECTION 106 CONSULTATION FOR THE SAN JUAN CREEK WATERSHED AND SAN MATEO CREEK WATERSHED SPECIAL AREA MANAGEMENT PLAN (SAMP), ORANGE COUNTY, CALIFORNIA

Dear Mr. Castanon:

Thank you for your October 1, 2003 submittal that initiates consultation with me regarding the National Register determinations for the area specified above. You are consulting with me in accordance with 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act. Specifically, the Corps is requesting my concurrence with the following determinations of eligibility:

- Nine prehistoric sites, CA-ORA-1554, 1555, 1556, 1559, 1560, 1565, 1125, 1449, and 1551 are eligible under Criterion D for listing on the National Register of Historic Places (National Register);
- Historic Site, CA-ORA-29, La Casa de la Misión Vieja is eligible under criteria B and D for listing on the National Register;
- Military Bunkers (sites 30-176634 and 30-176635) are eligible under Criterion A for listing on the National Register; and,
- Lacking integrity, sufficient data and/or research potential, the following sites are not eligible for listing on the National Register under any of the criteria: CA-ORA-653, 654, 655, 657, 658, 1105, 1124, 1184, 1446, 1450, 1550, 1561, 1562, 1563, 1564, 1566, 1111, 1135, 1553, 1557, 1573, and historic site 30-176632.

Your submittal included the following studies:

- *Report of Archaeological Resources Survey for Rancho Mission Viejo, Project 2000, South Orange County, California,* by Carol R. Demcak, Archaeological Resource Management Corporation (ARMC), June 15, 2000;
- *Report of Paleontological Resources Survey for Rancho Mission Viejo, Project 2000, South Orange County, California* by Milos Velechovsky, ARMC, June 15, 2000;
- *Rancho Mission Viejo: An Ethnohistory* by Nancy H. Evans, Ph.D., ARMC, August 25, 2000;
- *Report of Archaeological Testing for Project 2000, Phase II-A, Rancho Mission Viejo, South Orange County; California,* by Carol R. Demcak, ARMC, April 1, 2002;
- *La Casa de la Misión Vieja: CA-ORA-29, Project 2000, Phase II-A Test Excavations, South Orange County, California* by Stephen R. Van Wormer, ARMC, April 1, 2002; and,
- *Report of Archaeological Testing for Project 2000, Phase II-B, Rancho Mission Viejo, South Orange County, California* by Carol R. Demcak and Stephen R. Van Wormer, ARMC, May 1, 2003.

By applying the National Register criteria (36 CFR Part 63) you have determined that CA-ORA-653, 654, 655, 657, 658, 1105, 1124, 1184, 1446, 1450, 1550, 1561, 1562, 1563, 1564, 1566, 1111, 1135, 1553, 1557, 1573, and historic site 30-176632 do not meet the criteria of integrity and are ineligible for inclusion in the National Register under Criteria A, B, C and D. Based on the information presented in the submitted materials, I concur with the Corps' determination that these resources are not eligible for the National Register.

I also concur with the Corps' determination that the nine prehistoric sites, CA-ORA-1554, 1555, 1556, 1559, 1560, 1565, 1125, 1449, and 1551 are eligible under Criterion D for listing on the National Register and that historic site, CA-ORA-29, La Casa de la Misión Vieja is eligible under criteria B and D for listing on the National Register.

At the present time I am unable to concur with the Corps' National Register eligibility determinations for Military Bunkers (sites 30-176634 and 30-176635) as being eligible under Criterion A. Based on the information submitted to me, it appears that the consultants have found these two properties eligible for both the National Register and the California Register at both the State and National level of significance. They state that the bunkers qualify under Criterion A for their association with the training of marines who participated in numerous important combat missions during World War II and the Cold War. Their stated period of significance is from 1942 to 1970.

I understand that the bunkers possess a high level of integrity dating to their construction dates and that penciled graffiti on the inside walls have been preserved due to deferred maintenance. However, I have a few questions in regard to the stated significance of these buildings under Criterion A:

1. How has the specific military training that occurred at Camp Pendleton made a significant contribution to the broad patterns of our history? How is this contribution important to the State of California in particular? How is the specific contribution of these two bunkers significant to the Nation?
2. As with any military training site, the location has an association with the military operations conducted there, including preparations for wartime activities. However, mere association to these events is not enough, in and of itself, to qualify a property under Criterion A: the property's specific association must be considered important as well. Are there any specific events or trends that have occurred at these two bunkers that have made a significant contribution to our Nation's history?
3. These two bunkers appear to be utilitarian training buildings that one might find on any training ground across the country. How does the significance of these two bunkers, on land that was originally part of Camp Pendleton, compare with other military bunkers and training grounds across the country?
4. The selected Period of Significance for these two bunkers (1942 to 1970) is a very broad period that covers several wartime activities. Was this the only location where a specific type of training occurred during this period of significance that might contribute to its importance, or is the period defined by the occurrence of military activity alone?

I look forward to continuing our consultation upon receiving your response to the requests that I have recorded above. Please do not hesitate to contact Blossom Hamusek, Project Review Unit Staff Archaeologist at (916) 651-6956 or at bhamu@ohp.parks.ca.gov, if you have any questions or need clarification of any of my comments.

Sincerely,

Dr. Knox Mellon
State Historic Preservation Officer

REPORT OF ARCHAEOLOGICAL RESOURCES SURVEY FOR THE RANCH PLAN, RANCHO MISSION VIEJO, SOUTH ORANGE COUNTY, CALIFORNIA

By:

Carol R. Demcak

Of:

Archaeological Resource Management Corporation
1114 N. Gilbert Street
Anaheim, CA 92801
714/491-9702

For:

Rancho Mission Viejo, L.L.C.
P.O. Box 9
San Juan Capistrano, CA 92693

June 15, 2000

REPORT OF ARCHAEOLOGICAL RESOURCES SURVEY FOR THE RANCH PLAN, RANCHO MISSION VIEJO, SOUTH ORANGE COUNTY, CALIFORNIA

INTRODUCTION

At the request of Laura Coley Eisenberg of Rancho Mission Viejo, L.L.C., personnel from Archaeological Resource Management Corporation (ARMC) conducted an archaeological resources survey for the proposed Ranch Plan on Rancho Mission Viejo in south Orange County. This study concludes the Phase I assessment for the project. The records and literature search was completed earlier (Demcak 1999). That research revealed that only a small portion of the property had been surveyed within the last five years and thus most of the acreage would need to be resurveyed.

The fieldwork consisted of a field walkover survey of approximately 25,000 acres and field checking of all of the recorded sites within or immediately adjacent to the project boundaries. The fieldwork took place from March 13 – June 1, 2000. The author supervised the project. A Society of Professional Archeologists (SOPA) certified field archaeologist and Registered Professional Archaeologist (RPA), she has over 20 years of experience in southern California archaeology. Steve Wakefield served as Field Director for the survey. Chris Demcak acted as Crew Chief for the northern survey area and Steve Dennis for the southern part. Field crew consisted of Kathleen Allen, Aaron Brocamontes, Steve Dibble, Denise Dickinson, David Frietze, Ralph Frietze, Fred Gonzalez, Hugo Lozano, Richard Miller, and John Sunio.

The results were that 19 new prehistoric sites and five new historic sites were recorded. Nine previously recorded sites (CA-ORA-656, -882, -921/1127, -997, -1043, -1048, -1121, -1144, and –1222) are considered eligible for the National Register of Historic Places (NRHP).

NATURAL SETTING

The project area (Figure 1) generally consists of Chiquita Canyon, Gobernadora Canyon south of Coto de Caza, the floodplain of San Juan Creek, a stretch of Ortega Highway, the acreage east of La Pata Avenue and north of Cañada Deshecha, Trampas Canyon, Cristianitos Canyon, Gabino Canyon, and La Paz Canyon. The project is bounded at its southernmost point by Camp Pendleton; on the east by the San Diego and Riverside County lines; and by the developments of Coto de Caza, Las Flores, and Ladera Ranch on the north. To the west a high-voltage power line and grant boundary mark the terminus of the survey.

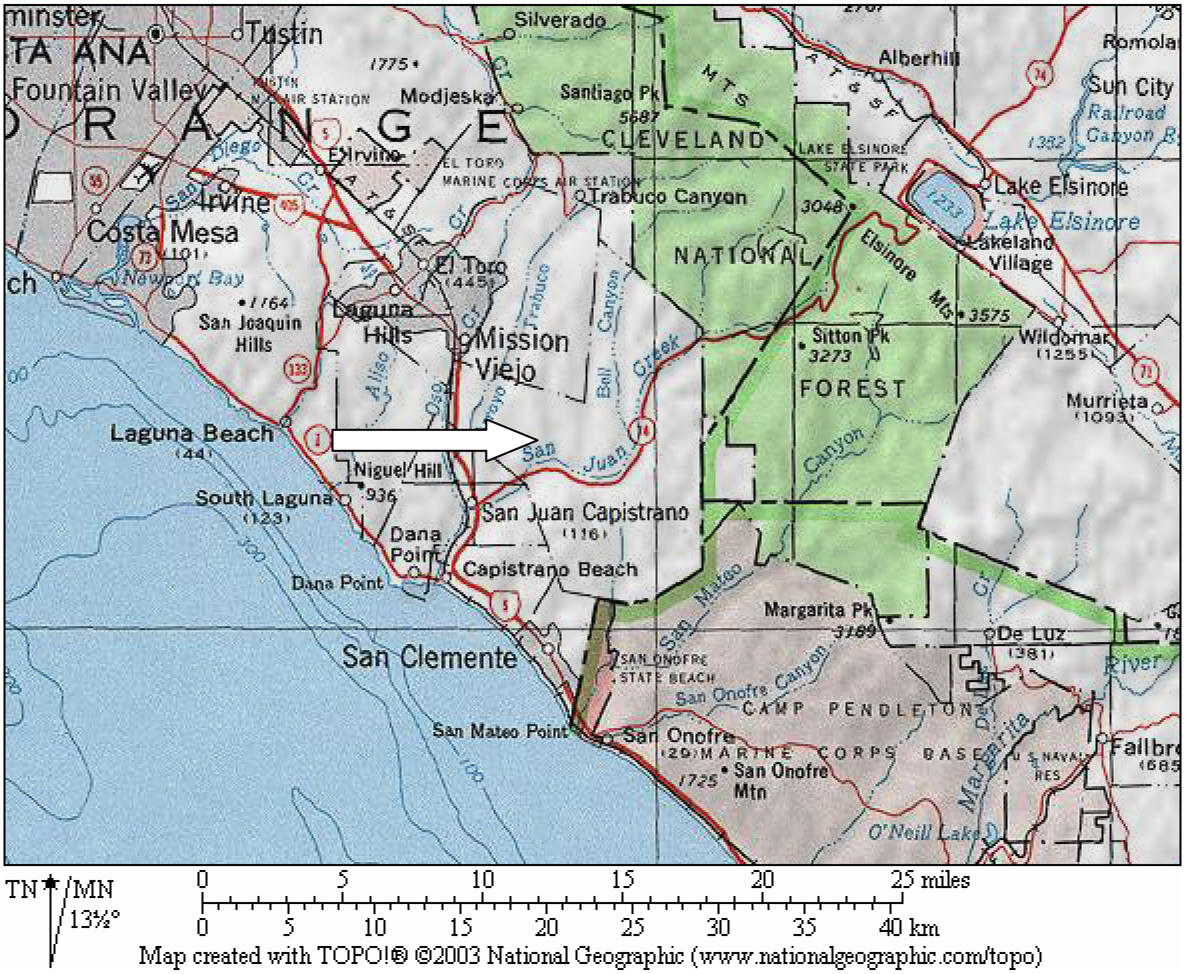

Figure 1. General Project Location.

The project is situated in south Orange County along Chiquita Creek, Gobernadora Creek, San Juan Creek, Cristianitos Creek, and numerous unnamed drainages, their adjacent terraces and foothills that make up Rancho Mission Viejo. The foothills are part of the Santa Ana Mountains that form part of the Peninsular Ranges Province that stretches from the Transverse Ranges through the Los Angeles Basin to the tip of Baja California (Norris and Webb 1976). The climate of the area is Mediterranean type, with dry summers and moist winters. Rainfall averages 10-15 inches annually on the coastal plain and up to 40 inches in the interior mountains (Hornbeck 1983).

Topographically, the study area is characterized by rolling hills, narrow ridgelines, and knolls separated by narrow canyons, localized drainages, and broad watercourses (Orange County Planning Department 1971). Elevations in the project area vary from a low of 160' in the floodplain of San Juan Creek on the western edge of the survey area to a high of 1260' in upper Gabino Canyon on the northeastern edge of the survey area.

Geologically, the study area is underlain by marine Upper Cretaceous deposits (Trabuco, Ladd or Williams Formations) and by Tertiary age, marine sedimentary rocks (Morton and Miller 1981), along with Quaternary and recent alluvium. Mapped formations include the marine Upper Cretaceous Ladd and Williams Formations, the marine Paleocene Silverado Formation, the marine Eocene Santiago Formation, the terrestrial Oligocene Sespe/Vaqueros undifferentiated Formation, the marine Middle Miocene Topanga and Monterey Formations, the marine and non-marine Middle Miocene San Onofre Breccia, the Upper Miocene Capistrano Formation, and unnamed Quaternary and recent alluvium. Soils in the study area vary from gray-brown to red-brown clayey loam on the upper terraces and knolls to light tan, sandy/silty sediments with abundant cobbles on the creek bottoms and adjacent terraces.

Lithic raw material derived from these and other formations in the Santa Ana Mountains include the Bedford Canyon metasediments (argillite) and quartzites; the Santiago Peak volcanics and metavolcanics; as well as granitics, quartz, chert, and chalcedony. These lithics occur as stream float in the local drainages. These raw materials were utilized by aboriginal populations to create chipped and ground stone tools and ornaments.

Six plant communities as defined by Munz and Keck (1959) are present in the project area. These communities (Chaparral, Coastal Sage-scrub, Grassland-herbland, Oak Woodland, Riparian, and Freshwater Marsh) would have provided a variety of seasonal plant resources to the prehistoric and early historic inhabitants of the region. For a detailed description of these resources and their uses, see Demcak and Del Chario (1989).

CULTURAL SETTING

Prehistory

Wallace (1955) and Warren (1968) have both proposed syntheses of the local cultural sequence. These summaries continue to be useful in defining the prehistoric period in southern California. The two researchers propose that aboriginal populations remained hunters and gatherers before Spanish contact.

The Millingstone Horizon, or Encinitas Tradition, is the earliest occupation that has been properly documented for Orange County. Highly mobile populations adapted to a littoral, or coastal, environment during this occupation. Small native groups gathered plant foods, including seeds, tubers, and berries, collected shellfish, and hunted small and large game. They used millingstone and muller, more commonly called metate and mano, to grind seeds. Hunting tools included wide, thick, and heavy projectile points. They were presumably utilized as spear points, based on their weights (Fenenga 1953), and launched by atlatls, or wooden spear-throwers. Cogstones and discoidals, wheel-shaped and disc-shaped ceremonial stones respectively, and red argillite beads are diagnostic artifacts, or time-markers, for this earliest known occupation in Orange County.

During the subsequent Intermediate Horizon, or Campbell Tradition, prehistoric populations expanded their resource base to include more hunting and fishing. The mortar and pestle, tools associated with the processing of acorns and other fleshy plant foods, were introduced into the area. Projectile points remained relatively large and heavy.

In the final prehistoric occupation, the Late Horizon Cultures (Shoshonean and Hokan speakers), local economies expanded markedly. Artifact assemblages reveal an increase in the number and types of tools, reflecting population growth and task specialization. Non-utilitarian items, such as beads and ornaments, were also on the increase in the Late Horizon compared to earlier occupations. Local groups continued to rely primarily upon plants, shellfish, and terrestrial game, which they hunted with small, lightweight arrow points and the bow.

Steatite, obsidian, and other non-local lithic resources were traded into the area. Pottery was introduced into Kumeyaay territory in San Diego County and small quantities reached Orange County in the very late prehistoric period. Pestles and portable mortars, especially of the basket-hopper type, and bedrock mortars were utilized locally for acorn processing. Seed grinding continued to be carried out with manos and metates, as well as on bedrock grinding slicks.

Ethnohistory (see N.H. Evans, 2000, accompanying volume)

Historical Overview

The arrival of the Portolá Expedition in 1769 marked the first efforts at extending Spanish control into Alta California through the establishment of Catholic missions. This move by the Spanish King Carlos III was intended to protect Pacific Coast shipping against Russian or English occupation of the area. Beginning in San Diego, the padres surveyed the lands as far north as Monterey Bay and secured them for the Spanish Crown. Mission sites were selected on the way north by Fathers Crespi and Gomez (Hallan-Gibson 1986).

The Portolá party arrived in Orange County on July 22, 1769, at a site in Cristianitos Canyon where two sick children were baptized by the fathers. The following day the travelers camped near the Mission Vieja site (CA-ORA-29) at the mouth of Gobernadora Canyon. The next day the expedition continued northwestward and out of the survey area to the western edge of the Plano

Trabuco and camped at the San Francisco Solano campsite at the present location of the Trabuco Adobe. Altogether they stopped at seven campsites (Smith 1965) in what became Orange County.

Missions, presidios, and pueblos were established by the Franciscan fathers, and in 1775, the Mission San Juan Capistrano was begun. Within days, however, a Native American uprising at the mission in San Diego forced the fathers to abandon the local mission, hastily bury its bells, and with the soldiers hurry southward to assist their fellow priests. The fathers returned the following year to re-establish the mission at a different site. There on November 1, 1776, the mission was officially founded. On October 4, 1778, the mission was removed to its present location closer to the Arroyo Trabuco, a dependable water source (Hallan-Gibson 1986). Substantially expanded in 1784, the mission continues in use and is believed to be the oldest building extant in California, according to Friis (1965).

The Native inhabitants were brought under the control of the mission. They were converted to Catholicism and provided the mission with a large labor pool. The padres taught them the necessary skills to grow crops, tend cattle, make wine, pottery and other crafts. The missions intended to prepare them to look after their own lands, which were held in trust for them. Spanish legislators called for the dissolution of the missions and turning over the lands to the natives as early as 1813. However, it was not until the Mexican Period that secularization was begun.

At the end of the Mexican Revolution, mission lands were seized and turned over to Mexican citizens of the Catholic faith and of good character. The Mission San Juan Capistrano was the first mission to be secularized in 1834. A pueblo for Native Americans was set up at Mission San Juan Capistrano, but, after years of mismanagement, failed (Dixon 1988; Hallan-Gibson 1986). A town was instead chartered and land became available to petitioners, including the Natives. Eventually, the town itself failed, and the mission was sold by Governor Pio Pico to his brother-in-law John Forster and James McKinley, a trader (Hallan-Gibson 1986). Forster maintained his residence at the mission until his claim to the property was denied (Muñoz 1980).

A series of land grants, or grazing rights, was issued by the Spanish Crown. The land between the Santa Ana and San Gabriel rivers was given to Manuel Nieto in 1784; this was the first land grant in Orange County. The second, called Rancho Santiago de Santa Ana, went to Juan Grijalva and Jose Yorba, his son-in-law. The grant was confirmed in 1810 to Yorba and Grijalva's grandson (Hallan-Gibson 1986). There followed a period of growth and development as rancheros built adobe homes, ran large herds of cattle and sheep, engaged in foreign trade, and dabbled in politics.

California was drawn into the Mexican-American War in 1846, and Governor Pico fled the oncoming American Army. His son-in-law John Forster, an American sympathizer, tipped off the Union soldiers marching through Orange County that a large contingent of enemy soldiers was on its way. This may have saved their force from defeat by 600 Mexicans (Hallan-Gibson 1986). After the Treaty of Guadalupe Hidalgo ended the war in 1848 and California entered the Union, the land claims of the rancheros were scheduled to be upheld, but subsequent laws required the land owners to prove their claims, requiring considerable time and expense. Most of the land claims in Orange County were eventually confirmed by the courts.

In the American Period, life on the ranchos continued much as before although squatters, rustlers, and mounting debts grew troublesome. Large landholdings were increasingly broken up; towns and settlements grew in number. Mission San Juan Capistrano was returned to the Catholic Church in 1865 when the U.S. Government denied Forster's claim to the property. Forster took his family and moved southward to Rancho Santa Margarita, home of his relatives, the Picos (Hallan-Gibson 1986).

During the 1860s, severe drought, smallpox, and torrential rains alternately took their toll on the large landholders and other settlers in southern California. The cattle market collapsed, land was devalued, and a diversified economy developed. The end of the Civil War brought an impetus to settlement. Land was cheap, and thousands flocked to the Golden West. A real estate boom ensued in the 1880s. The arrival of the Union Pacific, Southern Pacific, and Santa Fe Railroad provided transportation for people and products into and out of California. Sheep ranching became highly profitable due to the scarcity of cotton in the South. Large land grants were partitioned. Development proceeded at a rapid pace through the late nineteenth and early twentieth century. Improvements in transportation and communication contributed to the boom. The citrus industry with its associated beekeeping was one of the most successful enterprises in the area.

In the post-World War II period, southern California has been characterized by expanding urbanization, business and industry. The aerospace industry, movie and television industries, automobile manufacturing, and tourism have spurred local growth and continue to attract visitors and potential residents. The last ranchos have been developed or are in the process of being developed.

<u>Mission Viejo, or La Paz, and O'Neill Ranch</u>

This large rancho comprising 46,500 acres was granted to Jose Estudillo in 1841. Juan Forster acquired the holding in 1845 after having grazed his cattle there for at least a year. Forster, who played a significant role in the development of southern Orange County and northern San Diego County, was an Englishman by birth but a naturalized Mexican citizen. He was married to Pio Pico's sister, possessed vast land holdings, and was one of the wealthiest and most influential men of his day. His ranching success was partly due to an increased demand for beef that brought about a cattle boom once the gold rush had begun in 1848.

In 1882, the heirs of Juan Forster, whose land was heavily mortgaged due to various business failures, sold the Rancho Santa Margarita y Las Flores to Richard O'Neill and James C. Flood. Thus began the O'Neill Ranch, which includes the project area.

O'Neill, an Irishman, had come to California and established a successful ranching business and later meat-packing establishment. With his friend Flood, he acquired the Forster property. With various innovations, such as installing feedlots, O'Neill was highly successful and bought more land. The land holding reached its maximum of 260,000 acres under the care of Jerome O'Neill, Richard's son, at the turn of the century (Emmons 1974).

After Jerome's death, the ranch became the property of the Rancho Santa Margarita Corporation in 1926; and the O'Neills' stocks were held in trust. The Floods retained half interest in the corporation and ran the ranch until the 1930s when they sold their share (now Camp Pendleton) and the O'Neills divided their half interest. The land itself remained in trust. In 1943, after Richard O'Neill, Jr., died, an effort by trust officers to sell the property was halted by his widow.

In 1964 Mission Viejo Company was formed. The heirs and Richard O'Neill, Jr.'s, widow retained a 20% share of the company. Local development was initiated, and in 1972 the company was sold to the Phillip Morris Company, whose development became the Mission Viejo Planned Community. Santa Margarita Company launched its first large development, Rancho Santa Margarita, on the upper Plano Trabuco and on the adjacent hills to the south and southeast. Development has continued southward and now includes the Las Flores and Ladera Ranch communities.

The O'Neill family continues to operate Rancho Mission Viejo as it has since 1882. Ranching is still being carried out on the project area except for leased acreage. Herds still roam the hills and cowboys still conduct spring round-ups, repair fence lines, and patrol the range. Working windmills and cattle troughs dot the landscape.

FIELD SURVEY: METHODS

The ARMC crews carried out field walkover surveys beginning on March 13 and concluding on June 1, 2000. Visibility varied with project segment. In Chiquita Canyon, much of the land had been disced recently making for excellent ground visibility. Elsewhere in the canyon grassland-herbland, sage-scrub, chaparral, riparian, and oak-woodland vegetation made for limited ground visibility, ranging from 10 – 20%. In the remaining canyons to the east and south of Chiquita, grassland-herbland vegetation allowed reasonable ground inspection (30 – 50%) in the center of the drainages, while scrub and other vegetation permitted only limited inspection (10 – 20%) of the low hills and peaks surrounding the drainages. Narrow, elevated ridgelines in the interior of the study area both north and south of Ortega Highway were often choked with vegetation that precluded close ground inspection.

Surveyors walked 5-meter transects in most areas, shortening to one meter or less on recorded sites or when conducting a close inspection of a newly-discovered site. Transects followed the general direction of ridgelines and varied north-south or east-west in open areas, sometimes repeating in the reverse direction if the terrain and visibility warranted such coverage. Single surveyors walked narrow ridgelines or small drainages, while groups of surveyors covered wider spaces. Fully-disturbed areas, including re-vegetation zones, citrus and avocado groves, SMWD Water Treatment Plant, ranch headquarters and related structures, and sand and gravel plants were not surveyed due to the extreme levels of disturbance.

FIELD SURVEY: RESULTS

The results are given below by project segments, from northwest to southeast. See Confidential Appendix for maps showing site locations.

Segment 1: Upper Chiquita Canyon

CA-ORA-877 is the only site previously recorded in this segment. It was was recorded by ARMC in 1980 as a small milllingstone site. The site was described as a 20 x 20-meter scatter of lithics, consisting of three manos, one hammerstone, and two metate fragments. The recent field inspection revealed the presence of one hammerstone and a mano fragment.

Three new sites (CA-ORA-1559, -1560, and –1561) were recorded during the recent survey. See Confidential Appendix for site locations and site survey records.

CA-ORA-1559 is located on the eastern side of Chiquita Canyon. This moderate scatter of ground stone and chipped stone tools and debitage. The assemblage also includes a discoidal, or ceremonial stone (collected), red bead material, 11 manos or fragments, three metate fragments, a core, a flake, a hammerstone, two core tools, five scraper-planes, and two flake tools. The range of tool types and the presence of the discoidal and red bead raw material suggests that this was an Early Millingstone base camp, or village. Site area is an estimated 60 meters (m) E/W x 50 m N/S. A ranch road cuts into the site on its eastern end. The site has been disced for agriculture. Cows graze on the site currently. The site lies between the 600' and 640' contour elevation. Depth could not be determined.

CA-ORA-1560 is located to the northwest of CA-ORA-1559 on the east side of Chiquita Canyon. This moderate scatter of ground and chipped stone tools occupies an area of 40 m E/W x 30 m N/S. Artifacts include nine manos/fragments, eight metate fragments, three scraper-planes, four flake tools, a hammerstone, and red bead raw material. A possible feature consisted of six fragments of a schist metate and a granitic mano. The site may be a small (40 m N/S x 30 m E/W) base camp associated with CA-ORA-1559. It is probably an early site. It contains no late period indicators. The site lies on the 560' – 580' contours. Depth is unknown.

CA-ORA-1561 lies to the north of CA-ORA-1560 on the eastern side of Chiquita Canyon. This sparse lithic scatter contained three items: two discoidals (both collected) and a hammerstone. The site occupies an area of 30 m E/W x 5 m N/S at an elevation of 720' above mean sea level. The site appears to be a special purpose camp (probably ceremonial) associated with CA-ORA-1559 and CA-ORA-1560. Depth could not be determined.

Segment 2. Lower Chiquita Canyon and Western San Juan Creek

Eighteen prehistoric sites (CA-ORA-1447, -997, -1042, -1043, -880, -881, -902, -882, -1048, -1049, -1050, -1106, -1104, -1105, -27, -26, -28, and –1121) and one historic site (CA-ORA-29, Mission Vieja) were previously recorded in this area. Two new prehistoric sites and two isolates were recorded during the recent field reconnaissance.

CA-ORA-1447 was recorded by Greenwood and Associates (GandA) in 1988 as a ground stone scatter (60 x 50 meters) consisting of more than a dozen metates or fragments, a possible mortar fragment, hammerstone, and three manos. GandA also tested the site (Romani 1997). The site was determined to be ineligible for the National Register of Historic Places (NRHP) in a formal review process. ARMC surveyors found one core tool and a ground stone fragment during the recent field check of the site.

CA-ORA-997 was recorded by ARMC in 1984 as a small (20 x 20 meters) lithic scatter consisting of a mortar fragment, two manos, a core, flake, and fire-affected rock (FAR). It was described as a possible seasonal camp. GandA personnel re-surveyed the site (Van Bueren et al. 1988) and updated the site record to expand its area to 240 x 130 meters. ARMC personnel monitored the site during grading for the Chiquita Water Reclamation Pipeline (Demcak and Van Wormer 1987) and observed no subsurface deposits. A later ARMC crew monitored the area for the South County Pipeline Project (Julien and Demcak 1993) and collected 27 artifacts, including three hammerstones, three metate fragments, four utilized flakes, three plano-convex tools, three whole and two fragmentary manos, one very late projectile point (Sonoran type), a fragmentary pestle, a chopper, core scraper, and drill/reamer. Subsequent testing by GandA revealed an additional deposit east of Chiquita Creek and a calculated total area of 300 meters SW/NE x 180 meters NW/SE for the overall site. The site was described as a probable habitation/village with occupations from the early to the late period. A radiocarbon date of 8950± 70 B.P. was obtained from a shell sample 140-150 cm below datum (Romani et al. 1997). The site was determined to be NRHP eligible in a formal review process.

ARMC surveyors during the recent field check of the site discovered that the site had been freshly disced revealing a dense scatter of ground and chipped stone tools, debitage, and fire-affected rocks (FAR's). Diagnostic artifacts included a pestle and pestle fragment, a dart point fragment, and red bead flake, all of which were mapped and collected, along with a shallow basin metate (90% complete), a large biface (multipurpose tool) and small biface fragment (preform).

CA-ORA-1042 was recorded by ARMC in 1984 as a small lithic scatter (25 x 50 meters) consisting of two manos, a metate fragment, three scraper-planes, two large flake scrapers, and a core. It was described as a probable collecting and processing camp associated with the adjacent freshwater marsh (Chiquita Creek). ARMC personnel carried a test and salvage program within the right-of-way for the Chiquita Canyon Water Reclamation Plant access road and Chiquita Land Outfall Pipeline (Demcak and Van Wormer 1987). No subsurface artifacts were recovered. Surface-collected artifacts included five pieces of debitage, three scraper-planes, three flake scrapers, a hammerstone, two manos, four ground stone fragments, and two metate fragments. The site was again described as a plant processing station. RMW personnel (Bissell 1988) re-surveyed the site and concluded that the site had been adequately mitigated. GandA personnel revisited the site (Van Bueren et al. 1988) and revised the site area to 80 x 35 meters to include an additional deposit of metate fragments, bowl or mortar fragments, debitage, a chopper, and a mano. ARMC personnel monitored during pipeline/road construction and recovered a flake tool, two scrapers, two metate fragments, a complete metate, and a mano fragment (Julien and Demcak 1993). GandA personnel conducted a test program on the site that consisted of the excavation of 14 shovel test pits (STP's) and a surface collection. Site boundaries were extended to 80 x 120 meters. Only two artifacts (flakes) were recovered, both from the surface. As in the previous test/salvage of the site, no subsurface deposit was found. The site was determined to have limited data potential (Romani 1997) and therefore would not be NRHP eligible. The recent field check by ARMC personnel did not discover any artifacts at the site.

CA-ORA-1043 was recorded by ARMC in 1984 as a small, habitation site with a well-developed midden containing shellfish, chipped and ground stone tools. Testing in 1986 by a field school from Saddleback College under the direction of Dr. Patricia Martz yielded additional information. Their excavation uncovered a deep midden (130 cm) with two stratigraphically defined components. Recovered items from five 1x2-meter units included numerous flakes (obsidian among others), chipped stone tools, charcoal, and fire-affected rocks. During boundary testing by ARMC (Demcak and Del Chario 1989) 78 auger holes (24-cm diameter) and one 1x2-meter test pit were excavated. As a result the site area was revised to 6050 square meters. Recovery from the auger holes included shellfish remains, burnt mammal bones, 100 pieces of debitage, a utilized flake, two scrapers, a core tool, as well as two fragments of the same schist pestle, and a ground stone fragment. Subsequent data recovery in the right-of-way for the South County Pipeline (Jones et al. 1995) produced radiocarbon dates and obsidian hydration measurements that bracket site occupation from A.D. 1050 and the 19th century. The midden was continuous and reached a depth of 150 cm. The site was interpreted as a Late Period semi-permanent or permanent village. The site was determined to be NRHP eligible in a formal review process. Human remains were encountered during pipeline construction monitoring at the site. Following a Native American ceremony the remains were reburied nearby.

CA-ORA-880 was recorded by ARMC in 1980 as a thin scatter (100 x 40 meters) of chipped stone artifacts (two hammerstones, two cores, two flakes). A subsequent test of the site (Demcak and Velechovsky 1996) and the recent field check did not uncover any artifacts. This site lacks any research potential and does not qualify for the National Register.

CA-ORA-881 was recorded by ARMC in 1980 as a scatter (300 x 100 meters) of milling stone assemblage artifacts. Artifacts included five metate fragments, two manos, three hammerstones, and chipping waste. A subsequent test by ARMC (Demcak and Velechovsky 1996) uncovered a diverse group of chipped and ground stone artifacts but with no subsurface deposit. The site was determined to be NRHP ineligible. The site has been severely impacted as predicted by the construction of Antonio Parkway. Only the extreme southeasterly portion of the site remains intact. The recent field check produced one biface fragment (collected).

CA-ORA-882 was recorded by ARMC in 1980 as a flake scatter consisting of one flake and two utilized flakes. The area could not be determined due to heavy vegetation. During the Chiquita Canyon Water Reclamation Project (Demcak and Van Wormer 1987) the site was tested/salvaged in the right-of-way. The site was found to extend downslope to the south across Narrow Canyon to a small terrace. This terrace area and the road bed were surface collected and five 1x1-meter units were excavated to a maximum depth of 200 cm. Recovered items included debitage, two Late Period arrowpoints, three flake tools, asphaltum, shellfish, faunal remains (terrestrial and marine). A hearth feature was recorded and dated by shell and bone to A.D. 1750± 70 and A.D. 1460± 60, respectively. Additional samples from the same level of another unit produced dates of A.D. 1710 ± 60 and A.D.1670± 70. The site is interpreted as a small, Late Period base camp. The site possesses considerable research potential and is considered eligible for the National Register. The recent field check revealed only one chalcedony flake on the surface.

CA-ORA-902 was recorded by ARMC in 1980 as a small lithic scatter consisting of chipped stone and ground stone tools with a possible midden. The site was tested by ARMC in connection with the Antonio Parkway alignment (Demcak and Velechovsky 1996) and produced only debitage, waste flakes and cores, and no subsurface deposit. The site was determined to lack research potential, and thus it does not qualify for the National Register. The recent field check revealed no artifacts at this location.

CA-ORA-27 was recorded initially by Romero in 1935 and officially recorded in 1949. The site was described as being part of Camp 26 (CA-ORA-26). ARMC personnel updated the site survey record in 1980 as a substantial scatter of milllingstone assemblage artifacts and a small amount of abalone shell. Metate fragments, manos, hammerstones, cores and flakes were observed there. Three loci (A-C) were delineated: Locus A – original site area north of Ortega and adjacent to Rancho Mission Viejo headquarters; Locus B – smaller area south of Ortega; and Locus C – area along dirt road at end of orange grove west of Locus A. Loci A and B were tested by ARMC (Cottrell 1985). Locus C could not be relocated. Recovery from the ARMC surface collection at Locus A included 16 manos, 6 metate fragments, one pestle fragment, four ground stone fragments, 10 utilized flakes, 17 flake tools, 66 core tools,1348 flakes and 27 cores. Three 1x1-meter test pits produced only three tools and 34 pieces of debitage. No midden was present. Maximum depth of the units was 30 cm below datum. Locus B (Cottrell 1985) produced more than 150 surface artifacts. Two excavation units produced minimal recovery (five flakes); a third was more productive, yielding a metate fragment, mano, chopper, two cores, and four flakes from a maximum deposit of 30 cm. Caltrans archaeologists also tested the site and concluded from their field investigations that CA-ORA-27 may have been a base camp with several activity areas that had been disturbed since the 1930s by various activities such as road building and agriculture (Romani et al. 1987). The research potential of the site has been exhausted as a result of these multiple investigations. CA-ORA-27 would not be eligible for the National Register. The recent field check did not disclose any cultural items at this site.

CA-ORA-26 was recorded by Romero in 1935 and officially recorded in 1949. ARI (Schuster 1977a) updated the site record to indicate that the site was heavily disturbed and to report a wide scatter of ground stone artifacts south of Ortega Highway at the margins of the lemon groves on site. ARMC updated the site record in 1980 and delineated three loci: Locus A – main site area; Locus B – small knoll located due east of main area; and Locus C – small possible quarrying area located on upper knoll southeast of site. Caltrans personnel (Romani et al. 1986) updated the site record during testing of the site area south of Ortega Highway. They concluded that the northern part of the site had been substantially destroyed as a result of nursery operations and that only the southern remnant was partially intact. They described the site as a possible extensive base camp, seasonal village or processing location related to a major village in the area (Romani et al. 1986). Based upon the minimal recovery from their field investigations, they concluded that Locus A lacked research potential and integrity and that it would not qualify for the National Register. ARMC conducted a test of the western edge of Locus A (Demcak and Velechovsky 1996). The recovery from surface finds and excavation units was very limited. The deposit was found to be heavily disturbed. ARMC agreed with the Caltrans evaluation that Locus A lacked integrity and failed to qualify for the National Register. GandA personnel (Toren 1997) tested Locus B and recovered a single surface artifact, a core. They also tested Locus C and recovered a few pieces of debitage. They concluded that both loci possessed little data potential and thus would not be NHRP eligible. A recent field check of CA-ORA-26 did not disclose any cultural items.

CA-ORA-29 (Mission Vieja) was recorded in 1935 by Romero and officially recorded in 1949. Romero concluded that this was the site of the old San Juan Mission. He also reported: "The original burial grounds used by the Indians located on top of the mesa 500' N of the Mission" Romero 1949). This has been labeled Locus B of the site (Demcak et al. 1986). This locus is actually northeast of the site and has been destroyed by nursery operations. Historic accounts link the site with one of the campsites of the Portolá Expedition (Sleeper 1985; Meadows 1965; Smith 1965) and with a later adobe (Sleeper 1985; Smith 1985). Meadows (1966) reports that the adobe was a mission outpost dating to circa 1800. Sleeper (1985) says it may have been a mission outpost or home of the majordomo. Muñoz (1980) asserts that the site is most likely associated with early ranching rather than mission-period developments. On various visits to the site and on the recent field survey, ARMC personnel have sighted roof tile fragments, brick fragments, glass, and historic ceramics. On the most recent field check, ARMC surveyors noted that the site has been capped with fill dirt except for the elevated area nearest the creek.

CA-ORA-1048 was recorded by ARMC personnel in 1984 as a milling stone scatter of moderate density, consisting of scraper planes, flakes, core, manos, a large metate fragment, and fire-affected rock. Depth was unknown. ARMC subsequently tested the site (Demcak and Del Chario 1989) and salvaged in the right-of-way for the South County Pipeline (Jones et al. 1995). The site contained an extensive scatter (23,200 square meters) of ground stone and chipped stone artifacts and debitage along with four discoidals, two from the same subsurface feature. Excavated depth was a maximum of 60 cm below datum. A second activity area, Locus B, was delineated south of the ranch road that bisects the site. The site appeared to be a base camp where a wide range of activities occurred, including ceremonial activities as evidenced by the discoidals. The site was determined to be NRHP eligible in a formal review process. On a recent field check by ARMC, the ground had been freshly disced and surveyors noted seven metate fragments, eight manos or fragments, nine core tools, three flakes, a hammerstone, and a fragmentary discoidal. The discoidal was roughly 80% complete, consisting of three fragments. The pieces were collected and mapped.

CA-ORA-1049 and **CA-ORA-1050** were recorded by ARMC in 1984 on the same survey as was CA-ORA-1048. Artifacts were observed over a wide area, artificially separated by a small drainage; therefore three site numbers were generated. In reality only one continuous scatter or site (CA-ORA-1048) ever existed. There are presently no artifacts at the recorded locations for the other two sites and none was noted when CA-ORA-1048 was tested and salvaged by ARMC (Demcak and Del Chario 1989; Jones et al. 1995). Neither of these recorded sites has any research potential. They do not qualify for the National Register of Historic Places.

CA-ORA-1121 was recorded by RMW Paleo Associates (Bissell 1988) as a midden deposit encompassing 5600 square meters. They noted that the midden might be in excess of one meter in depth. They observed debitage, flake and core tools, metate fragments, and manos. ARMC personnel tested and salvaged the site (Demcak and Del Chario 1989; Jones et al. 1995) and found an intact and well-developed midden soil, a diverse assemblage of ground stone and chipped stone tools, and other evidence of a prehistoric base camp that was occupied into the historic period. Pottery and a glass trade bead were also recovered. The site was determined to be NRHP eligible in a formal review process. Monitoring during construction of the South County Pipeline (Julien and Demcak 1993) resulted in the recovery of a very late Sonoran-style arrowpoint, flake and core tools. The monitor also mapped a hearth feature from which were recovered utilized flakes, two choppers, a biface tip, core scraper, perforator, spokeshave, flake scraper, and a modified flake. A recent field check by ARMC personnel revealed a whole pestle (collected) at the site.

CA-ORA-1106 was recorded by ARMC in 1986 as a large (30 x 100 meters) lithic scatter of chipped and ground stone artifacts. The site was tested by GandA (Toren 1997) who enlarged the site boundaries to 20 x 230 meters. Surface finds numbered 15 and included hammerstones, a core, mano, ground stone fragment, flakes and shatter. There was no subsurface component. The site was determined to have very limited research potential that was exhausted with the test phase. Thus the site would not be NRHP eligible. A recent field check of the freshly-disced site by ARMC surveyors revealed a moderate scatter of chipped and ground stone tools. They included four manos, four metate fragments, two flakes, a core tool, and scraper-plane.

CA-ORA-1104 was recorded by ARMC in 1986 as a small lithic scatter (10 x 20 meters) that consisted of chipped and ground stone artifacts. Five flakes and a mano fragment were observed. The recent field check did not disclose any artifacts at this site.

CA-ORA-1105 was recorded by ARMC in 1986 as a small lithic scatter (20 x 20 meters) consisting of two core-scrapers, a small mano fragment, a ground stone fragment, and fire-affected rock. A recent field check by ARMC personnel did not disclose any cultural items.

Two new sites, CA-ORA-1562 and –1563, as well as two isolated artifacts (30-100334 and 30-100335) were recorded during the recent survey by ARMC personnel. They are described below. See Confidential Appendix for site locations and site survey records.

30-176631 is an historic site located adjacent to Ortega Highway. It is a telephone switching station dating to World War II. The station, built during wartime, is camouflaged as a house of Modified Colonial style. The house has a facade of what appears to be colored concrete blocks with brick inside. It has 1½ stories with false windows, vented on the ground floor and completely bricked in elsewhere, and wooden shutters with no hinges. A wooden outhouse, missing its door, adjoins the house on the west. The structure is currently operated by Pacific Bell and is surrounded by a chain link fence. Walkways surrounding the structure are of more recent age, according to Steven Van Wormer, historian (pers. comm.).

CA-ORA-1562 is a moderate scatter of ground and chipped stone tools and debitage on the east side of Chiquita Canyon. Ground visibility was excellent due to recent discing. The site is interpreted as a small base camp dating to the pre-late to late period in prehistory due to the presence of a pestle. The scatter also includes three fragmentary metates, two mano fragments, a hammerstone, a flake, two flake tools, a core, chopper, and scraper-plane. The site area is an estimated 20 m E/W x 15 m N/S. It is found on the 520' – 540' contours. Depth is unknown.

CA-ORA-1563 is a sparse lithic scatter consisting of three hammerstones, a hammer-abrader, two flakes, a flake scraper, two cores, a mano fragment, and a scraper-plane. The site measures 100 m E/W x 25 m N/S. It occupies the 400' – 420 ' contours on a SW/NE trending knoll on the east side of Chiquita Canyon. It appears to be a chipping station. Depth is unknown.

Two isolated artifacts were recorded during the ARMC survey. **30-100334** is a granitic bifacial mano fragment. The fragment measured 11 x 3 x 5 cm. It was found near the bottom of a ridgeline on the eastern side of Chiquita Canyon just to the northeast of Area B of CA-ORA-997. **R30-100335** is a small (5 x 4.5 x 3 cm) metasedimentary scraper-plane. It was found on a ranch road near the top of an easterly-trending knoll and west of the ridgeline of Gobernadora Canyon.

<u>Segment 3. Gobernadora Canyon and Eastern San Juan Creek</u>

Five prehistoric sites had already been recorded in this area: CA-ORA-984, -1122, -1123, -1123, and -535. Four additional sites were recorded during the ARMC survey: CA-ORA-1564, -1565, -1566, and historic site 30-176632.

CA-ORA-984 was recorded by ARMC in 1981 during a survey of the southern portion of Coto de Caza (Jertberg 1981). The light scatter measured 20 x 30 meters and included a whole metate, flakes, a chopper, hammerstone, and a biface fragment. The site is located at 805' in elevation. A subsequent field check and site update (Allen et al. 1992) recorded mano fragments, a hammerstone, chopper, and flakes. During the most recent ARMC field check, surveyors observed a mano fragment, core tool, core fragment, and flake. Artifacts were visible in the road only.

CA-ORA-1446 is recorded as a light scatter of ground and chipped stone tools (Van Bueren et al. 1988). Artifacts included a metate, two manos/fragments, a chopper, core, and flakes. The site measured 93 m E/W x 121 m N/S at an elevation of 400' – 440' above mean sea level. On the recent ARMC field check no artifacts were observed. Surface visibility was very good.

CA-ORA-1122 was recorded by RMW Paleo Associates (Bissell 1988) as an 80 x 60-meter scatter of flakes and cores. A field check by ARMC (Demcak and Del Chario 1989) did not reveal any cultural items. The most recent ARMC field check again found no cultural items.

CA-ORA-1123 was recorded by RMW (Bissell 1988) as a light scatter of chipping waste, cores, mano, and metate fragment. The site area was as estimated 35 x 20 meters. The site was recorded on the 280' contour. The site was tested by ARMC (Demcak and Del Chario 1989). A surface collection included five utilized flakes, a chopper, a core tool, and nine flakes. Recovery from the two 1x1-meter test units included four utilized flakes, 22 flakes, a mano, and a metate fragment. Maximum depth was 50 cm below datum. A few fragments of shell (unidentified clam) and bone (cottontail, jack rabbit, and boney fish) were also recovered sub-surface, along with a few flecks of charcoal. The site was interpreted as a satellite camp of one of the larger habitation sites along San Juan Creek. A flake scraper was recovered from the site during monitoring for construction of the South County Pipeline (Julien and Demcak 1993).

CA-ORA-535 was recorded by Weaver (1976) as a small scatter of six basalt flakes and one core. The site area was estimated as 50 square meters. The site was located on the 380' contour. During the recent field check by ARMC, surveyors did not observe any artifacts at this location.

Four new sites were recorded in this area: CA-ORA-1564, -1565, -1566, and historic site 30-176632.

CA-ORA-1564 is a light scatter of ground and chipped stone tools on the east side of Gobernadora Canyon. The tools include three scraper-planes, a metate fragment, a flake, three mano fragments, a hammerstone, and a ground stone fragment. The site measures 100 m SE/NW x 60 m SW/NE and occupies the 600' – 620' contours. It is a probable plant processing station. A ranch road cuts through the site on the northwest.

30-176632 is a moderate scatter of historic items in two concentrations: 1) bricks, lumber, metal, and fence post; and 2) three fragments of farm equipment. Piles of cobbles and bricks may be a feature, such as a firepit or possibly a burial. The site measures approximately 80 m NE/SW x 10 m SE/NW. It is located to the east of CA-ORA-1564 in a narrow drainage at 560' – 580' in elevation.

CA-ORA-1565 is a light scatter of ground and chipped stone tools on the east side of Gobernadora Canyon. The scatter consists of three scraper-planes, two manos/fragments, four large metate fragments, a bedrock (boulder) metate or grinding slick, a hammerstone fragment, core, and ground stone fragment. This extensive scatter occupies an area 280 m SW/NE x 140 m NW/SE at an elevation of from 480' – 500' above mean sea level. It is a probably a plant processing station. Depth of the deposit is unknown.

CA-ORA-1566 is a probable plant processing station measuring 60 m E/W x 10 m N/S at an elevation of from 560' – 580' mean sea level. This light scatter of ground and chipped stone artifacts includes six manos/fragments, a metate fragment, flake tool, and a hammer-abrader. A ranch road cuts through the south side of the site. Depth could not be determined.

<u>Segment 4. La Pata Drive to Trampas Canyon Road</u>

Eight prehistoric sites were previously recorded in this project segment: CA-ORA-28, -653, -654, -655, -656, -657, -658, and -1102. One new prehistoric site was recorded during the recent field survey: CA-ORA-1567.

CA-ORA-28 was recorded by Romero in 1935 and officially recorded in 1949 as a large site with plenty of water and other resources. The site record was updated by ARI in 1977 (Schuster 1977b). The surveyors were unable to inspect the site due to the construction of a private residence at the location. The survey team concluded that the construction of the house and roads had destroyed the site. A recent field check by ARMC confirmed that the site had been completely destroyed by the house's construction. Richard J. O'Neill (pers. comm.), its owner, does not recall seeing an archaeological site at the time of construction in 1959. The site now lacks research potential and integrity. It does not qualify for the National Register. The recent ARMC field check did not uncover any artifacts at the site location.

CA-ORA-653 was recorded by A. Peak in 1973 as a scatter of indeterminate area (possibly 200' x 300') south of Ortega Highway and east of a sand operation, then Owens-Illinois. A single mano and volcanic flakes were noted. The recorder noted that the site had been heavily damaged by bulldozing. On a recent field check by ARMC, surveyors confirmed that the site had been bulldozed. Piles of dirt surrounded the recorded site area. No artifacts were sighted.

CA-ORA-654 was recorded by A. Peak in 1973 as a small (30' x 80') scatter of core tools, manos, and flakes on a ridge overlooking Trampas Canyon. The recorder noted that some midden was present and suggested that it was probably an occasional use site. The recent field check by ARMC personnel failed to locate any artifacts at this location.

CA-ORA-655 was recorded by A. Peak in 1973 as a small (30' x 50'), open site with core tools, flake scrapers, and a possible mano. It was interpreted as a probable occasional use site. The recent field check by ARMC personnel failed to discover any artifacts.

CA-ORA-656 was recorded in 1973 by A. Peak as a large, deep shell midden measuring 800' x 200'. Flakes, cores, and core tools were observed on the surface. Caltrans archaeologists re-surveyed the site in 1985 and estimated the site's depth at 100 cm and its area as 200 x 90 m. The site was subsequently tested by Caltrans (Romani et al. 1986) for the proposed widening of Ortega Highway (SR 74). At that time, the site had already been impacted by the construction of Ortega Highway, Trampas Canyon Road, and by a haul road on the west. The extent of modern damage is, however, relatively minor, even now. The test at the site revealed a large, multi-component site totaling 14,520 square meters with a maximum depth of 120 cm. The two components were found to be stratigraphically distinct. The upper component contained sparse remains of a Late Prehistoric occupation that included arrowpoints and pottery. The assemblage from the upper component suggests a temporary or seasonal camp for hunting or plant processing. The lower component indicates a more intensive occupation as evidenced by greater frequencies of artifacts and ecofacts, the presence of a well-developed midden soil, and far greater frequencies of fire-affected rocks. A radiocarbon date of 915±80 years B.P. (before present) and thermoluminescence dates 540±40 and 730±70 years B.P. suggest an Intermediate Period occupation for the lower component. The large numbers of fire-affected rocks suggested a sweat lodge to Caltrans archaeologists (Romani et al. 1986). A human cremation consisting of several burnt skull fragments was uncovered in the lower component in an excavation unit on the north side of Ortega Highway. The site was determined to be NRHP eligible in a formal process of review (John Romani, pers. comm.). ARMC personnel conducted boundary testing on the eastern edge of the site in connection with the South County Pipeline (Demcak and Del Chario 1989). Recovery from a 1x2-meter test pit (maximum depth of 90 cm), auger holes, and a test trench included a whole basket-hopper mortar with asphaltum attached, 32 flakes, one flake tool, one core tool, and one biface. Charcoal from the 40 – 50 cm level of the test pit resulted in a radiocarbon date of A.D. 1720±80. A few ecofacts (bone and shell fragments) were also recovered. Some modern debris (glass, asphalt, and wood) was present in the test trench. A recent field by ARMC failed to locate any artifacts or ecofacts at the site.

CA-ORA-657 was recorded by A. Peak in 1973 as a ridge top site west of the Owens-Illinois sand operation, now the Ogleby Norton Industrial Sands Company. A small (15' x 20') scatter of one core tool and one flake, it was interpreted as a probable occasional use site. The recent field check by ARMC failed to discover any artifacts at this location. The area has been bulldozed, perhaps for fire control. Dirt piles ring the recorded site area.

CA-ORA-658 was recorded by A. Peak in 1973 on the basis of one core tool. There was no evidence of a midden (occupational detritus mixed with soil). The site was interpreted as a campsite. ARMC field personnel found no evidence of this site in a recent field check.

CA-ORA-1102 was recorded by Caltrans archaeologists (Romani et al. 1986). The recorded scatter consisted of ground stone artifacts (manos and metates), flakes, and core tools. The site measured 200 x 40 m. Testing consisted of a surface collection and excavation of seven 1 x 0.5 m units. The units revealed a cultural deposit no deeper than 70 cm. The site was not considered NRHP eligible. The recent field check by ARMC did not reveal any artifacts at this location.

One new prehistoric site was recorded in this area: CA-ORA-1567. **CA-ORA-1567** is a light scatter of ground and chipped stone tools and debitage. The site is found in and along a graded road just south of the recorded location of CA-ORA-28 and was probably associated with that site. Artifacts at CA-ORA-1567 consist of three core tools, a whole mano, a mano fragment, and a flake.

<u>Segment 5. Cristianitos, Talega, Blind, Gabino, and La Paz Canyons</u>

CA-ORA-1103 was recorded by Caltrans (Romani et al. 1986) as a sparse scatter of manos, metates, flakes, pottery, core tools, and arrowpoint, along with a few fragments of bone and shell. The site was tested by Caltrans and revealed a cultural deposit from 20 - 40 cm in depth. The site was not considered NRHP eligible. The recent field check by ARMC did not reveal any artifacts or ecofacts at this site location.

CA-ORA-1111 was recorded by Caltrans personnel (Romani et al. 1986) as a light scatter of flakes and core fragments in a graded road. The artifacts included a hammerstone, mano fragment, three core fragments, and two flakes. The area of the site could not be determined. The ARMC field crew did not see any artifacts at this location during a recent field check.

CA-ORA-535 was recorded by Weaver (1976) as a small (50 m^2) scatter of flakes and cores along both sides of Ortega Highway (SR 74) at the entrance to Caspers Regional Park. The site had been largely destroyed. On a recent field check by ARMC, surveyors noted a few flakes at this location.

CA-ORA-1222 was recorded by RMW (Brown 1989) as a small (20 x 20 m) scatter of flakes, scrapers, and a drill. A field check and test by GandA (Romani et al. 1997) revealed a much more extensive deposit, some 220 x 185 m. Surface finds included five manos, a biface, core tool, and ground stone fragment, as well as two metates and 21 flakes. Shovel test pits (STP's) and excavation units revealed a maximum subsurface deposit of 70 cm. No diagnostic artifacts were recovered. Two obsidian flakes were found but were not submitted for sourcing or hydration band measurements. No organic materials were recovered from the deposit. The site was interpreted as a short-term camp used for lithic production and seed processing. The site was determined to be NRHP eligible in a formal review process. The field check by ARMC personnel turned up only one mano on this site; however, four additional sites were recorded (CA-ORA-1550, -1554, -1555, and -1556) in the vicinity of CA-ORA-1222 and are likely associated with it.

CA-ORA-1124 was recorded as an apparent quarry area (Bissell 1988). The recorded scatter consisted of flakes and cores. The recent field check by ARMC located a few flakes and cores on this site.

CA-ORA-1125 was recorded (Bissell 1988) as a scatter (80 x 70 meters) of flakes, cores, a metate, and flake tools with an estimated depth of 40 cm. ARMC subsequently conducted a test/data recovery program in the right-of-way for the South County Pipeline (Demcak and Del Chario 1989). The recovered items included a metate fragment and whole mano, as well as nine flakes, a chopper, scraper-plane, core tool, flake tool, and utilized flake. GandA (Toren et al. 1997) further evaluated the site and extended its boundaries to a total area of 200 x 90 m. They recorded a maximum depth of 70 cm for the cultural deposit. Three manos, a core/hammerstone, and flakes were recovered. GandA investigators considered the site's research potential to be high and recommended testing for NRHP significance. On the recent ARMC field check surveyors noted a few flakes at this location.

CA-ORA-1452/1126 are the same resource. An RMW (Bissell 1988) crew recorded CA-ORA-1126 as a small (50 x 50 m) temporary or seasonal camp with an approximate depth of 30 cm. The scatter included flakes, cores, a manos, and flake tools. Upon review of the location of Locus C of that site (Jones and Demcak 1991), GandA personnel concluded that it was the same as the southern portion of CA-ORA-1452 (Sorensen et al. 1988). The total area encompasses 21,565m^2. A test program at the combined site revealed a maximum depth of 50 cm for cultural material. Fifteen metate fragments, four manos, a discoidal, ground stone fragment, hammerstone, six cores, five core tools, four utilized flakes, and 54 flakes were recovered. The site was determined to be NRHP ineligible in a formal review process. ARMC surveyors saw no artifacts at this location during the recent field check.

CA-ORA-1021 was recorded by ARMC personnel in 1983 as a small (10 x 15 meters) specialized campsite consisting of 15 – 20 flakes and a scraper-plane. Hatheway and KcKenna personnel (McKenna et al. 1988) field checked the site, extended its area to 100 x 100 meters, and observed two metates, four manos, three hammerstones, 11 pieces of debitage, and eight cores/tools. The ARMC field crew during the recent field check relocated the resource. The site has been severely disturbed by the cutting of an erosion control ditch and by flooding. A pipeline has now been installed along the road (old jeep trail) that bisects the site. Three flakes were observed on site.

CA-ORA-1023 and CA-ORA-1024 are now mapped as the same resource. Both were recorded by ARMC in 1983 as small lithic scatters. CA-ORA-1023 measured 70 x 30 meters, consisting of a scraper-plane, core fragments, 10 flakes, and two fire-affected rocks. CA-ORA-1024 encompassed only 5 x 5 meters and consisted of nine flakes, a core, and fire-affected rocks. Hatheway and McKenna (McKenna1 et al. 1988) field checked the sites, combined them as a continuous scatter, and recalculated the total area as 470 x 170 meters. They observed 12 flakes, two manos, 11 fire-affected rocks, five hammerstones, and three cores/tools. They also noted a possible hearth in the center of the site. ARMC surveyors in a recent field check of the site observed a few flakes at this location.

CA-ORA-921 and CA-ORA-1127 are currently mapped as one site. CA-ORA-921 was recorded by ARMC (1980) as a large scatter (estimated 250 x 150 meters) that included pottery, shell, animal bone, chipping waste, and fire-affected rocks in a midden deposit. Depth was estimated at 40 – 50 cm. A possible hearth was observed in a bank cut by Cristianitos Creek approximately three meters down from the bluff top. The midden was buried beneath a lighter-colored soil. RMW (Bissell 1988) field checked the site. They estimated site area as 125 x 90 meters. Apparently a flood had essentially destroyed the site. RMW (Bissell 1988) also recorded a new site, CA-ORA-1127, as a small (50 x 50 meters) specialty use area. The artifacts recorded were flakes, cores, and flake tools. ARMC conducted a limited test (surface collection, STP's, and surface scrape) in the area. The crew recovered flakes, a flake tool, utilized flake, hammer-chopper, plano-convex scraper/chopper, and a potsherd from the surface. Most of the STP's were sterile; the remainder produced small amounts of shell, bone, and fire-affected rocks. The large surface scrape produced 12 shell fragments. While monitoring during construction, ARMC discovered two buried cultural deposits between the two sites in an area thought to be culturally sterile, and thereby demonstrating that the two sites formed a continuous deposit. Two deeply buried hearths were encountered. The first hearth lay 4.5 m below datum and produced a radiocarbon date of A.D.1040±70. The second lay at 1.5 m below datum and yielded a radiocarbon date of A.D. 1720±70. A third sample from float material yielded a date of A.D. 1300±70. An additional sample from a deposit that included charcoal, flakes, fish bone, and shell yielded a radiocarbon date of A.D. 1300±90. Other artifacts collected during monitoring included a hammer/chopper, utilized flake, two manos, two metate fragments, one mortar, one potsherd, and a bone awl (Jones and Demcak 1991). GandA tested the site (Romani et al. 1997) and estimated the site boundaries as 315 x 140 meters. GandA archaeologists conducted an intensive surface survey and surface scrapes, excavated STP's, performed augering, and then mechanical trenching to create block exposures. A series of 2x2-m units was excavated. One revealed a cairn feature that overlay a human cranium fragment and distal end of a radius. The human remains and overlying cairn were reburied after a Native American ceremony. Depending on the route alignment of the Foothill Corridor, the remains will be left undisturbed or relocated. The GandA investigations uncovered two cultural strata, upper and lower, and resulted in the recovery of several diagnostic items, including Olivella saucer beads, potsherds, projectile points, and a pestle. Radiocarbon samples yielded dates of 590±90 B.P. and 1430±60 B.P. (Romani et al. 1997). The site was determined to be NRHP eligible in a formal review process. No artifacts were observed by ARMC surveyors during the recent field check.

CA-ORA-913 was recorded by ARMC (1980) as a light scatter of flakes, cores, and core tools. It encompassed an area of 50 x 75 meters. Depth was indeterminate. An update by Hatheway & McKenna (McKenna et al. 1988) noted three flake tools and one flake at this location. The recent field check by ARMC found one flake.

CA-ORA-916 was recorded by ARMC in 1980 as a lithic scatter measuring 200 x 75 meters. Artifacts included large flake tools, cores, and hammerstones. Hatheway and McKenna (McKenna et al. 1988) field checked the site and expanded the site size to 400 x 200 meters. They recorded fire-affected rocks, flaked lithics, and a possible hammerstone. Mooney and Associates (Shackley et al. 1989) tested the site and recovered only 13 artifacts. They concluded that the site lacked sufficient research potential to necessitate a data recovery program. GandA personnel were not aware of the previous testing since the report was not submitted to the SCCIC at UCLA, and conducted a test of the site (Romani et al. 1997). The testing produced one ground stone fragment,19 flakes, a cobble tool, a few fragments of animal bone, and shell. The site was determined to be NRHP ineligible in a formal review process. The recent field check by ARMC revealed that the site has been largely (estimated 70%) graded away by home construction and by the realignment of the TRW access road.

CA-ORA-1185 was recorded by Hatheway and McKenna (McKenna et al. 1988) as a relatively extensive scatter of ground and chipped stone items. Area was estimated as 100 x 70 meters. Depth could not be determined. Artifacts included a metate, mano/hammerstone, fire-affected rock, seven cores/tools, and a flake. ARMC surveyors observed a few flakes at this site location.

CA-ORA-1450 was recorded by GandA (Van Bueren et al. 1988) during a survey for the Foothill Transportation Corridor. The area of the lithic scatter was estimated as 68 x 60 meters. Depth was unknown. Artifacts included six flakes and a chopper. ARMC crew members saw no artifacts at this location during the recent field check.

CA-ORA-362 was recorded by Riddell (1972a) as a scatter of approximately 100 x 50'. Artifacts included one core and some flakes. ARMC field checked the site during a survey of the Talega property (Cooley and Cottrell 1980). On a re-survey of the Talega acreage Hatheway and McKenna (McKenna et al. 1988) observed a mano, two metates, a hammerstone, 22 flakes, seven core tools, and fire-affected rock at this location. They estimated the site area as 173 x 77 meters. Depth was unknown. GandA (Toren et al. 1997) conducted a boundary test of the site. They judged that the site was smaller or possibly farther to the south than indicated by Hatheway and McKenna. Subsurface depth reached 40 cm in one of the test STP's. Two flakes were observed on site during the recent ARMC field check.

CA-ORA-363 was recorded by Riddell (1972b) on the basis of two scraper-planes and a core hammer that were collected in the field. It was described as an apparent limited and special use area. Area was estimated as 150' in diameter with a possibility of slight depth. ARMC field checked the site (Cooley and Cottrell 1980) and found scrapers, cores, a mano, and flake tools. Area was estimated as 50 x 75 meters with at least a depth of 30 cm. Hatheway and McKenna (McKenna et al. 1988) also field checked the site and observed flakes, cores, and possibly core tools. They increased the area estimate to 190 x 140 meters. They noted considerable disturbance from graded roads through the site. GandA (Toren et al. 1988) observed 13 artifacts on a surface re-survey of the site. They included eight flakes, three cores, and two core-hammerstones. STP's revealed a subsurface deposit to 60 cm (flakes and cores). Site area was recalculated as 160 x 80 meters. ARMC surveyors noted two cores and three flakes at this location during the recent field check of this site. They also noted that the site has been mostly graded away.

CA-ORA-1449 was recorded by GandA (Sorensen et al. 1988). The site was described as a light scatter of debitage and tools. The artifacts included two drills or awls, three choppers, and a mano. The site is interpreted as a possible hunting camp. Size was estimated as 190 x 170 meters with an unknown depth. ARMC personnel observed flakes and a core at this location during the recent field check of the site.

CA-SDI-5925 was recorded by Hatley (1978a) as a 20 x 20-meter medium intensity scatter of about 25 flakes. Raw materials were varied (rhyolite, andesite, felsite, and basalt). A few bone fragments were also sighted. No artifacts were noted at this location by ARMC surveyors during the recent field check.

CA-SDI-5926 was recorded by Hatley (1978b) as a moderately intense lithic scatter. Site area was estimated as 50 x 40 meters with unknown depth. Artifacts included 500 flakes, three cores, five scrapers, and three retouched tools. He noted some erosion of the site. ASM personnel (Victorino 1997) found only four flake fragments at this location in a field check of the site. ARMC surveyors found no artifacts during the recent field check of the site. The site may have been washed away.

CA-SDI-9571 was recorded by Van Wormer (1981) as a lithic scatter consisting of seven flakes. Neither the area nor the depth of the site could be determined. A recent field check by ARMC found no artifacts at this location.

CA-ORA-753 was recorded by Breece et al. (1978) as a small lithic scatter (40 x 25 meters) consisting of two metate fragments and assorted debitage. Depth could not be determined. A recent field check by ARMC failed to relocate the site.

CA-ORA-754 was recorded by Breece et al. (1978) as small lithic scatter (15 x 10 meters) that consisted of a mano, hammerstone, and assorted debitage. Depth was unknown. Surveyors from ARMC field checked the site recently and found a few flakes at this location.

CA-ORA-1448 was recorded by GandA (Sorensen et al. 1988) as a light to moderate scatter of ground stone tools and debitage measuring 245 x 105 meters. Depth was estimated as roughly 70 cm. Artifacts included a discoidal, mano, several cores, a unifacial tool, and debitage. A recent ARMC field check revealed that the site is now south of Corral Road since the road was re-routed. Several flakes and cores were noted at the site.

CA-ORA-1132 was recorded by RMW (Bissell 1988) as a light scatter of chipped stone consisting of cores, flakes, flake and core tools. Area was estimated as 10 x 20 meters of unknown depth. The recent field check by ARMC revealed several flakes and cores at the site.

CA-ORA-1133 was recorded by RMW (Bissell 1988) as a dense scatter of ground and chipped stone artifacts. The site measured 130 x 90 meters. Depth was estimated to be 40 or 50 cm. Artifacts included manos, metates, cores, flakes, flake and core tools, and hammerstones. The RMW crew noted a cairn consisting of unmodified stones, chipped and ground stone tools and fragments. The ARMC crew recently field checked the site and found many flakes and cores on site.

CA-ORA-1134 was recorded by RMW (Bissell 1988) as a dense scatter of chipped and ground stone tools. The site measured 125 x 75 meters. Site depth was estimated as 40 or 50 cm. Artifacts included manos, metates, flakes, cores, flake and core tools, and hammerstones. Two cairns (unmodified stones, ground and chipped stones) were noted. ARMC surveyors recently field checked the site and noted an extensive scatter of ground and chipped stone tools, cores and flakes. The site area has been redefined as 400 x 15 meters; depth appears to be roughly 50 cm. A ranch road with erosion channels cuts through the site.

CA-ORA-1135 was recorded by RMW (Bissell 1988) as a light scatter of chipped and ground stone tools, a possible seed processing camp. Artifacts included a deep basin metate, and a few flakes and cores. ARMC surveyors recently field checked the site and found the metate and a few flakes.

CA-ORA-1136 was recorded by RMW (Bissell 1988) as a light scatter of chipped and ground stone artifacts over a 50 x 40-meter area. Depth was not determined. A recent field check by ARMC surveyors failed to find any evidence of a site at this location.

CA-ORA-1137 was recorded by RMW (Bissell 1988) as a small (100 x 55 meters) scatter of chipped stone. Depth was not determined. Artifacts consisted of flakes and cores only. ARMC surveyors recently field checked the site and noted a few flakes.

CA-ORA-1138 was recorded by RMW (Bissell 1988) as a small scatter (20 x 45 meters) of chipped stone tools, flakes and cores. Depth was not determined. ARMC surveyors recently field checked the site and noted a few flakes and cores at this location.

CA-ORA-1139 was recorded by RMW (Bissell 1988) as a small (20 x 45 meters) scatter of chipped and ground stone tools and debitage. Depth was estimated as 20 or 30 cm. Artifacts included a mano, flakes, cores, and flake tools. ARMC surveyors recently field checked the site and noted a few flakes and a flake tool.

CA-ORA-1140 was recorded by RMW (Bissell 1988) as a small (35 x 50 meters) scatter of chipped stone tools and debitage. Depth was estimated as 20 or 30 cm. Artifacts included flakes, cores, and flake tools. ARMC surveyors recently field checked the site and noted a few flakes and one core.

CA-ORA-1141 was recorded by RMW (Bissell 1988) as a small (55 x 50 meters) scatter of chipped stone tools and debitage. Depth was estimated to be 20 or 30 cm. Artifacts included flakes, cores, and flake tools. ARMC surveyors recently field checked the site and noted a flake, a core, and two utilized flakes.

CA-ORA-1142 was recorded by RMW (Bissell 1988) as a small (30 x 35 meters) scatter of chipped stone tools and debitage. Depth was estimated to be 20 or 30 cm. Artifacts included flakes, cores, and flake tools. ARMC surveyors recently field checked the site and noted one flake at this location.

CA-ORA-1143 was recorded by RMW (Bissell 1988) as a small (30 x 35 meters) scatter of flakes and cores. Depth was not determined. ARMC surveyors recently field checked the site and noted two flakes at this site location.

CA-ORA-1144 was recorded by RMW (Bissell 1988) as a large (300 x 135 meters) scatter of ground and chipped stone tools, debitage, and fire-affected rocks in and around a Rancho Mission Viejo metal corral. Depth of the midden was estimated to be 50 cm. Artifacts included flakes, cores, flake tools, and manos. GandA tested the site (Romani et al. 1997). The site area was calculated to be 270 x 240 meters. The deposit was 90 cm deep at its maximum. The field crew carried out a surface collection and surface scrapes, and excavated 23 STP's and five test units. The area inside the corral was surface collected but not excavated due to the Ranch's concern for possible injuries to cattle. Based upon their recovery outside the corral, GandA archaeologists concluded that the site lacked the research potential for inclusion in the National Register of Historic Places. During a recent field check ARMC surveyors observed over 80 flakes, three cores, a mano, two metate fragments, and a hammerstone, all within the internal corral area at the site. Grass cover limited visibility elsewhere on the recorded site area.

At recorded location **120004** the ARMC survey team could not detect any cultural activity. This record from the SCCIC did not provide any specific information as to the item/feature recorded. The field check did not find a site at the given location.

Ten new prehistoric sites (CA-ORA-1550, -1551, -1552, -1553, -1554, -1555, -1556, -1557, -1558, and RMV-15) and three historic site (33-176633, RMV-13/H, and RMV-14/H) were recently recorded in this portion of the Project 2000 survey.

CA-ORA-1550 is a light scatter of ground stone tools and debitage located at the head of Cristianitos Canyon on the west. The site measures approximately 50 x 30 meters. Depth could not be determined. A seep (spring) and unnamed drainage are present in proximity to the site. Artifacts include two mano fragments, a core, and a discoidal (collected). The site appears to be a limited use area (possibly ceremonial) that is associated with CA-ORA-1222.

CA-ORA-1551 is a moderate scatter of ground stone tools, chipped stone tools and debitage. It is located on the eastern side of Gabino Canyon adjacent to and north of a ranch road gate. The site measures 100 x 50 meters. Depth is unknown. Artifacts include three flakes, three cores, six flake tools, four core tools, 12 scraper-planes, and six manos. The flake and core tools are unusually large for this region. This is a probable plant processing station.

CA-ORA-1552 is an extensive scatter of ground stone tools, chipped stone tools and debitage. The scatter occurs over an area of 300 x 40 meters. The depth is an estimated 30 cm but may be considerably deeper in the dark, well-developed midden area of the site. The site is located in upper Gabino Canyon near a spring. A modern pond, 1930s water trough, and metal water tank are found on the southwestern end of the site. Artifacts include over 100 flakes, 26 flake tools, a mano, a pestle, three cores, 24 core tools, six scraper-planes, and fire-affected rocks. This appears to be a base camp, or village, where stone tool production was a major activity.

CA-ORA-1553 is a light scatter of ground stone tools, chipped stone tools and debitage. The site measures 75 x 20 meters. Depth could not be determined. The site is located in upper Gabino Canyon on a ridgetop west of the modern pond and CA-ORA-1552. Artifacts include a whole metate (shallow basin), two flake tools, three core scrapers, a mano, and two flakes. This is a probable plant processing station associated with CA-ORA-1552 to the east.

CA-ORA-1554 is a light scatter of ground stone tools, and chipped stone tools and debitage. The scatter measures some 400 x 15 meters and is located along a ridgeline in upper Cristianitos Canyon. Depth could not be determined. Artifacts include two manos, two metate fragments, two flake tools, four hammerstones, nine flakes, one scraper-plane, and a small Cottonwood triangular projectile point.

CA-ORA-1555 is a light to moderate scatter of ground stone tools, chipped stone tools and debitage. The site measures 80 x 60 meters. Depth is unknown. Artifacts include two flake tools, one metate fragment, seven flakes, two scraper-planes, three manos, one drill/reamer, one ground stone fragment (possible pestle). The site is located in upper Cristianitos Canyon north of the ranch road split. It is a probable base camp associated with CA-ORA-1222 immediately to the south.

CA-ORA-1556 is a light to moderate scatter of ground stone tools, chipped stone tools and debitage. The site encompasses approximately 100 x 30 meters. Depth could not be determined. Artifacts include eight metate fragments, two scraper-planes, one hammerstone, a core, three flakes, and three manos (one a possible discoidal). The site is located on a south-easterly trending knoll in upper Cristianitos Canyon and is a possible satellite camp associated with CA-ORA-1222 to the north.

CA-ORA-1557 is a light scatter of ground stone tools, chipped stone tools and debitage over an area of approximately 70 x 30 meters. Depth could not be determined. The site is located in upper Gabino Canyon between two small drainages. A ranch road bisects the site. Artifacts include two scraper-planes, seven flakes, a mano, and a core. This appears to be a plant processing station.

CA-ORA-1558 is a light scatter of ground stone tools, chipped stone tools and debitage. Area of the site is 100 x 50 meters. Depth is unknown. The site is located on a knoll above the western bank of La Paz Canyon Creek. A dirt access road runs along the western boundary of the site. Artifacts include two mano fragments, four flake tools, one metate fragment, two hammerstones, eighteen flakes, and a core. The site is a probable plant processing station.

RMV-15 is a light scatter of chipped stone tools and debitage. Artifacts include two scraper planes, a flake tool, a chopper, and six flakes. Site area is an estimated 30 x 10 meters. Depth could not be determined. The site is found on the TRW leased property west of an unnamed drainage and north and east of the confluence of Talega Creek and Cristianitos Creek. It is a probable plant processing station.

Three historic sites were also recorded in this area: 30-176633, RMV-13/H, and RMV-14/H.

Site No. **30-176633** is an historic scatter consisting of a wood and metal wagon, possible derrick segment, and assorted pieces of lumber on a knoll south of and adjacent to Gabino Canyon Creek. A large clay pit is located immediately down slope and is presently filled with water, forming a freshwater marsh habitat. The wagon, fabricated from old wagon parts and 1900 – 1930's auto and truck parts (Stephen Van Wormer, pers. comm.), is held fast by a toyon bush. See cover photo.

RMV-13H is a military bunker associated with Camp Pendleton, whose northern boundary is located 450 meters to the south of this structure. The structure is found on a small knoll north and east of the confluence of Talega Creek and Cristianitos Creek and on leased land occupied by the TRW Capistrano Test Site. The concrete building has wooden roof and wall supports. The concrete blocks have been poured and roughly finished. Imprints from the wooden forms are clearly visible on the blocks. The structure stands 3.5 m high, 2.5 m wide, and 4.5 m long. The walls are 22 cm thick. Sentry openings are cut into the walls facing to the NW and SE. Graffiti from the 1950s and 1960s are scattered along the interior walls. A few rusted tin cans are also present along with a wooden frame that may have been part of a field telephone installation. The word "Tel" appears on the NW wall near the entrance, and "62-MU-1" appears in larger letters on the rear wall.

RMV-14/H is a military bunker associated with Camp Pendleton to the south. It is found on a small knoll on the leased land occupied by the TRW Capistrano Test Site. The building is constructed of concrete blocks, poured and roughly finished. Graffiti date to the 1940s. The earliest date is 1944, two years after the first troops arrived at Camp Pendleton (Reddy 2000). The structure measures 2.3 m high, 5.05 m long, and 1.95 m wide, with walls 22 cm thick. The expresssion "62-M-U2" appears on the rear wall of the structure. A wooden frame with hooks attached and colored numbers below the hooks is fastened to one wall. There is a large opening to the NE, and smaller slit openings to the east and west.

FIELD SURVEY: HISTORICAL ITEMS

The survey team found a number of historical items on the Rancho Plan survey. These items date to various time periods and reflect different uses of ranch land. They are described below in two groups: Ranch Water Systems and Corrals (windmills, water troughs, water tanks, corrals), and Recent Historic Camps (Campfire Ring/Gobernadora Canyon, Amantes Camp, Portolá Camp, Campfire Rings and Flagpole/Upper Gabino Canyon). None of these items would be NRHP eligible. Although certain of the items (> 45 years of age) could have been recorded as historic isolates, we used a simplified recording mechanism. The following description and recording of their locations we feel will serve as adequate recordation of these historical items. See Figure 2 (rear map pocket) for locations.

Ranch Water Systems and Corrals

Windmills, water troughs, and water tanks were installed and put into use on Rancho Mission Viejo as early as the 1930s. Corrals and chutes for handling cattle were also added. They are described individually below.

R-1: Windmill and water trough. The windmill tower is missing its blades. A metal water trough on a concrete foundation lies adjacent to the tower on the southeast. The float mechanism is still attached. The unit is no longer in service. These items are located in upper Chiquita Canyon.

R-2: Windmill, Holding Pen/chute, and Watering Troughs. The wood and metal windmill is collapsed on its side although otherwise intact. Two metal watering troughs and a metal corral/chute are also present but no longer in service. This group of historic items is located in central Chiquita Canyon immediately south of Tesoro High School.

R-3: Water Trough. This is a metal water trough installed along the fence line at the mouth of Narrow Canyon. The unit is intact and continues to supply water.

R-4: Water Tank, Pond, and Water Trough. This group of historic items includes a rectangular pumping station and water storage tank. This concrete tank was built in the 1930s. Its construction is identical to that of the 1930s concrete water troughs described by Muñoz (1980); the concrete sections are roughly finished with marks of the forms clearly visible. Surrounding the tank is a large fenced pond down slope to the southeast. An abandoned metal water trough rests opposite the other two and down slope across the ranch road to the northeast.

R-5: Water Trough. This concrete trough with intact float and concrete foundation dates to the 1950s. Unlike the 1930s troughs, it has an elevated extension to the basic rectangular trough. This elevated portion holds the wooden protective section above the float. The newer design was probably intended to allow a greater volume of water to flow into the tank; the float rested higher in the structure. The unit is fully functioning. It is found to the east of the ranch road on the eastern side of Gobernadora Canyon.

R-6: Water Trough and Water Tank. The metal trough has a concrete foundation. Two wooden posts that supported the wooden section overlying the float are still present in the concrete. The remains of a collapsed circular, barrel-type water tank on a concrete platform are also present to the north of the trough. The unit is no longer functional. It lies alongside an unnamed tributary drainage to Gobernadora Creek on the eastern side of Gobernadora Canyon and just to the southeast of site CA-ORA-1446.

R-7: Water Trough. This concrete water trough with metal central bars and cobble foundation dates to the 1930s. It is flat in side profile and has beveled corners. A small wooden section protects the float. The concrete is roughly finished with marks of the forms clearly visible. The unit is no longer functioning. The trough is found alongside the ranch road on the eastern side of Gobernadora Canyon near the mouth of the canyon.

R-8: Water Trough. This concrete trough has wooden slabs protecting the float. All features are intact. There is a rectangular poured concrete foundation, very regular in outline compared to platforms at the other troughs. There are no identifying marks on the trough (date, initials, etc.). The shape is 1950s style (flat with inclined section at end). The unit is located immediately east of La Pata Drive and just north of the ranch road and a small drainage.

R-9: Water Trough. This concrete water trough is still functioning. The initials “C.B.”, “C.M.”, and “P.h”.and the date “9-20-50” appear on its face. The basin is made of concrete reinforced with rebar. Wooden slats protect the rubber float. It has a concrete foundation. The unit is found immediately adjacent to the ranch road leading E/SE from La Pata Drive.

R-10: Water Tank. This 1930s water tank is made of poured concrete blocks with visible marks of the forms and it is roughly finished. It is nearly identical to the tank located in Chiquita Canyon

(R-4). It is located adjacent to a microwave tower alongside the ranch road on the knolltop east of Trampas Canyon. The area is fenced with barbed wire.

R-11: Water Trough. This concrete trough with concrete foundation is located just downslope and east of R-10. The initials “P.H.”, “C.M.”, and “F.F.5” appear on the face of the trough along with the date “8/25/50”. A brand , a stylized T over an O, also appears on the trough face. This brand was apparently adopted from the shorthorns imported from Texas and Oklahoma to the ranch in 1883 (Sleeper 1985:7).

R-12: Water Trough. This concrete and wooden structure rests on a concrete and cobble foundation. Its construction date (“8/31/50”) and the initials “FF5”, “CM”, and “PH” appear on face of the trough. It is still operational albeit clogged with aquatic plant life. The unit is located just east of the ranch road and just west of the head of Trampas Canyon.

R-13: Water Trough. This concrete structure with wooden protective slats over the float is located west of Trampas Canyon and east of the ranch road. The foundation is concrete with cobbles. It is of 1950s construction although no date appears on it. The unit is fully operational.

R-14: Water Trough and Corral. The concrete trough with wooden protective slats lies on a rough concrete and cobble foundation. It is no longer functioning. The unit is of 1950s construction. The wooden corral is located just northwest of the trough, is in good repair, and appears to be currently used. The two units are found on south of the O’Neill House, or the location of CA-ORA-28.

R-15: Water Tanks. Two circular metal water tanks are found directly up slope to the southeast of the O’Neill House, or CA-ORA-28. One of the tanks is old and rusted, the other new and painted green with white swirls in a camouflage pattern.

R-16: Water Trough. This metal tank with wooden flats protecting the float is located on site CA-ORA-656 at the mouth of Trampas Canyon west of the paved road. Wooden posts and support pieces provide additional protection from cows stepping onto the trough. The trough is fully operational.

R-17: Water Tank, Water Trough, Natural Gas Tank (?). A round rusted water tank and a metal water trough are located adjacent to and north of the ranch road leading to Amantes Camp. A second tank, rocket-shaped, with a pressure gauge is also present.

R-18: Water Trough. This shallow, boat-shaped metal trough is located west of the entrance to Amantes Camp adjacent to and north of the ranch road. A metal screen protects the float on this trough.

R-19: Water Tank. This round, metal water tank is located on a small knoll above Amantes Camp to the south. A dirt road cuts through the Rancho Mission Viejo Cemetery (established 1987) to the tank.

R-20: This metal and wood trough is almost identical to R-16, described above. It is still operating although it is rusted. It is located to the east of the paved road in Christianitos Canyon. Archaeological site CA-ORA-1124 is also recorded at this location. An old, barrel-type water tank is located on the opposite side of the canyon to the west and out of the project area.

R-21: Windmill and Water Trough. This windmill, made by Aermotor Company of Chicago, is fully operational. The concrete trough adjacent has a construction date of "9-18-50" and the initials "C.M., P.H., and J.T." inscribed on its upper surface. The trough foundation is of irregular outline and is made of concrete and cobbles. The trough is no longer functional. It was partially filled with rainwater during the recent field survey. The two items are found at the mouth of Gabino Canyon between the ranch road and the creek at the point where a second dirt road leads up slope to the TRW facility.

R-22: Windmill, Water Trough, Water Tanks, and Well. This windmill, also made by Aermotor Company, bears a plaque with the following inscription: "BAXTER WINDMILL For all who dare to slip the surly bonds of Earth April 1986" followed by six Chinese or Japanese characters (translation not provided). The concrete trough design dates to the 1950s. The foundation is concrete with cobbles. There are two water tanks, a wooden-barrel type and a metal railroad-car type. A well is located beneath the windmill. The whole system continues to operate. These items are located at the confluence of the La Paz and Gabino drainages.

R-23: Windmill and Water Tank Platform. This is a derelict windmill that is being engulfed by the surrounding vegetation. The adjacent structure is a concrete base for a railroad-car type water tank. Just west of these two are remnants of what may have been a frame for a metal water trough. The items are located north of and adjacent to the ranch road in La Paz Canyon.

R-24: Windmill and Water Tanks. The windmill is fully functioning. A wooden barrel-type tank collects the water alongside. A second, railroad-car tank is located uphill to the east. These items are located inside the "Portolá" Camp in central Gabino Canyon. See C-2 for a description of the other historical items at this location.

R-25: Water Trough, Tank Platform, and Corral. The concrete water trough bears the date "4/11/35" and the number "№ 108-A". It rests on a cobble/concrete foundation. The metal poles and cables of the surrounding metal corral partly overlie the trough and make it possible for cattle to drink from inside or outside the corral. Four concrete pads, the platform for a now-absent water tank, are also present. These items are found just west of the ranch road and adjacent to Gabino Canyon Creek.

R-26: Water Trough, Water Tank, and Tank Platform. This concrete water trough bears the date "5.17.35" and several letters that are badly weathered, possibly an unknown followed by "H" and "A". The trough is a typical 1930s design with a flat profile and beveled corners. It is no longer in use. A large metal, railroad-car type tank with a concrete base is also found at this location just up slope to the northeast along with a hexagonal base for a water tank, no longer in place. Metal pipes are also present, perhaps bringing water from the spring recorded at this location or from the pond to the southwest. These items are found in upper Gabino Canyon at the location of newly-recorded site CA-ORA-1552.

R-27: Water Trough. This 1950s-style concrete trough lies on a concrete and cobble foundation of irregular outline. It is still functioning. It is located adjacent to and north of the dirt road that leads into Verdugo Canyon.

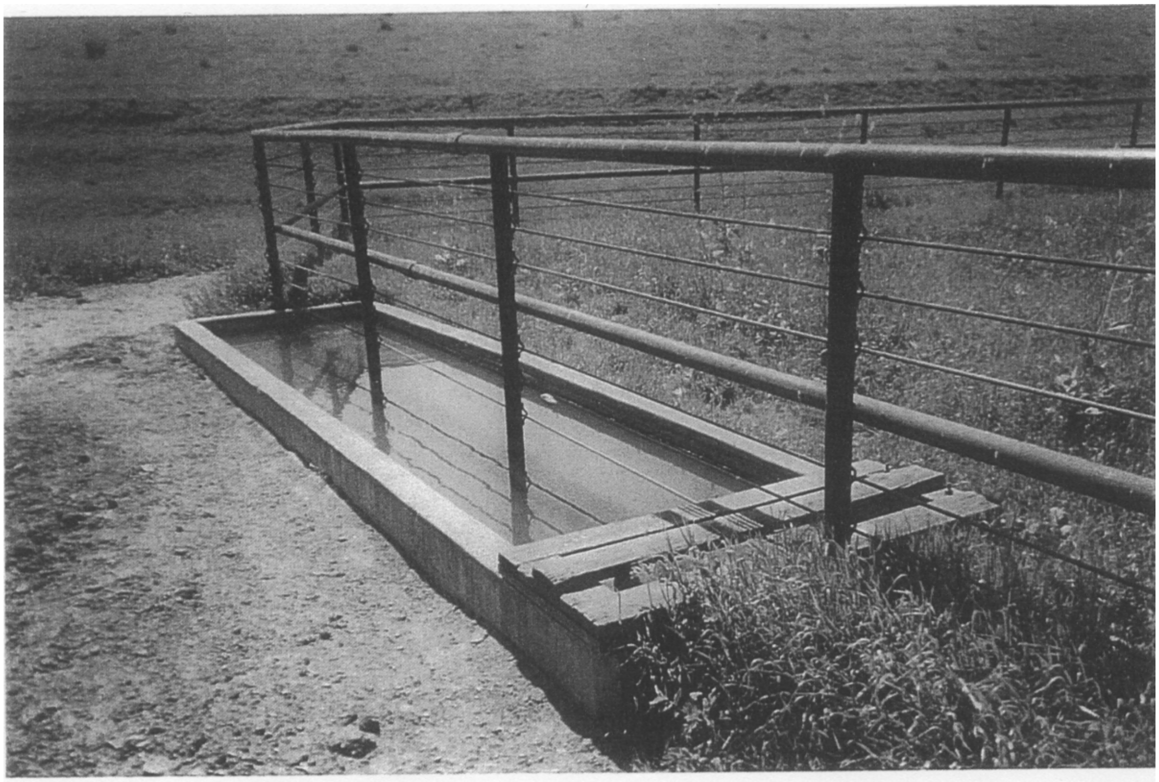

Figure 3. 1930s Water Trough, Upper Gabino Canyon (R-25).

Figure 4. 1930s Water Trough (above) with Number and Date of Installation.

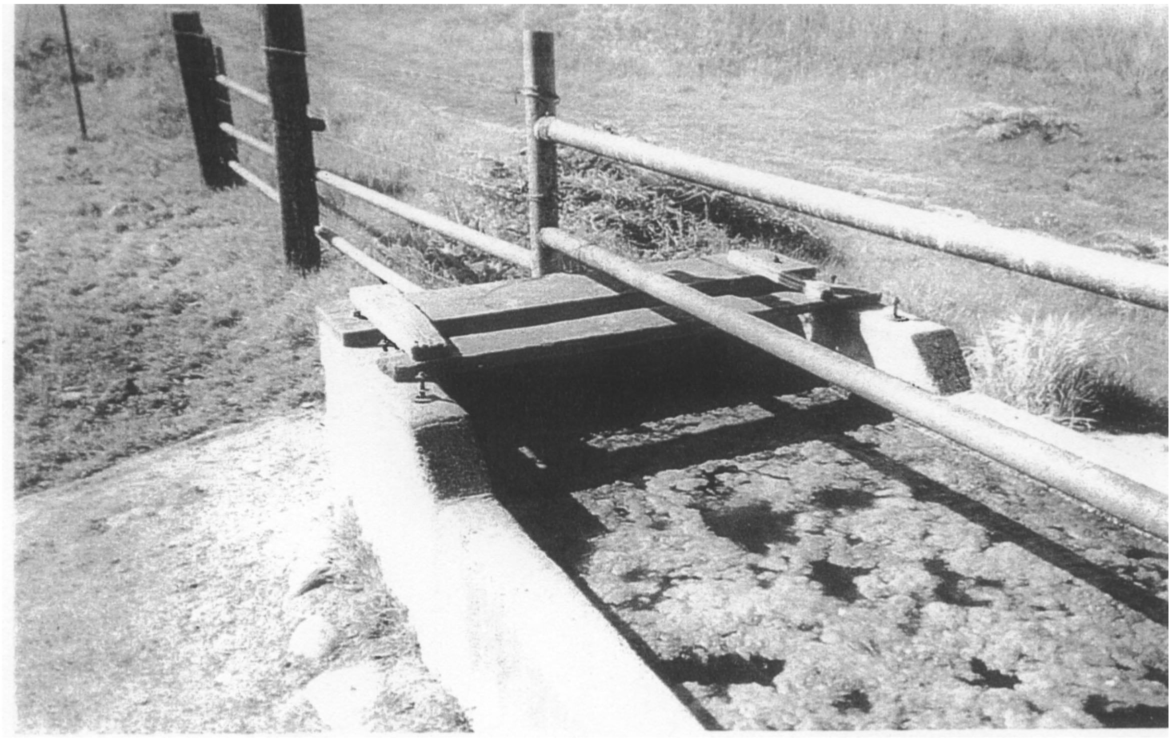

Figure 5. 1950s Water Trough, Trampas Canyon (R-12).

Figure 6. 1950s Water Trough (above) with Installation Date.

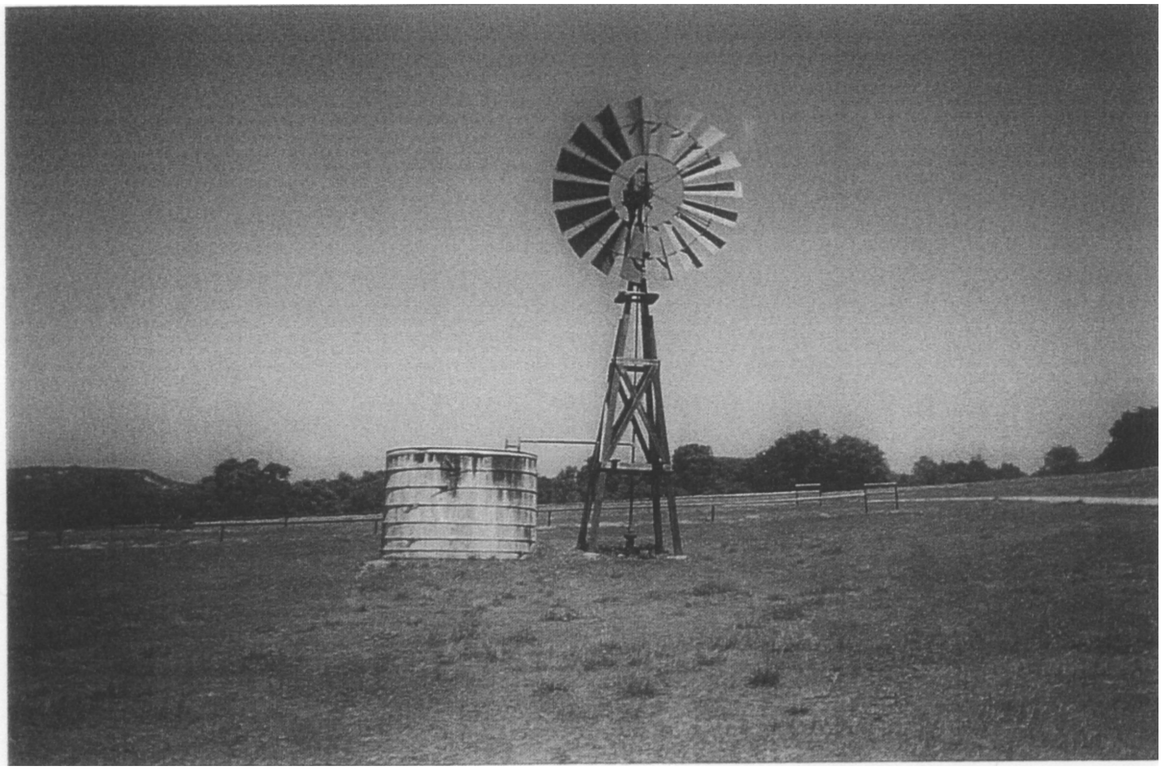

Figure 7. Windmill and Water Tank, Middle Gabino Canyon (R-24, C-3).

Figure 8. 1930s Water Tank, Lower Chiquita Canyon (R-4).

Figure 9. Plaque Dedicated to Founders of "El Viaje de Portolá", Middle Gabino Canyon (C-3).

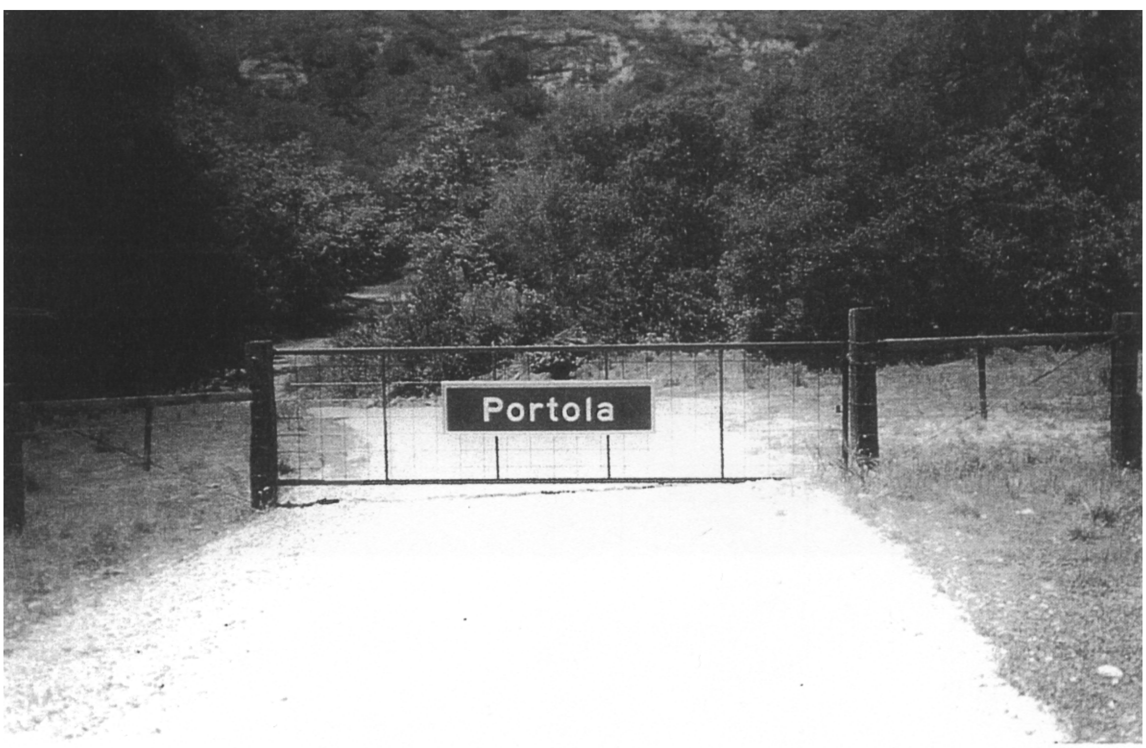

Figure 10. Entrance to "Portolá" Camp, Middle Gabino Canyon (C-3).

R-28: This water tank, fenced in by chain link and barbed wire, lies south of the Santa Margarita Water District pumping station along Ortega Highway. A power line (STA 196-459) passes to the west of the tank.

R-29: Water Troughs. One metal trough lies abandoned, while another is fully functioning in a field south of Ortega Highway.

<u>Recent Historic Camps</u>

C-1: Campfire Ring. This roughly circular (6 x 5 meters) alignment of large rocks, cobble to boulder size, is located in a side canyon east of Gobernadora Creek. A single artifact, a fragment of a green canning jar mouth, was found inside the ring. The configuration suggests a campfire ring perhaps associated with the riders of "El Viaje de Portolá" (see more at C-2, C-3). The rock ring is recent, according to Patrick Forster (pers. comm.). It was not present while his father, Tom Forster, served as Ranch Manager from 1955 - 1965.

C-2: Amantes Camp (Campo de Amantes). This large, modern camp/private park is located along a ranch road that heads east from Trampas Canyon Road. The camp is largely dedicated to activities with the horseback riders that annually retrace the 1769 Portolá expedition through what is now Rancho Mission Viejo. "El Viaje de Portolá" has been recreated each April since 1963. Plaques and an El Camino Real bell pay tribute to O'Neill family members and the annual ride. The bell was dedicated in 1988 and bears the following inscription:

El Viaje de Portolá

They came to California-
A small but hardy band
For God, for King and Viceroy
To claim a fabled land.
Both old Spain and New Spain
Long eyed the northern mystery
But it fell to Don Gaspar
To change the course of history.

C-3: "Portolá" Camp. This camp is located midway up Gabino Canyon on the east side of the drainage. A dirt road leads east from the main canyon road to the camp. This is the second camp dedicated to the annual Portolá ride. Like Amantes Camp (C-2) this campground is well equipped for picnics and other gatherings. A small, one-room log cabin (newly constructed) has been installed at the southwestern edge of the camp near the creek. A corral, windmill, and water tanks (R-18) add to the camp's rustic atmosphere.

C-4: Campfire Rings and Flagpole. This group of historical items is composed of two campfire rings, made up of small to medium cobbles, and a flagpole that is held upright by cobbles at its base. Pieces of firewood are scattered nearby. These items are located just north of C-3 to the east of the ranch road.

NATIVE AMERICAN CONCERNS

The Rancho Mission Viejo survey area is the ancestral home of the Juaneño Band of Mission Indians, or Acjachemem Nation. Thus consultation with the Juaneño Band was part of the scope of work for this project. An ethnohistory was prepared (N.H. Evans, 2000, separate volume). Each group representing the Juaneño community was sent a map of the project area and asked to comment on any concerns they might have regarding Native American resources in the area. Two members of the Juaneño community, David Frietze and Ralph Frietze, served as crew members on the field survey.

The following group representatives received maps and letters regarding these resources:

David Belardes (2/16/00)
Juaneño Band of Mission Indians
31742 Via Belardes
San Juan Capistrano, CA 92675

Sonia and Darrell Johnson (2/16/00)
Juaneño Band of Missions Indians Acjachemem Nation
P.O. Box 25628
Santa Ana, CA 92799

Jean Frietze (3/7/00)
Juaneño Band of Mission Indians, Acjachemem Nation
31877 Del Obispo, Suite 106A
San Juan Capistrano, CA 92675

David Belardes and Joyce Perry contacted ARMC by telephone and through Nancy Evans, the project ethnohistorian. They asked for and received permission to visit the survey area. The author and two ARMC staff members accompanied them on a field trip to the Ranch on Sunday, March 16, 2000. The purpose of the field collaboration was to explore the possible identification of several named historic Juaneño villages with recorded archaeological sites in the study area. See Evans (2000) for a discussion of those possible linkages.

Jean Frietze responded by telephone on several issues. She expressed an interest in obtaining a copy of the survey report and wanted to request that the artifacts from the survey area be turned over to the Juaneño band. She was referred to Laura Eisenberg, Rancho Mission Viejo, to make the requests directly.

Although Sonia and Darrell Johnson were contacted by letter and telephone, ARMC received no feedback from their group.

Future studies on the Ranch will necessarily involve additional contact and consultation with the Juaneño people.

RECOMMENDATIONS

Based upon the results of the records and literature search (Demcak 1999) and field survey, the following are the recommendations for archaeological field investigations at the recorded sites in the project area. They are presented by project segment, beginning in Chiquita Canyon and moving east and south from that point. See Tables 1-5 for summaries.

Upper Chiquita Canyon

Only one site, CA-ORA-877 was previously recorded in this area. Three new sites (CA-ORA-1559, -1560, and –1561) were recorded during the survey. All four sites will need to be tested for NRHP eligibility.

Table 1. Upper Chiquita Canyon: Sites, NRHP Eligibility, and Recommended Actions.

SITE: CA-*	NRHP ELIGIBLE	TESTING NEEDED	DATA RECOVERY NEEDED	MONITORING ONLY NEEDED
ORA-877		X		
ORA-1559*		X		
ORA-1560*		X		
ORA-1561*		X		

* Newly recorded sites

Lower Chiquita Canyon and Western San Juan Creek

Previously recorded sites CA-ORA-29, -1104, -1105, along with new sites CA-ORA-1562, -1563, and historic site 33-176631, will need to be tested for NRHP eligibility. Isolates 30-100334 and 30-100335 should be collected.

Sites CA-ORA-882, -997, -1043, -1048, and –1121 are NRHP eligible and will need to be avoided in future project design or subjected to a data recovery program prior to development. Human remains were found at CA-ORA-1043.

Sites CA-ORA-26, -27, -28, -880, -881, -902, -1042, -1049, -1050, and –1447 are not NRHP eligible and will need only to be monitored during construction if they are to be impacted.

Table 2. Lower Chiquita Canyon and Western San Juan Creek: Sites, NRHP Status, and Recommended Actions.

SITES: CA-	NRHP ELIGIBLE	TEST NEEDED	DATA RECOVERY NEEDED	MONITORING ONLY NEEDED
ORA-877		X		
ORA-1447				X
ORA-997	X		X	
ORA-1042				X
ORA-1043	X		X	
ORA-881				X
ORA-880				X
ORA-882	X		X	
ORA-902				X
ORA-27				X
ORA-26				X
ORA-28				X
ORA-1048	X		X	
ORA-1049				X
ORA-1050				X
ORA-29		X		
ORA-1121	X		X	
ORA-1104		X		
ORA-1105		X		
ORA-1106				X
ORA-1562*		X		
ORA-1563*		X		
33-176631*		X		

* Newly recorded sites

Gobernadora Canyon and Eastern San Juan Creek

Previously recorded sites CA-ORA-984 and –1446, as well as newly recorded sites CA-ORA-1564, -1565, -1566, and historic site 33-176632, will need to be tested for NRHP eligibility.

Sites CA-ORA-1122 and –1123 are not NRHP eligible and will need only to be monitored during construction if project impacts are predicted.

Table 3. Gobernadora Canyon and Eastern San Juan Creek: Sites, NRHP Eligibility, and Recommended Actions.

SITE: CA-	NRHP	TEST NEEDED	DATA	MONITORING

	ELIGIBLE		RECOVERY NEEDED	ONLY NEEDED
ORA-984		X		
ORA-1446		X		
ORA-1122				X
ORA-1123				X
ORA-1564*		X		
ORA-1565*		X		
ORA-1566*		X		
30-176632*		X		

* Newly recorded sites

La Pata Drive to Trampas Canyon Road

Recorded sites CA-ORA-653, -654, -655, -657, -658, -1111, and newly recorded site CA-ORA-1567 will need to be tested for NRHP eligibility.

Site CA-ORA-656 is NRHP eligible and will need to be avoided in project design or subjected to a data recovery program prior to development. Human remains were found at the site.

Site CA-ORA-1102 is not NRHP eligible and will need only to be monitored during construction if impacts are predicted.

Table 4. La Pata Drive to Trampas Canyon Road: Sites, NRHP Eligibility, and Recommended Actions.

SITE: CA-	NRHP ELIGIBLE	TEST NEEDED	DATA RECOVERY NEEDED	MONITORING ONLY NEEDED
ORA-653		X		
ORA-654		X		
ORA-655		X		
ORA-656	X		X	
ORA-657		X		
ORA-658		X		
ORA-1102				X
ORA-1567*		X		

* Newly recorded site

Cristianitos, Talega, Blind, Gabino, and La Paz Canyons

Previously recorded sites CA-ORA-362, -363, -753, -754, -913, -1021, -1023/1024, -1124, -1125, -1132, -1133, -1134, -1135, -1136, -1137, -1138, -1139, -1141, -1142, -1448, -1449, -1450, SDI-

5925, -5926, 9571, as well as newly recorded sites CA-ORA-1550, -1551, -1552, -1553, -1554, -1555, -1556, -1557, -1558, RMV-13/H., RMV-14/H, and RMV-15, will need to be tested for NRHP eligibility.

Sites CA-ORA-921/1127 and –1222 are NRHP eligible and will need to be avoided in project design or subjected to a data recovery program prior to development.

Site CA-ORA-1144 was determined to be NRHP ineligible based upon incomplete testing. An extended test program will be needed for the corral area of the site.

Sites CA-ORA-916, -1103, -and -1452/1126 are not NRHP eligible and will need only to be monitored during construction if impacts are predicted.

Table 5. Cristianitos, Talega, Blind, Gabino, and La Paz Canyons: Sites, NRHP Eligibility, and Recommended Actions.

SITE: CA-	NRHP ELIGIBLE	TEST NEEDED	DATA RECOVERY NEEDED	MONITORING ONLY NEEDED
ORA-1103				X
ORA-1111		X		
ORA-535		X		
ORA-1222	X		X	
ORA-1450		X		
ORA-1124		X		
ORA-1184		X		
ORA-1125		X		
ORA-1185		X		
ORA-1452/1127				X
ORA-1023/1024		X		
ORA-1021		X		
ORA-921/1127			X	
ORA-913		X		
ORA-916				X
ORA-363		X		
ORA-362		X		

Table 5. Cristianitos, Talega, Blind, Gabino, and La Paz Canyons: Sites, NRHP Eligibility, and Recommended Actions (Continued).

SITE: CA-	NRHP ELIGIBLE	TEST NEEDED	DATA RECOVERY NEEDED	MONITORING ONLY NEEDED

SDI-5925		X		
SDI-5926		X		
SDI-9571		X		
ORA-754		X		
ORA-753		X		
ORA-1144		X		
ORA-1448		X		
ORA-1449		X		
ORA-1137		X		
ORA-1138		X		
ORA-1139		X		
ORA-1140		X		
ORA-1141		X		
ORA-1142		X		
ORA-1143		X		
ORA-1132		X		
ORA-1133		X		
ORA-1134		X		
ORA-1135		X		
ORA-1136		X		
ORA-1550*		X		
ORA-1551*		X		
ORA-1552*		X		
ORA-1553*		X		
ORA-1554*		X		
ORA-1555*		X		
ORA-1556*		X		
ORA-1557*		X		
ORA-1558*		X		
RMV-13/H*		X		
RMV-14/H*		X		
RMV-15*		X		

* Newly recorded sites

REFERENCES

Allen, K.C., J.D. Newland, and S.R. Van Wormer

1992 Cultural Resources Reassessment of the South Ranch Area of Coto de Caza, Orange County, California. Prepared by ARMC for Coto de Caza, Ltd. Copy on file, SCCIC.

Bissell, R.M.

1988 Cultural Resources Assessment of the Santa Margarita Water District Proposed Water Delivery and Storage Facilities, Southern Orange County, California. Prepared by RMW Paleo Associates for Robert Bein, William Frost and Associates. Copy on file, South Central Coastal Information Center, Institute of Archaeology, UCLA (SCCIC).

Breece, W., and B. Padon

1982 Cultural Resource Survey, Archaeological Resources, Foothill Transportation Corridor Phase II. Copy on file, SCCIC.

Brown, J.C.

1989 Site Survey Record for CA-ORA-1222. Copy on file, SCCIC.

Cooley, T.G., and M.G. Cottrell

1980 Archaeological Assessment of the Talega Parcel. Prepared by ARMC for the Talega Land Company. Copy on file, SCCIC.

Cottrell, M.G.

1985 Preliminary Report of Test Level Investigations Conducted at CA-ORA-27, Ortega Highway, Orange County, California. Prepared byARMC for the Santa Margarita Water District. Copy on file, SCCIC.

Demcak, C.R., and K.C. Del Chario

1989 Test Level Investigations at the San Juan Creek Sites, CA-ORA-1125, CA-ORA-656, CA-ORA-1123, CA-ORA-1123, CA-ORA-1048, and CA-ORA-1121, Santa Margarita Water District South County Pipeline Project, Orange County, California. Prepared for Santa Margarita Water District. Copy on file, SCCIC.

Demcak, C.R., K.C. Del Chario, and M.G. Cottrell

1986 Report of Phase I Archaeological Investigations for the Route Location Study, Foothill Transportation Corridor, Christianitos Segment; Part I. Description of Archaeological Resources. Prepared by ARMC for Michael Brandman Associates. Copy on file, SCCIC.

Demcak, C.R., and S.R. Van Wormer

1987 Archaeological Investigations at CA-ORA-27A, CA-ORA-882, CA-ORA-1042, and CA-ORA-870: Chiquita Canyon Water Reclamation Plan Project, South Orange County, California. Prepared by ARMC for the Santa Margarita Water District. Copy on file, SCCIC.

Demcak, C.R., and M. Velechovsky
1996 Archaeological Investigations for the Antonio Parkway Extension, Oso Parkway to Ortega Highway, South Orange County, California. Prepared by ARMC for Michael Brandman Associates. Copy on file, SCCIC.

Dixon, K.A.
1988 Indian Communities in History. In *A Hundred Years of Yesterdays: A Centennial History of the People of Orange County and Their Communities,* edited by E.R. Cramer, K.A. Dixon, D. Marsh, P. Brigandi, and C.A. Blamer, pp. 11-18. The Orange County Centennial, Inc., Santa Ana.

Emmons, S.
1974 O'Neill Ranch Empire. *Los Angeles Times*, January 13, 1974.

Fenenga, F.
1953 The Weights of Chipped Stone Points: A Clue to Their Functions. *Southwestern Journal of Anthropology* 9(3):309-323.

Friis, L.
1965 *Orange County Through Four Centuries*. Santa Ana.

Hallan-Gibson, P.
1986 *The Golden Promise: An Illustrated History of Orange County*. Windsor Publications, Northridge.

Hatley, M.J.
1978a Site Survey Record for CA-SDI-5925. Copy on file, South Coastal Information Center, Social Science Research Laboratory, San Diego State University (SCIC).
1978b Site Survey Record for CA-SDI-5926. Copy on file, SCIC.

Hornbeck, D.
1983 *California Patterns: A Geographical and Historical Atlas*. Mayfield Publishing, Palo Alto, CA.

Jertberg, P.
1981 Archaeological Resource Assessment Conducted for the 3000 Acre Southern Section of Coto de Caza. Prepared by ARMC for Coto de Caza Development Company. Copy on file, SCCIC.

Jones, C.S., and C.R. Demcak
1991 Archaeological Monitoring, Recovery, and Analysis of Buried Deposits Encountered on Contract 1486A, South County Pipeline Project, South Orange County, California. Prepared by ARMC for Santa Margarita Water District. Copy on file, SCCIC.

Jones, C.S., S.H. Conrad, J. Hudson, D. DeVries, T. Tokunaga, and C.R. Demcak
1995 Archaeological Investigations at the San Juan Creek Sites (CA-ORA-1043, -1048, and –1121), Santa Margarita Water District South County Pipeline, Orange County, California. Prepared by ARMC for Santa Margarita Water District. Copy on file, SCCIC.

Julien, M.R., and C.R. Demcak
1993 Archaeological Monitoring Report for Contract 1485 and Contract 1485A, South County Pipeline Project, Orange County, California. Prepared by ARMC for Santa Margarita Water District. Copy on file, SCCIC.

McKenna, J., R. Hatheway, and R.S. Brown
1988 An Intensive Archaeological Survey of the Talega Properties, San Clemente, Orange County, California. Prepared by Hatheway and McKenna for the Talega Valley Partners. Copy on file, SCCIC.

Morton, P. and R. Miller
1981 *Geological Map of Orange County, California, Bulletin 204, Plate 1*. California Division of Mines and Geology, Sacramento.

Muñoz, J.
1980 Historic Resources of Talega Parcel. Prepared for Rancho Mission Viejo. Ms. on file, ARMC.

Munz, P.A., and D.D. Keck
1959 *A California Flora*. University of California Press, Berkeley.

Norris, R.N., and R.W. Webb
1976 Peninsular Ranges. In *Geology of California*. Wiley and Sons, New York.

Orange County Planning Department
1971 *The Physical Environment of Orange County*. A General Planning Program Report. County of Orange, Santa Ana.

Reddy, S.
2000 Settling the Highlands: Late Holocene Adaptations on Camp Pendleton, San Diego County, Southern California. Prepared by ASM Affiliates for the U.S. Army Corps of Engineers, Los Angeles District, Los Angeles, California. Copy on file, SCIC.

Riddell, F.
1972a Site Survey Record for CA-ORA-362. Copy on file, SCCIC.
1972b Site Survey Record for CA-ORA-363. Copy on file, SCCIC.

Romani, J.F.
1997 Extended Phase I Investigations for the Foothill Transportation Corridor, Orange

County, California. PartI: CA-ORA-908, -1042, and –1447. Prepared by Greenwood and Associates for the Environmental Planning Branch, District 12, State of California, Department of Transportation, and the Transportation Corridor Agencies. Copy on file, SCCIC.

Romani, J.F., G.R. Romani, A.G. Toren, D.A. Larson, S. Winzler, J. Schmidt, and J. Schmidt
1997 Phase II Investigations and Determination of Eligibility for CA-ORA-916, -907, -921/1127, -997, -1144, -1222, and –1452/1126, Located along the BX and CP Alignments for the Proposed Foothill Transportation Corridor-South, Orange County, California. Prepared by Greenwood and Associates for Environmental Planning Branch, District 12, State of California, Department of Transportation and the Transportation Corridor Agencies. Copy on file, SCCIC.

Romani, J.F., and R.J. Wlodarski
1986 Draft Report on a Phase II Archaeological Investigation of CA-ORA-656 and Extended Phase I Archaeological Investigations of Three Sites (CA-ORA-26, CA-ORA-1102, and CA-ORA-1103), Along Ortega Highway (07-ORA-74 P.M. 1.7/5.3), Orange County, California. Caltrans District 7. Copy on file, SCCIC.

Romero, J.
1949 Site Survey Record for CA-ORA-29. On file, SCCIC.

Schuster, T.
1977a Site Survey Record Update for CA-ORA-26. Copy on file, SCCIC.
1977b Site Survey Record Update for CA-ORA-28. Copy on file, SCCIC.

Shackley, M.S., G.T. Gross, J.R. Cook, C.J. Serr, L.E. Christenson
1989 An Evaluation of Cultural Resources within the Talega Valley Project (Development Phases 2, 3, and 4), Orange County, California. Prepared by Brian F. Mooney Associates for Arvida Talega Limited Partnership. Copy on file, Brian F. Mooney Associates, San Diego.

Sleeper, J.D.
1985 Rancho Mission Viejo (A Chronological History). Ms. on file, Rancho Mission Viejo, P.O. Box 9, San Juan Capistrano, CA 92693.

Meadows, D.
1966 *Historic Place Names in Orange County*. Balboa Island, California.
1965 First European Contact with the Indians of Orange County. *Pacific Coast Archaeological Society Quarterly* 1(2):24-26. Costa Mesa.

Smith, H.
1965 The Portolá Camps Revisited. *Pacific Coast Archaeological Society Quarterly* 1(4):28-32. Costa Mesa.

Toren, A.G., J. Schmidt, J. Schmidt, and P. Fulton
1997 Extended Phase I Investigations at Sites CA-ORA-26 (Loci B and C), -7789, -780, and –781 Located Along the BX Alignment, and Sites CA-ORA-362, -363, -1106, -1125, and –1126 and Isolated Finds FTC-IF-3, -4, -6, and –9 Located Along the CP Alignment for the Proposed Foothill Transportation Corridor-South, Orange County, California. Prepared by Greenwood and Associates for the Environmental Planning Branch, District 12, State of California, Department of Transportation and for the Transportation Corridor Agencies.

Van Bueren, T.M.
1988 Archaeological Site Survey Record Update, CA-ORA-1042. Copy on file, Greenwood and Associates, Pacific Palisades.

Van Bueren, T.M., J.M. Foster, and R.S. Greenwood
1988 Intensive Archaeological Survey and Cultural Resources Assessment for the Southern Alternatives of the Foothill Corridor, Orange and San Diego Counties. Prepared by Greenwood and Associates for Michael Brandman Associates. On file, SCCIC.

Van Wormer, S.R.
1981 Site Survey Record for CA-SDI-9571. Copy on file, South Coastal Information Center (SCIC), Social Science Research Laboratory, San Diego State University.

Wallace, W.J.
1955 A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology*, 11: 214-30. Albuquerque.

Warren, C.N.
1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. In Archaic Prehistory of the Western United States, C. Irwin Williams, ed. *Eastern New Mexico Contributions in Anthropology*, Vol. 1(3), pp. 1-14. Portales.

Weaver, R.
1976 Site Survey Record for CA-ORA-535. Copy on file, SCCIC.

REPORT OF PALEONTOLOGICAL RESOURCES SURVEY FOR THE RANCH PLAN, RANCHO MISSION VIEJO, SOUTH ORANGE COUNTY, CALIFORNIA

By:

Milos Velechovsky

Of:

Archaeological Resource Management Corporation
1114 N. Gilbert Street
Anaheim, CA 92801
714/491-9702

For:

Rancho Mission Viejo, L.L C.
P. O. Box 9
San Juan Capistrano, CA 92693

June 15, 2000

REPORT OF PALEONTOLOGICAL RESOURCES SURVEY FOR THE RANCH PLAN, RANCHO MISSION VIEJO, SOUTH ORANGE COUNTY, CALIFORNIA

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INTRODUCTION

This report summarizes the results of a paleontological survey for the Ranch Plan, Rancho Mission Viejo, south Orange County, California. Milos Velechovsky, Orange County certified paleontologist, of Archaeological Management Corporation (ARMC) conducted the survey at the request of Laura Eisenberg of Rancho Mission Viejo, L.L.C. The study consisted of a records and literature review, field work, and report preparation. The field work took place between March 21 and April 26, 2000.

According to the California Office of Historic Preservation (1983), fossils are highly sensitive, nonrenewable scientific and educational resources, which in California are protected by the following State and Federal laws:

1. **Federal Antiquities Act of 1906** (P. L. 59-209; 34 Stat. 225, 16 U. S. C. 432, 433). It forbids disturbance of any object of antiquity on federal land without a permit issued by a responsible agency. It also establishes criminal sanctions for unauthorized desecration or appropriation of antiquities.

2. **Historic Sites Act of 1935** (P. L. 74-292; 49 Stat. 666, 16 U. S. C. 461 *et seq*.). It declares a national policy to preserve objects of national significance for public use and gives the Secretary of the Interior broad powers to execute this policy, including criminal sanctions.

3. **Reservoir Salvage Act of 1960** (P. L. 86-523; 74 Stat. 220), as amended 1974 (P. L. 93-921). It requires the Secretary of the Interior to institute a salvage program in connection with federally funded reservoir construction and requires the cooperation of responsible agencies with this program.

4. **National Environmental Policy Act of 1969, NEPA.** (P. L. 91-190; 31 Stat. 852, 42 U.S.C. 4321-4327). It requires important natural aspects of our national heritage to be considered in assessing the environmental consequences of a proposed undertaking.

5. **Archaeological and Historic Preservation Act of 1974** (P. L. 93-291; 88 Stat. 174, U. S. C. 469). It provides for the survey, recovery, and preservation of significant paleontologic data when such data may be destroyed or lost due to a federal, federally licensed, or federally funded project.

6. **California Environmental Quality Act of 1970, CEQA.** (13 Public Resources Code: 21000 *et seq*.) It requires public agencies and private interests to identify the environmental consequences of their proposed projects on any object or site, significant to the scientific annals of California (Division I, Public Resources Code: 5020.1 (b)).

7. **Guidelines for the Implementation of CEQA,** as amended May 10, 1980 (14 California Administrative Code: 15000 *et seq*.) It defines procedures, types of activities, persons, and public agencies required to comply with CEQA and includes

definitions of significant effects to a paleontologic site (Section 15023, Appendix G (j)).

8. **Public Resources Code, Section 5097.5** (Stats. 1965, c. 1136, p. 2792) It defines any unauthorized disturbance or removal of paleontologic remains or sites located on public land as a misdemeanor.

SETTING

The project area covers 36.5 square miles or 94.5 square kilometers and extends on both sides of San Juan Creek and Ortega Highway (Figures 1-7). From San Juan Creek to the north, the property runs 11 km into Cañada Chiquita and 4 km into Cañada Gobernadora. From San Juan Creek, it extends to Talega Canyon and Camp Pendleton in the south and to the Orange County, Riverside County, and San Diego County lines in the east. It covers the area consisting of Trampas, Cristianitos, Gabino, La Paz, Blind, and Talega Canyons.

The survey area covers portions of four USGS 7.5' Quadrangle maps. They include the Cañada Gobernadora, Santiago Peak, San Juan Capistrano, and San Clemente Quadrangles. Table 1 below summarizes the Township-Range-Section data of the study area.

Table 1. Summary of Township-Range-Section data of the survey area.

T6S, R7W, parts of sections 27, 33, and 34
T7S, R7W, parts of sections 3, 4, 9, 10, 14-16, 21-28, and 32-36
T8S, R7W, parts of sections 1-4, 9-13, and 24
T7S, R6W, parts of sections 28-33
T8S, R6W, parts of sections 4-9, and 16-20

RECORDS AND LITERATURE REVIEW

Samuel McLeod of the Los Angeles County Museum of Natural History (LACM), Vertebrate Paleontology Section, carried out a records and literature search. Kathleen C.

Allen and Milos Velechovsky gathered additional information using maps and records housed at ARMC and completed the first portion of the assessment (Allen and Velechovsky 2000). An older record search by Diveley (1994) was also consulted.

According to McLeod (1999), the LACM has no record of any vertebrate localities within the project area. It is important to mention here that many significant vertebrate localities have been discovered within the same formations just outside the survey area.

STRATIGRAPHY

According to Morton and Miller (1981), twelve sedimentary rock units occur in the project area. These rock units ranging in age from Late Cretaceous to Holocene include the Trabuco, Ladd (Baker Canyon Conglomerate), Williams (Schulz Ranch and Pleasants Sandstone Members), Silverado, Santiago, Sespe, Topanga, San Onofre Breccia, Monterey, Capistrano, as well as Quaternary alluvium and colluvium.

PALEONTOLOGY

Trabuco Formation – **Kt**

Sensitivity: low
Stop: 12
Figure: 9

The early Late Cretaceous Trabuco consists of reddish-brown conglomerate and sandstone. This basal unit usually rests on the Santiago Peak Volcanics or the Bedford Canyon Formation. According to Schoellhamer and others (1981), the Trabuco lacks fossils. The Trabuco is relatively rare in the project area. Its outcrop at the head of Gabino Canyon is very poor, but large boulders scattered in the overlying colluvium suggest its presence underground. No fossils were discovered in this formation during the recent field survey.

Ladd Formation – Baker Canyon Member – **Klb**

Sensitivity: moderate
Stops: none
Figures: none

The lower part of the Baker Canyon Member is believed to be of non-marine origin. The rock consists of non-fossiliferous, greenish-gray, poorly bedded conglomerate. The upper part consists of yellow-brown beds of conglomerate and very-coarse sandstone as well as finely laminated sandstone with scattered mollusk shells (Schoellhamer and others, 1981). The Baker Canyon Member, as mapped at the head of Gabino Canyon, does not crop out within the survey area. Only boulders scattered in the overlying colluvium suggest its presence underground. The Baker Canyon Member is very rare in the project area. No fossils were discovered in this formation during the survey.

Williams Formation – Schulz Ranch Member - **Kws**

Sensitivity: moderate
Stops: 9-**11**, 13, 20-23, 59, and 60
Figure: 10

Two members of the Late Cretaceous Williams Formation were studied extensively during the ARMC survey. The Schulz Ranch Member consists of brownish-gray to gray, massive, coarse-grained sandstone and conglomerate. According to Schoellhamer and others (1981), the Schulz Ranch is sparsely fossiliferous. It contains chiefly pelecypods of the shallow marine environment. This unit, occurring mostly in the east and southeast parts of the project area, was studied in ten stops. A large number of trace fossils in this formation was discovered at Stop **11**. This kind of burrowing trace fossil usually occurs in a shallow marine environment.

Williams Formation – Pleasants Sandstone Member - **Kwp**

Sensitivity: high
Stops: 4, **56**, and 61
Figure: 11

The Pleasants Sandstone Member of the Late Cretaceous Williams Formation consists of light-brown to gray, fine-grained marine sandstone and siltstone. Schoellhamer and others (1981) described extensive pelecypod, gastropod, and ammonite faunas from 42 localities in the northern Santa Ana Mountains. Lander (1988) reported additional invertebrates occurring in this unit in the nearby Foothill Transportation Corridor. Morton (1974) lists one invertebrate locality in the northern part of Cristianitos Canyon, which lies within this project area. This unit, occurring mostly in the east and southeast parts of the survey area, was studied in three stops. Many pieces of petrified tree trunks and pelecypod shells were found in this formation at Stop **56,** but the author could not verify the existence of Morton's (1974) locality.

Silverado Formation - **Tsi**

Sensitivity: high
Stops: 3, 6-8, 28, and **29**
Figures: 12-14

According to Morton (1974) and Schoellhamer and others (1981), the Paleocene Silverado Formation consists of interbedded siltstone, sandstone, as well as massive pebble and cobble conglomerates of both marine and terrestrial origin. The mostly marine upper part is brownish-yellow to greenish-gray. The predominantly non-marine lower part includes coarse-grained sandstone, conglomerate, clay, and lignite. The Silverado is a very colorful formation and its outcrops remind the visitor of the Painted Desert of Arizona. Schoellhamer and others (1981) and Lander (1988) reported marine and brackish mollusk assemblages from the Santa Ana Mountains as well as plant remains. This unit, occurring mostly in the east, south, and southeast parts of the survey area was studied in six stops. Pieces of petrified wood were discovered at Stop **29** **(**Figures 13 and 14).

Santiago Formation - **Tsa**

Sensitivity: high
Stops: 1-4, 24–26, 37–51, 53, and 55
Figure: 15

The Eocene Santiago Formation, occurring mostly in the north-central, central, and southern parts of the survey area, was studied extensively during the ARMC survey. Its lower part consists of thin-bedded brown to gray sandstone, sandy siltstone, and conglomerate. The upper part includes white to brownish-yellow, massive coarse-grained sandstone and conglomerate.

Outside our survey area, Schoellhamer and others (1981) reported a diverse marine mollusk fauna from the Santa Ana Mountains. Lander (1988) described several other mollusk occurrences, silicified logs, and a fish locality from the lower part of the Santiago in the vicinity of our survey area. Golz and Lillegraven (1977) listed an extensive assemblage from the nearby San Onofre Canyon, including non-marine fish, lizard, turtle, insectivore, marsupial, rodent, oromerycid, oreodont, protoceratid, hypertragulid, rhinoceros, and primate species.

Within the survey area, Lander (1988) lists silicified logs and a marine vertebrate fauna from a site between Chiquita and Gobernadora Canyons, as well as several sites from within these two canyons. The same author recorded fossil leaves from Gabino Canyon, as well as scaphopods from between Talega and Gabino Canyons. No fossils were found during the recent ARMC file survey at any of the 23 stops where the formation was exposed.

Sespe Formation – **Ts**

Sensitivity: low to moderate
Stops: 30, 31, and 34
Figure: 16

According to Cooper (1980), the non-marine Sespe ranges in age from Late Eocene to Late Oligocene. It consists of coarse sandstone and conglomerate, as well as minor amounts of mudstone. Most of the Sespe in the survey area occurs in upper Chiquita Canyon.

Historically, the Sespe yielded only a few well-documented fossils. Raschke (1984) and Savage and Barnes (1972) reported that several sites in the Santa Ana Mountains produced rare remains of horse, entelodont, camel, and oreodont. Some of these species do not occur elsewhere in California. According to Velechovsky (2000), even the screening of 250 kg random samples of loose sediment failed to produce any fossils. No fossils were discovered in this formation during the survey.

Topanga Formation – **Tt**

Sensitivity: high
Stops: **35** and **36**
Figures: 17 and 18

The shallow marine Topanga Formation is a known fossil producer throughout Orange County. It has yielded a diverse molluscan fauna of Middle Miocene age as well as locally abundant vertebrates such as shark, fish, and marine mammals. The Topanga is poorly exposed in the survey area and makes up less than one percent of its size.

According to Lander (1988), fossil localities in the vicinity of the survey area produced remains of brachiopods, pelecypods, gastropods, sharks, fish, desmostylians, dolphins, whales, turtles, birds, sea lions, and walruses. In addition to the aquatic fossils, it contains Barstovian land mammals, such as horses, camels, deer, and pronghorns. Abundant remains of pelecypods, gastropods, and mammal bone debris were discovered in both stops where the Topanga was exposed.

San Onofre Breccia - **Tso**

Sensitivity: low to moderate
Stops: 15-17, and 33
Figure: 19

The San Onofre Breccia is a coarse, angular deposit derived from the Catalina Schist. This poorly fossiliferous rock unit represents rapidly deposited debris flows. In the study area, Cooper (1980) observed small fragments of whalebone and possible pinniped remains in this formation. The San Onofre Breccia, occurring mostly in the west and north-center parts of the study area, was studied in four stops. No fossils were discovered in this formation during the survey.

Monterey Formation – **Tm**

Sensitivity: high
Stop: **14**
Figure: 20

According to Diveley (1994), the Late Miocene Monterey Formation is a correlative of the Clarendonian North American Land Mammal Age (circa 9 to 12 million years ago). This important, highly fossiliferous lithologic unit consists of gray siltstone, shale, and thin-bedded sandstone. The Monterey occurs in the western part of the survey area and covers less than one percent of it.

The invertebrate specimens frequently occurring in this formation include worms, bryozoans, pelecypods, gastropods, barnacles, and ostracodes. Much more important are remains of aquatic vertebrates such as walruses, sea lions, and whales, as well as fishes and aquatic birds including shearwaters and auks. In addition to animal remains, Lander (1988) also reports algae, leaves, and petrified wood of terrestrial origin. At Stop 14, remains of fish bones and scales, as well as coprolites were discovered.

Capistrano Formation – Siltstone Facies – **Tcs**

Sensitivity: high
Stops: none
Figures: none

According to Diveley (1994), the Late Miocene to Early Pliocene Capistrano Formation, a correlative of the Blancan North American Land Mammal Age (circa 2 to 5 million years ago), is a highly fossiliferous marine deposit. The unit consists of fine sandstone and shale with local limestone concretions, conglomerate, and breccia lenses. The Capistrano Siltstone makes up less than one percent of the survey area, mostly along the western edge of the property.

This deposit yields diverse marine invertebrate and vertebrate faunas. The fossil record for marine invertebrates is not well known. The marine vertebrate fossils include many sharks, such as angel sharks and cow sharks, as well as bat rays, bony fishes, monodontids (beluga/narwhal), baleen whales, dolphins, eared seals, and walruses. Many kinds of sea birds are known from this deposit as well, of which several forms are extinct such as the flightless auk and a species of gannet. In the vicinity of the survey area, Cooper (1980) observed several specimens of whalebone.

Quaternary Non-marine Terrace Deposits – **Qt**

Sensitivity: low to moderate
Stops: 5, 19, 57, and 58
Figure: 21

Late Pleistocene and Holocene alluvial terrace deposits are composed of poorly consolidated gravel and sand. They are quite common in the survey area. Typically, these deposits are poorly fossiliferous, but if they contain fossil remains, these remains can be very important. No fossils were discovered at any of the four stops under investigation during the recent ARMC survey .

Lander (1988) reported an extensive land mammal assemblage including frog, salamander, turtle, lizard, snake, bird, insectivore, ground sloth, rabbit, rodent, dog, weasel, saber-toothed cat, mammoth, horse, camel, deer, pronghorn, and bison. According to Diveley (1994), several important Pleistocene fossil faunas, all of the Rancholabrean North American Land Mammal Age (circa 10,000 to 400,000 years ago), have been recovered in the vicinity of this survey area. These fossils include an extensive and well-studied assemblage of terrestrial animals, many of which are extinct, such as sloth, mammoth, mastodon, camel, horse, bison, birds, and reptiles.

Quaternary Alluvium and Colluvium – **Qac**

Sensitivity: low
Stops: 18, 27, 52, and 54
Figures: 22 and 23

Alluvia and colluvia of mostly Holocene age include soil and slope wash, as well as sand and gravel deposits from creek beds. They may occasionally contain fossil float material derived from older bedrock. No fossils were discovered at any of the four stops under investigation during the recent field survey.

SENSITIVITY

The Natural History Museum of Los Angeles County considers all sedimentary rock units occurring within the survey area to rank high in paleontological sensitivity. According to McLeod (1999):

> Some of the rock units are sparsely fossiliferous, but the known fossils are extremely important. For example, the Ladd Formation contains Late Cretaceous sharks and bony fishes, but has also produced one of the very rare examples of a dinosaur from California. The Paleocene Silverado Formation has produced rare west-coast marine turtles. The Eocene Santiago Formation has produced a diverse assemblage of turtles, crocodiles, and terrestrial mammals. The Oligocene Sespe/Vaqueros undifferentiated Formation has produced an assemblage of mixed terrestrial and marine vertebrates. The Topanga, Monterey, and Capistrano Formations have produced abundant and highly diverse assemblages of marine vertebrates including sharks, bony fishes, sea turtles, sea birds, and marine mammals. Quaternary surface deposits throughout the Los Angeles Basin have produced Late Pleistocene vertebrates such as those found at Rancho La Brea.

Not all paleontologists would agree with ranking all of those formations as high in sensitivity. Large differences certainly exist among the formations in terms of sensitivity. See Table 2 for a summary of differing viewpoints about formations within the project area with regard to sensistivity.

Table 2. Summary of the differing views about formation sensitivities of McLeod (1999) and the author of this report.

	Formation	Sensitivity McLeod (LACM)	Sensitivity Velechovsky (ARMC)
Qac	Alluvium and Colluvium	high	low to moderate
Qt	Quaternary terraces	high	low to moderate
Tcs	Capistrano Formation	high	high
Tm	Monterey Formation	high	high
Tso	San Onofre Breccia	high	low
Tt	Topanga Formation	high	high
Ts	Sespe Formation	high	low to moderate
Tsa	Santiago Formation	high	high
Tsi	Silverado Formation	high	high
Kwp	Pleasants Sandstone Member of the Williams Formation	high	high
Kws	Schulz Ranch Member of the Williams Formation	high	moderate
Klb	Baker Canyon Member of the Ladd Formation	high	moderate
Kt	Trabuco Formation	high	low

See Table 3 for a summary of formation locations and sensitivities by survey areas.

Table 3. Summary of formations and sensitivities by survey areas.

Formation	Sensitivity (Velechovsky)	North	North-central	Central	West	East	South	South-east
Trabuco Formation	Low					X		
Ladd Formation – Baker Cyn. Member	Moderate					X		
Williams Formation – Schulz Ranch Member	Moderate					X	X	X
Williams Formation – Pleasants Sandstone Member	High			X		X	X	X
Silverado Formation	High			X			X	X
Santiago Formation	High		X	X	X	X	X	X
Sespe Formation	Low to Moderate	X	X					
Topanga Formation					X			
San Onofre Breccia	Low to Moderate		X		X			
Monterey Formation	High				X			
Capistrano Formation – Siltstone Facies	High				X			
Quaternary Non-marine Terrace Deposits	Low to Moderate			X		X	X	X
Quaternary Alluvium and Colluvium	Low			X	X		X	

IMPACT ASSESSMENT

Paleontological resources anywhere in the study area could be adversely affected by impacts created by any future ground-disturbing activities. Such activities usually include brush clearing and grading. They might result in the loss of paleontological resources, including important fossil remains or fossil beds due to their removal or covering by fill.

The impact of grading activities on a particular formation is not simply a function of its sensitivity. The size of the area the formation covers is also important. In general, the impact increases with the size of the area. An otherwise poorly fossiliferous formation is more likely to have niches of increased fossil density if traced over a larger area. The following statements reflect the expected impact of future grading activities on individual formations.

The impact on the **Trabuco Formation** by future grading activities is likely to be low. This is due to a combination of its low sensitivity and the small area that it covers.

The impact on the **Baker Canyon Member** of the **Ladd Formation** is also likely to be low. Its sensitivity is moderate, but its extent is so small that future grading activities might even miss it.

The **Schulz Ranch Member** of the **Williams Formation** is likely to be affected to a large extent. Its sensitivity is only moderate, but the area it covers is so large that future grading activities are more likely to expose new important fossil sites.

The **Pleasants Sandstone Member** of the **Williams Formation** is also very likely to be affected significantly by future grading. This is due to a combination of a high sensitivity and the large area that it covers.

The **Silverado** and **Santiago Formations** are likely to be affected significantly for the same reasons.

The sensitivity of the **Sespe Formation** is low to moderate at best. However, due to its large extent, it is likely that significant fossils could be discovered during extensive grading activities. This formation could be then affected to a larger degree than its sensitivity alone would indicate.

The impact on the **Topanga Formation** could be very high, despite its small size. The Topanga in the survey area crops out as an oyster bank, which is even more sensitive than the rest of the Topanga. Any excavation in this formation in the survey area should be done with utmost care.

The sensitivity of the **San Onofre Breccia** is low and it covers a relatively small area. Usually, it occurs on mountaintops and it seems likely that any grading impact would be small.

The **Monterey Formation** covers only a very small part of the survey area. Due to its high sensitivity, the impact on this formation could be high as well. Just like the Topanga, this formation should be excavated under the strictest monitoring procedures.

The **Capistrano Formation** is of high sensitivity and but covers only a small area. When the grading activity reaches this formation, its impact could be very high and strict monitoring procedures must be applied immediately.

The **Quaternary Terrace Deposits** occur throughout the survey area but their extent is only moderate. Due to their low to moderate sensitivity, the impact of grading is expected to be moderate as well.

The sensitivity of the **Alluvium** and **Colluvium** deposits is low to moderate. They cover large parts of the survey area, so there is an increased chance of finding new fossil sites.

RECOMMENDATIONS

The survey area contains 12 formations of variable sensitivity with respect to paleontological resources. Any future grading operations are likely to encounter one or more highly sensitive formations. For that reason, a grading monitoring program is recommended for all such future projects. A monitoring program should follow Orange County guidelines. It should consist of observing grading activities, salvaging, and cataloging of fossils, and should be supervised by a County-certified paleontologist. The paleontologist should attend all pre-grading conferences and set forth the procedures to be followed during the monitoring program. Recovered fossils should be offered to the County of Orange, or its designee, on a first refusal basis.

REFERENCES

California Office of Historic Preservation, 1983, Summary of state laws protecting cultural resources.

Cooper, J. A., 1980, Paleontological Assessment of Horno Creek Study Area, unpublished report on file, ARMC.

Diveley, D. V., 1994, Personal Communication, Curatorial Assistant, Vertebrate Paleontology Section, Los Angeles County Museum of Natural History.

Golz, J. D. and Lillegraven, J. A., 1977, Summary of known occurrences of terrestrial vertebrates from Eocene strata of southern California: University of Wyoming Contributions to Geology, 15(1): 43-65.

Lander, E. Bruce, 1988, Paleontologic Resource Technical Report Foothill Transportation Corridor, Orange and San Diego Counties, California, prepared for Michael Brandman Associates, unpublished report on file, ARMC.

McLeod, Samuel A., 1999, Paleontological Resources for the eastern Orange County Project Area, letter report dated 11-16-1999, Natural History Museum of Los Angeles County, Vertebrate Paleontology Section. On file, ARMC.

Morton, P. K., 1974, Geology and Engineering Geologic Aspects of the south half of the San Juan Capistrano Quadrangle, Orange County, California: California Division of Mines and Geology, Special Report 112.

Morton, P. K. and Miller, R. V., 1981, Geologic Map of Orange County, California, 1:48,000: California Division of Mines and Geology, Bulletin 204, Plate I.

Raschke, R. E., 1984, Early and Middle Miocene Vertebrates from the Santa Ana Mountains, California, **In** Butler, B., Gant, J. and Stadum, C. J., editors, The Natural Sciences of Orange County: Memoirs the Natural History Foundation of Orange County, 1: 61-67.

Savage, D. E. and Barnes, L. G., 1972, Miocene Vertebrate Geochronology of the West Coast of North America, **In** Stinemeyer, E. H. and Church, C. C., editors, Proceedings of the Pacific Coast Miocene Biostratigraphic Symposium, Pacific Section, Society of Economic Paleontologists and Mineralogists 47th Annual Convention, 124-145.

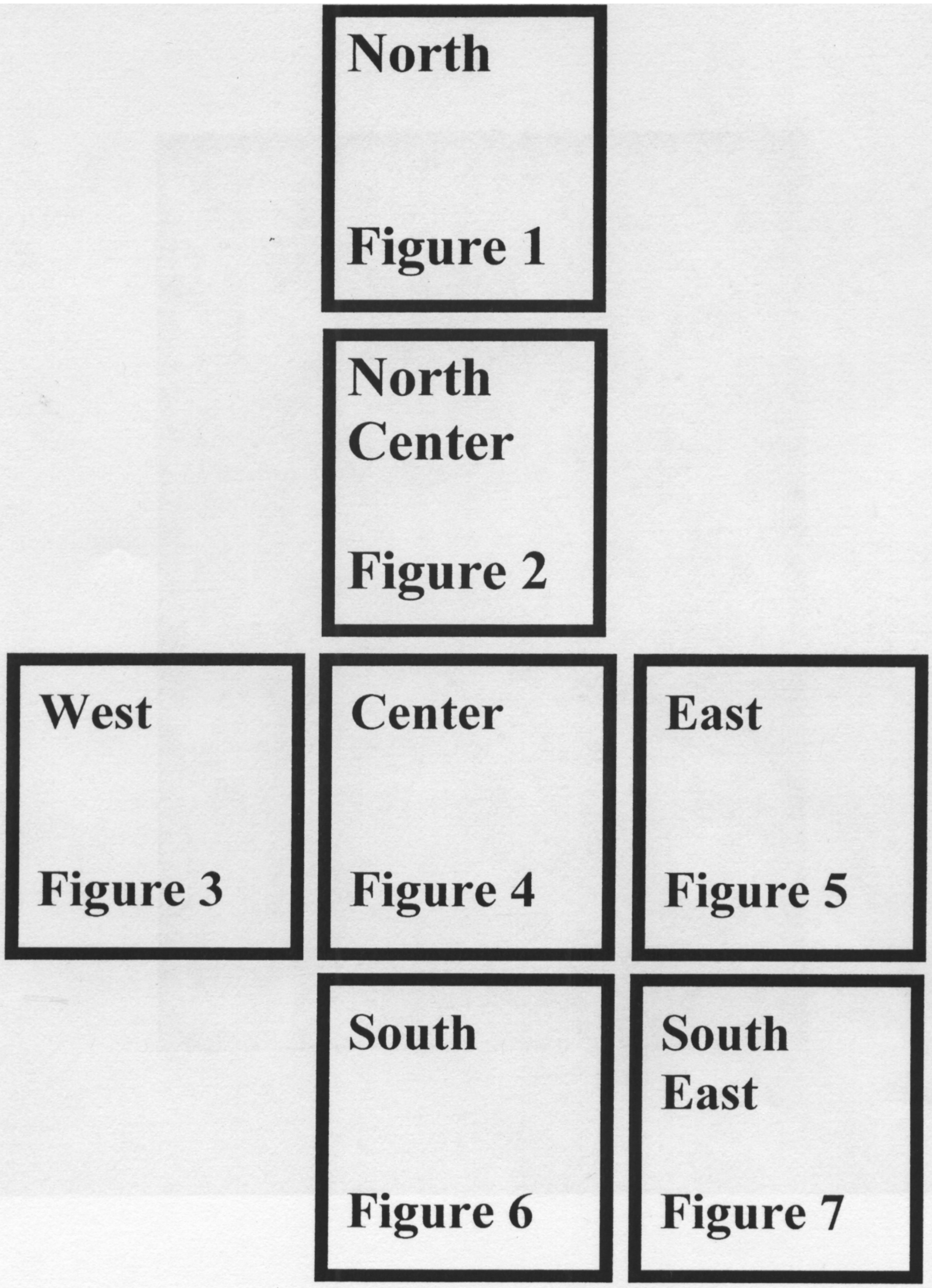
Schoellhamer, J. E., Vedder, J. G. Yerkes, R. F., and Kinney, D. M. 1981, Geologic Map of the Northern Santa Ana Mountains, California: U. S. Geological Survey Professional Paper 420-D.

Velechovsky, M., 1994a, Paleontological Assessment of the Proposed Ortega Golf Course, San Juan Creek, South Orange County, California, unpublished report on file, ARMC.

Velechovsky, M., 1994b, Paleontological Assessment for Land Development Area, South Orange County, California, unpublished report on file, ARMC.

Velechovsky, M., 1994c, Paleontological Assessment for Antonio Parkway Alignment from Oso Parkway to La Pata Drive, South Orange County, California, unpublished report on file, ARMC.

Velechovsky, M., 2000, Final Report on Paleontological Monitoring Program Conducted at Chiquita Canyon, Orange County, California, unpublished report on file, ARMC.



This diagram shows the relative positions of maps from Figures 1 to 7. Overlaps exist among all seven Figures.

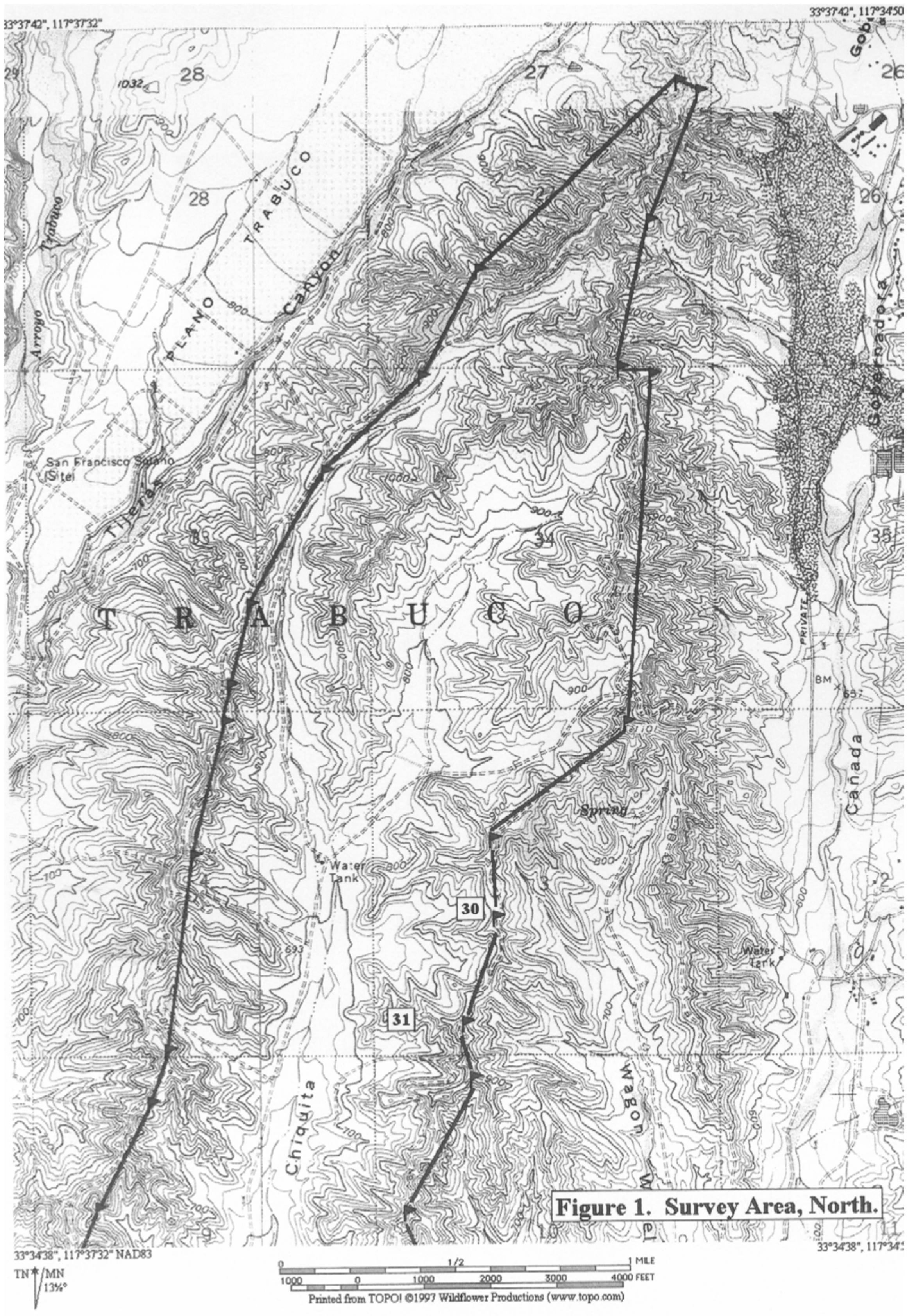


Figure 1. Survey Area, North.

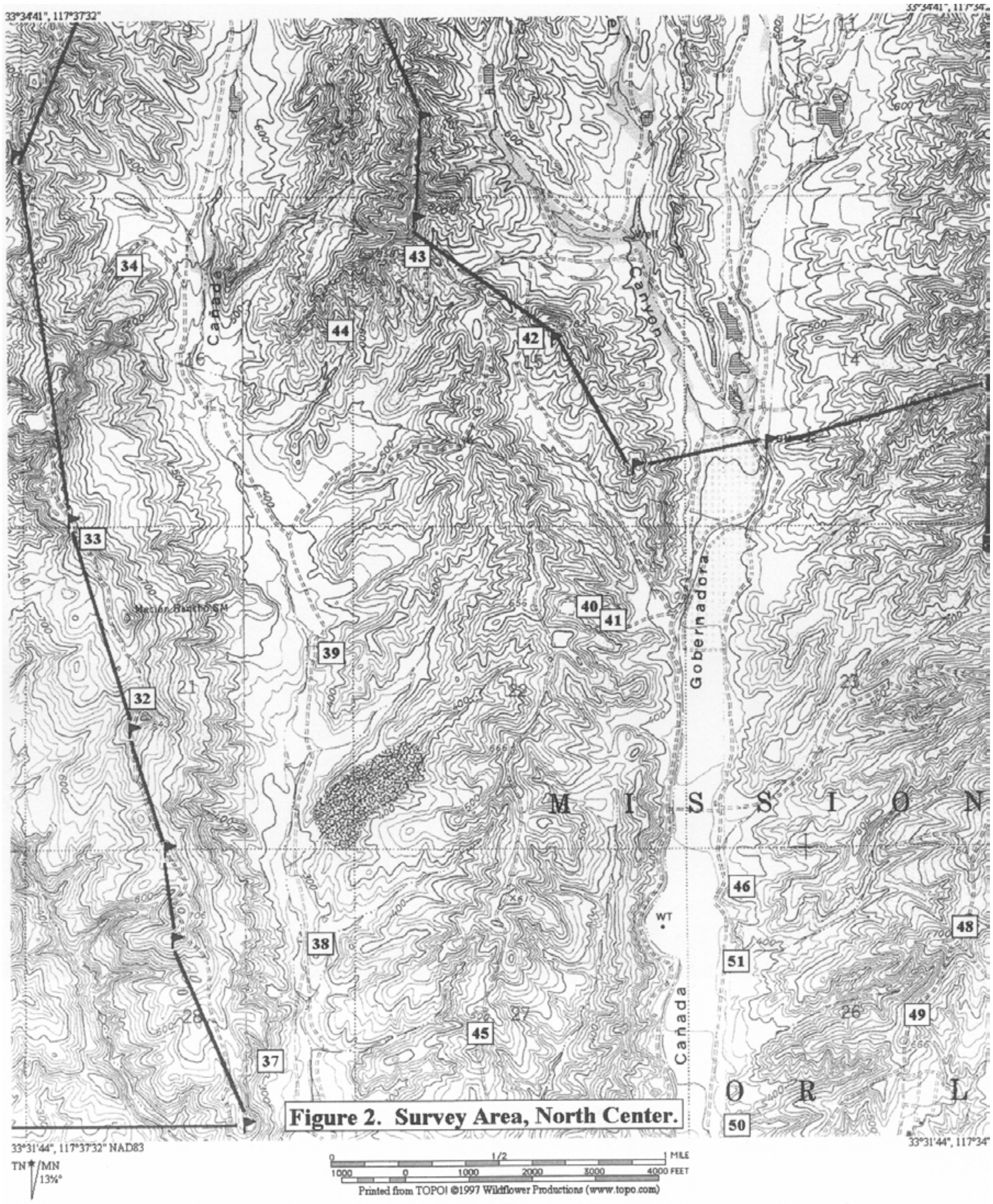


Figure 2. Survey Area, North Center.

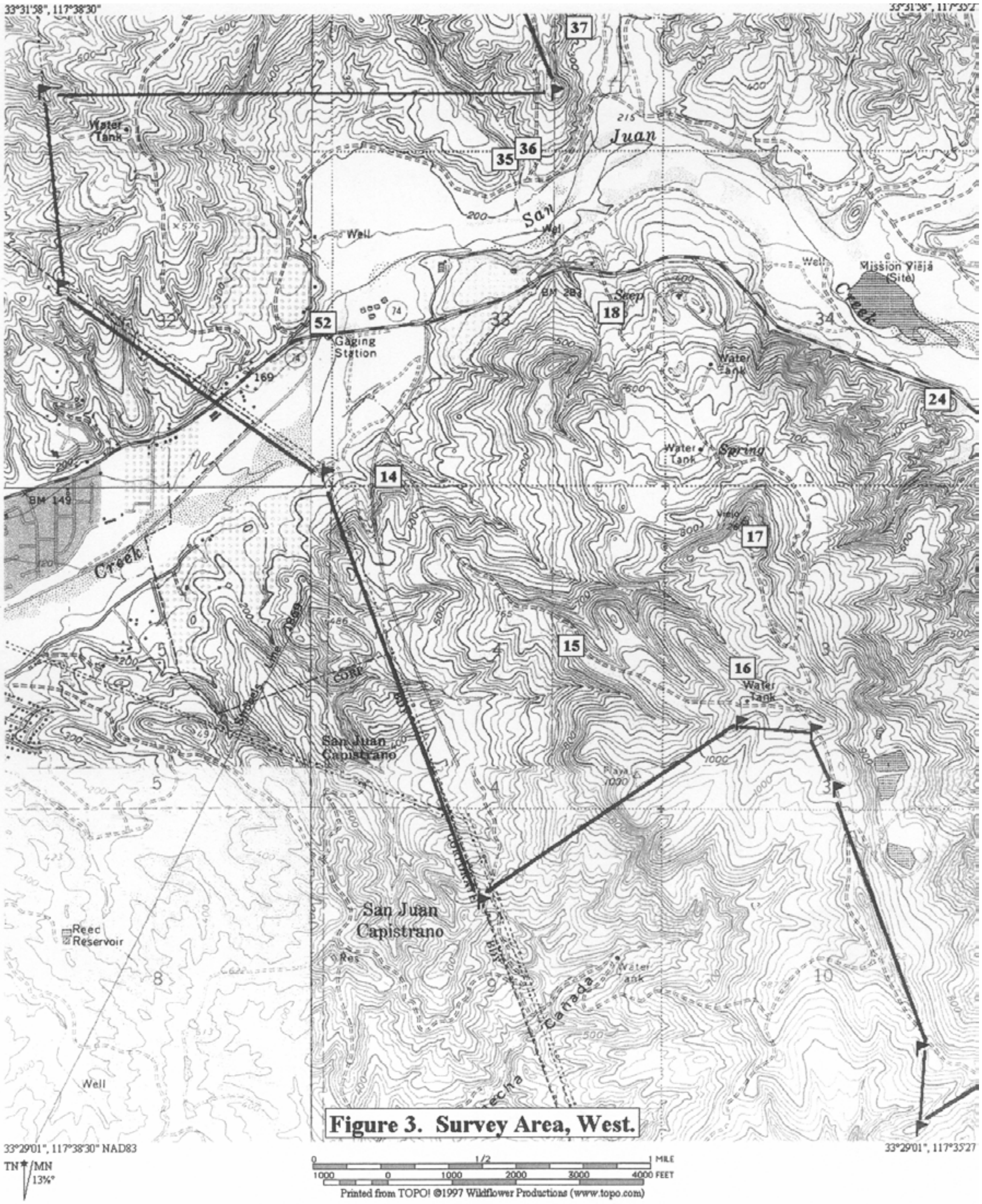


Figure 3. Survey Area, West.

Figure 4. Survey Area, Center

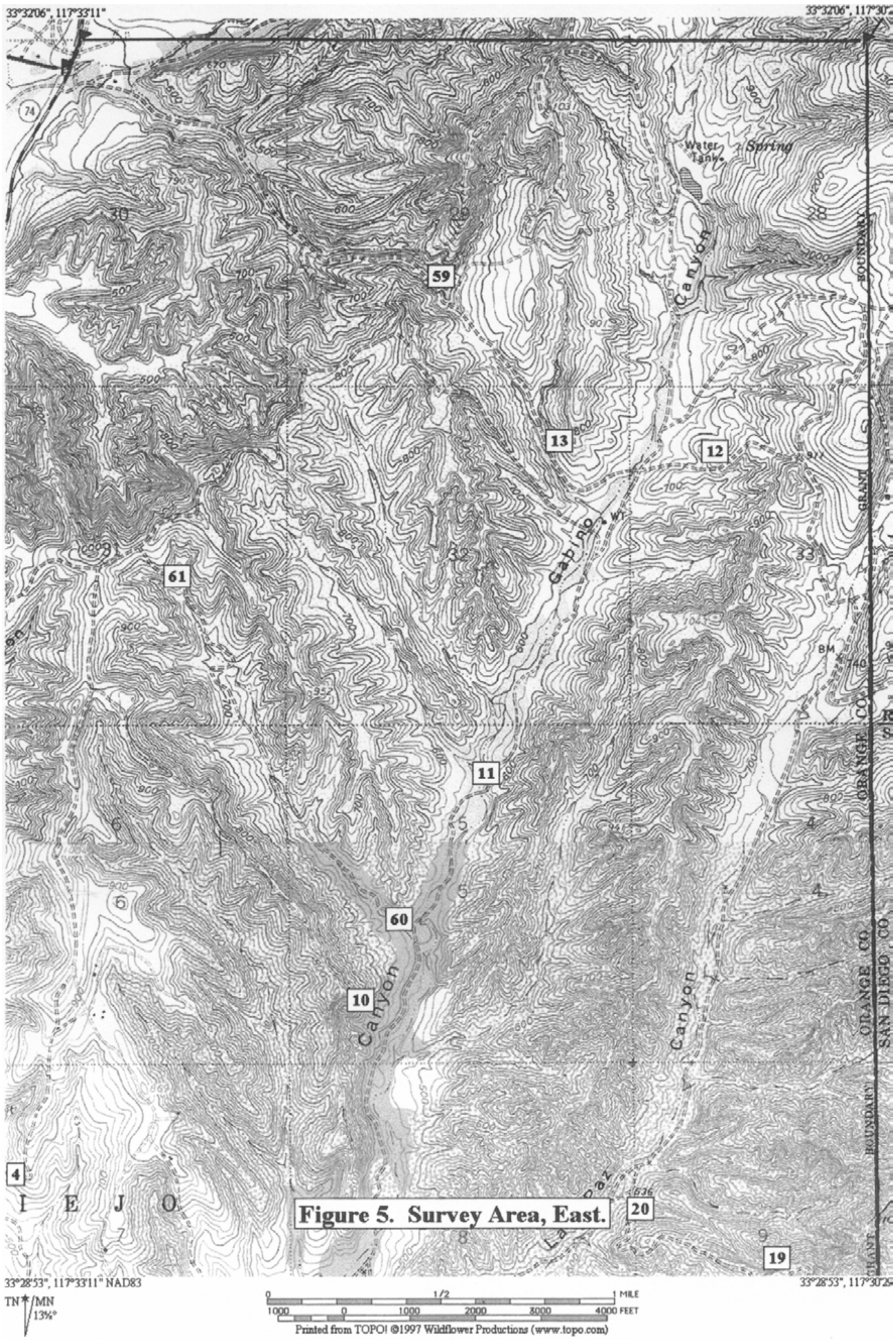


Figure 5. Survey Area, East.

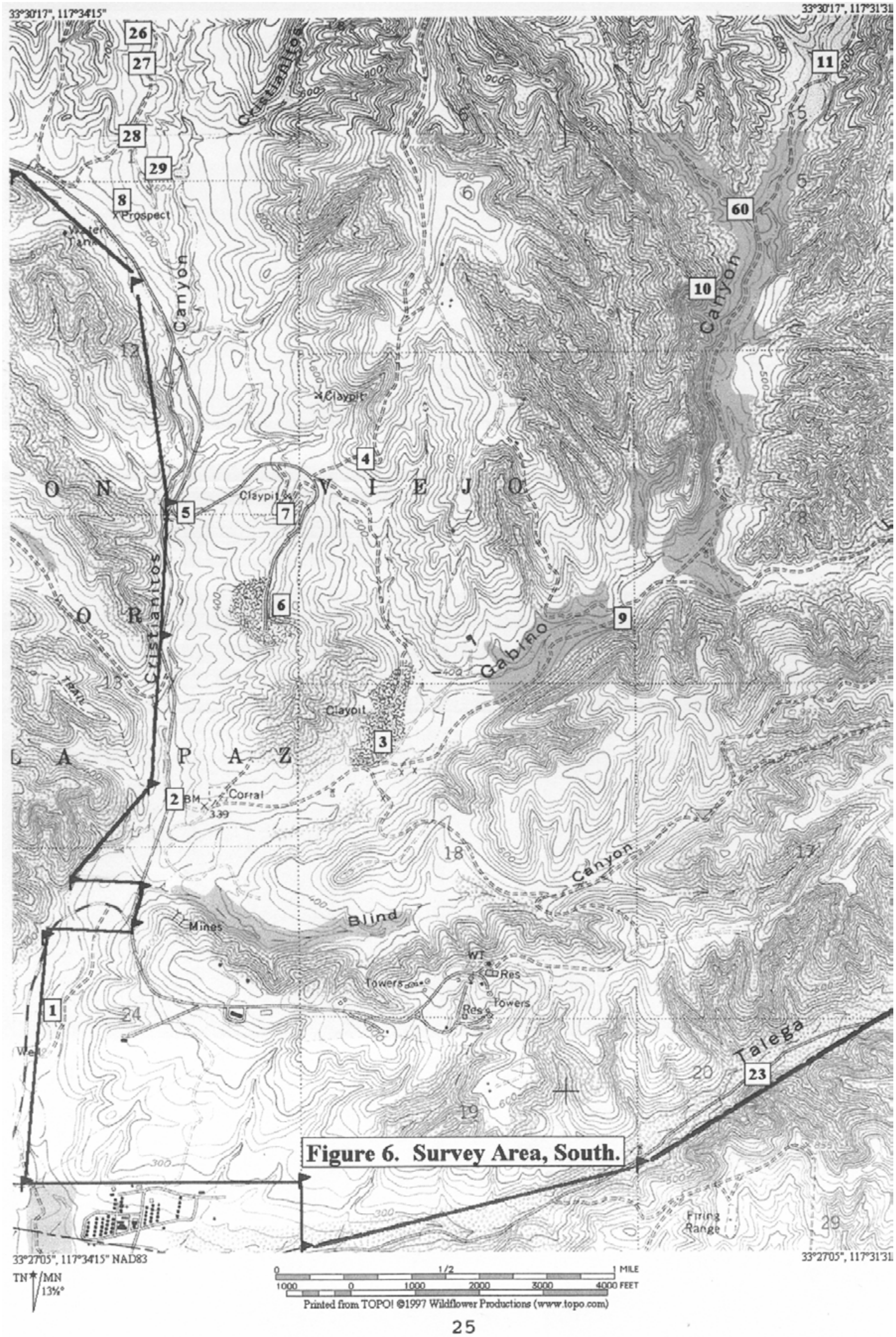


Figure 6. Survey Area, South.

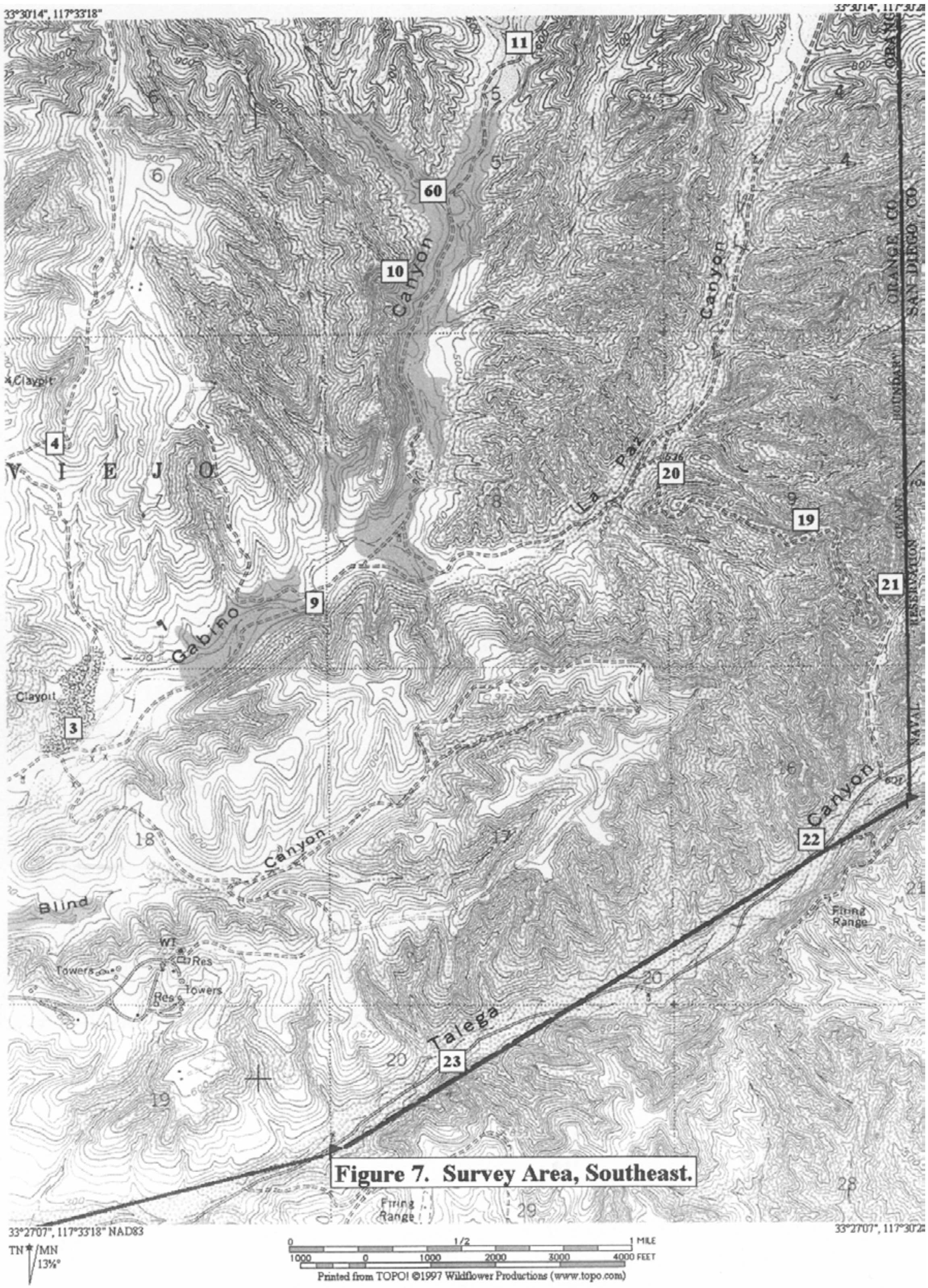


Figure 7. Survey Area, Southeast.

Figure 8 - Stops

This is a complete list of stops or outcrops studied during the fieldwork. Keep in mind, that: (1) Some stops include more than one formation, (2) the latitudes, longitudes, and elevations were taken from computerized TOPO! Maps, and (3) some stops occur on more than one figure due to overlaps.

#	Figures	Latitude	Longitude	Altitude	Formations	Fossils
1	6	33°27'42"	117°34'06"	226 ft	Tsa	not found
2	6	33°28'15"	117°33'44"	344 ft	Tsa	not found
3	6, 7	33°28'28"	117°33"06"	374 ft	Tsa, Tsi	not found
4	5, 6, 7	33°29'09"	117°33'08"	688 ft	Tsa, Kwp	not found
5	6	33°29'01"	117°33'44"	380 ft	Qt	not found
6	6	33°28'44"	117°33'26"	541 ft	Tsi	not found
7	6	33°29'02"	117°33'24"	515 ft	Tsi	not found
8	6	33°29'47"	117°33'55"	488 ft	Tsi	not found
9	6, 7	33°28'45"	117°32'22"	390 ft	Kws	not found
10	5, 6, 7	33°29'35"	117°32'06"	597 ft	Kws	not found
11	5, 6, 7	33°30'10"	117°31'43"	613 ft	Kws	**trace fossils**
12	5	33°30'59"	117°31'02"	784 ft	Kt	not found
13	5	33°31'01"	117°31'31"	718 ft	Kws	not found
14	3	33°30'47"	117°37'18"	337 ft	Tm	**fish**
15	3	33°30'20"	117°36'44"	882 ft	Tso	not found
16	3	33°30'15"	117°36'12"	994 ft	Tso	not found
17	3	33°30'37"	117°36'11"	1089 ft	Tso	not found
18	3	33°31'13"	117°36'36"	337 ft	Qac	not found
19	5, 7	33°28'54"	117°30'52"	862 ft	Qt	not found
20	5, 7	33°29'05"	117°31'16"	633 ft	Kws	not found
21	7	33°28'45"	117°30'36"	836 ft	Kws	not found
22	7	33°28'07"	117°30'49"	587 ft	Kws	not found
23	6, 7	33°27'32"	117°31'58"	462 ft	Kws	not found
24	3, 4	33°31'00"	117°35'37"	314 ft	Tsa	not found
25	4	33°30'38"	117°34'04"	600 ft	Tsa	not found
26	4, 6	33°30'16"	117°33'49"	587 ft	Tsa	not found
27	4, 6	33°30'09"	117°33'50"	583 ft	Qac	not found
28	4, 6	33°30'00"	117°33'53"	557 ft	Tsi	not found
29	4, 6	33°29'55"	117°33'46"	524 ft	Tsi	**petrified wood**
30	1	33°35'28"	117°36'12"	803 ft	Ts	not found
31	1	33°35'13"	117°36'23"	823 ft	Ts	not found
32	2	33°32'53"	117°37'06"	757 ft	Tm	not found
33	2	33°33'21"	117°37'19"	846 ft	Tso	not found
34	2	33°34'05"	117°37'09"	564 ft	Ts	not found
35	3	33°31'35"	117°36'57"	269 ft	Tt	**oyster bank**

Figure 8 – continued

#	Figures	Latitude	Longitude	Altitude	Formations	Fossils
36	3	33°31'37"	117°36'53"	275 ft	Tt	**oyster bank**
37	2, 3	33°31'56"	117°36'43"	311 ft	Tsa	not found
38	2	33°32'14"	117°36'35"	301 ft	Tsa	not found
39	2	33°33'03"	117°36'33"	406 ft	Tsa	not found
40	2	33°33'09"	117°35'44"	505 ft	Tsa	not found
41	2	33°33'06"	117°35'39"	456 ft	Tsa	not found
42	2	33°33'52"	117°35'54"	646 ft	Tsa	not found
43	2	33°34'05"	117°36'14"	738 ft	Tsa	not found
44	2	33°33'53"	117°36'29"	567 ft	Tsa	not found
45	2	33°32'01"	117°36'04"	479 ft	Tsa	not found
46	2, 4	33°32'22"	117°35'16"	400 ft	Tsa	not found
47	4	33°32'42"	117°34'19"	780 ft	Tsa	not found
48	2, 4	33°32'16"	117°34'33"	741 ft	Tsa	not found
49	2, 4	33°32'03"	117°34'43"	629 ft	Tsa	not found
50	2, 4	33°31'47"	117°35'16"	334 ft	Tsa	not found
51	2, 4	33°32'13"	117°35'17"	360 ft	Tsa	not found
52	3	33°31'10"	117°37'31"	157 ft	Qac	not found
53	4	33°31'16"	117°35'18"	311 ft	Tsa	not found
54	4	33°30'54"	117°35'04"	262 ft	Qac	not found
55	4	33°30'58"	117°35'21"	255 ft	Tsa	not found
56	4	33°31'22"	117°33'33"	331 ft	Kwp	**petrified wood**
57	4	33°31'30"	117°33'33"	347 ft	Qt	not found
58	4	33°31'41"	117°33'42"	446 ft	Qt	not found
59	5	33°31'27"	117°31'56"	669 ft	Kws	not found
60	5, 6, 7	33°29'50"	117°32'00"	524 ft	Kws	not found
61	5	33°30'41"	117°32'42"	843 ft	Kwp	not found

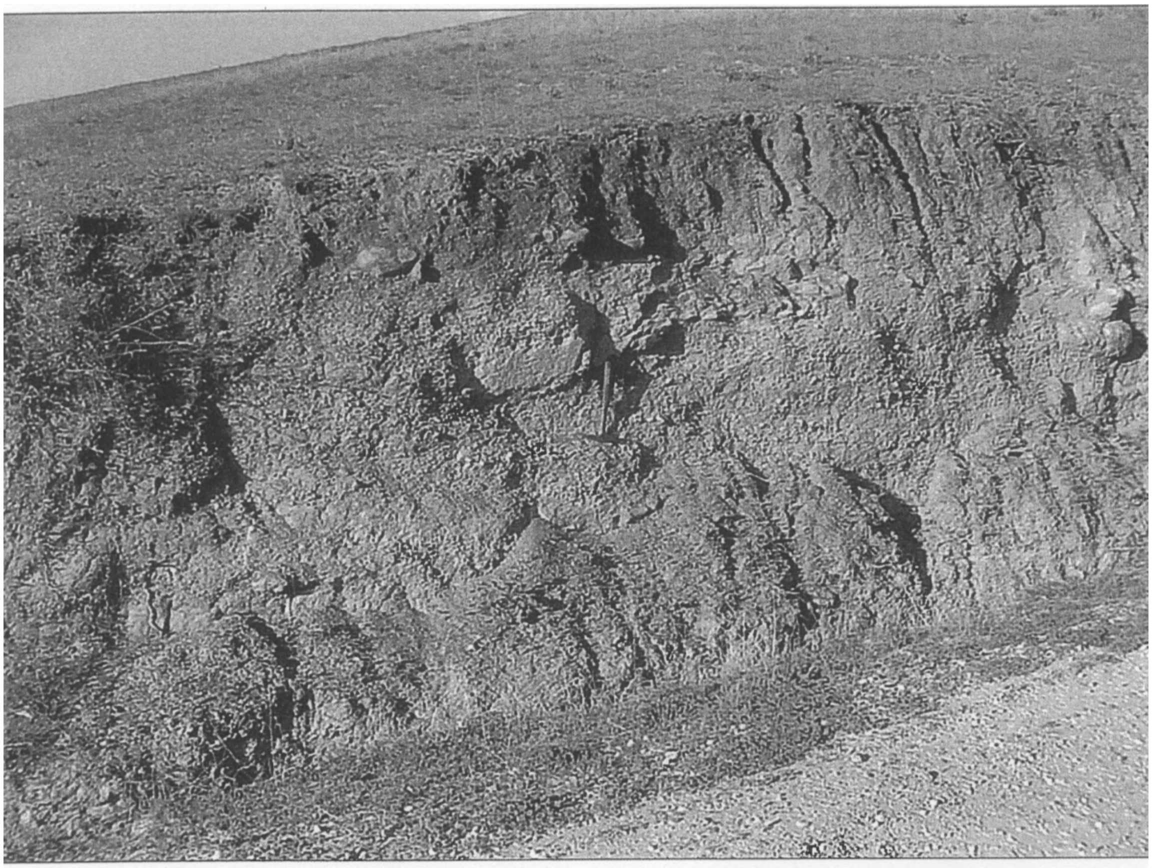


Figure 9. Stop 12, Trabuco Fm – Kt, early late Cretaceous. This is one of the best outcrops of this formation in the project area.

Figure 10. Stop 11, Williams Fm, Schulz Ranch Member – Kws, Late Cretaceous. This is the only stop out of ten stops of this formation where trace fossils occurred.

Figure 11. Stop 56, Williams Fm, Pleasants Sandstone Member – Kws, Late Cretaceous. Several pieces of tree trunks and pelecypod shells occur near the bottom of San Juan Creek. The piece in this figure is almost one foot long. The largest one was over three feet long.

Figure 12. Stop 6, Silverado Fm, Tsi, Paleocene. This formation is very colorful. Notice the thick horizon of lignite in the middle part of the picture. The reddish strata above the lignite are clays and siltstones.

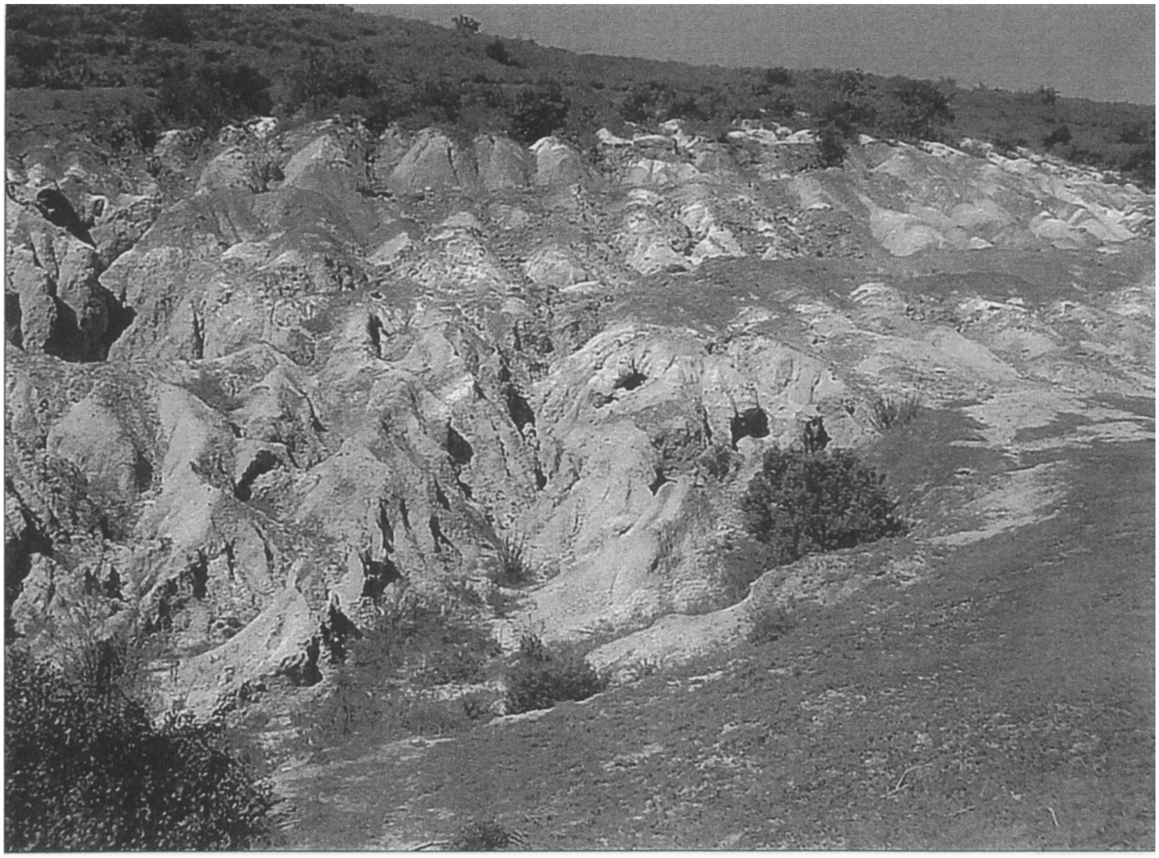


Figure 13. Stop 29, Silverado Formation – Tsi, Paleocene. This stop produced large amounts of petrified wood fragments, found mostly in the lower third of the outcrop.

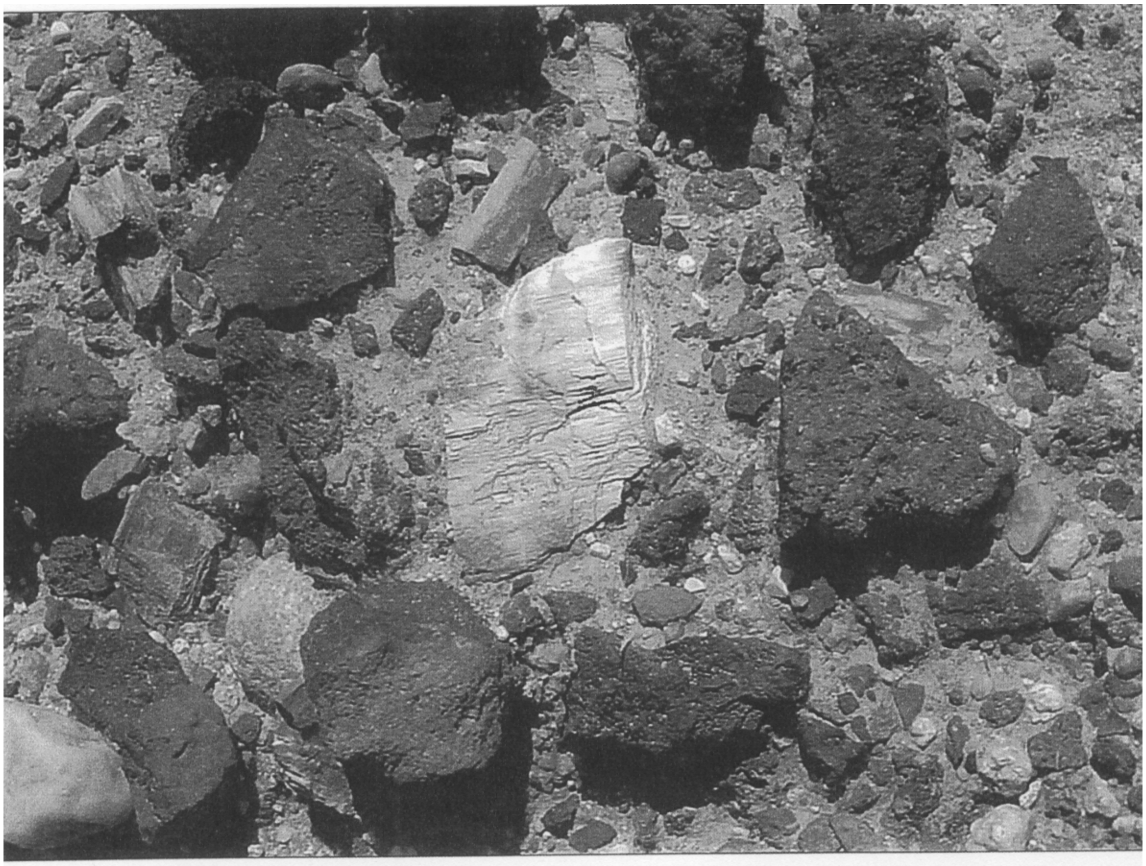


Figure 14. Stop 29, Silverado Fm – Tsi, Paleocene. This stop produced large of petrified wood debris, such as the light-gray fragment in the center of this picture.

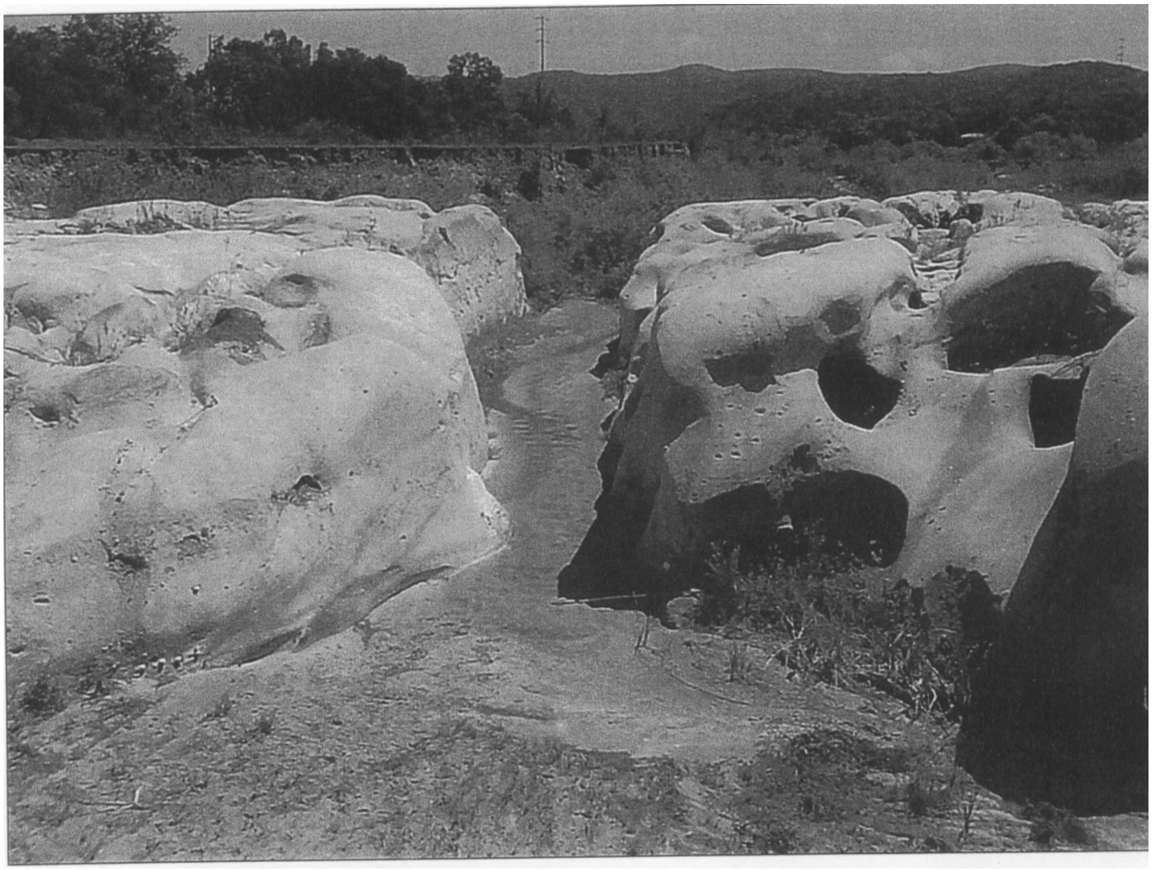


Figure 15. Stop 55, Santiago Fm – Tsa, Eocene. This stop was one of the largest outcrops studied during the Ranch Plan survey. The massive sandstone extends at least 150 m on both sides of San Juan Creek. Despite a large effort, this stop did not produce any fossils.

Figure 16. Stop 31, Sespe Fm – Ts, Eocene. Badland topography quickly develops on freshly exposed Sespe Formation. This outcrop is located on the future Tesoro High School property in upper Chiquita Canyon. Despite excellent exposures and a large effort, no fossils have been found on this site.

Figure 17. Stop 36, Topanga Fm – Tt, Middle Miocene. The Topanga in the survey area is quite rare. At this stop, it forms ledges of exposed fossiliferous oyster bank. The boulders in the middle of the picture came from the oyster bank just above them.

Figure 18. Stop 36, Topanga Fm – Tt, Middle Miocene. The Topanga at this stop forms ledges of exposed fossiliferous oyster bank. This is a detail picture of the oyster bank. The large shell belongs to the genus Pecten.

Figure 19. Stop 16, San Onofre Breccia – Tso, Miocene. This coarse-grained, massive or poorly bedded and sorted rock unit accumulated from and marine and non-marine debris flows and avalanches. No fossils were found during the survey.

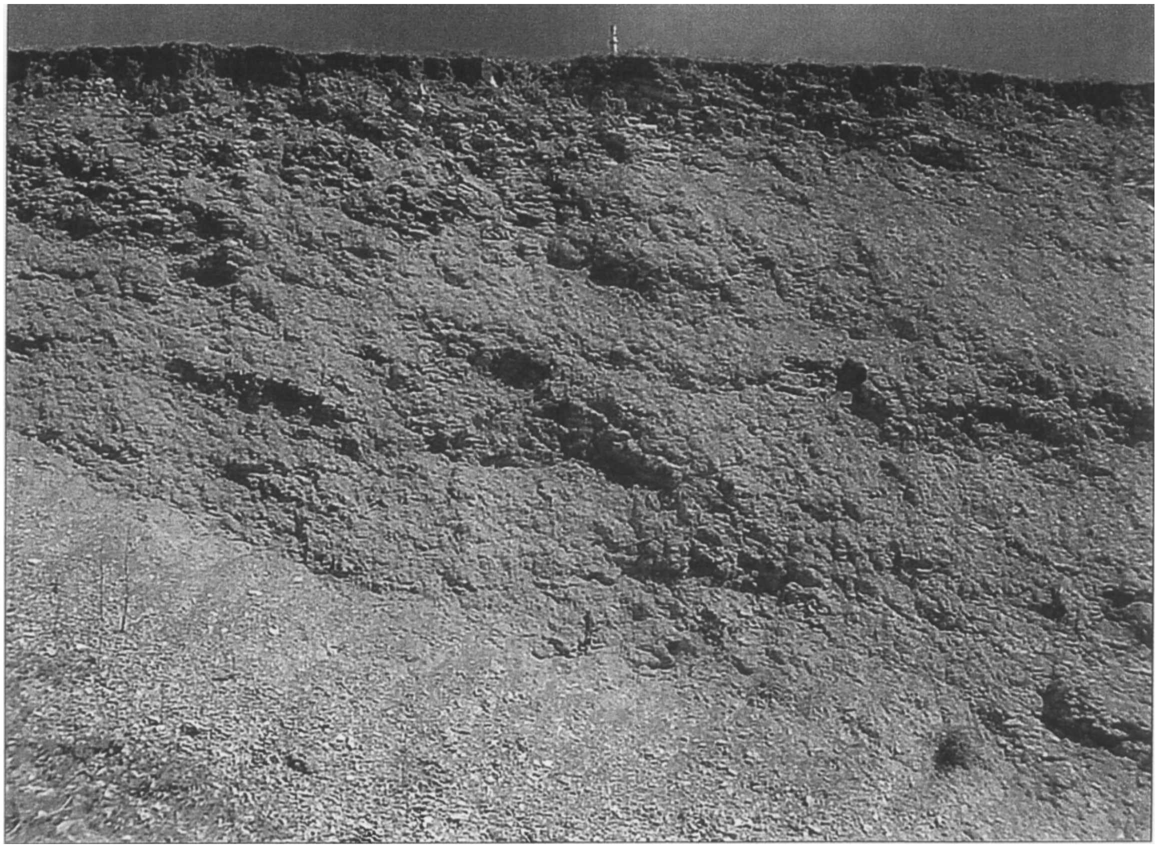


Figure 20. Stop 14, Monterey Fm – Tm, Miocene. This outcrop produced many fossils typical of this formation, including fish bones and scales, coprolites, and indeterminate mammal bone fragments.

Figure 21. Stop 58, Quaternary Non-marine Terrace Deposits – Qt. Such deposits are rarely fossiliferous, but if fossils occur they can be very important.

Figure 22. Stop 54, Quaternary Alluvium Deposits – Qac. Such deposits are rarely fossiliferous, but if fossils occur they can be very important. This particular deposit accumulated in the San Juan Creek bed.

Figure 23. Stop 18, Quaternary Colluvium Deposits – Qac. Such deposits are rarely fossiliferous, but if fossils occur they can be very important.

RANCHO MISSION VIEJO: AN ETHNOHISTORY

By:

Nancy H. Evans, Ph.D.

Of:

Archaeological Resource Management Corporation
1114 N. Gilbert Street
Anaheim, CA 92801
714/491-9702

For:

Rancho Mission Viejo, L.L.C.
P.O. Box 9
San Juan Capistrano, CA 92693

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RANCHO MISSION VIEJO: AN ETHNOHISTORY

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RANCHO MISSION VIEJO: AN ETHNOHISTORY

INTRODUCTION

This ethnohistory is part of the archaeological report (see Demcak 2000) for Rancho Mission Viejo's Ranch Plan. It is not a formal history per se but a specialized reconstruction of, at least partially, the prehistoric and ethnic groups whose cultural traditions and lifestyles have not been described completely in the environment in which they took place. Although the written records provide a rich background, they had not been brought together to form a coherent whole. This ethnohistory has included some archaeological research, linguistic data, and oral interviews which emphasize the Native Californians, Californios, and others of Mexican-American descent who have lived on and participated in the environmental, economic and cultural changes on the Rancho Mission Viejo.

Prehistorically, the Rancho Mission Viejo was situated within the domain of the Juaneño Indians. Their name, Juaneño, was derived from the Mission San Juan Capistrano, placed in the heart of their territory by the Spanish missionaries. As the coastal southern California Indians became missionized, the early European and American colonists began to refer to those who lived around and associated with a particular mission by its name, hence they were the Juaneño Indians. The Luiseño Indians in San Diego, to whom the Juaneño are most closely related, were those associated with the Mission San Luis Rey.

Culturally and linguistically, the Juaneño and the Luiseño are so closely related that some anthropologists (Bean and Shipek 1978) have viewed and written about them as the same group with a few dialectical differences. But the Juaneño and Luiseño not only view themselves as separate, but also have had very different post-contact histories. Further, the Juaneño have reclaimed the name "Acjachemen" or "Acjachemen Nation". This was the name by which Father Geronimo Boscana (1978; Harrington 1934) referred to them at the mission. This Franciscan missionary who was stationed at the San Juan Capistrano mission between 1814 and 1826, interviewed and wrote about the Indians there. He referred to the Juaneños by their main village name, Ahachmai, and also recognized the Gabrielinos and the few Cahuillas who also lived there. Currently, most of the Juaneño use both terms, as in the "Juaneño Band of Mission Indians Acjachemen Nation." In this ethnohistory, however, the Juaneño will be discussed as a separate group from the Luiseño, but using the term 'Juaneño' since that is still the most common name by which they are recognized today.

Prehistoric Period

The Juaneño territory extended south into San Diego County to Las Flores (Las Pulgas today) between the San Onofre and Las Pulgas creeks. It spread east to Santiago Peak and the crest of the Santa Ana Mountains, and north to Los Alisos Creek although the Juaneño probably shared the area including Newport Beach (Earle and O'Neil 1994) with the Gabrielino. They shared the southern river valleys with the Luiseño, the eastern mountain crest with the Cahuilla and the Gabrielino, some of which came to the Capistrano mission to be missionized. These groups are all related linguistically. The Juaneño, along with the Luiseño, Gabrielino, Cupeño, and the Cahuilla belong to the Cupan group of the Takic family or subfamily of languages. The Takic sub-family, often called the southern California Shoshonean languages, is part of the Uto-Aztecan stock that includes many other language families (Bean and Shipek 1978; Shipley 1978:90).

The Juaneño Indians had the unique distinction of being the only tribe in California to have had a relatively full description of their culture written down at the advent of the Spanish occupation. Father Boscana, as mentioned above, learned their language, observed their ceremonies and asked questions about the ritual, social, and material world of the Juaneño. Despite a strong racial bias, Boscana's manuscript, of which only two copies were extant but were both translated (Boscana 1978; Harrington 1934), was said to be "easily the most intensive and best written account of the customs and religion of any group of California Indians in mission days" (Kroeber 1925:636). Further, the copious and illustrative annotations by J. P. Harrington (Boscana 1978), an excellent anthropological linguist, provided access to more Juaneño language than would have been available otherwise. But adding to this work, excellent ethnographers (Dubois 1908; Sparkman 1908; Strong 1929) visited the Luiseño, who were not missionized until 1798 and with less disruption than the Juaneño, and these ethnographers added not only new data but much needed analysis.

Like that of most California Indians, the Juaneño world at the time of European contact was built on religion, ritual and social hierarchy. Every Juaneño village was a clan tribelet, that is, a group of people related through the male line which controlled the surrounding area in common and were politically and economically autonomous from other villages. The exception to that rule might have been a particularly large village whose chief also controlled two or three neighboring and small satellite villages. The surrounding area was filled with named places associated with their food products, i.e. the acorn gathering area, raw materials for tools, or sacred beings who determined appropriate behavior in those areas. Each place was owned by an individual, a family, the chief, or the group collectively. Only by getting permission could someone gather on territory other than his own.

The Juaneño were not agriculturalists but they nurtured certain plant species and paid careful attention to how environmental and climatic conditions affected the plant and animal communities. Women, with the occasional help of children, were responsible for gathering most of the vegetable products. Acorns were the most important staple food as with most California groups; six species were used by the Juaneño (Bean and Shipek 1978:552). But a wide variety of seeds, fruit, greens, cactus pods, berries, yucca buds, bulbs, roots, tubers, mushrooms and tree fungi supplemented their vegetable menu, and crustaceans and mollusks were collected at the coast. Men were the most frequent collectors of tobacco (*Nicotiana attenuata*) and toloache or Jimson Weed (*Datura meteloides*) for their sacred rituals. The plants were prepared both for their hallucinogenic powers and their medicinal effects. Men were the large game hunters, but they also snared and shot birds, hunted large sea mammals, and caught fresh and saltwater fish. Juaneño hunting and horticultural efforts included the following:

> Fire was used as a crop-management technique as well as for community rabbit drives. The annual return from certain wild foods and useful plants-grass seed, some greens, yucca, and basket grasses-was maintained by burning at least every third year (Bean and Shipek 1978:552).

Village sites, or "rancherias" as the Spanish called them, were located near a potable water source, rich food resources, some bedrock outcroppings, if possible, for seed and acorn grinding, and, more often than not, a commanding view of the area. Houses were built in an orderly arrangement, and were conical shelters with thatched roofs and sided with tule, brush or bark. Their floors were dug several feet below ground level that, no doubt, provided some insulation, and there was a fire pit in the center. Each house had a ramada, four poles with a rectangular roof, for a shaded work area. The most important structure in each village was the vanquex, or enclosure sacred to Chinigchinich. It "was built at all the rancherias near the house of the chief, which house was always the biggest and tallest one…located at about the middle of the town" (Boscana, in Harrington 1934:35).

Ceremonial ritual took place primarily in front of the vanquex or inside its walls where only the religious chiefs and shamans were allowed. Puberty rites for boys and girls, and death rites for the initiated took place in the front or public area, and it was here that the sand paintings connected with the rites were made. Each painting represented an aspect of the universe, and all were destroyed when the ceremonies were completed. The sanctity of the vanquez was such that a wrong-doer, before his capture, could take shelter inside, and later, when he came out, he was absolved of his crime. This immunity from punishment was due to the perceived power of Chinigchinish who would do the punishing (Boscana, in Harrington 1934:37). The family of the guilty party, however, made restitution to the aggrieved family so that no retribution would be taken on them.

The Juaneño cosmology, which gave meaning to the religious rituals, began with Ouiot, a creator and culture hero combined who was born of a brother and sister, his earth mother and sky father. As the world's natural resources were also born, including people although they lived only on white clay, the earth increased in size. After Ouiot, their creator god, died, a general council had to make decisions and organize people's conduct for now they had to collect different types of food. After awhile, a spectre appeared who, when questioned, said he was not Ouiot but an even greater captain named Chinigchinich who lived above. He proceeded to assign various powers concerning food production to the individuals around him, e.g., to make rain, or to produce acorns. Then he created the real men and women whose descendents are alive today, and, while he was dancing in special robes with his skin painted black and red, he taught them the laws that he expected them to observe. Then, he separated out the chiefs and the elders, explaining that they alone should dance and robe themselves as he had done, and that they would be responsible for such tasks as curing the sick and relieving drought. They were to be called puplem, meaning that 'they would know all things'. (Boscana 1978:27-30).

The position of chief, whose responsibilities and role were hereditary, was inherited in the male line. He was assisted by a crier, who spread the news and delivered messages, and the puplem, the priest-shaman group who, together, conducted the rites for Chinigchinich in the vanquex in a specialized language which the rest of the community did not understand:

> The authority which the chief exercised in his rancheria was that he was the one to tend to and handle all matters which came up with other rancherias, to call together for war, defensive as well as offensive, and also for peace; to announce the day of all the feasts which they celebrated, which were many; to set the general days for hunting and seed gathering (Boscana, in Harrington 1934:33).

In the final chapters of Boscana's book, Chinigchinich, he (1978, Harrington 1934) related how people came from the north to populate the area and establish new villages. Although the leader of these new settlers, Chief Oyaison, returned home, he left his daughter Coronne, who changed her name to Putuidem and established the village of the same name. As the village name Putuidem grew, some of these newcomers began to move out to found new villages. But Putuidem, the chieftainess, eventually sent word for them to come back and attend a great feast, after which she died and turned into a big pile of earth. These settlers then left sadly for their own villages and on the first night they all stopped at the same place to sleep in a big pile. This place was then named Acagchemem, meaning 'a pile of moving things', later recalled by some as Axatcme (Harrington in Boscana 1978:237). Acagchemem is located very near where the Capistrano Mission stands today, and is the name by which many of the Juaneño people often refer to themselves today. The term, Axatcme, seems to have been expanded into the name of a larger area, possibly the size of the Juaneño territory as it has been described.

Boscana (Harrington 1934:60-62) listed the names of the fifteen villages in Chinigchinich that he was told about by the Juaneño. Those were the villages that those early settlers had founded, as well as the names of their first chiefs, and the translations of both sets of names. The first was Putuidem, quite possibly represented by the site at CA-ORA-855, a large Late Prehistoric village site approximately one-quarter league, or .649 miles (Pauley 2000:5) from the mission. The 6th village Boscana listed, Panga, or, written as Panhe on Kroeber map (1925:Pl. 57), and as Pange or San Matheo, alias Pange, in Merriam (1968:132), was said to mean 'cañada' or canyon, and "since the arrival of the discoverers has been called San Mateo. Its chief was named Sequilquix, which means plant that dries up." (Boscana, in Harrington 1934:61). Rivers (1991:37) equates the complex of archaeological sites CA-ORA-22, and SDI-4282, SDI-4535 and SDI-4412 near the mouth of San Mateo Canyon to Panhe or Panga. Others of these named village sites, most of whom are also listed in the Register of Baptisms, vol.1-2, for the Capistrano Mission, are not yet as clearly located, and will be discussed in the next section.

European Contact

European ships had been sailing along the California coast since 1542, and in a few places in northern California, shoreline meetings had been made. But in July,1769, the Spanish exploring party led by Gaspar de Portolá, the new governor of California, left San Diego for a trek northward to Monterey and was the first exploration mounted on land. This party of 63 men and 100 horses and mules (Carrico 1977, Meadows 1965:24) traveled for one week, at the rate of two to four leagues (5-10 miles) per day before they left San Diego County and entered Orange County. In that company, six extant accounts were kept during the expedition. Portolá kept a very brief record along with his second in command, Rivera y Moncada. Lieutenant Fages, Sargeant Ortega, and Engineer Costanso also made records. The final and most complete diary belonged to Father Juan Crespi (1927) who kept quite detailed observations and comments. In the party were 33 soldiers, 7 muleteers, and 15 christianized Lower California Indians carrying tools to break trail if necessary (Bancroft 1883:vol.II:141). The scouts and most of the Indians stayed out ahead of the main party.

Portolá was an experienced leader, and most of the party had just had a long trip from Mexico. In California, the daily marches through unknown lands were not more than half a day long, with frequent day layovers to rest and feed the pack animals. Through southern California, they were almost always following Indian trails, and though the terrain was not difficult, they were a large party and their animals consumed the resources rapidly. The Portolá party marched across Orange County for one week that included one day of rest, and met with friendly and generous Indians all along the way. Those days are listed below, with the activities that took place on each day.

July 22nd -The explorers entered Orange County by way of the entrance to Christianitos Canyon where they camped above a pool of water in a dry arroyo that night. Fathers Crespi and Gomez returned to an Indian village they had passed and baptised two dying children. Crespi (Meadows 1963:38) said of this experience, "For this reason this place is known to the soldiers as Los Christianos: I named it San Apolinario: others call it Valley of Los Bautismos."

July 23rd – According to Father Geronimo Crespi (Palou 1926:123):

> After we two said Mass we started at seven o'clock, going to the north-northwest…we went on over mesas, hills, valleys and dry arroyos, ascending and descending, all the land being well covered with grass. We passed two valleys with two dry arroyos, both grown with alders and large live oaks. In one of the valleys we found a village of heathen, who, as soon as they saw us, began to shout; and they came out, as if to meet us at the watering place, where we went to stop. We must have traveled this day about four leagues in the four hours on the road.
>
> A little before eleven we came to a very pleasant green valley…It has a large arroyo, which at the point where we crossed it carried a good stream of fresh and good water…We halted there, calling it the valley of Santa Maria Magdalena. In the journey of this day we came upon some deposits of fine red ochre, and some others of very white earth. They are on some hills near which we passed, and we inferred at once that from this earth the heathen provide themselves for their paint, which is their gala dress for their visits and their war feasts (Palou 1926:123).

It is at this point that a consideration of the names of the Indian villages Boscana recorded is relevant. Tobe, the eighth village name he recorded, meant "a kind of clay or fine argil, white, similar to white lead, with which the women painted themselves" (Boscana, in Harrington 1934:61). The location of this site is assuredly on the Rancho Mission Viejo, in the neighborhood of Christianitos and Gabino Canyons, which has an abundance of fine clay deposits, several of which were mined there during the early 20th century. And further, there is a site with National Register eligibility, although not yet dated, CA-ORA-1222, (Demcak 2000) in the saddle of northern Christianitos Canyon with an excellent water source and historically worked clay pits located just downhill and south of the site. Discussions during two field visits (4/16/00, 5/20/00; Note1) considered the possibility of this being the site of Tobe.

Studies of Portolá's route made by a historian, Don Meadows (1963:38) and an archaeologist, Helen Smith (1965:29), both suggest that the Portolá party emerged into San Juan Canyon, the "pleasant green valley"...from a ridge west of Trampas Canyon with neither making an explanation for their choice. Perhaps a better choice by Portolá's scouts would have been a selection from one of the following routes: (1) Trampas Canyon itself, (2) a small draw to the east of Trampas, or (3) a recently surveyed trail site, CA-ORA-1554, (Demcak 2000) which leads from the northern saddle of Christianitos Canyon down into the San Juan Creek Valley. In any case, upper Christianitos might well have appeared to be the second of two eastern valleys, Gabino Canyon being the first, and Christianitos the one from which the Indians emerged. It is suggested here that the Portolá party may well have seen Indian people from the village of Tobe.

While camping in San Juan Canyon, the two priests with the Portolá party named their camp and the valley "Santa Maria Magdalena", for that religious feast day. They were probably camped on the eastern knoll overlooking the mouth of Canada Gobernadora in the heart of the Rancho Mission Viejo. There are a number of late prehistoric village sites nearby, within a mile or two, and although they may have been occupied, the vegetation could have blocked views of them, and possibly these Indian people were somewhat reluctant to show themselves. Note the unique description of the first observed Indian behavior in the next day's account:

> July 24th – We got up early this morning and broke camp at a quarter past six. Going north-northwest, we descended from the high hill on which we had stopped to a valley in the same direction. Before we left about nine heathen from a village in this valley allowed themselves to be seen. After traveling a short distance in it we came to two good villages, whose people were all very friendly. We greeted them in passing, and they made us their speech, of which we understood nothing. We traveled through this valley for about two leagues; it is of good land, but they had burned all the grass…After two leagues' travel we turned to the northwest, veering considerably to the west, in order to climb a high pass through a range of grass covered hills; and after traveling about a league over good mesas we descended to a pleasant arroyo, and a valley very full of large alders and live oaks, so that it looked like a fig orchard. After about three hours on the road from the starting place, during which we must have traveled as many leagues, we pitched camp on a very long mesa of earth, which runs to the foot of a high mountain range, from which flows an arroyo of good water. Instantly the Indians from a village in the valley came to visit us. They came without arms, and with a friendliness unequaled; they made us presents of their poor seeds, and we made return with ribbons and gew-gaws (Palou 1926:124).

For the first two leagues (or 5+ miles) the Portolá party appears to have been in Canada Gobernadora whose name, according to Meadows (1963:38) refers to the abundance of artemisia, or white sage, that grows there, Gobernadora being a provincial name for artemisia. The two villages they passed seem, almost certainly, to have been at the entrance to Wagon Wheel Canyon, a western offshoot of Gobernadora. Two archaeological sites, CA-ORA-564 and CA-ORA -991 are located on the west side of Wagon Wheel Canyon with a small gully between them. According to radiocarbon dating and obsidian hydration readings, these two village sites were "in use during the very Late Prehistoric, from as early as A.D. 1400 to perhaps after the time of European contact." (Allen et al. 1992:77)

One of these villages could have been Boscana's (Harrington 1934:61) thirteenth village, Uut, which signified a little stick [foreshaft] which was put on arrows. The evidence supporting this possibile village identification is not very strong, but Kroeber (1924:Pl. 57) places Huumai on a Juaneño territory map toward the center of Canada Gobernadora. In the Juaneño language, according to O'Neil (2000:19), if the noun indicator, the letter 't', is removed and the locative suffix, 'mai', is added, they are the same word. But challenging this location for Uut is a notation by Harrington (Oxendine 1980), that an unknown informant told him Humai was near the San Juan Capistrano Mission. Nonetheless, Humai or Uut could have been located in Wagon Wheel Canyon.

Wagon Wheel Canyon is short, and at its north end where it was described as having been burnt by the local people, it would have been an easy traverse west into and across Chiquita Canyon, and a slight descent into Tijeras Canyon and up along the Plano Trabuco. Crespi (Palou 1926:124) says that they "pitched camp on a very long mesa of earth, which runs to the foot of a high mountain range, from which flows an arroyo of good water". Portolá's party probably camped somewhere near the location of the ruins of the Trabuco Adobe, which on the San Juan Capistrano topographic 7.5" series map appears as the "San Francisco Solano site." That is the name Father Crespi (Palou 1926:125) gave their camp site, with the stated conviction that this was the place they would build a mission of that name. The very friendly Indians who came immediately to their camp, and spent the next day there, could have come from Boscana's fourteenth village, Alume, which signifies the head looking upward. Boscana (in Harrington 1934:92) said that "this alludes to the rancheria having been located at the foot of a very high mountain which today is called El Trabuco." And today, that same mountain is called Santiago Peak, or Kalawpa by the Juaneño Indians.

Recognizable variations of the name Alume in the two Books of Baptism are Alauna, Alaugna, and Alauna, and "alias El Trabuco" for the baptism recordations of at least 60 Indian people whose village it was (Merriam 1968:122). There are several sites that could be Alume, but CA-ORA-876, a huge site that is probably under and certainly surrounds the Trabuco Adobe, is the most acceptable one. It is an extensive site with many late artifacts such as both pre- and post-contact ceramics (Jones et al. 1995) and is eligible for the National Register.

The soldier explorers reported that from the highest point on the Plano Trabuco, they could see six islands including San Clemente and Santa Catalina. During the day of rest, the two priests walked up there but could only verify having seen the largest two islands. The Indians visited them again that day, and since Father Crespi observed in writing that their houses had been made of willows and their reed baskets could hold water, he must have visited the nearby village (Palou 1926:126-127),

When the members of the expedition left the Plano Trabuco on July 26th, they traveled to Tomato Springs on the Irvine Ranch, and there named it, "San Pantaleon". All along this week's trek across Orange County, they had met only friendly Indian people and on July 29th, 1769, one week after entering the County, they crossed the Santa Ana River and moved into Los Angeles County.

Although the Portolá party returned along the same route the following year, having failed to meet with the ship waiting for them in Monterey, in early 1770, the return trip was not only uneventful but much more rapid. Portolá's route of 1769 became the main route through California used for several years by the padres, the soldiers, and the Indians who traveled between the missions and to the headquarters, the presidio, at Monterey. It became known as El Camino Real, the Royal Road.

Mission Period

In Monterey, Father Serra appointed Fathers Lasuen and Amurrio to found a new mission between San Gabriel and San Diego in honor of St. John of Capistrano, an early member of his own order (Hallan 1975:12). Lasuen rode to San Diego for supplies and to request that Lieutenant Joseph Ortega, formerly a sergeant with the Portolá party, accompany him to help select a suitable site. Besides the usual resources of water, fertile soil, pasture, timber, etc., the site selected had the advantage of having many Indians living nearby. Soon however, problems began to arise that made this a less than ideal location. According to Father Mugártegui (Sleeper 1967:340), in his annual report of 1783:

> On the first of November in 1776 on the date dedicated to All Saints, this mission was founded in the glen popularly known as El Arroyo de la Quema at a site three-fourths of a league distant from what is called the Old Road, and about a league and a half distant from the seashore. There the mission remained for two years under many difficulties expecially because of the water scarcity which was insufficient not only for irrigating the plantings but also for drinking purposes…For this reason, taking the necessary measures, the mission was transferred to the site where it stands today, about three-quarters of a league distant from the glen…

This original mission site was located "in a place called by those born there 'Quanis-savit' (Meadows 1967:339) for the Indian village there. But because of the water scarcity and crop failure, the fathers choose a new site and it was inaugurated two years later by Father Serra. On the title pages of the Baptism and Death registers, therefore, Quanis-savit was crossed out, and changed to reflect the new location of Sajirit (Meadows 1967:342) where it is today.

Although everyone must have known the original location of the mission in those days, that knowledge disappeared along with the physical remains of the first mission, some of which was pirated away to be used at the new mission. Eventually, the adobe ruins at the mouth of the Cañada Gobernadora overlooking San Juan Creek which, in fact, had been an adobe building, was thought to have been the old mission. These ruins, which are no longer visible, but are labeled the “Mission Vieja Site” on the 7.5” topographical map, Cañada Gobernadora, California (1968, photorevised 1988), will be discussed later.

The aforementioned mistake would probably not have happened had the Annual Reports of the Mission San Juan Capistrano between 1779 and 1793 not been lost for a century and a half. Fortunately, Reverend Geiger, O.F.M. (1967) found them in the Archivo General de la Nación, Mexico City, and wrote about them. Communication between Father Geiger and Don Meadows (1967:341) allowed the latter to conclude that the original mission had been on the south side of San Juan Creek and more than a mile downstream from the adobe site. This logical place is the Lacouague family citrus ranch, purchased and planted in 1923, and also the location of the large, and reportedly, very rich archaeological site, CA-ORA- 243, two miles east-northeast of the present San Juan Capistrano Mission. The evidence for this site being the original location of the first San Juan Capistrano mission, the Misión Vieja, seems quite conclusive.

The first structures built at the final site were a church, living quarters for the padres, and a shed for the calves. The first crops planted were vineyards and a vegetable garden, which indicate what the padres had with them and felt they needed. Unlike other missions, the Capistrano missionaries wrote that they were besieged with requests for baptism from the Indians. It is unlikely, however, that the missionaries were moving the Indians to the mission site immediately as some were already living there and they would have had no way to feed many others. In fact, although it is seldom mentioned, the Indians must have continued to visit their village sites and collect their own traditional foods for some time. Further, the soldier mission guards immediately began to molest the Indian women. This was a never-ending problem, the priests complained, and in the early days before there were protective structures to house the women, it was probably safer to leave them in their villages.

In 1786, ten years after the mission’s founding, the priests had added a dormitory for unmarried girls (1779), a storeroom, a chicken coop, two warehouses (1881), a permanent church (1782), a corral, an adobe calf barn, a winery, and a permanent barracks (Kelsey 1987). There were 544 Juaneño neophytes, most of whom were probably living near the mission most of the time. Joyce Perry, a Juaneño living in Irvine, California, shared her family genealogy for the purpose of illustrating where some of the neophytes had come from. Two of her 8^{th}

generation ancestors were a couple from Alume on the Plano Trabuco, and one ninth generation male and his parents, a married couple from the 10th generation were all from the village of Cuinisavit, near the original Misión Vieja, both villages on the Rancho Mission Viejo (Perry 2000).

Constant building in the next few years could not keep up with the needs of the mission community, and in 1794, forty small adobe houses, some with tile roofs, were built for Juaneño families. This was the only California mission to construct permanent structures for the neophyte families.

By 1797, the mission had baptised 1107 Indians (Engelhardt 1922:175). The mission's most important building, a great stone church was begun that year. When it was completed in 1806, President Tapis of the mission system dedicated it with many visiting priests and dignitaries, and crowds of Indians attending the ceremonies. According to Bancroft (1883, vol. II:110), the three day celebration was remembered for many years.

Mission production had increased significantly by 1810. In 34 years, the cattle had multiplied to 10,213, they had 693 horses and the sheep, while having decreased from a high of 17,030, were still a respectable 11,500 in number. The crops, however, had decreased from 6,240 bushels in 1800 to 5,300 (Bancroft 1883, vol. II:110).

By this time, the number of livestock required large amounts of land for pasturage, and therefore the neophytes' former village areas provided that land. As Rojas (1964:26) commented:

> The padres trained native Indians as vaqueros as the herds increased, despite the Laws of the Indies which forbade Indians, on penalty of death, to ride horses. The Spanish feared the Indians would become warriors like Apaches. Subsequent events proved that the Spaniards were not wrong. The padres were good teachers.

The Juaneño neophytes, now trained in livestock handling, cared for them at outposts built on what was now considered the mission property. All the lands between the San Mateo and Santa Ana rivers fell into the jurisdiction of the Capistrano mission. According to Hallan (1975:20) this land was divided into six huge ranchos and three portreros, or pastures, called Las Flores, the Cerro de Trabuco and the Misión Vieja. Each rancho had its own adobe and mayordomo, and probably his family, and a crew to manage the huge herds. As Sleeper (1988a:195) explains:

> The largest of the mission's outposts was the twenty-by-seventy foot home of the mayordomo of Rancho Trabuco, near Portolá's campsite. Its ruins still survive. Several times enlarged, the

> adobe's origins are conjectural, but construction and statistics suggest a beginning date of 1806 when some 1,400 mustangs bore the "CAP" (mission) brand. Church records mention the Mesa as a horse farm.

In 1812, tragedy struck at the mission. Massive earthquakes shook California and a major part of the stone church collapsed while mass was being given. At least 40 people were killed, and the building programs halted. When they resumed in 1814, a new hospital was constructed, with a church chapel in 1818 (Kelsey 1987:21,24) as various epidemics, such as measles in 1806, and tuberculosis, syphilis, and dysentery were raging throughout the missions (Cook 1943:22-30). As the mission population was declining because of disease, little building took place after that time.

The pirate, Hippolyte Bouchard, caused a huge sensation in 1818 as he began to raid along the California coast. After he left Santa Barbara, messengers were sent to warn Capistrano. The mission fathers packed up the mission valuables and left for the Trabuco adobe with the populace for safety. When the pirates threatened the defensive force under Santiago Arguello, he ordered his men to retreat to a high hill where they watched while Bouchard's 140 men destroyed property, set fires, and drank all the wine and spirits. The pirates left the next day, still intoxicated and hung over. Hallen (1975:20) says that this incident was the beginning of all the stories of buried treasure that persist in San Juan Capistrano.

Mexico won her war of independence from Spain in 1821, and in the following governmental change in California, the Spanish priests were told to leave and plans for the Indian emancipation were begun. The Mexican priests took over the missions, the Indians held mixed emotions—elation, confusion, fear—and many left the missions for the larger communities and the ranchos that had been carved out of mission lands. In 1829, an American, Alfred Robinson (1846:28), was traveling with a friend who knew the priests in Capistrano where he stopped for the night, and noted the current conditions:

> Two aged missionary friars resided here, but one alone attended to the temporal concerns of the Mission; this was Padre Geronimo Boscana; the other, Padre José Zalveder, sic (Zalvidea) though at this time secluded, and apparently weak in mind, once took an active and laborious part in the management of the Missions. This establishment was founded in 1776, and , though in early years the largest in the country, yet is now in a dilapidated state, and the Indians much neglected.

In the first census of Los Angeles, the Padron of 1836, there were 2228 people listed living in the Los Angeles district, 553 of them were Indians enumerated only by a single name but giving their sex and age, and place of birth for some.

Although the census is incomplete, missing whole ranchos and neglecting to show where most of the Indians were born, it lists 19 Indians from San Juan Capistrano living on the Rancho Los Alamitos and four living in Los Angeles. Also on the census was Juan Forster from England, listed as single and living in a boarding house. He would shortly begin to place an illustrious role in the history of southern California (Layne 1936:84,100-109).

San Juan Capistrano was secularized and organized into an Indian pueblo in 1833. The Juaneño Indians were expected to move south along the coast to San Mateo which was to be one of the model Indian towns. Some moved, and some objected, insisting that they wanted to keep their well watered lots in San Juan and areas nearby (Bancroft 1883, vol. III:332). Various administrators were appointed including Santiago Arguello and a Belgian, Augustin Janssens, who lived in the Trabuco adobe while Arguello went north to Monterey to petition for the rancho (Hallan 1975:26). He was successful. In 1840 and again in 1841 Governor Alvarado signed over to his old friend, Santiago Arguello, and to his two sons Santiago and Jose Ramon, the two square leagues (about 8000 acres) located on both sides of Trabuco Creek, which was called De La Victoria at that time (Bowman 1958:840). Some people said this was a trade off, one that ended the administration of Arguello of whom the Indians had complained so bitterly.

Father Zalvidea, however, continued to petition the governor on behalf of the neophytes who were complaining, this time, that several men were trying to get grants of the mission lands. Again, on March 14, he asked that Janssens be prevented from taking the Indians from San Juan which he had no authority to do, and, finally, that Arguello and Estudillo be ordered to remove their cattle from the Trabuco and the Misión Vieja (Bancroft 1883, vol. III:625).

In 1841 also, Governor Alvarado gave the Misión Vieja of sixteen leagues to Jesse A. Estudillo provisionally (Bowman 1958:441). Estudillo must not have fulfilled the provisions as the rancho was soon abandoned, and then renounced in 1843. As conditions in Capistrano continued to deteriorate, Governor Alvarado decided that the Indian pueblo would be dissolved, the property sold, and a new town to be formed and named 'San Juan de Arguello'. Therefore, a commissioner was sent to distribute the San Juan lands among the ex-neophytes, about 100 in number, and about 40 petitioners, only a few of whom ever arrived to occupy the land. Thirty-four settlers and five free neophytes received from 100 to 300 varas. Of the neophytes, each family was given 100 varas, and 50 varas to each single man. Bancroft (1883, vol. III) reported that the San Juan Indians chose the eastern valley, also known as the San Juan Creek Valley. Seventy-six years later, in 1917, a Juaneño couple told Father Sullivan (in Harrington n.d., Reel 121) that:

> When Santiago Arguello was sent here by the Governor he told the Indians they might choose either the valley of the Trabuco or that of the Mision Vieja. They choose the Mision Vieja, and

> lived all along the river, and up in the Gobernadora and the Canada Chiquita, where the remains of their dwellings may be seen.
>
> …A few Indian families remained on the Trabuco side, because they had roots (grapes, etc.) there; (1) Magdalena, the grandmother of Damian Rios, (2) Lazaro, the father of Acu, (3) Zephyrino Parojes and his wife Aguida.

Conditions in San Juan had gone from bad to worse. Of the five or six commissioners that were sequentially appointed, each soon resigned or proved unfit, and the pueblo became badly demoralized. Finally, in 1845, when Pio Pico became governor, a large part of the ex-mission buildings and gardens were sold to Juan Forster and James McKinley by order of the government (Bancroft 1883, vol. III:626-627).

Don Juan Forster

John Forster, who was listed in the Los Angeles Census of 1836, came to California from England in 1833 at the behest of his uncle to work in his import business with headquarters in Sonora, Mexico. In 1836, Forster decided to stay permanently in California, and the following year, he was baptised 'Juan' Forster in the Catholic Church and married Isadora Pico, sister of Pio Pico who, at the same time, became his sponsoring godfather. In late 1837, Juan Forster and his new wife, Isadora, seem to have visited the San Juan Capistrano Mission. In Book 2, the second Book of Baptisms, there is an entry on November 30, 1837, for a female child of 3 years old, Gertrudis, of gentile Yuman parents, their names were not inscribed, therefore probably not known. She may have been an orphan. Her godparents were listed as Juan Forster and Isadora Pico, and the entry was signed by Father Zalvadea.

The Forster family moved to San Pedro where they started a family, and Mr. Forster worked as a shipping agent for his uncle in Mexico, and also as captain of the port. Very soon thereafter, Juan Forster decided to go into stock raising and moved the family to San Juan in 1844. There they purchased the Mission San Juan Capistrano for $710 and moved their family into it (Bancroft 1883, vol. III:744), By that time, they had six children.

In 1845, Forster purchased the Rancho La Paz, later known as the Rancho Mission Viejo, from Agustin Olvera days after Olvera had received this large land grant of 46,432 acres from the new governor, Pio Pico. By 1846, Forster had acquired two more properties, the 26,632 acre Rancho de la Nación near present day Chula Vista, and 10,000 acre Rancho Valle de San Filipe east of Julian (JRP Historical Consulting Service 1991:13). This young man of barely 30 years now managed four ranchos of over 100,000 acres. Although some properties were lost, others were gained after California became part of the United States, and Forster continued for decades in the great tradition of the California ranchero. On the Ranchos Trabuco and Misión Vieja, and later on the Santa Margarita and Las Flores, it was primarily the Juaneño Indians, the former Capistrano mission neophytes, who were his work force. As Marinacci and Marinacci (1980:107) comment:

> The California vaquero was frequently Indian or part-Indian because the padres—the first big cattle ranch proprietors—trained their neophytes to the task…like their cousins on the Plains, but with the special skills needed for ranchos, they soon proved themselves among the best horsemen in the world.

It is not generally known that the Forster family went to live on Rancho La Paz, or the Misión Vieja as it was soon termed, but as Stephenson (1936:59) says:

> It has been generally been understood that in 1846 Forster and his family were living in the mission at San Juan Capistrano. According to the testimony in the proceedings of the land commission, however, it appears that Forster built a fine adobe at Mission Viejo in 1845, and occupied it with his family and all his property. "In the year when the Americans came," testified Brigidio Morillo [mayordomo for the Picos] at the Commission hearing, "the Indians began to steal his stock and Don Juan Forster took his family away from the place for safety. Three civilized Indians were killed by wild Indians." According to the testimony given by J. J. Warner at that time, Forster and his family occupied the adobe part of the time each year.

The fine adobe that Forster built for his family home is, most likely, the ruins today in San Juan Canyon that are thought to have been the original mission, Misión Vieja. It may be, however, that he did not choose a new site but began by adding on to the mission outpost that may have been the first building there.

Governor Pio Pico gave his brother-in-law and godson, Juan Forster, the Trabuco, which had reverted to the state when Arguello abandoned it. Pico increased the size of Trabuco to five leagues, called it 'Rancho Trabuco' and deeded it to Forster in 1846 (Bowman 1958:840). Along with Trabuco, Forster acquired the three mission portreros, or mountain meadows, called Los Pinos, El Carrizo, and La Cienega. Pio Pico had already acquired for himself the 89,742 acres of Santa Margarita y Las Flores, and San Onofre from Governor Alvarado in 1841, so now the two were neighbors in the sense that their lands were contiguous. Juan Forster was selected as a juez de paz for 1846-7, or a Justice of the Peace, and probably worked primarily in San Juan. His family lived there for twenty years, although they visited the rancho on a regular basis.

War was declared between Mexico and the United States by Congress in 1846. In Monterey, the American flag replaced the Bear Flag, which had been there for only one month, and a provisional American government took office. Forster was favorably disposed toward the United States but sympathetic with his brother-in-law, the Governor, who feared for his life. Northern California was pacified, so to speak, by the American Forces, and then General Fremont and his rangers--Kit Carson, backwoodsmen, and a company of Shawnees-- landed in San Diego to march on Los Angeles. There had been sufficient violence from the rough-necked rangers to worry the California government, and they recommended that Governor Pico escape to Mexico and explain what was happening in California to the Mexican government there. Of this escape, Pio Pico (Stephenson 1936:55) testified that:

> "The day I left Los Angeles, I stopped that night at the house of Don Ignacio Yerba (sic). The American forces were also stopping at the house of Don Antonio Yerba (sic). I went from there to San Juan and then to the mountains. I was in the house of Don Juan [Forster].

Under orders from Governor Pico, Forster took possession of Pico's property at Santa Margarita to protect it from the Americans. Then, Forster (Stephenson 1936:57) said that, at the Santa Margarita ranch, they were:

> …getting together horses, mules, provisions, and everything else needful for a sudden start upon an emergency. When all was ready, and an opening appeared for the Governor's successful exit to Lower California, he came to Santa Margarita, made his arrangements, and, having everything ready, he made a sudden start for Lower California on his way to Sonora.

According to Stephenson (1936:59), Pico's escape route from Los Angeles had taken him through Santiago Canyon, and across the Aliso and Trabuco Canyons to Forster's newly built adobe residence on Rancho Mission Viejo, 'located several miles up San Juan Canyon from San Juan Capistrano on a bit of mesa facing Gobernadora Canyon." There he had stayed for several weeks. The American forces were still looking for him while he was making his escape across the border. Pio Pico remained in Sonora until the provisional government in California was in undisputed control and safety was certain. He returned to San Diego on July 6, 1848.

Don Juan Forster, along with Juan Avila, were noted as being two of the typically affluent and generous hosts in the Californio tradition of southern California. In the Census of 1850 (U.S. Bureau of the Census 1850), the first American census in California, it is interesting to examine the occupants of the Forster mission residence. Besides his wife and their five children, there were Forster's two brothers and a sister from England in residence, and, outside the family, a laborer, a school master, and a ship master. The shipmaster was probably just visiting briefly, and the schoolmaster was, no doubt, being housed by Forster, as one of the affluent property owners. In the column for property, Forster has listed 20,000 acres, a small amount of his total acreage but more than anyone else in town had reported. Although a number of men owned l to 3,000 acres, the next largest property owners were Jose Sepulveda with 12,000 acres and Juan Avila with 5,000 acres. The former San Juan Capistrano mission remained the home of Juan Forster and his family until they moved to Rancho Santa Margarita y Las Flores in April of 1865.

The American government had created a legal process whereby the Californios could patent, or “prove up“, their Mexican land titles before the U.S. Land Commission. In 1865, after testimony by the Catholic Bishop, the Land Commission finally restored the missions, and five nearby tracts of land the Capistrano mission owned, to the Catholic Church.

Juan Forster filed his land claims in 1852 for both Rancho Trabuco and Rancho Misión Vieja, and they were accepted by the hearings board on October 31, 1854. Misión Vieja was confirmed by the District Court in 1857, after hearing an opposing appeal which had been dismissed. Both title patents finally were issued to Juan Forster on August 6, 1866, fourteen years after they had been filed (Bowman 1958:441,840). He was fortunate in that only one of his several land grants was never confirmed. His property made relatively rapid process through the bureaucracy, and he had relatively few legal entanglements compared to many of the other ranch owners in California. He was also fortunate, or frugal enough, or both that he had sufficient cash assets to retain his property through this process as many other Californios had not been able to do so.

American Period

In the early years of American citizenship, Californios, with their wealth in cattle, found great and immediate prosperity. The southern California cattle ranchers were amazed as the gold rush created a stampede of prospectors and other newcomers to swell the northern California population. The rapidly rising prices of beef in the new markets up north made the long cattle drives increasingly profitable. The skills of many Juaneño vaqueros were essential for the huge roundups and cattle drives to Sacramento and San Francisco, and all these men might be away for weeks at a time driving and tending cattle, or signing contracts with the butchers. Although some vaqueros owned property in Capistrano, they lived on the ranchos and on the road, and didn’t see their families for months at a time.

The District Judge, Benjamin Hayes (1929:116,198), made frequent trips on his legal circuit between Los Angeles and San Diego. His journal recorded the years between 1849 and 1875, and he always stopped for the night in San Juan

Capistrano. He kept an excellent account of his travels. In 1856, he says of Capistrano:

> San Juan boasts a peaceful population, in general. Sometimes they elect a couple of Justices of the Peace and constables. The "elect" are not of an ambitious class, and have never taken the oath of office since 1851. The last Justice of the Peace there had made several concessions of lots in what they still call their Pueblo—it was a Pueblo once—supposing that he had power to so the same as an alcalde…In all, there are 60 voters here… Fortunately, there is to be no payment of taxes this year. And my Indian friends were rejoiced when I told them this, for, robbed of the use of their lands by some of the worthless Sonorans who infest the county, they were afraid the Sheriff might take the land itself, and turn them out with their families to the mountains…

At this time, the Juaneño Indians were still farming land that had been distributed to them, or so they thought. Four years later, Hayes' notes read that he had just stayed overnight at Juan Avila's house, and before leaving town, stopped to visit with Mrs. Forster at the mission:

> Visit Doña Ysidora, the estimable lady of Mr. John Forster. He is now absent above, but expected on the next steamer. Doña Ysidora is a sister of Don Andrés and Pío Pico. Very lively; praises Nympha highly; insists that we must stop at her house on our return. Photograph of Don Pío hanging upon the wall…

Hayes' observation that Forster is not home suggests that he is probably in San Francisco selling beef contracts. Juan Forster, along with the other Californios of the south, had been facing the prolonged legal expenses of patenting his land, usurious interest rates for new business ventures, and exorbitant taxes on "unimproved" land. The California legislature was dominated by the northern mining interests who placed the burden of taxation on the south in a deliberate attempt to force them to break up their huge ranchos and sell them off, thereby encouraging an influx of small property holders and agriculture (Cleland 1951:122-124), Although Forster seems not to have been as extravagant as his brothers-in-law Pico, nonetheless his expenses were high and he often traveled to San Francisco to sell his beef.

A series of natural disasters hit southern California in the early sixties. The winter floods of 1862, and the following drought years of 1863-1865 devastated the cattle herds. Forster managed to save about half his herd one year by driving them south into the Cuyamaca Mountains. Cleland (1951:131) quoted Juan Forster as saying, "We poor Rancheros have had a damned bad string of luck these last two years and if it is going to continue I don't know what will become of us."

And, the next year, 1863, it got worse. A smallpox epidemic hit southern California, and despite attempts at quarantining whole towns, it took many lives. Judge Benjamin Hayes (1929:282) reported that:

> The Supervisors of Los Angeles County…appropriated $200 for the relief of the citizens of San Juan Capistrano. Regulations and instructions were sent by Judge Hayes in Spanish. At his request Don Juan Abila, Don Juan Forster, and Don Jose António Yorba took charge of the supplies purchased with the donation. They reported on Feb. 14, 1863, that relief had been extended to thirty-four families.

The Judge heard later, however, that their efforts had been ineffectual, or possibly just too late. And even though the smallpox vaccine had been available in San Diego, no one remembered to vaccinate the Indians there until Judge Hayes arrived. Given the size of the population, however, San Juan Capistrano was the hardest hit. Two hundred died, that figure included the Indians. Among the Juaneño, it was particularly devastating. The priest of the San Juan Capistrano mission recorded 129 Indian deaths from November 16th to December 31st, 1862 (Engelhardt 1922:205). Anastasia de Majel, a Luiseño who was born just after the 1862-3 epidemic and moved to San Juan Capistrano with her family, told Harrington that she did not "know all the words" in Juaneño because "all the Indians in San Juan" had died before she was born. Certainly, the epidemic had carried away all the older people, those who still were able to speak Juaneño, and probably many children also.

Almost none of the rancheros survived the widespread ruin of the mid-sixties. But Forster had been able to patent Ranchos Trabuco and Misión Vieja, and seems to have leased some portion of the Trabuco to Basque sheepherders, and possibly the Misión Vieja also. And his son Marcos not only organized the semi-annual rodeos at Las Flores, where he lived, but also grew crops and grains for ranch consumption while son Thomas was in charge of the sheep business, and Chico and Juan, Jr. led the cattle drives north (JRP Historical Consulting Service 1991:19).

As precarious as Forster's income may have been, he was always concerned and helping out with his padrino, Pio's, debts. Noted for their extravagance, the Pico brothers were often the instigators and supporters of the famous horse races in which huge amounts of money changed hands. Andrés Pico had already given his deed for one-half the Santa Margarita to his brother, Pio. To prevent the creditors' seizure of Santa Margarita from the debt-ridden Pio Pico, Forster received 1500 cattle and 140 horses from Pio and the deed to the property, then went to San Francisco to settle Pico's delinquent debt for $44,000 (Stephenson 1936:7). Cave Couts, who owned the neighboring Rancho

Guajome, later testified that Forster had paid far too much money for the rancho as it was only worth $30,000 and the starving cattle had negligible value. In order to pay Pico's debt, Forster took out new promissory notes on the Misión Vieja, the Santa Margarita, and others of his properties, so he could remain solvent. Then he moved his family into the Santa Margarita Rancho where they stayed for the next seventeen years.

There was plenty of work available on the Forster Ranchos. During the Civil War, there was a great demand for wool and all the rancheros increased their sheep herds. Cleland (1951:139) said that in 1870, the California wool clip amounted to 11,400,000 lbs. And according to Sleeper (1988a:196):

> During the 1870's some 20,000 sheep roamed Trabuco Mesa, then under lease to Miguel Erreca. Every other year two flocks of 2,500 each were driven north to San Francisco to market. Similar drives continued, but by rail after 1888 when El Toro got a siding. Much to his regret, in 1881 Erreca turned down a $4 per acre offer to buy the Trabuco.

The $4 per acre must have been the price Forster or his creditors would have taken for it. At that time, vaqueros were earning about $15 per month, and receiving their room and board free, and generous ranchers like Forster might throw in their tobacco and perhaps a gallon or two of aguardiente every month or so. Mayordomos, such as Blas Aguilar at Rancho Santa Margarita, had heavy responsibilities and might make $45 a month (Gray 1998:116). Each vaquero's string of horses was also provided by the ranch, but his saddle, bridle, and other equipment was purchased at his own expense. His reata, or rope, he made himself if he was good at it, or bought one from one of the expert vaqueros. He spent hours preparing his reata for use, stretching and smoothing it very carefully. He knew that the condition of his reata would decide whether its throw would be successful or not, according to Rojas (1964:28, 40) who also commented on the typical vaquero's demeanor:

> The Indian vaquero was sparing in speech, and serene under all circumstances. He was pithy in all his expressions and often spoke in metaphor or ironically. One would have to be well acquainted with him to know his meanings. He had a knack for giving names which never failed to correspond to something risible in their owners. His nicknames told the characteristics of the victim.

Nicknames are a very old tradition in San Juan Capistrano, no doubt stemming from a Hispanic-Indian tradition, and only those people who were well-liked and respected received them to their faces. At the same time, just being an Indian in California during the 19th and most of the 20th century was difficult to say the least. There was serious endemic discrimination, and, almost everywhere, Indians melted into their Hispanic heritage when they could. Nevertheless, on a cattle ranch, the Indian vaquero was highly respected for his skills and good qualities, according to Rojas (1964:24) who worked primarily on the Tejon Ranch in California's central valley where there were fewer Mexicans and more white cowboys. He said:

> When a vaquero was especially skilled, and he was asked how he had reached such a degree of proficiency, his answer would invariably be: "Me crié entre los Indios." I was raised among the Indians. Or when some vaquero had performed his work with great skill, the other men would look at each other, smile approvingly, and say, "Se crió entre los Indios pues." Well, he was brought up among the Indians.

In 1870, the Santa Margarita Rancho household, which composed family and employees, was probably more representative of the previous decade of Californios, but Forster was one of the few who were still quite well off. The 1870 Census (in JRP Historical Consulting Services 1991:15) enumerated 47 persons living in the Forster household. Two of the grown Forster sons, Chico and Juan Jr., ages 19 and 25, were still living at home, Forster's married brother had a house for his family nearby, and Marcos Forster, the eldest, had his own home at Las Flores. The forty-three employees included l0 female servants, one waiter, one houseboy, 12 vaqueros, three laborers, and one gardener. There were three married couples among them, and all these employees were Hispanic-Californians, i.e. Juaneños, and one vaquero from Sonora.

This census list does not include the populations on the outlying ranchos, the Trabuco and Misión Vieja where vaqueros supervised the cattle and sheep herds. Whether the census taker visited these more remote, isolated places is not known. Sleeper's (1985:5) notes say that Manuela Yorba de Pico occupied the Misión Vieja adobe in 1870, although he does not explain who she is or why she is there. He goes on to say that the telegraph now connected Los Angeles and San Diego, and that Forster had a telephone to communicate with Judge Richard Egan in San Juan Capistrano. Mr. Egan, a relative newcomer to San Juan Capistrano, was now the administrator of the Trabuco and Misión Vieja Ranchos. He is also an example of one of the new settlers who either took up lands made available through the Homestead Act, or were able to buy property from a bankrupt rancho. In 1870, he owned acreage near Trabuco Creek and raised barley (Hallan 1975: 44).

In 1872, Forster began to hear that the Picos were making claims that they owned a part share in the Santa Margarita. His brother-in-law Andres claimed that Pio had sold his half share to Forster, and that he owned the rest of the ranch. Pio claimed just the opposite, so each claimed 50% of the Santa Margarita ranch. And the widow of Jose Antonio, the third Pico brother, claimed that she held a quarter interest for herself and her children. Thus, Forster found that his wife's relatives were attempting to establish claim to 125% of the ranch of which he owned 100%.

Juan Forster brought suit to quiet title in the San Diego courts, and the Pico relatives filed suits against him. This very famous suit, Forster vs. Pico, was noted especially for the many prominent men of the time that testified (Gray 1998; Stephenson 1936), and their testimony provided history with an excellent picture of the American actions during the United States' annexation of California and the years of drought faced by the cattle owners which followed. The jury deliberated very briefly, and came back quickly with a decision for Juan Forster. It was said at the time that everyone knew how much Pio Pico enjoyed a good law suit, and that if he couldn't find one, he would buy one! This incident seems not to have destroyed family relationships permanently, and the Forster family watched over the Picos for many years.

Charles Nordhoff (1876:240-242) mentioned that he visited at the Santa Margarita where 30 to 50 persons were fed every day and "that more of the old Spanish Californian life remains than at any other I have visited. Spanish only is spoken in the family, and the old customs are kept up, not from any desire to be different from others, but because they are family habits."

The Californio lifestyle had faded away in most of southern California, but was retained by the Forster family. Nevertheless, Juan was farsighted, too, and took the lead in promoting and serving on the board of a railroad that was considering a coastal railroad route between Los Angeles and San Diego. Looking forward to the availability of modern transportation, he had plans for encouraging colonization of a new settlement to be carved out of his coastal land at San Mateo.

There were still a few Indian families living at San Mateo, probably left over from having moved there in the 1840's. An unknown Juaneño informant told Harrington (n.d.: Reel 121, Frames 0665, 0784,788) that his parents lived at San Mateo and were surrounded by the Forster property. He had been raised there, and his father cultivated land, and although they had eaten many of the Forster calves, the patron or owner didn't say anything. Forster was perceived as a generous patron, even though two families explained that they were "run out by the Foresters", one moved to San Juan Capistrano and the other to the Potrero de Los Indios, near the head of San Mateo Canyon. Teodosio Avelardez (sic) (Belardes), was said to have had a ranch there, a spread where he kept cattle, but he was also employed by Forster. Ambrosio Aguilar (so•'al), as he was called, was one member of the family told to leave San Mateo. He either already worked for the Santa Margarita ranch at that time or was then hired for the Rancho Misión Vieja.

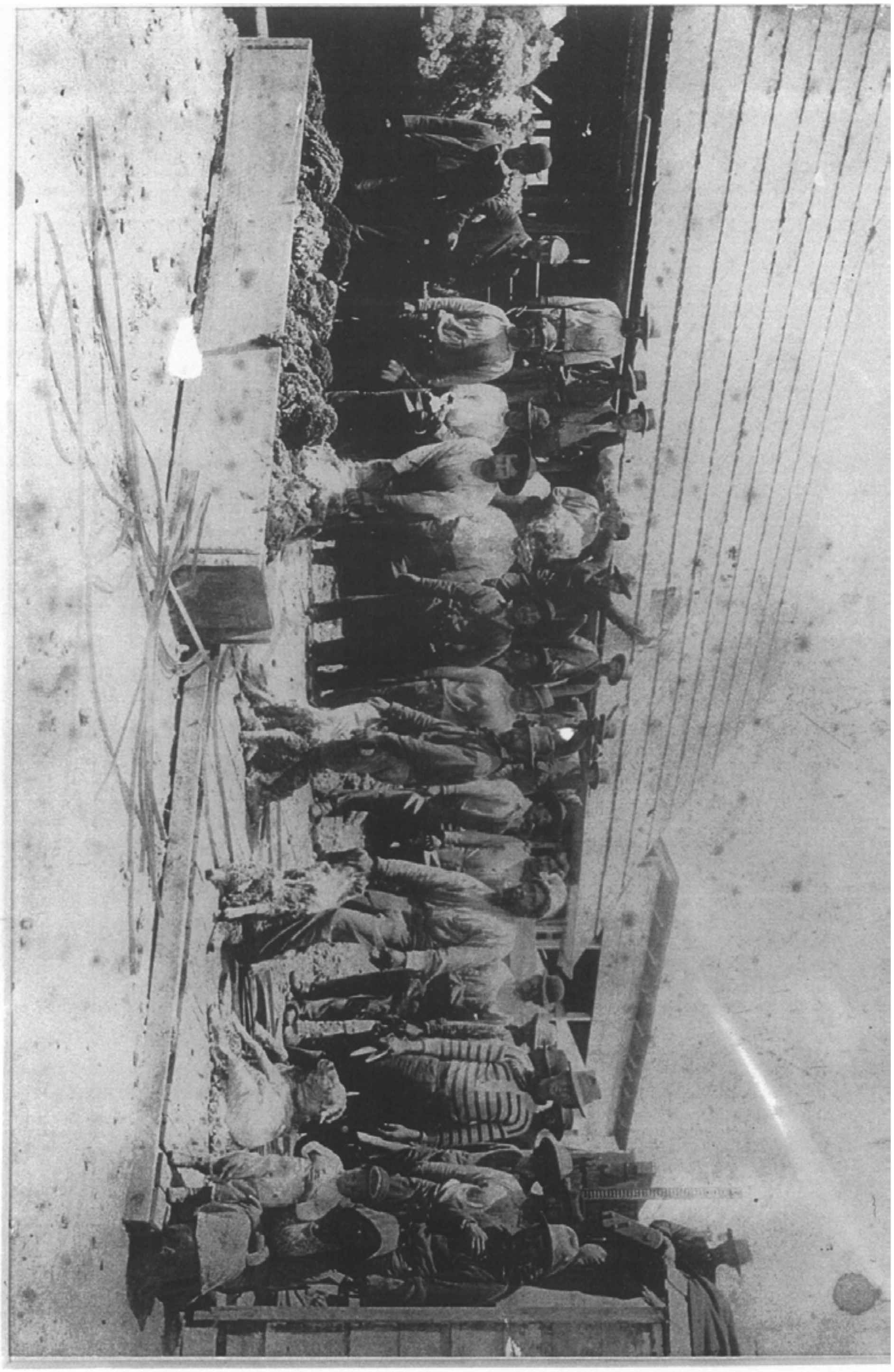
Forcing the Indians to move was a wasted effort. The Forster colonization plan failed anyway when Dutch commissioners reported unfavorably on it, and no Dutch settlers were allowed to migrate. Of course, the Forsters lost a considerable amount of money (JRP Historical Consulting Services 1991:23).

Evidence for what was happening on the Misión Vieja is sketchy. Sleeper (1985:6) reports that Don Louis D'Artigas, the "leading Frenchman in this part of the valley", was living in the Misión Vieja adobe in 1877. He was a sheep rancher (see below). 1877 was also a drought year, and Forster was again hard hit financially along with many others. But at this time, and for many years thereafter, the sheep industry was a mainstay of the ranches in the Capistrano Valley (Figure 1, sheep shearing in 1887).

José de Gracia Cruz, well known in San Juan Capistrano as "Acu" (Harrington n.d.; Saunders and O'Sullivan 1930), was a capitán of a sheep-shearing band from Rincon and Pala, reservations in San Diego County. Acu explained to Father O'Sullivan (Saunders and O'Sullivan 1930:54-55) in his later years just how that worked:

> "'And fifteen hundred sheep at ten cents a sheep, how much is that, padre?'
> "'A hundred and fifty dollars.'
> "'Well, that is what I used to receive from my patron, Luís Lartiga, who lived at Mission Vieja and had ten thousand sheep, and from Don Domingo Oyharzabal in San Mateo cañon, the one that goes up from the ocean down there beyond La Boca de la Playa. The ranch was called San Mateo, and the place where we sheared was el Aguage de la Piedra—the Water-hold of the Stone. I had from fifty to eighty shearers—Indians, Californians, all kinds of shearers. Acú, Indian—a good man, quien sabe! – was capitán. I got the shearers together and had them do the work and got their provisions. Flour and sugar were cheap. I spent twenty-five dollars a day for their meals, and gave them five cents a sheep for shearing.

And brief notes from Harrington's Indian informants provide interesting glimpses of the Misión Vieja. Anastacia de Majel, mentioned earlier as Harrington's linguistic informant, said she visited her uncle, her mother's half brother, Ambrosio só•al, or Aguilar as the white men called him, when he was mayordomo on the Misión Vieja. As Harrington (n.d.:Roll 122, frame 45-R, 54-R,192-L) says of Aj. (Anastacia de Majel):



Sheep shearing 1887. Acu was the major domo of the sheep-shearers. He wore an apron with pockets full of nickels. Each shearer was paid a nickel when he deposited a fleece. Copyright 1887 by I. W. Taber, Photographer, San Francisco

Figure 1. Sheep Shearing, 1897.

24.

Figure 1. Sheep Shearing, 1897.

> Aj got to see Ambrosio make jabon del pais [country soap] at the Mission Vieja adobe house, and also used to take already made soap And rebanan [dissolve] it into water and heat it and add cattle gall, and boil it down, and cool it off, and it makes a cake of greenish hand soap. And used this for wash and girls' face when it estaban mala de granos [was bumpy, had acne] and also hair. It made hair grow to hips and knees.

Another time visiting at the Misión Vieja adobe, she was frightened by ball lightning, a rare phenomenon that she and Ambrosio recognized as Taakwic, pronounced "Tak'-wish", a Juaneño-Luiseño spirit that carried off the souls of people:

> Aj. once at the Mision Vieja. Taakwic went by inf. (informant) as inf. was standing by the door, & it passed in just a moment, but was a powerful thing, and as inf. looked in the distance got to see curling white stuff like cotton. Ambrosio, inf's tio [uncle], was escarbando (digging) a posthole for the potrillos [colts], & He said: "'óonap taakwic", adding in Spanish that is bola de fuego [ball of fire]. Even as they spoke, it was already 4 miles away. And inf. said to her tia (she used to call her tia mother): madre, paso como un pajarito [mother, it passed like a little bird.]

Lucas Canyon on the Rancho Mission Viejo has a long history of individuals searching for gold there. The information for this activity is very sketchy so it won't be discussed here. But two interesting incidents came out of the Harrington (n.d. Roll 122:Frame 216R) notes. First, Marcos Forster, probably the grandson of Juan Forster called "Marquitos", told Harrington that Lucas Canyon, located "this" [west] side of the San Juan Hot Springs, was previously called La Cañada del Islay. The seeds from the Islay or Holly-Leaved Cherry (*Prunus ilicifolia)* were used for soup or a thin beverage but first were dried, ground into meal, and leached (Balls 1972:15). This naming of the canyon is in keeping with the Indian tradition of naming places by virtue of what resources may be found there.

Second, Anastacia de Majel also told Harrington a long story about her uncle living in Cañada de Lucas, or Lucas Canyon on the Misión Vieja. She narrated how her Uncle Ambrosio had "scattered barley seed secretly in this canyon & drove horses to stamp it in, & when the barley was tall, Ambrosio went to the Mision Vieja and told Juan Forster to come." And Forster came in a caleza [buggy], and Ambrosio had the adobe at the barley patch nicely swept to receive him. And when Juan Forster asked him, "How did you sow it?" He just said "it was a long story."

This little joke is readily understood with Anastasia's (Harrington n.d.:Reel 128:Frame 246) explanation that "when my tio came back from the placeres [marketplace], he was like a son of Juan Forster". The 'marketplace' Ambrosio returned from was undoubtedly San Francisco as Forster was reported to have sent large sums of money home concealed on an Indian, and very possibly Ambrosio was the one. And Forster was probably getting older or he would not have arrived in a buggy. Anastasia de Majel went on to suggest that Forster left the Misión Vieja house, probably the adobe in Lucas Canyon, to Ambrosio when he died, and that Ambrosio had died there. By this time, another Ambrosio, Ambrosio Valenzuela, the nephew of Ambrosio Aguilar, was working on the Santa Margarita.

These homely incidents which Harrington (n.d.) preserved as part of his Juaneño linguistic studies demonstrate how the Juaneños perceived the rich landowners for whom they worked during their possibly less-than-romantic Californio period. It is clear that Forster was viewed as a kindly and generous landowner who provided steady work and, occasionally, even food for the taking. In contrast, Anastasia commented that Cave Couts and his wife, a prominent couple of their day, the owners of the Rancho Guajome adjacent to the Santa Margarita, "measured the thickness of every slice of bread that they gave the vaqueros to eat" (Harrington n.d., Roll 121, Frame lll). Further, these few memories provide at least a brief glimpse of life at the Misión Vieja at that time.

In 1878, in anticipation of a coastal railroad soon to be completed, Forster financed an even more ambitious settlement than before, this time at the mouth of San Onofre Creek. He created a plan and proceeded to develop Forster City. Lots were laid out and put under contract to new settlers, and at least 35 families settled there in their house lots and another 20 acres to farm. There was a hotel and post office, and everything looked very promising. In 1880, Marcos Forster had even acquired a 12-horse thresher as an aid in harvesting the larger fields, and he shipped 4,000 sacks of wheat to the San Francisco market that year.

Juan Forster was a director of the San Diego & Los Angeles Railroad Co. and in 1882, the first railroad between Los Angeles and San Diego ran through Temecula Canyon to Fallbrook, and across the southern portion of the ranch (JRP Historical Consulting Service 1991:22-24). Much later, when the coastal railroad was the main line, the line between Oceanside and Fallbrook was just a branch that ran once daily. There were three stops designated on the Rancho Santa Margarita. They were: Ysidora (5.4 miles), Chappo (7.9 miles), and Ranch House (9.2 miles), the mileage calculated from Oceanside. There is no doubt that Juan Forster had named them for the first was for his beloved wife and the second for Ambrosio (Chappo) Valenzuela, the majordomo and best vaquero on his ranch (Baumgartner Jr. 1982: Appendix 8)

But the Forster family could no longer stave off bankruptcy, and foreclosure was barely held off with yet another loan in 1881. Before any financial recovery could be made, Juan Forster died and his wife followed shortly thereafter. All the ranch properties, including Forster City, had to be sold to cover the debts. Forster City was disbanded since the settlers did not have the ownership of their land there.

Rancho Santa Margarita y Las Flores: 1882-1942

Hearing that a huge southern California ranch was for sale, Richard O'Neill, a 57-year old butcher-turned-cattleman traveled south to see it. He had worked hard all his life, and despite all, he had missed out on a fortune thus far. But he had recently spent two years learning to manage a cattle ranch in northern California, and made a grand success of it only to have it sold out from under him. His one advantage was that the new owner had described this opportunity to him.

Born in Brigtown Parish, County Cork, in the heart of Ireland's dairy country, he had left with his family at a very young age to resettle in New Brunswick, Canada. Life was hard in a fishing community where his father was a butcher, and he was apprenticed in the fishing industry. He left for Massachusetts, and there he heard about the gold strike in California, and immediately booked passage on a ship bound for the new lands. His months grubbing in the gold fields brought only a little reward, and so returning to San Francisco, he settled on his family trade and opened a small meat market. Here he prospered, married, and bought a home for his wife, Mary, whose maiden name had also been O'Neill. They had four children.

Among O'Neill's business acquaintances was James C. Flood, an Irishman who had opened a saloon across the street from the Mining Exchange. Flood purchased meat from O'Neill for the food he served in this very popular saloon. Business transactions frequently took place there, and Flood began to speculate in mining stock. In very successful negotiations, he managed to acquire the Comstock Lode in Nevada, America's most famous silver mine, and become fabulously wealthy. O'Neill tried speculating but lost a huge investment, and had to leave his excellent location for a fresh start. By his hard efforts, he repaid everything he had borrowed. Flood was so impressed with his friend's tenacity and honorable behavior that he hired him to manage a run-down cattle ranch in Merced. This was the very success that made O'Neill want to continue in ranching, this time owning his own land (Baumgartner 1989:4)

After a week of inspecting the rich resources of the Santa Margarita ranch, riding all over the various ranchos and probably even inspecting the three high mountain potreros, O'Neill returned to San Francisco to propose to James Flood that he buy the ranch. The Forster heirs wanted $250,000 for their share and the creditors were owed almost that much again. On hearing the proposition, Flood, in return, proposed that he would buy the ranch and they would become equal partners, O'Neill would manage the rancho at $500 a month investment and would eventually own his half. Although at the purchase price of $457,000, it could have taken O'Neill thirty-seven years to own his half, he was convinced that this was a good deal. In fact, James Flood died in 1888, but their contract remained. Although the widow, Mary Flood, received a half share, her son, James L. Flood, had the final control.

Richard O'Neill acquired ownership in his half of the Santa Margarita ranch in 1907, 25 years after the original agreement between the two men. He immediately deeded his undivided half interest to Jerome, his eldest son. His other children received money and other properties such as the home in San Francisco (Sleeper 1985:10; 1989:160-161).

The 1882 sale of the Santa Margarita to the O'Neills included 1000 head of cattle and 500 horses and mares, and sundry personal property. There is no mention of whether the property included the 12-horse thresher Marcos Forster had purchased. But if the cattle mentioned were those in the 1880 agricultural census for Marcus Forster, at least 500 were purebred, 70 were dairy cattle and 200 more were the long-horned, tough Mexican cattle (JRP Historical Consulting Service 1991:24). Further, there was Marcos Forster's very nice house at Las Flores, and the Santa Margarita ranch house, which was considered by many to be the state's most pretentious adobe, being 300 feet long by 80 feet wide (Baumgartner 1992: footnote #5). And there still was a very nice adobe at the Misión Vieja, and the Trabuco adobe where Miguel Erreca, a Basque sheepherder with a lease, was still living (Sleeper 1985:7).

The Richard O'Neill family moved into the Santa Margarita ranch house, and planted 400 acres nearby in alfalfa. The Misión Vieja (Rancho Mission Viejo) was turned into a cattle ranch, and the Rancho Trabuco continued to be used for sheep raising since there still was insufficient water in Trabuco Creek for cattle. Miguel Erreca lost his grazing lease on the Rancho Trabuco after O'Neill took over, and moved his sheep to the Irvine Ranch for nine years (Osterman 1988:11). By 1890, Baptiste Duhart, another Basque shepherd, and his familys had moved into the Trabuco adobe. Decades later, Harrington's (n.d.:Roll 121:Frames 737, 722) Indian consultant from Capistrano remembered that "Pete Dewhart's (sic) is the Trabuco adobe", but thought his family lived there in the early 1900's. He also remembered that the Plano Trabuco was called "tcikwa'xava' in the Juaneño language.

In 1891, it was reported that there were 2,000 head of cattle and 200 head of horses being raised on the Rancho Mission Viejo (Hallan 1975:60-61), and Marcos Forster and Richard O'Neill were the major cattlemen in the Capistrano Valley. They shipped to markets in San Francisco, Los Angeles, and San Diego, and the shipping was all by train from stops at San Mateo and Las Flores on the Santa Margarita Ranch. Figures 2, 3, and 4 show early activities on the ranch.

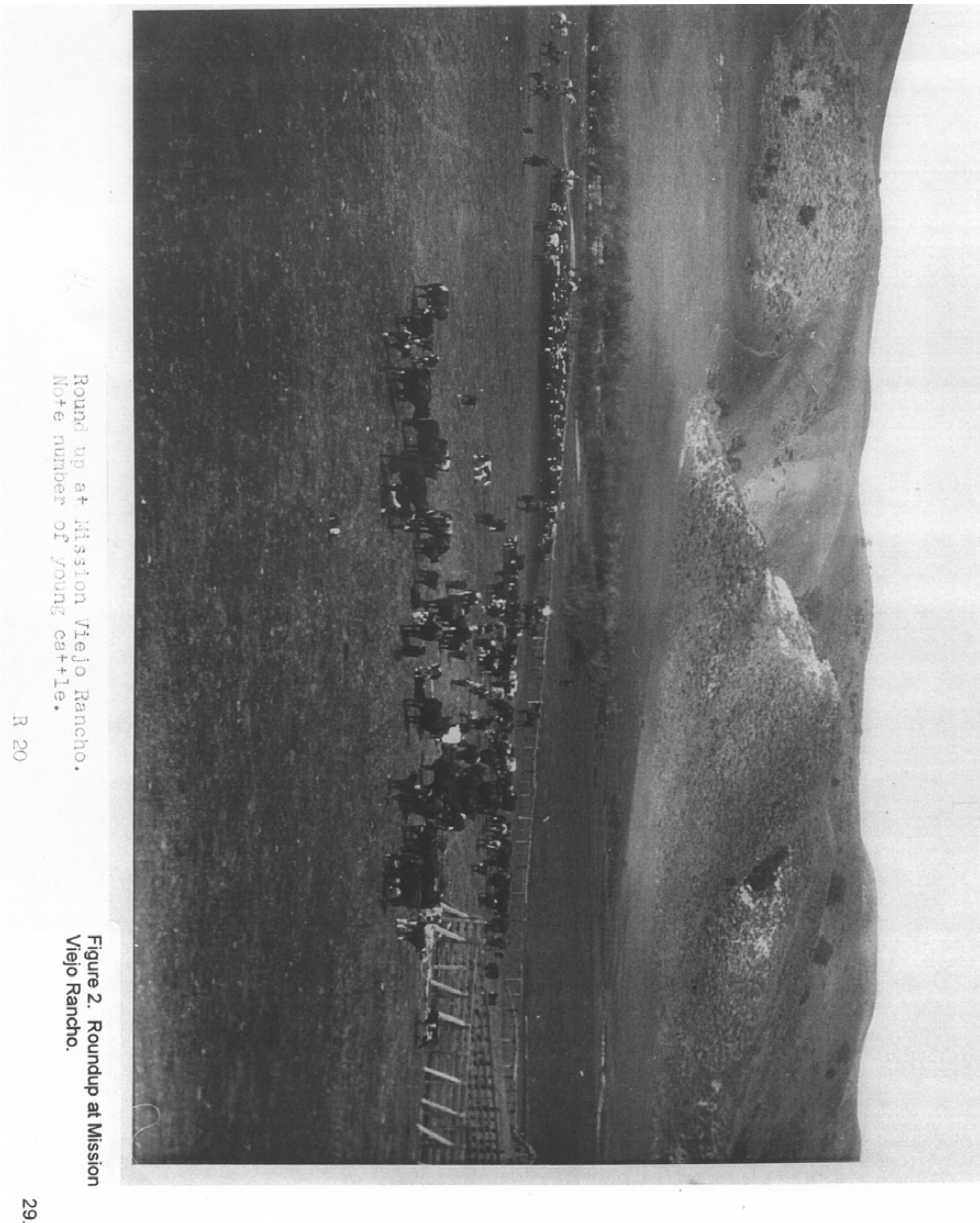


Figure 2. Roundup at Rancho Mission Viejo.

Figure 3. Dehorning Cattle.

Figure 4. Thirty-two Mule Grain Harvester.

As the greater Los Angeles area grew, and especially south county, the residents there wanted more local control. These coastal people felt ignored by the county government in Los Angeles, and after a state lobby failed, some prominent men went to Sacramento and were able to get a bill to create Orange County passed and signed. The bill then had to be ratified by the affected residents, and out of the 3,009 votes, only 500 were against ratification. In San Juan Capistrano, the vote was 80 to 16 for becoming a separate county. Although the Capistrano vote by 96 citizens is an indication of a growing population, it seems to be a very slow growth compared to other areas of Los Angeles and Orange County (Hallan 1975:64).

Orange County had its own special resort which, although it now began to receive publicity, had always been known for its curative attributes. The San Juan Hot Springs, twelve miles east of Capistrano, had been a significant resource for the Juaneño Indians, who called it “ateyva” (Harrington n.d., Roll 121, Frame 745-L). The mission fathers and the Indians under their care visited it for its supposed health values, and, at the turn of the century, increasingly, it attracted tourists and vacationers. At that time, It was enclosed by the Forster holdings, and was sold to Flood and O’Neill as part of the Santa Margarita Ranch.

When Mr. Kraszewski, a retired storekeeper from Capistrano, leased the San Juan Hot Springs from the O’Neills, it already had a hotel, but he added various types of accommodations, such as more cabins and tent areas around the pools. The railroad made it much more convenient to visit by outsiders, and from the new Capistrano railroad station, the visitors could find inexpensive transportation by carriage. After 1902, when Mr. Kraszewski retired, there were a series of proprietors that increased the available social activities with many building additions, more tents, and events.

According to John J. Baumgartner, Jr. (1982:46), grandson of Richard O’Neill, his uncle Jerome O’Neill had a cottage built across the creek from the hot springs, and the grandchildren spent quite a lot of time down there, mostly in the summertime. The residents of Capistrano went there for dancing, concerts and picnics. The Springs were a well-known and popular resort until 1936 when they were closed for health reasons, and the 75 buildings there sold to the various residents of San Juan Capistrano and moved to various locations around town (Hallan 1975:70-72).

On the Santa Margarita Ranch, very soon after he purchased it, Richard O’Neill leased 1500 acres and the Las Flores house, and later added another 1500 acres, to the young Magee family. They were descendents of an American soldier who arrived in 1897 and had been stationed at the San Diego Presidio. The young Lieutenant Magee married Victoria Pedrorena, a daughter of one of the illustrious Californio families, and acquired the Castro Rancho in San Luis Rey Valley. His widowed descendent, Henry Magee died, leaving eight children, the eldest two being Jane, age 22, and Henry, age 24. While Henry took over the field management of Las Flores, and maintained it for 25 years, his sister Jane, who never married, ran the business end and reigned as family matriarch there until 1938. When she retired, other Magees took over. Their long-term relationship with the O'Neills was a close one, the O'Neill children and grandchildren always welcome at the Magee residence and both families spending Christmas and Easter together.

One of the Magee family, described as Jane's sister, Luisa Magee or "Aunt Wee", lived there too. She was the illegitimate child of a Magee uncle and an Indian girl, and had been partially raised by the Estudillo family. In the 1900's, she moved to the O'Neill ranch and took care of Richard O"Neill in his ailing years, then Mary O'Neill, his wife, until she died, and was housekeeper to the O'Neill household at the same time (Baumgartner 1989:101-103).

The Magees raised chickens, pigs, and cattle but their major crop, for which they were locally famous, was lima beans. The climate along this narrow stretch of coastline was mild with constant moisture in the air, perfect for a summer crop that did not demand irrigation. Large-scale mechanized production on 15,000 acres was not uncommon, and the cattle could be brought down from the mountains in the early fall to graze off the stubble and dried vines. Until 1962, all lima and baby lima beans in the United States were raised in California, and the Magees had one third of the total acreage in San Diego County planted to lima beans. Jane Magee was, for years, referred to as the "Bean Queen of Southern California" (JRP Historical Consulting Services 1991:26-28).

Richard O'Neill's four grandchildren, the offspring of his youngest daughter, Mary, spent their early years and most of their summers on the Santa Margarita Ranch. During the school year, they lived in San Francisco with their parents, the Baumgartners, where their father practiced law. John Jay, Jr., born in 1901, and Jerome O'Neill Baumgartner, born in 1903, the two youngest children in the family, have left detailed accounts. The latter, the Jerome O. Baumgartner memoir, was recorded, edited and published by his son, Jerome W. Baumgartner (1989). Both men were in their seventies when they were recalling the life style and events of their childhood on the ranch, and all the family and folk who lived there (Baumgartner 1982, 1989), For the purposes of identification here, I use their first names, John or Jerome, to identify the speaker.

Jerome (Baumgartner 1989:122) or 'Jome' as the family called him, commented that:

> The vaquero camps were always fun for John and me and we'd spend as much of our summers as we could living with the vaqueros. I think we were a nuisance to them, but they were very patient. We were the nephews of the Big Boss and they had to look out for us so we didn't get into trouble.

John Jay, Jr., two years older, was the acknowledged ‘cowboy’ of the two, and as an adult in northern California, was a cattle rancher most of his life. He (Baumgartner 1982:41) described riding into Capistrano and returning at night across the Mission Viejo:

> My brother and I, when we were youngsters, we would be with thevaqueros, and we would stay there at that wonderful restaurant…El Adobe…it’s run by the people that ran the restaurants for the Santa Fe railroad…And we’d ride back toward evening, maybe late after dinner when it would be start getting dark and my brother and I would get frightened when we’d get close to that Mission Viejo, that old place there, because people would go there and dig holes looking for gold that the Fathers left there…Anyway, we were told about it and we’d get scared and we would lope those horses, run those horses clear back to the camp…Don Esteban would make us lead those horses around until they cooled off a little bit.

“Don Esteban” was a term of respect the children used to address Steve Peters, the head vaquero of the main ranch after Ambrosio Valenzuela, or “Chapo” died in 1911. Mr. Peters was from San Luis Rey, possibly a Luiseno on his mother’s side, and his son “Viejo” Alex Peters also went to work for the ranch. In a photograph dated 1920 owned by John J. Baumgartner, he, as a youth, is on horseback side by side with vaqueros named “Cholo” Alvarez, Cecil Martinez, Ambrosio ‘Chappo” Valenzuela, and his son of the same name. By this time, the final Ambrosio Valenzuela discussed here is the 3rd generation of relatives that have worked on the Santa Margarita Ranch. Anastacia de Majel (Harrington n.d.:Roll 122,Frame 39L) who has related most of these stories, is related to all of them. But the oldest two, Ambrosio so’al Aguilar and the first Ambrosio Valenzuela, are her uncle and her half brother. She says of the former, that he won a championship at Coronado and died with honors, and of the two of them that they were the best vaqueros in all of southern California. The 3rd generation, Chappo’s son, Ambrosio, was younger than Baumgartner and worked on the ranch long after the latter was grown.

There were at least six to eight vaqueros on the ranch at all times, and Tiano Bourel, Damian [Rios], “Capitan” Stanislado Morales, “Chulo” (Jose de Gracia, also sometimes called “Gaza”) Olivares, Philip Crosthwaite, Secutha, and “Chico” or “Chio”, the vaquero cook were some of them. Hugo Forster, a third generation Forster, Boyd Sleeper who had a ranch on Trabuco, and Delores Yorba seem to have been cowboys who took part in the roundups. Almost all these vaqueros had nicknames, and so did family members such as Uncle Dick O’Neill, who was teasingly called “flojo” or ‘lazy’. (Baumgartner 1982:11,43, 49).

The vaqueros remembered best were those who lived in the adobe bunkhouse at the ranch house on the Santa Margarita. Those stationed on the Mission Viejo, and possibly there were some on the Trabuco, the boys might have seen only at the big spring and fall roundups when cattle were brought in from all the ranchos, and many extra vaqueros were hired. But the ranch house was connected by telephone to all parts of the ranch: the Magees at Las Flores, the Rodriguez' family at San Mateo, the Capitan's house at the Mission Viejo, and for the outside world, Mr. Everett at the grocery store. He had the telephone exchange in Oceanside and could put a call through outside the area to Los Angeles or San Francisco and, even more important on a daily basis, Mr. Everett would take orders for groceries and send them out to the ranch on the train that day. The daily train to Fallbrook made a stop at the ranch house (Baumgartner 1989:33).

Living conditions for the vaqueros hadn't changed much in a long time. As Jerome Baumgartner (1989:124) put it,

> The ranch provided the workers with three meals a day and a place to sleep, period. The workers provided their own blankets. The ranch gave them three meals a day, seven days a week and paid them. The vaqueros got more money than the laborers. The average laborer got about $30 a month and the vaqueros got about $45, which wasn't as bad as it sounds. It wasn't what you'd called princely pay, but $45 was a lot of money in those days.

In contrast, the Floods would visit the ranch in a private railroad car, loaned by Santa Fe, which would be parked on a siding near the ranch for a couple of weeks. They seldom traveled down from San Francisco more than once a year, usually for the bird-hunting season. Jerome O'Neill, after he was manager, would visit San Francisco a couple of times a year to discuss business with James Flood. In 1910, Richard O'Neill, who had been ailing and partially blind for some time, passed away. He was 88 years old, and as John Clay (1964:19) described him:

> the most clean-cut man he ever met, a master of his business, silent, shrewd, persistent, decisive, with a keen, caustic wit, yet under all a kindly disposition. When alone with him he talked freely, in fact he gave liberally of his experience. He was a well-versed student of the cattle business.

He was taken on the train to be buried in San Francisco, and as the train passed slowly along the tracks through Orange County, people came to the side of the tracks to bid him farewell.

Evidently, there had been an understanding that the oldest son, Jerome O'Neill, would inherit the ranch and the others would receive cash compensation through the years. Jerome had been managing the ranch for some time and was the only O'Neill offspring raised on the ranch and trained to run it. Further, he had had infantile paralysis and, although he was a superb horseback rider, he was not able to drive a car. After he purchased one, he hired Carl Romer, another young man married to a Forster, to chauffeur his automobile. Jerome O'Neill never married.

His married sister, Alice O'Neill McDade, who lived there for many years after she was married, finally left to join her husband in San Francisco and was estranged from the family. She had been the housekeeper, and after that, Aunt Wee McGee took over that role and cared for their mother, Mary, until she died at 93 years in 1916. In that same year, the ranch house was increased in size to 23 rooms, one of which is an office with the first typewriter, and three rooms across from the ranch including a dining hall for the vaqueros. The next year, indoor plumbing and electricity was installed in the ranch house, although the latter at first only with a generator. The next year, San Diego Gas & Electric got a right-of-way through the ranch to Capistrano, and the ranch was connected into the line (Sleeper 1985:11).

Jerome Baumgartner (1989:123) described the temporary vaquero accommodations for roundups as follows:

> In 1915, Uncle Jerome decided to get a little modern and had bunkhouses built where the vaqueros always made camp [probably at San Onofre]. Actually they were more like barracks than bunkhouses. They were just board and batten buildings with wood floors—hotter than hell in the summertime…The vaqueros would pile a little hay on the boards and spread their blankets out on that. It got cold in the wintertime, but it wasn't anything like Wyoming, no blizzards or snow. There weren't any stoves or fireplaces and besides, the camps weren't much used in the wintertime.

Although the ranch didn't reach its peak of 27,000 head of cattle until 1925 with well water then available in San Juan Creek, the ranch was prospering (See Figures 5-7 for ranch life during this time). In 1917, the black-eyed peas, limas, and wheat that were being raised on the Trabuco and Las Flores, and cattle from the Santa Margarita were selling for top dollar. The ranch was selling 1500 cattle and 500 hogs annually, all these crops to the United States Government who was responsible for feeding a large military force during World War I.

But as vaqueros were going off to military service, even more were needed. Abel "Viejo" Majel, Joe Avila, the brothers L. and Tom Ramos, Adolpho Manriquez, and the Jose Gracia Olivares family, all from San Juan Capistrano, were then living and working on the Santa Margarita Ranch. Jose "Chulo" Olivares and his wife, Vivian, already had nine children when they moved to Rancho Mission Viejo

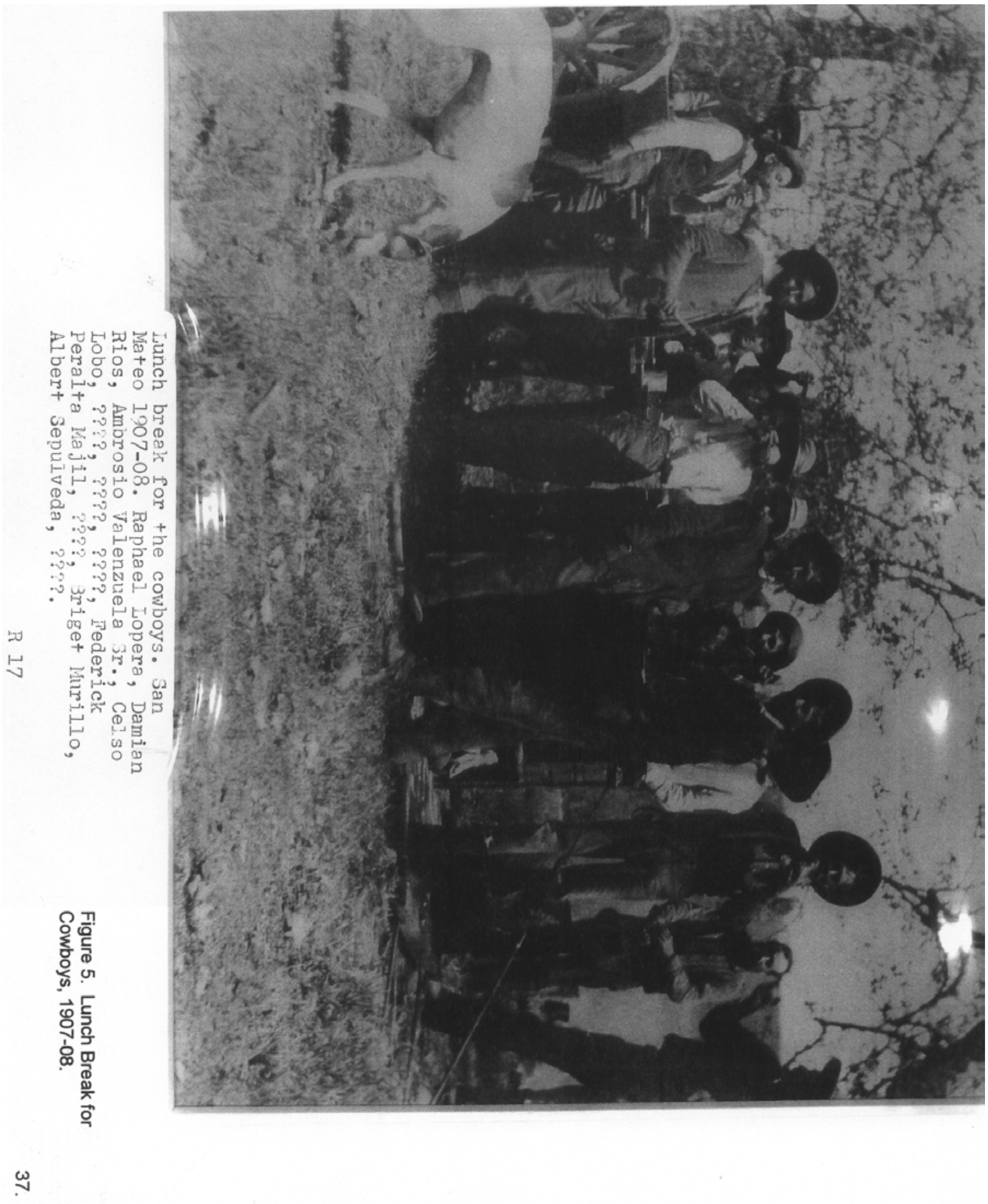


Figure 5. Lunch Break for Cowboys, 1907-08.

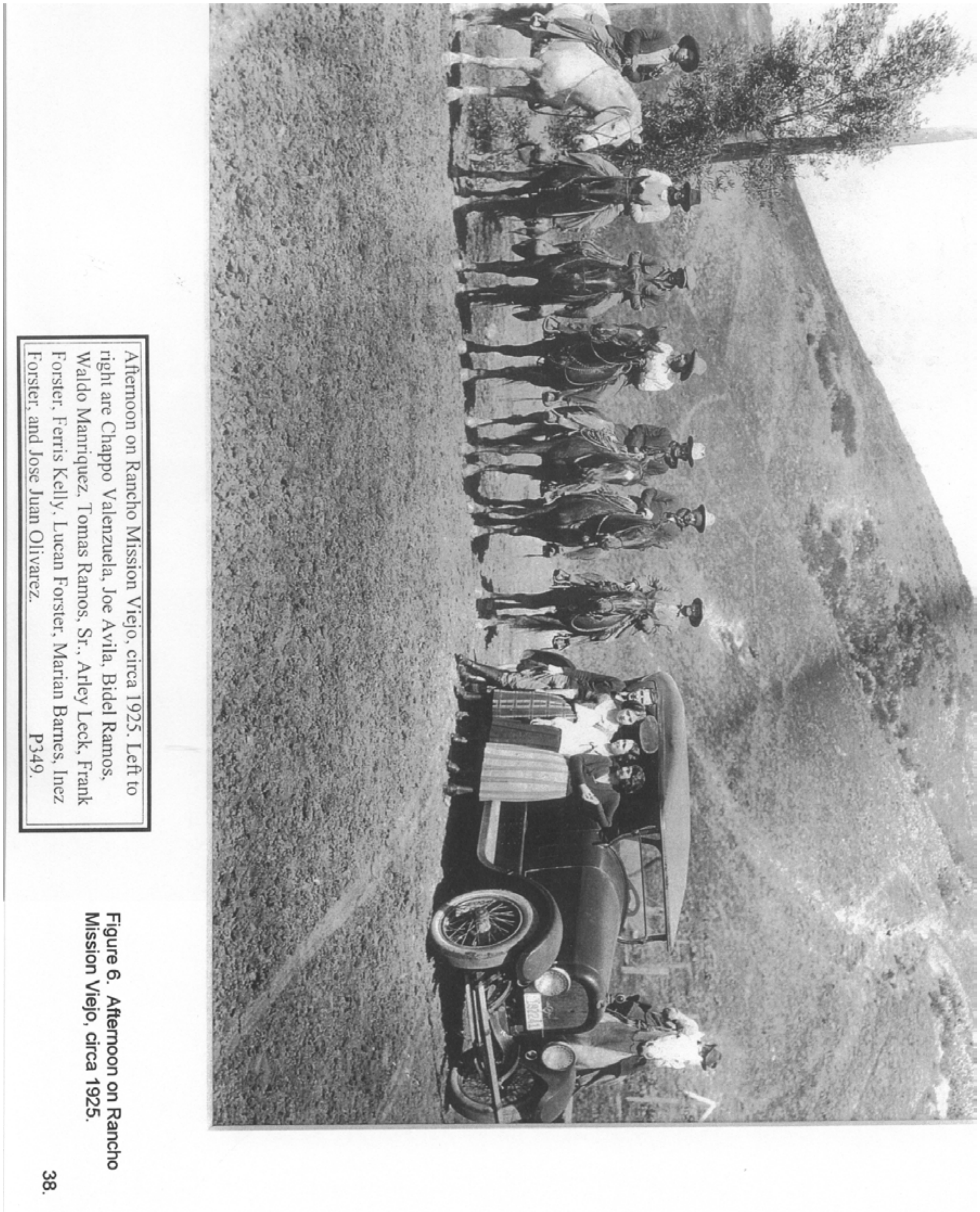


Figure 6. Afternoon on Rancho Mission Viejo, circa 1925.

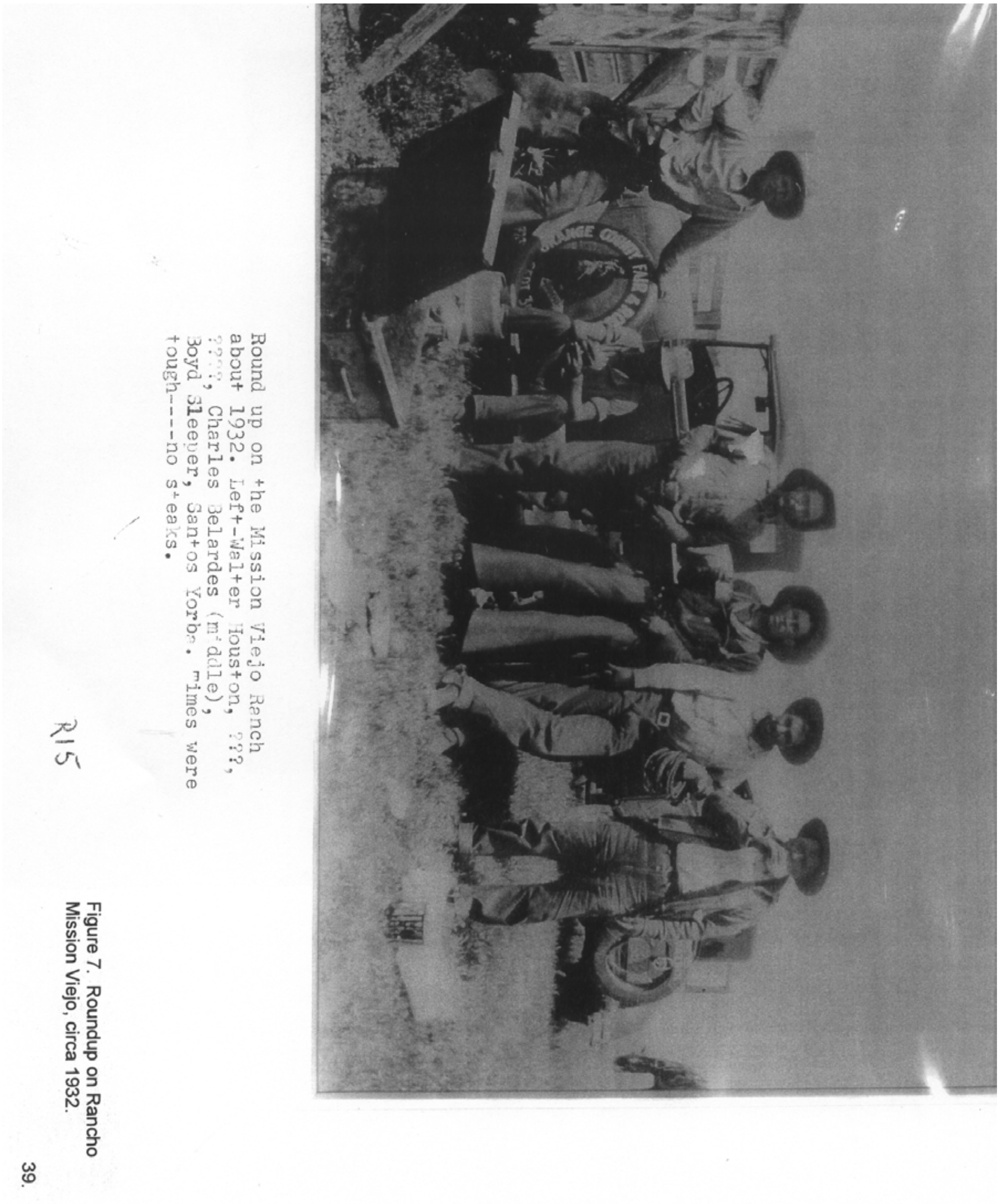


Figure 7. Roundup on Rancho Mission Viejo, circa 1932.

to live in the Line Camp ranch house. Many years before, Vivian's father, Patricio Ricardes, had been a sheepherder out on the ranch but died of pneumonia in the 1890's from tending sheep on a rainy night. She and Chulo had four more children born at the Rancho Mission Viejo, and then they moved to the San Mateo Ranch House when Chulo became foreman there in 1932. Various grandchildren came to visit, but two of them, Teeter Olivares Romero and her brother, came to stay until their grandfather retired.

Clara Olivares Hostler, born in 1913 before the Olivares family left Capistrano, shared her memories of growing up on the ranch with Betty Rivers (1991:47-48) before she passed away. The family lived on the Mission Viejo about two and one half miles east on what would now be the Ortega Highway, and in 1990, their house was still standing. Clara, and her brothers and sisters walked to San Juan Capistrano for school and her brother, Lawrence, the oldest, got to finish high school. The only time that Clara missed school was in 1919, when the family moved to the San Mateo. Their ranch house was in the San Mateo Canyon, near the Christianitos fork:

> The creek ran so high at one time, Clara remembers, that the family could not cross for a month. Jose [her father] "would cross on horseback to get groceries." From a later period, Luis recalls that the creek flooded high enough to carry off the woodpile in back of the house, and that "the ground would shake like Jello" after rain.

Luis, Clara's brother born in 1920, was called "Yo-yo". He went to work for the ranch under his father, the foreman, when he was fourteen years old in 1934. But in 1920, after Clara had briefly attended the newly established school in San Onofre by horse and buggy, they moved back to the Mission Viejo. Her mother, Viviana, took in boarders, grew vegetables, and kept a cow to add to her husband's income. She was also able to order some food wholesale through the ranch. Clara, on the other hand, left the ranch when she was sixteen and found that there wasn't much work available to girls her age in 1939.

In 1923, Jerome O'Neill and James L. Flood decided to incorporate the various ranch parcels under the name "Santa Margarita Ranch, Inc.", and to issue stock to the various family members. But Jerome's brother and sister, Dick O'Neill and Mary Baumgartner, continued to receive money from the ranch. Jerome O'Neill was continually purchasing their ranch stock, again a plan that seems to have been decided beforehand (Baumgartner 1982:4-5).

By this time, the young Baumgartners, who had observed two decades on the ranch were not spending much time there any more. And in their detailed memories of the ranch and particularly the life of the vaqueros, they seem not to have known that the vaqueros were Indians, or at least part-Indians, the Juaneños of San Juan Capistrano. In particular, Jerome Baumgartner (1989:108) remarked that the men spoke Spanish, but explained that by saying:

> A great many of the people who worked on the ranch were not from Mexico but were from Capistrano and San Luis Rey, and their families had come with the padres in the old days. They were fourth-generation as families. In my day on the Santa Margarita, places like Capistrano were made up of people of Spanish descent.

John Baumgartner, on the other hand, seems to have recognized some workers on the ranch as Indians, but not the vaqueros from Capistrano. John Baumgartner (1982:10,14,17) said:

> If someone was hurt on your ranch, why, you took care of them and their family, which the O'Neills did for these vaqueros at San Juan Capistrano, and the Indians from Pala, and Baja California too….

And in answer to a question about hunting, and deer on the ranch, he says:

> …the Indians from here-well, they were really half Indians, and they were good shots with the rifle-would follow a deer for a day and a half before they would catch up with him. But they would get him.

And, finally, with household chores which were not the responsibility of the vaqueros:

> We had Chinese help in the kitchen and then they had an Indian or two to help wash the dishes and to help around when they had lots of men…The bathroom was a bathtub out in an adobe building, right next to the outhouse as we called it. The Indians would have to carry the hot water from the kitchen out to the bathroom if you wanted to take a bath.

Most of the vaqueros were Juaneños on the ranch payroll at this time. In fact, most of the vaqueros were probably part-Indian whether they were from Baja California, Mexico, or Capistrano. With Spanish-Mexican surnames and speaking Spanish as their first language, they were apparently not identified as Indians by the Baumgartner children. Further, the vaqueros were unlikely to have been discussing the subject of their identity, especially in English, and the Baumgartners did not understand Spanish.

During this time, there were various mining experiments, such as tin, gold, silver, and oil going on nearby. One such location was the Trabuco area (Sleeper 1985). Another was the most continuous and long-lived mining venture on the ranch – clay mining – in Gabino Canyon. Joseph Yorba (1976:11), son of John and Marie [Rios] Yorba, and born about 1900 in San Juan Capistrano, was a young worker. One day he was fired from bean threshing, probably on the Trabuco mesa, and hired the same day by a man who had leased the clay fields in Gabino Canyon from the Mission Viejo Ranch. Young Joe Yorba seem to have been hired at the very beginning of the mining venture and worked for a year digging white clay. He was hired by a second company when it took over the workings. Then Yorba had to join a union, and began to work a nighttime, 8-hour shift of a 24-hour operation, but with this second company, he made more money. The white clay, he was told, was used to make spark plugs. Yorba (1976:11) reported this experience:

> Then the day shift came in at eight o'clock until four o'clock. Four trucks hauling clay all the time. One of the loaders, he lived on Los Rios Street…Clarence Lobo! He used to drive the truck. At that mine, I used to do everything. I powdered, dynamited, you know, I drilled, worked on the track. I put in chambers. I used to be a helper for the timberer. The timberer used to lie down and go to sleep.

Mr. Yorba worked there for twelve years, but the mine closed down, he claimed, when the O'Neill family raised the lease another dollar per ton. The Clarence Lobo, mentioned above as the truck driver, was the acknowledged leader of the Juaneño Band of Mission Indians during the late 40's and early 50's.

In 1926, when Jerome O'Neill died unexpectedly at age sixty-five years, he had probably been suffering from the late complications of his infantile paralysis. Somewhat strangely, James Flood, a man of his own age, had passed away just two days previously in San Francisco. But as before, everything had been carefully arranged.

At that time, the corporation was dissolved, and the Santa Margarita left in trust for the O'Neill grandchildren as heirs. Mrs. Flood, the widow, was left the owner of the Flood half of the ranch. A new manager, Charles Hardy, hired in 1925, was well trained and continued until 1931 when he died. During that time, the right-of-way was designated through the ranch for the Ortega Highway, and in 1929, before construction commenced, the last cattle drive up to the potreros in the mountains was completed. When Hardy died, Richard O'Neill, Jr., then sixty-eight years old, began to take an active role in managing the ranch and continued to do so until 1935. He hired both Harry Whitman and John Salisbury, the latter being a former ranch lessee, as superintendents of different parts of the ranch (Sleeper 1985:14).

John Salisbury, who managed the various crop leases and the ranch crops, was also managing a large herd of sheep on the Rancho Mission Viejo. He and Mr. Bidart, the Basque sheep owner on El Toro Ranch, were having a terrible problem with coyotes at lambing time. Following complaints to the federal predatory control officer, the government hired Albert Walter of Orange to trap coyotes in Orange County for several years. Al Walter (1971:17) explained that the various ranches handled lambing differently:

> In Irvine, when they would lamb, they'd bring all of their sheep in and lamb them in the yard. They had their sheepyards down by the saltworks down in Newport, in the back bay country down there. But John Salisbury, on the Rancho Mission Viejo, lambed on the range. When he had so many ewes that were ready to lamb, he'd just run an iron stake fence, or a woven fence, around so many and they'd ewe right on the range. Well, the coyotes got to following them and he just lost them right and left.

The federal government paid a salary and mileage on the car, and although he was supposed to work an 8-hour day, he actually worked an 8-hour night setting traps and then collecting them. Salisbury was very pleased the first season, and said, "This is the first time that I've ever been able to lamb and not lose sheep." But both ranches eventually stopped raising sheep in preference to handling larger numbers of cattle.

The Depression of the 1930's is remembered as a hard time by all. There is no question that urban folk suffered most, that agriculture in rural areas such as Capistrano remained the safety net for local people. But, as Hallan (1975:74) recorded of agriculture from the townspeople of San Juan:

> It provided employment, and food, yet for some there was no work, no money and nothing to eat. One resident recalled subsisting on a diet of fish, cabbage and whatever he could catch in the nearby Cleveland National Forest. Another confessed to poaching on the O'Neill Ranch. The Works Progress Administration put some people to work building roads and firebreaks, and a Civilian Conservation Corps opened in the nearby national forest, though most of its workers were imported from another state. The town was loaded with vagrants, many of them knocking on back doors looking for something to eat. Stomachs were empty and work was scarce.

But 1932 showed two signs of improvement, both of which affected the Santa Margarita Ranch. Construction of the Ortega Highway from San Juan Capistrano to the San Juan Hot Springs began, and not only provided work for many men but a better transportation route for the ranch. And in the same year, the American Fruit Growers leased 700 acres on the Santa Margarita, Echenique, and Forster ranches for growing row crops such as eggplant, lettuce, sweet potatoes and bell peppers. The company also intended to pack and ship local crops, such as tomatoes and oranges, from Capistrano. That year, the Blue Goose label marketed 148,000 boxes of oranges, which provided work for many, especially women, and was one of the town's leading industries (Hallan 1975:96).

During the depression, strangely perhaps, there were the beginnings of concerns for historic preservation, as many old buildings were being razed because they had deteriorated badly and were fire hazards. Building materials were continually being taken for reuse elsewhere, and in fact, tiles from the old Misión Vieja adobe were excavated and taken to be used in the yard of the Santa Margarita ranch house. Among the projects selected to put people to work by the Works Progress Administration (WPA) was a study of the various Orange County adobes and their condition by C.E. Roberts (1936; Sleeper 1985:14), Roberts wrote of the Trabuco Mesa Adobe and the Rancho Mission Viejo Adobe:

> Alone in the middle of a huge cattle range, commanding a long mesa shut in on all sides by rugged hills, its setting is perhaps less changed than that of any other in this area…the big rancho has been joined to some still larger and the house has not been needed.
>
> Tradition has always connected the Trabuco adobe with San Juan Capistrano Mission and the manner of its construction bears out the tradition.

Of the Rancho Mission Viejo Adobe:

> Nothing is left of this adobe save a huge mound of adobe clay and broken tile but it is well remembered by many people living in that region. The last residents were Basque sheepmen, after whose occupancy the building was abandoned.

But on the Santa Margarita Ranch shortly thereafter, momentous changes began to take place. In 1938, for the first time, large parcels of ranch property were being sold, possibly as a result of the continuing economic conditions or efforts to pay taxes, or both, although rumor had it that a Flood paternity suit was involved. In any case, the oil magnate Eugene G. Starr bought 10,000 acres for $40,000 in Bell Canyon, and the two potreros of La Cienega and El Cariso for almost $28,000. A few years later, he also purchased the third potrero, Los Pinos, and San Juan Hot Springs, all of which had traditionally been connected to the Rancho Mission Viejo. Another ranch parcel, the upper portion of Gobernadora Canyon, some 4,636 acres, was sold to Ernest Bryant. Finally, the southern portion of the ranch, the original Santa Margarita y Las Flores, was reduced by 8,853 acres in the Fallbrook area when a property was sold to the U.S. Government for $371,187 to build a naval ammunition dump (Sleeper 1985:15).

The tight economy of the depression and the prospect of war were looming over the ranch and the neighboring community of Capistrano. Further, several of the Flood and O'Neill offspring had reached their majority and seemingly wanted to pursue different goals, the adult Floods more interested in stocks and bonds, and the Baumgartners considering a mixed agriculture and hotel development. The two families began discussing property division, and the final plan they developed gave the Trabuco and Mission Viejo, the Orange County property of

55,000 acres to the O'Neill family. Approximately 55,000 acres of land extending from San Onofre to the Orange County line along the coast was allocated to the Baumgartners, and the rest of the San Diego County portion of the Santa Margarita Ranch went to the Flood family. The negotiations and settlement took more than a year, and details such as cattle herds that had to be rounded up and divided, new brands designed, and equipment distributed were considerable (Baumgartner 1989:18).

Luis "Yoyo" Olivares, the son of Chulo Olivares who had grown up on the ranch, discribed the vaqueros' responsibilities at that time. He remembered that they had to work two and a half months, with no days off, to change the ranch brand and bob the tips of the cows' tails, thereby showing a change of brand. The work, he said, took extra time because the O'Neills had used a bell design, which turned out to be registered to another outfit; and the herd then had to be rebranded (Rivers 1991:50). John Baumgartner took the former Santa Margarita ranch brand, the "T over O" up north and registered it for his ranch in San Benito County, restricted to the cow's left hip. He described the new O'Neill ranch brand (Figure 8) finally selected as "an easy M with a sort of triangle or arch over the top" (Baumgartner 1982:51).

What happened next, in retrospect, might have been anticipated because the government has been shopping and buying large properties along the southern California coast. But according to Jerome Baumgartner (1989:161) it was totally unexpected and began with two big military footlockers arriving on the train from Oceanside:

> We decided that they must have been sent to the Navy base in San Diego and somehow put on the wrong train. But the next morning, Major General Joseph Fegan arrived at the ranch house and announced that the government was taking possession of the ranch to use it as a Marine base for the duration of the war and he was to be the commander of the new base. The Santa Margarita ceased to exist as a ranch at that moment. John had studied all his life to operate the Santa Margarita and almost as soon as he took it over, the government stepped in and made it Camp Pendleton.

According to John Baumgartner (1989:51) this happened on February 1, 1942. He explained that the Second War Powers Act allowed the military, in this case the marines, to use the ranch as a training base only for the duration of the war. But shortly thereafter, the law was amended to condemn the land, allowing for compensation and the right to receive it back after the war and claim damages for any destruction. Later in the war, the law was changed again to give the property, in order of priority, to a county, state or federal agency, and only if they rejected it, back to the original owners. Finally, although the family fought to get the land back, the Marine Corps fought equally hard to keep it for a permanent base.

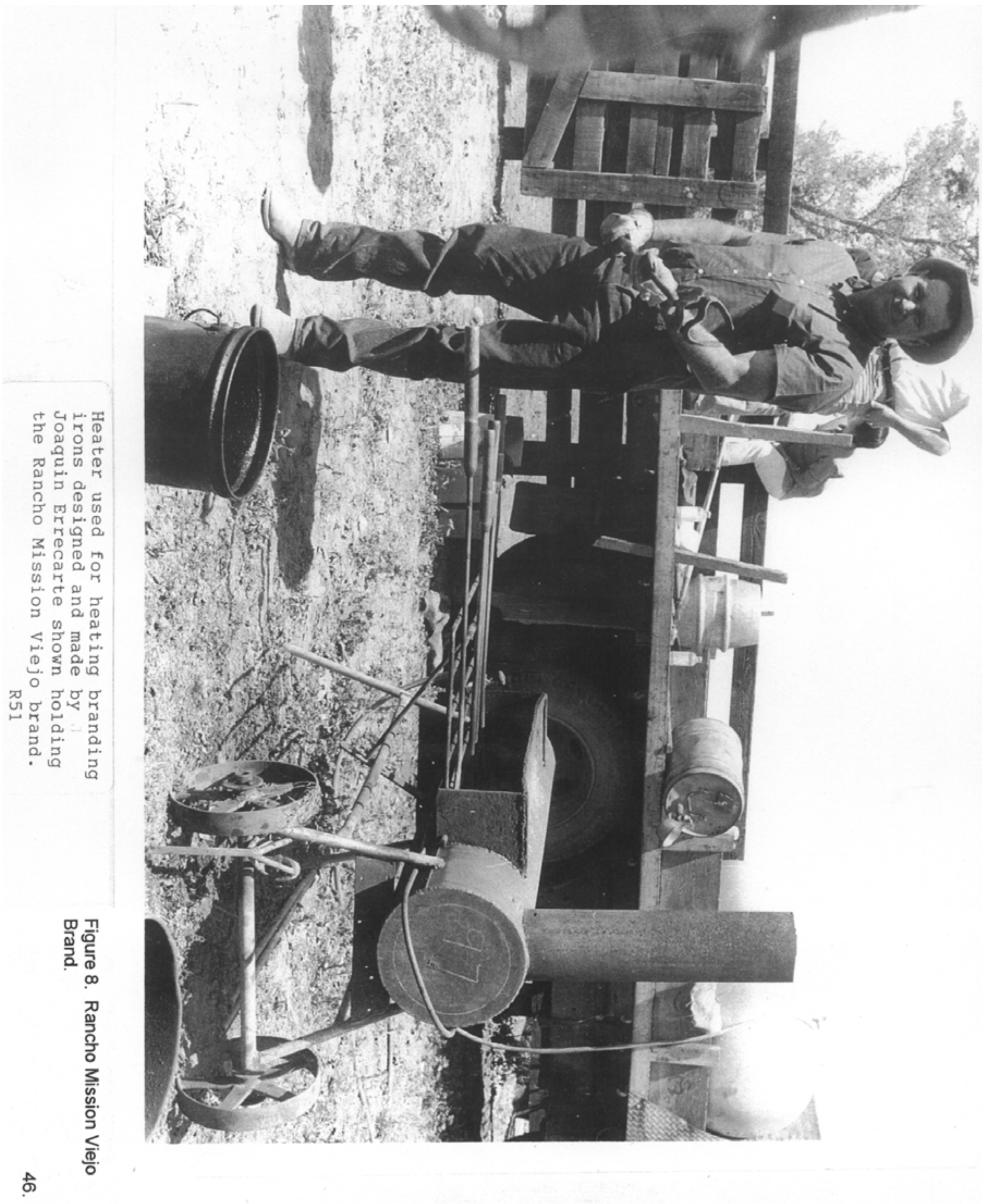


Figure 8. Rancho Mission Viejo Brand.

In May 1943, the United States Government purchased 123,620 (or 124,749 acres) acres from the Flood and Baumgartner families for $4,239,062 (or $4,110,035), the discrepancies stemming from Sleeper's (1985:15) quoting from different newspaper sources. This check was claimed to have been the largest ever cleared in San Diego County. President Franklin D. Roosevelt traveled by train to San Juan Capistrano where he transferred to an automobile to officiate at the dedication of Camp Pendleton. There is a photograph of President Roosevelt receiving a reata from Ralph Brown, the foreman of the Santa Margarita y Las Flores. Mr. Brown continued to work for the O'Neill family on the Rancho Mission Viejo for many years.

At the time of his visit to Camp Pendleton, the President also granted the Magee family lifetime tenure at the Las Flores adobe. And the former brand of the Santa Margarita Ranch, the "T over O" was kept by Camp Pendleton and is probably used today to brand the buffalo herd that resides there.

Rancho Mission Viejo: The O'Neill Family

In 1943, Richard J. O'Neill died at the age of 80 years, and his wife, Marguerite (Daisy), and her children, Alice Moiso and Richard Jerome, inherited the ranch. The trust had already been established, and at age 54, Daisy took over the responsibility of family decisions concerning the ranch. Evidently, the family received various offers to buy the ranch, one of unknown value from James Irvine and another offer at $1.2 million. The trustee representatives of the bank were very favorably inclined toward accepting a cash offer, running cattle ranches not being an expertise they enjoyed (Sleeper 1985:16). As the O'Neill family and the trust bank disagreed over the price, the trust company took the O'Neills to court in San Diego county.

According to John Baumgartner (1989:36), he had advised his Aunt Daisy to keep the ranch, and a very good friend of his, the biggest cattleman in San Diego County, testified for the O'Neill family. Mr. Baumgartner remembered that:

> …The bank attorneys asked him a lot of questions, and one of the questions was, "Was the ranch worth the amount of money that they were offering?" And he said, "It's worth a lot more than that." And they said, "Well, no it isn't. It couldn't be." And, the story is that he looked up at the judge and asked if he could have a pen, and he reached in his pocket and pulled out a checkbook and wrote down a certain number of dollars. That was the first payment for the ranch. …Well, naturally, the judge took a look at this check …that was the end of the case. The bank didn't have anything to say after that….

The population of San Juan Capistrano on the eve of World War II was still only 1200 people, a face-to-face community where most people knew each other. Immediately after the onset of the war, like other American communities, San Juan Capistrano organized a civilian defense council. One of the duties of the council was to turn an old water tower on Mission Hill into an observation tower, and, immediately, volunteers of all ages began to observe the skies for enemy planes. The official responsibility of the airplane observers was to get word to the authorities if they should observe anything suspicious. But Capistrano readiness went one step further, according to Patrick Forster (2000:33) who recently read a reprinted article from the early 1940's:

> …I don't know who organized it and if it was a government deal or what, but they organized the local sportsmen in town, the local hunters, and they formed a group called the Parachuters. P-A-R-A dash S-H-O-O-T-E-R-S. Para-Shooters. It was their job to hold off the Japanese troops. If they parachuted in here, the local guys would get together and be picking off Japanese soldiers until the Army got here!

The town probably had an official home militia, but whether it entailed carrying guns is somewhat dubious, but not at all surprising in a rural community still somewhat isolated, and men who hunted seasonally on the ranches to the east.

Another result of the early war hysteria and invasion fears was the proclamation by President Roosevelt that the west-coast Japanese should be removed to relocation centers. Japanese families farmed in the Capistrano area, both as lessees on large ranches and as property owners. Most of them were sent to the Parker Dam area in Arizona, and their land was distributed to farmers who would grow the same crops. Of the number who left south county, only one or two families returned to farm there after the war (Hallan 1975:109).

The war brought immediate changes to the Olivares family, the family whose father and husband was the vaquero foreman, Jose "Chulo". They had lived and worked on the Santa Margarita ranch for 24 years, but as the Flood and Baumgartner portions of the ranch closed down, Jose Olivares' job was terminated. Clara, his daughter, remembered that he was given nothing, no pension or severance pay, but that he went to work on a ranch at El Toro and made better money there. Louis, her brother, commented that John Baumgartner offered his father any horse he wanted, and "he took old Eleanor, his favorite mare. He could have had any horse on the ranch, and he took that old mare, twenty-five years old". Mr. Olivares was, no doubt, offered better pay at El Toro because all the young men went off to war, leaving the ranches extremely shorthanded, and his vaquero skills were essential to the war effort.

Clara herself, now about 29 years old, was also essential as she went to work in a southern California defense plant, a startling new job type not previously conceived as suitable for women. In the course of the war, she met her future husband, Jasper Hostler, a Hupa who had attended Sherman Indian Institute, at an Indian dance in Los Angeles. Mr. Hostler was stationed at Camp Pendleton for many years until his retirement from the Marine Corps. And with the expected and most essential job, her brother Louis “Yoyo” Olivares, now 22 years old, went into the Army for four years, three of them in the European theater. After the war, typically, he said, “I was never going back to the ranch because I’d found out there was an easier way to make a living” (Rivers 1991:50). Louis did, however, work an occasional roundup for the Rancho Mission Viejo in later years. In many ways, this Indian family serves as a perfect microcosm of families from Capistrano and all over the country where life changed drastically during World War II.

By 1944, the war news sounded very hopeful and fears of invasion had long since dissipated. Local people were still entertaining serviceman at nearby camps, and dances at the Capistrano packinghouse were popular. In the following year young men began to return home and the war was finally over in 1945. Of the O’Neill ranch, Sleeper (1985:16) reported that the year was a low point in ranch income and that the banks’ indecision had stifled development. The bracero program, however, had been bringing agricultural workers here from Mexico who had kept the crops picked, especially oranges in the Capistrano Valley, and probably some of them utilized their skills in the cattle industry, too.

Teeter Olivares Romero (Earle and O’Neil 1994b:20) contributed a final chapter to the Olivares family life in partial retirement:

> My grandfather was the foreman at the Rancho Mission Viejo. He retired here in San Juan Capistrano. He got tired sitting around, so Mr. Starr, who was the one that owned Cota de Caza and Casper Park at that time, gave him a job. And he went over there and he had this south end over here, he was taking care of. That was over there by the hot springs. They put a trailer house over there. My grandfather and grandmother were the same age – 65. And they didn’t want to live in the trailer, they wanted to live outside. So they build themselves a lean-to, and they would sleep outside, and my grandmother had an old stove and she would cook out there. This was in the forties, forty-eight, right around the war. They had an encampment out there. I can still remember what it looked like. The oak tree was very large, we would collect all the oak from there, And we would burn it, and if you really want a good barbecue going use the oak bar, Manzanita wood is used for smoking. We were kids, seven and eight years old, nine, ten years old. We used to go out there; all summer long we lived out there on the ranch.

John Salisbury, the ranch manager retired in 1947, and Arley Leck became the new manager of the Rancho Mission Viejo properties. He was married to a Forster girl, Alice, a sister to Marcos “Tom” Forster, and had cattle ranch experience. In the same year, the largest house in the Cow Camp, the camp near the San Juan Creek where the vaqueros and other workers lived, became available. The second generation Manriquez vaquero to work for the ranch, Waldo "Cabeza" Manriquez had his family living in Capistrano and asked for the cow camp house when it became vacant. His wife, Delores, now a widow living in Capistrano, and her son, Joey, have kindly shared their memories of life on the Rancho Mission Viejo over a period of 31 years, from 1947 to 1978 (Manriquez 2000). Most of the following description is theirs.

Waldo Manriquez had a Juaneño heritage, and his wife, Delores Souffat is a Luiseño, baptised at San Luis Rey Mission. Waldo's father, Ubaldo Manriquez, had been the vaqueros' cook years ago for the Santa Margarita Ranch but he had since passed away. Manriquez received permission, and moved his family from Capistrano out to the ranch. At the time, they had one child and his wife, Delores, was pregnant with another. Within a few years, they had four children that they raised on the ranch, just as the Olivares family had done in the 30's. Delores not only took care of her family but she also cooked regularly for several single cowboys. The foreman, Ralph Brown, and Abel "Viejo" Majel were two of the regulars.

Abel Majel, another Juaneño, had been working for the ranch for thirty years, since 1918 (Sleeper 1985:12), and he probably had not married. People say that his father, Fernando Majel, also worked for a time on the ranch. His mother, Anastacia de Majel, had been one of five linguistic informants for the Juaneño language interviewed by the anthropologist, John P. Harrington (Mills and Brickfield 1986:96), in the 1930's. Before she passed away in 1937, she had discussed her son's work on the Santa Margarita with Harrington. As one of the single men, he lived in the bunkhouse, but nowadays the bunkhouse had four separate sleeping rooms, and a washroom, bathroom, and showers. There was another small family house there in the small community along with barns, corrals and equipment.

Roundups were often a monthly event, and created their own schedule. In the preparation, such as ordering extra food, Mrs. Manriquez often asked her mother to come from San Onofre to help her. Delores cooked for all the extra cowboys hired on, and for the very early breakfast, she made bacon, eggs, potatoes, tortillas and coffee. She made her own tortillas, and also her tamales from the small stand of corn they grew on the ranch. If the cowboys were working a distance from the Cow Camp and couldn't return for lunch, she either packed lunches for them or drove out to the working location and delivered the beans, rice, meat, and "sarsa", the Californio word for salsa. Although beef was often served, they also had chicken and lamb from the ranch animals kept for that purpose. If they were castrating bulls at this roundup, she served "Mountain Oysters", floured and fried. At dinner, they often ate leftovers, and she baked pies, too.

The ranch also kept a cow for the milk, and Delores made butter, and although there was a goat, she couldn't figure out how to milk it. Daniel Gilbert, a cowboy from Baja California, did it for her. Mr. Leck, the foreman, also allowed them to keep about two dozen sheep in with the bulls at the Cow Camp. A sheepshearer came from Costa Mesa in spring to shear the sheep, and the wool was sent off to a factory to have blankets made for the ranch. She grew her own herbs such as *yerba manza*, *ruda*, and *yerba buena* from which she brewed a tea that was incidentally good for the kidneys. *Ruda* was excellent for treating earaches, and it was also a traditional remedy for keeping witches away! At that time, Delores father still used it for the traditional purpose. For major equipment, she had a big, square freezer, a wringer washing machine, an Electrolux vacuum cleaner, and a television set by 1947.

Branding was the important late winter activity, sometime in February or March depending on the Farmer's Almanac and the weather. The weather and humidity determined the temperature of the cattle that was a crucial factor. At that time, the ranch used two brands, the O'Neill "M with flying V over it", and a number from I through 10, representing the last digit of the year, and placed just above the ranch brand. The ranch didn't keep the heifers more than 10 years, and they were culled by using the date record. Joey Manriquez (2000) commented that at that time, the ranch had a fine breeding record that had produced excellent stock. Weaning the calves took place at the end of June, but any particular roundup beside those was for selling and shipping, and the timing of the roundup was dependent upon the current market price. The cattle were all shipped by truck by this time.

Another change that seems to have occurred is in language. While almost everyone on the ranch spoke or at least understood Spanish, English appeared to be the primary language. The Mexican cowboys from Baja were the major exception. Further, the consultants I talked to have dropped the Spanish term 'vaqueros' for the American term 'cowboys', but always making the distinction between real working cowboys and those that just perform at rodeos, and ranch hands or 'ground' cowboys that don't work on horseback.

For the big roundups, Philip Crosthwaite, who had worked for the Santa Margarita ranch since 1926, would bring Mexican cowboys north from Baja California. Delores couldn't remember all their last names, or even some of their real first names since everyone had a nickname in those days. Those she could remember were Tio, Jose Samiengo, Daniel, Thomas, John, and Robert Mundo, who brought his wife, Margarita, who helped her with the food. Local folk who came for the roundups included the following: Ray and Frank Serrano, who worked on the Moulton Ranch; Ralph Fury, who lived at Cook's Corners; Marge and Ernest Bryant from their ranch in Gobernadora Canyon; Joe Avila, her sister-in-law's husband from Capistrano; and Theodore and Luis "Yoyo" Olivares, cousins, the latter having grown up on the ranch.

Everyone's favorite cowboy was Chappo Valenzuela who had been a foreman on the Santa Margarita Ranch for many years. He was very sociable, loved jokes and had a voice that never failed to get the cattle moving. Chappo only worked part-time now, and he also chauffeured the Capistrano Mission car in the summertime when it came to get the children for catechism lessons.

The spring roundup was a great social gathering, and it always ended with a huge barbecue to which others were invited. Monty Montana, a cowboy entertainer who did fancy roping tricks, visited southern California schools, and rode in the Rose Parade, came for several years. Joey Manriguez (200:3) said his rope tricks were fun to watch but he couldn't rope anything! Another favorite with the ranch employees was a Mr. Rasmussen from Riverside who attended during the late 50's and early 60's with his movie camera and shot lots of film. When he returned the next year, he had made a film which he would show to everyone at the house.

Before the 1940's were over, the O'Neill family donated approximately 300+ acres to Orange County to make a county park in Trabuco Canyon. It was named for the family, the O'Neill Park, and dedicated in 1950. The family added another 130 acres in 1963. At the same time, the Los Pinos potrero, which had been owned by E. G. Starr, was swapped for another property and became a part of the Cleveland National Forest (Sleeper 1985:16).

In the early 1950's, the Manriquez children were ready to go to school. The San Juan Capistrano public school bus didn't come out to the Cow Camp, so Arlie Leck, the foreman, told Delores Manriquez to call the school every day until they sent one. She said it took a year but they finally sent one. In the meantime the children had to walk to the ranch headquarters which was the end of the school bus line. Charlie Belardes, a grandson of Theodosio Belardes who had worked for the Santa Margarita (discussed earlier), and Grace lived there and had three children who also rode the school bus. After that, the school bus went all the way to San Juan Hot Springs for the children there, and stopped along the way for the children of the farmers who leased property on the ranch.

Charlie Belardes, according to Patrick Forster (2000), was deputized by the County of Orange, and had the authority to write a ticket for trespassing on ranch property. He was not a game warden. Mr. Belardes was also a valuable employee because he could operate a road grader and do road work on the ranch.

Delores Manriquez couldn't remember all the farmers that had leases on the Rancho Mission Viejo. She thought that most of it was dry farming like the barley raised by Joe and Si Chingala, Basques, who developed fields all over the ranch. Fred "Shorty" Nieblas and his wife, Mary had two children. They raised vegetables, trees, watermelon, and other crops for at least 10 years. George Olivares was another farmer who also made beer and was born at the Parra

Adobe on the edge of town. And at possibly a later time, Mike Imata, Japanese groundskeeper for Richard and Donna O'Neill who had built a beautiful home overlooking the ranch on the south side of the Ortega Highway, leased some land. Delores said he didn't speak much English except for swear words!

Richard Kramer (1995:1) took the test to be Game Warden, and was the first one to be assigned to San Juan Capistrano. He spoke of the Rancho Mission Viejo:

> We had all kinds of deer here. In fact, on Ortega Highway, there used to be alfalfa fields up there. Some evenings, I could count 100, 200 deer on the alfalfa fields. That was one of my main patrol duties. From along about July, August, September, these deer would come down and eat the alfalfa. These other hunters would come along and poach the deer at night, spot light them. So that was one of my main jobs, trying to to protect the deer and keep the poachers out of killing them all.

Fanny was the pet deer of the ranch that Delores Manriquez had raised from a fawn. Everyone knew her and she waited for her dinner outside the kitchen door of the cow camp house. The deer followed everyone around the camp, and when she was five years old, she turned up missing. Delores was sure that a poacher had shot Fanny, and in fact he had. Richard Kramer, she said, went all the way to Pasadena to catch and ticket the hunter that shot her deer.

In 1955, Arley Leck, the ranch manager, passed away and Marcos "Tom" Forster was hired to be the new ranch manager. Tom Forster was the great grandson of Don Juan Forster, the former owner of this land 75 years previously. In an extensive and enjoyable interview with his sons, Tony and Patrick Forster, they remembered that their father was pleased to accept the position, and to be responsible for Rancho Mission Viejo and more closely connected with the O'Neill family. He was almost 60 years old when he took the job, and remembered how he had work summers as a kid on the ranch. Since that time, Tom Forster had been on the Capistrano School Board for 25 years, held Badge #1 for the Volunteer Fire Dept., and served as Justice of the Peace for 16 years. Most residents of the ranch and the town called him "Judge" Forster.

Thomas Anthony "Tony" Forster, age 20, was attending the U.S. Military Academy at West Point at that time, but came home during the summer. Patrick, his youngest brother, born in 1945, was only 10 years old and attended the Capistrano Mission School and Mater Dei High School in Santa Ana, California. The Catholic school sent a station wagon, driven by Paul Arbiso, the well-known Juaneño bell ringer, to pick up Patrick and Bunnie, the daughter of Cecil Martinez, another Juaneño cowboy born on (1908) and worked on the Santa Margarita Ranch. The station wagon picked up more children on the way into Capistrano, but the remainder of the ranch children rode the school bus into Capistrano to public school.

Patrick Forster described himself as a "ground" cowboy that just took care of the physical properties. Like most of the ranch hands, he built fences, fixed water troughs and windmills, dug ditches and drove tractors and pickup trucks. Cowboys, or vaqueros, were paid more for their skills but, as Delores explained, they had lots of work to do just to take care of their own equipment. They had to keep their horses shod themselves, except when Tommy Ramos, a blacksmith and former vaquero on the Rancho Mission Viejo, came out to shoe horses on the ranch. In the evenings, they had to oil their saddles, check their bridles, and other tack and wash their saddle blankets regularly. Some, such as Ralph Brown, the foreman, could make their own reatas, woven or braided leather ropes, for roping cattle. And finally, any dogs they kept were carefully trained to be cattle dogs or they might spook the cattle.

Patrick Forster (2000:5) also explained that the Rancho Mission Viejo had a standing herd of 5,000 cattle in the late 50's and early 60's. There were 1,200 brood cows, their calves, and the yearlings to be gotten ready for market. The ranch cattle were grown so well and put on so much weight that they could barely fit through the butcher chutes. The butchers complained, so the ranch had to start selling them earlier, just to satisfy the packinghouses. The big roundup was held once a year when they branded a thousand cows in three days:

> Early April. And there was ropers and then there was ground cowboys. I was a ground cowboy. We bulldogged the cows and wrestled them down, held them down, and then they got branded while we held them down. And they got inoculated against disease. They would cut their horns off so they wouldn't get long and gore other cows. And they had earmarked that a cow, a cowboy could tell from a hundred yards away if that cow belonged to them just by the way their ears were, had been cut as the young cows.

Tony Forster added the following:

> Also was the count. The number of ears that they ended up. They had girls ears and boys ears, so that they'd know how many steers they had and they had branded, and how many cows they had branded.
>
> I think at your house. He's [speaking of Patrick] got one of those old wires with a bunch of ears strung on it.

In December, 1958, the largest fire Orange County has ever seen burned 66,300 acres (Sleeper 1985:17) beginning more than 20 miles east of the Rancho Mission Viejo at the Stuart Ranch. It was a Sunday, a *santana* wind was blowing and everything was very dry. Patrick (Forster 2000:15), a teenager, observed it Sunday night in a friend's pickup:

> The embers were flying a quarter mile landing in the brush that was on the hillside in front of us…And pretty soon all these little fires developed their own life, and then they'd get together and then they'd form a huge fire…And when we went out the Ortega, there were no fire trucks. And as we got in around the corner, there were maybe 20 fire trucks there…But the worst thing was rabbits were catching on fire, running…Running across the highway and dying on the other side in the grass, and they'd start that grass on fire.

Delores Manriquez (2000:2) remembered that she took her children down to San Juan Capistrano to stay with her sister and returned to cook for the cowboys while they worked on the fire. There was a herd of bulls at the cow camp that they all stayed to protect. The men were able to back fire the plateau, she said, and that stopped it coming in their direction.

And Tony Forster (2000:18) explained that he was coming home for Christmas from El Paso where he was stationed. He had telephone conversations with his parents about the fire, and remembered that:

> About a week after it started, I said, "Can I come over the Ortega?" and the answer was, "Yeah. We think maybe you can." So, I came over the Ortega, and it just looked like a wasteland. I mean, it just, he [his father] described it as going 20 miles this way, and it was just, you know, smoke was still…it was still smoldering.

During the late 50's and early 60's, the momentum of change began to grow as developers began to recognize Capistrano Valley's appeal. The town became a city by incorporating in 1961 with 6,000 acres and a population estimated at 1,200, still not a large community. They also agreed to bring Metropolitan Water to their new city, and sewer bonds were passed. And once again, the old buildings in the town center were threatened with demolition, and some, indeed, were lost. But the American Institute of Architects listed ten buildings worthy of consideration for the National Registry of Historic Sites, a federal organization deigned to help preserve the architectural history of the United States (Hallan 1975:135), and San Juan Capistrano did continue to maintain something of its early California character.

In 1964, change was in the very air of the Rancho Mission Viejo. The O'Neill heirs formed Mission Viejo Company for development purposes, and discussion took place with Donald Bren to create the new Mission Viejo community on the old Rancho Trabuco. A decades-old water suit reached a final settlement, and the Santa Margarita Water District was formed to service the ranch, and also the Starr, John Clay, and new Cota de Caza properties for a total of 41,000 acres (Sleeper 1985:17).

The spring roundup drew all the old cowboys and friends of the ranch, and there was even a professional photographer enjoying the roundup atmosphere and memoralizing it with her excellent pictures (Figures 9 and 10). Mrs. Richard O'Neill, Jr, or "Daisy" as she was known, was celebrating her 85th year, and enjoying the roundup. The tradition of men cooking the barbecue had been passed on from generation to generation of men in the Capistrano Valley, and is still going strong.

The very first El Viaje de Portolá, a trek to commemorate the discovery of Orange County by land, led to an invitational horseback ride along the route followed by the Portolá expedition. Those invited to ride included honored friends, ranch cowboys and large property owners along the route from San Juan Capistrano to Santa Ana, crossing the Rancho Mission Viejo and the Irvine Ranch and transporting the El Camino Real bell this first year of 1964. The trek was organized by a group that every year since has elected "El Presidente" or the president, and dedicated the ride to an important event, place or person. In the subsequent 36 years of the trek, Rancho Mission Viejo or members of the O'Neill family have been honored seven times.

Within this and the next couple of years, a number of men who had all the vaquero skills passed away. The first to go was Waldo "Cabeza" Manriquez who died in 1964, although his family was allowed to remain living and working on the ranch. The Manriquez boys were still in school at that time, but they later worked on the ranch, and Delores was still cooking for ranchhands. Further, Tom Forster picked that same year to retire as ranch manager, and, sadly he too passed away unexpectedly the following year. Within a very short time, Ralph Brown, the foreman, and Chulo Oliveras also were gone. There were very few "vaqueros" left in and around San Juan Capistrano, and seemingly no young men who were getting the experience to fill those roles.

Then, in 1967, Gilbert Aguirre was hired on the Rancho Mission Viejo as the new cattle manager, a year later he became the ranch's general manager, and in 1970, he was promoted to general manager of operations (Sleeper 1985:18). Mr. Aguirre was a new kind of cowboy, one who had grown up on an Arizona cattle ranch, learning the traditional vaquero skills, and then graduated from the University of Arizona with a bachelor's degree in Animal Science. The Coastline Dispatch (April 3, 1968:l) of Capistrano recognized Mr. Aguirre as being in charge of the two week spring roundup of 4,200 head of cattle in 1968. It is possible that the newspaper reporter confused the number of cattle on the ranch with the number being rounded up for market. The article also mentioned that the five regular ranch cowboys would be working with the ten more from Baja California that were hired just for the roundup. And as of this writing, Mr. Aguirre still holds the managerial position of Rancho Mission some 33 years later, a strong indication of the kind of traditional loyalty and devotion on the part of the O'Neill family and the people who have worked for them.

Rancho Mission Viejo round up
1964. Piece of calf's ear is clip-
ped off, the only accurate way to
keep count of the number of calves
being branded. Looking into the
camera is David Stewart. R35

Figure 9. Rancho Mission Viejo Roundup 1964, Ear Clipping.

57.

Figure 9. Rancho Mission Viejo Roundup 1964, Ear clipping.

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Mrs. Richard O'Neill, Jr. 85
years old and Marco F. Forster,
manager Rancho Mission Viejo.
Great-grandson of Don Juan For-
ster, owner of ranch 1864-1882

Figure 10. Mrs. Richard O'Neil
and Marco F. Foster, 1964
Roundup.

58.

Figure 10. Mrs. Richard O'Neill and Marco F. Foster, 1964 Roundup.

Anthony “Tony” Moiso, great grandson of Richard O’Neill, became president of the Viejo Management Company in 1976, and from that time has taken an active role in development and ranch management. When his grandmother, Marguerite “Daisy” O’Neill died in 1981 at age 102 years, the ownership of the ranch was then divided among his mother, Alice Avery (40%), his uncle, Richard J. O’Neill (40%), and various family trusts and foundations (20%). In 1985, they were on the Forbes’ “400” list with an estimated wealth of $250 million each (Sleeper 1985:20). The O’Neill family can look back with gratitude and respect to the long struggles of Marguerite O’Neill who fought off the bank trust officers that wanted a quick profit from selling the Rancho Mission Viejo.

The annual spring roundup, which is still a traditional event, was several times referred to in the seventies as a “Cowboy Reunion”. That ‘reunion’ is still taking place for the workers, friends and neighbors of the Rancho Mission Viejo. Although there may be only a few old vaqueros left, there are still “horse” cowboys, wranglers, who can brand those cattle and get them ready for market, and the tradition of the San Juan Capistrano men, Juaneños and cowboys, cooking the barbecue for the big traditional celebrations is still going strong.

In 1982, Rancho Mission Viejo celebrated the centennial of the O’Neill family ownership and management of the Santa Margarita and the Rancho Mission Viejo at Campo Amantes, the large barbecue and picnicking area east of Trampas Canyon set aside by the ranch for this purpose. Every year, the San Juan Capistrano Historical Society has a celebration at the camp, and no doubt other groups do too. They are very grateful for the historical O’Neill Museum building in San Juan Capistrano that the O’Neill family had moved, renovated, and continues to support.

The full, rich history of the Rancho Mission Viejo has hardly been touched on here, especially the very prosperous recent years of residential development. But that is a completely different story, and this one, the story of people who worked and lived on the ranch, especially the Juaneño Indians of San Juan Capistrano, has come to an end although, I suspect, it will never be completed.

ACKNOWLEDGMENTS

I have long been aware that the act of doing research, organizing the rich material and getting it written down teaches far more that the perusal of the finished product does for the reader. This has been another splendid opportunity to enjoy the process again and in doing so, gain a deeper appreciation of the rich environment, the historical processes, and the many players that have created the Orange County of the 21st century. I would like to express my gratitude to Mr. Gilbert Aguirre and Ms. Laura Eisenberg of the Rancho Mission Viejo, and to Carol Demcak of Archaeological Resource Management Corporation (ARMC) for giving me that opportunity.

Along the way, I have enjoyed the hospitable company, invaluable assistance, and the rich observations of David Belardes and Joyce Perry of the Juaneño Band of Mission Indians. And to Steve O'Neill who helped to orient me, untangled the Majel and Valenzuela families, and discussed the potential placement of the villages of Boscana, I am deeply grateful.

And finally, I wish to thank and give credit to the Historical Society of San Juan Capistrano for the use of their excellent historical photographs. In particular, Gwen Vermeulen, Tony Forster, and Patrick Forster provided valuable assistance and historical insights into the evolution of the Rancho Mission Viejo.

NOTES

I. On the first field trip, David Belardes and Joyce Perry accompanied ARMC personnel Carol Demcak, Chris Demcak, Steve Wakefield, and me to various sites on the ranch and contributed their observations as to the sites' possible relevance to Juaneño villages described in the ethnographic literature. On the second field trip, Steve O'Neil (1988:116), who had already noted the possible location of Tobe on the Rancho Mission Viejo because of the Crespi 'white clay' observation, took part in this on-going discussion of the location of the villages reported by Geromino Boscana. My thanks to all who participated in the field trips.

REFERENCES

Allen, Kathleen Del Chario, James D. Newland, Stephen R. Van Wormer, and Carol R. Demcak
1992 Cultural Resources Assessment of the South Ranch Area of Coto de Caza, Orange County, California. Report prepared for Coto de Caza, Ltd. Copy on file, South Central Coastal Information Center (SCCIC), Department of Anthropology, California State University, Fullerton, P.O. Box 6846, Fullerton, CA 92834-6846.

Balls, Edward K.
1958 Early Uses of California Plants. University of California Press, Berkeley.

Bancroft, Hubert Howe
1883 History of California, Vols. I-V(1542-1848). In The Works of Hubert Howe Bancroft, vol. XVIII, The History Company, San Francisco.

Baumgartner, Jerome W.
1989 Rancho Santa Margarita Remembered. Fithian Press, Santa Barbara, CA.

Margarita. Shirley E. Stephenson, interviewer and editor. California State University, Fullerton Oral History Program, Fullerton, CA.

Bean, Lowell John and Florence C. Shipek
1978 Luiseno. In Handbook of North American Indians, Volume 8, California; R.F. Heizer, ed., pp. 550-591. Smithsonian Institution, Washington D.C.

Boscana, Geronimo
1978 Chinigchinich, A Revised and Annotated Version of Alfred Robinson's Translation, and Annotations by John P. Harrington. Malki Museum Press, Banning, CA.

Bowman, J. N. Baumgartner, John J., Jr.
1982 John J. Baumgartner, Jr, Reflections of a Scion of the Rancho Santa

1958 Index of the Spanish American Land Grants Recorded and Cases of California. On microfilm at the Sherman Library, Corona del Mar, CA.

Carrico, Richard L.
1977 Portola's 1769 Expedition and Coastal Native Villages of San Diego County. The Journal of California Anthropology 4(3):30-41.

Clay, John
1896 My Life on the Range. Referenced in JRP Historical Consulting Service, 1991.

Cleland, Robert G.
1951 The Cattle on a Thousand Hills. The Huntington Library, San Marino, CA.

Cook, Sherburne F.
1943 The Conflict between the California Indians and White Civilization I: The Indian versus the Spanish Mission. Ibero-Americana 21. Berkeley, CA.

Costanso, Miguel
1911 Diary of Miguel Constanso. Frederick J. Teggart, ed. Publications Of the Academy of Pacific Coast History II:173-175.

Crespi, Juan, O.F.M.
1927 Fray Juan Crespi: Missionary Explorer on the Pacific Coast 1769-1774. Edited and translated by Herbert E. Bolton. University of California Press, Berkeley.

Demcak, Carol R.
2000 Report of Archaeological Resources Survey for the Ranch Plan, Rancho Mission Viejo, South Orange County, California. Prepared for Rancho

Mission Viejo, L.L.C., San Juan Capistrano, CA. Copy on file, SCCIC.

Dubois, Constance G.
1908 The Religion of the Luiseño Indians of Southern California. University of California Publications in American Archaeology and Ethnology 8(3):69-186.

Earle, David E., and Stephen O'Neil
1994a Newport Coast Archaeological Project: An Ethnohistoric Analysis of Population, Settlement, and Social Organization in Coastal Orange County at the End of the Late Prehistoric Period. Prepared for the Keith Companies, Costa Mesa, California. Copy on file, SCCIC.

1994b Native Californian Commentary and Ethnographic Interviews. Prepared for the Keith Companies, Costa Mesa, California. Copy on file, SCCIC.

Engelhardt, Zephyrin, O.F.M
1922 Mission San Juan Capistrano. Standard Printing Co., Los Angeles.

Forster, Patrick
2000 Oral Interview, April 18, 2000, Nancy H. Evans, interviewer, at the O'Neill Historical Museum, San Juan Capistrano, CA.

Forster, Thomas Anthony (Tony)
2000 Oral interview, April 18, 2000, Nancy H. Evans, interviewer, at the O'Neill Historical Museum, San Juan Capistrano, CA.

Geiger, Maynard, O.F.M
1967 New Data on Mission San Juan Capistrano. Southern California Historical Society Quarterly 49(l):37-45.

Gray, Paul Bryan
1998 Forster VS Pico: The Struggle for the Santa Margarita Ranch. Arthur H. Clark Company, Spokane, Washington.

Hallan, Pamela
1975 Dos Cientos Años en San Juan Capistrano. Walker Color Graphics, Irvine, CA.

Harrington, John P.
1934 A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southern California. Smithsonian Miscellaneous Collections 92(4):1-62.

n.d. Juaneño Field Notes. John P. Harrington Papers. National Anthropological Archives, Smithsonian Institution. (Microfilm edition:

Reel 121, Frames 665, 784, 788.
Reel 122, Frames 39, 45.
Reel 128, Frames 246, 286.

Hayes, Benjamin
1927 Pioneer Notes from the Diaries of Judge Benjamin Hayes, 1849-1875, Privately Printed at Los Angeles, California.

Hunn Jr., George
1976 Vivian Ricardes Olivares, In Recuerdos de San Juan Capistrano. San Juan Capistrano Historical Society, Anderson, Richie and Simon, USA.

Jones, Carleton S., Sue A. Wade, Kathleen C. Allen, and Carol R. Demcak
1995 Report of Archaeological Test and Salvage Investigations at the Golf Course Village Sites, Plano Trabuco, Orange County, California, Vol. I. Prepared for the Santa Margarita Company. Copy on file, SCCIC.

JRP Historical Consulting Service
1991 National Register Nomination for the Las Flores Adobe. On file at the Office of Historic Preservation, Dept. of Parks and Recreation, Sacramento, CA.

Kelsey, Harry
1987 The Mission Buildings of San Juan Capistrano: A Tentative Chronology. Southern California Quarterly vol. 69(1):1-32.

Kramer, Richard
1994 Oral Interview, Ross and Anna Weinberg, interviewers. On file at the O'Neill Historical Museum, San Juan Capistrano, CA.

Kroeber, Alfred L.
1925 Handbook of the Indians of California. Smithsonian Institution, Bureau of American Ethnology Bulletin 78. Washington, D.C.

Layne, J. Gregg
1935 The First Census of the Los Angeles District. The Historical Society of Southern California, vol.18(3):81-109.

Manriquez, Delores
2000 Oral interview, May 4th and 11th, 2000. Nancy H. Evans, interviewer. Manriquez home, San Juan Capistrano, CA.

Manriquez, Joseph
2000 Oral interview, May 4th and 11th, 2000. Nancy H. Evans, interviewer. Manriquez home, San Juan Capistrano, CA.

Marinacci, Barbara and Rudy Marinacci
1979 California's Spanish Place-Names: What they are and how they got here. Presidio Press, San Rafael, CA.

Meadows, Don
1963 Orange County Under Spain, Mexico and the United States. The Historical Volume & Reference Works, Whittier, CA.

1965 The First European Contact with the Indians of Orange County. Pacific Coast Archaeological Society Quarterly, vol. 1(3).

1967 The Original Site of Mission San Juan Capistrano. The Historical Society of Southern California. Reprinted from Southern California Quarterly, vol. XLIX:3.

Merriam, C. Hart
1968 San Juan Capistrano Mission. In Village Names in Twelve California Mission Records. Reports of the University of California Archaeological Survey, No. 74. Robert F. Heizer, ed. University of California Archaeological Research Facility, Dept. of Anthropology, Berkeley.

Mills, Elaine L. and Ann J. Brickfield, eds.
1986 The Papers of John Peabody Harrington in the Smithsonian Institution, 1907-1957, vol. 3. Kraus International Publications, White Plains, N.Y.

Nordhoff, Charles
1893 California: For Health, Pleasure, and Residence. A Book for Travellers and Settlers. New York. In JRP Historical Consulting Service, 1991.

O'Neil, Stephen
1989 Their Mark Upon the Land: Native American Place Names in Orange County and Adjacent Areas. In, The Natural and Social Sciences of Orange County, Henry C. Koerper, ed., pp.106-122. Memoirs of the Natural History Foundation of Orange County, Volume 2. Natural History Foundation of Orange County.

2000 Native American Settlements on the Rancho Mission Viejo. Unpublished manuscript in the possession of the author.

Osterman, Joe
1986 Saddleback Valley. In A Hundred Years of Yesterdays: A Centennial History of the People of Orange County and their Communities. The Orange County Centennial, Inc., Santa Ana, Ca.

Oxendine, Joan
1980 Harrington Placename letter, on file in the Juaneno Band of Mission Indians business office

Palou, Fray Francisco O.F.M.
1926 Historical Memoirs of New California, vol.2. H. E. Bolton, ed. University of California Press, Berkeley, CA.

Pauley, Kenneth
2000 Weights and Measurements in California's Mission Period. Part 1 – Linear Measurements. Paper delivered at the California Mission Studies Association Conference, Mission San Gabriel, February, 2000. Copy in author's possession.

Perry, Joyce
2000 Personal communication, May 21, 2000.

Rivers, Betty
1991 The Pendleton Coast District: An Ethnographic and Historical Background. In The Cultural Resources of the Pendleton Coast District. Report on file at the Department of Parks and Recreation, State of California, Sacramento.

Roberts, C. E.
1936 Adobes of Orange County, California. U.S. Works Progress Administration, Southern California, Orange County Series,WPA Research Project No. 3105, Santa Ana, CA.

Robinson, Alfred
1846 Life in California. Wiley & Putnam, New York.

Rojas, Arnold R.
1964 The Vacqueros. MacNally and Lofting Publications, Santa Barbara, CA.

Saunders, Charles F., and Father St. John O'Sullivan
1998 Capistrano Nights. The Paragon Agency, Orange, CA.

Sleeper, Jim
1985 Rancho Mission Viejo (A Chronological History). Ms. on file, Rancho Mission Viejo, P.O. Box 9, San Juan Capistrano, CA 92693.

1988a Trabuco Mesa. In A Hundred Years of Yesterdays: A Centennial History of the People of Orange County and their Communities. The Orange County Centennial, Inc., Santa Ana, CA.

1988b Rancho Santa Margarita. In A Hundred Years of Yesterdays: A Centennial History of the People of Orange County and their Communities. The Orange County Centennial, Inc., Santa Ana, CA.

Smith, Helen
1965 The Portola Camps Revisited. Pacific Coast Archaeological Society Quarterly, Vol. 1(4):28-33.

Smith, Donald Eugene and Frederick J. Teggart
1909 Diary of Gaspar de Portola During the California Expedition of 1769-1770. Academy of Pacific Coast History I(3).

Sparkman, Philip S.
1908 The Culture of the Luiseño Indians. University of California Publications in American Archaeology and Ethnology 8(4):187-234. Berkeley.

Stephenson, Terry E.
1935 Forster vs. Pico. Historical Society of Southern California 17(4):143-147.

1936 Forster vs. Pico. Historical Society of Southern California 18(1):22-30, 18(2):50-68.

Strong, William D.
1929 Aboriginal Society in Southern California. University of California Publications in American Archaeology and Ethnology, vol. 26. Malki Museum, Morongo Reservation, Banning, CA.

U.S. Bureau of the Census
1850 7th Census. California Population Schedule. U.S. Government Printing Office, Washington D.C. Microfilm copy in the California State Library, Sacramento.

Van Hemert-Engert, Adolph and Frederick J. Teggart
1910 The Narrative of the Portola Expedition of 1769-1770 by Miguel Costanso Publications of the Academy of Pacific Coast History I(4).

Walter, Albert
1971 Albert Walter Interview. Conducted by Eric Siegel, 27 April, 1971. Orange Community History Project, California State University, Fullerton, CA.

Yorba, Joseph
1977 General History of San Juan Capistrano. Community History Project, California State University, Fullerton Oral History Program.

REPORT OF ARCHAEOLOGICAL TESTING FOR THE RANCH PLAN, PHASE II-A, RANCHO MISSION VIEJO, SOUTH ORANGE COUNTY, CALIFORNIA

By:

Carol R. Demcak

Of:

Archaeological Resource Management Corporation
1114 N. Gilbert Street
Anaheim, CA 92801
714/491-9702

For:

Rancho Mission Viejo, LLC
P.O. Box 9
San Juan Capistrano, CA 92693

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REPORT OF ARCHAEOLOGICAL TESTING FOR THE RANCH PLAN, PHASE II-A, RANCHO MISSION VIEJO, SOUTH ORANGE COUNTY, CALIFORNIA

PART I: BACKGROUND TO THE STUDY

INTRODUCTION

At the request of Laura Coley Eisenberg of Rancho Mission Viejo, LLC, personnel from Archaeological Resource Management Corporation (ARMC) conducted archaeological testing of 24 sites in south Orange County for the Ranch Plan, Phase II-A. This second phase follows Phase I, (survey level) investigations conducted earlier (Demcak 2000). Sites selected for this test phase were determined according to their likelihood of being impacted by the proposed Ranch Plan project or alternatives to the Ranch Plan project. Due to the number of sites to be tested, this test phase is divided and documented separately as Phase II-A and Phase II-B. The sites are all located on Rancho Mission Viejo. They include the following: CA-ORA-29, -653, -654, -655, -657, -658, -1105, -1124, -1184, -1446, -1450, -1550, -1554, -1555, -1556, -1559, -1560, -1561, -1562, -1563, -1564, -1565, 1566, and 30-176632. The latter 13 sites were recorded during the Phase I investigations in 2000. The remaining sites were recorded at various times, CA-ORA-29 (Mission Vieja) being the earliest. That site is treated in a separate report (Van Wormer 2002).

The author, a Society of Professional Archeologists (SOPA) certified field archaeologist and Registered Professional Archaeologist (RPA), with over 20 years of experience in southern California archaeology, was overall Project Director and supervised the fieldwork on the prehistoric sites. Stephen Van Wormer, historian and Society of Professional Archeologists (SOPA) certified field archaeologist, supervised the fieldwork on the two historic sites; only 30-176632 is treated in this report. Chris Demcak prepared the report graphics. The northern field crew consisted of Kathleen Allen, Jill Cooley, Chris Demcak, and Jack Demcak. Steve Wakefield served as Crew Chief for the southern crew consisting of Karim Pike, Peter Reinke, Paul Staniec, John Sunio, and Eric Wenhold. The fieldwork took place from June 11 – October 23, 2001.

The results are that six prehistoric sites (CA-ORA-1554-, -1555, -1556, –1559, -1560, and -1565) and one historic site (CA-ORA-29; Van Wormer 2002) are considered significant, i.e., potentially eligible for the National Register of Historic Places (NRHP).

NATURAL SETTING

The project area (Figure 1) generally consists of Chiquita Canyon, Gobernadora Canyon south of Coto de Caza, the floodplain of San Juan Creek, Trampas Canyon, and Cristianitos Canyon. Ortega Highway (SR 74) bisects the study area. The foothills that characterize the study area are

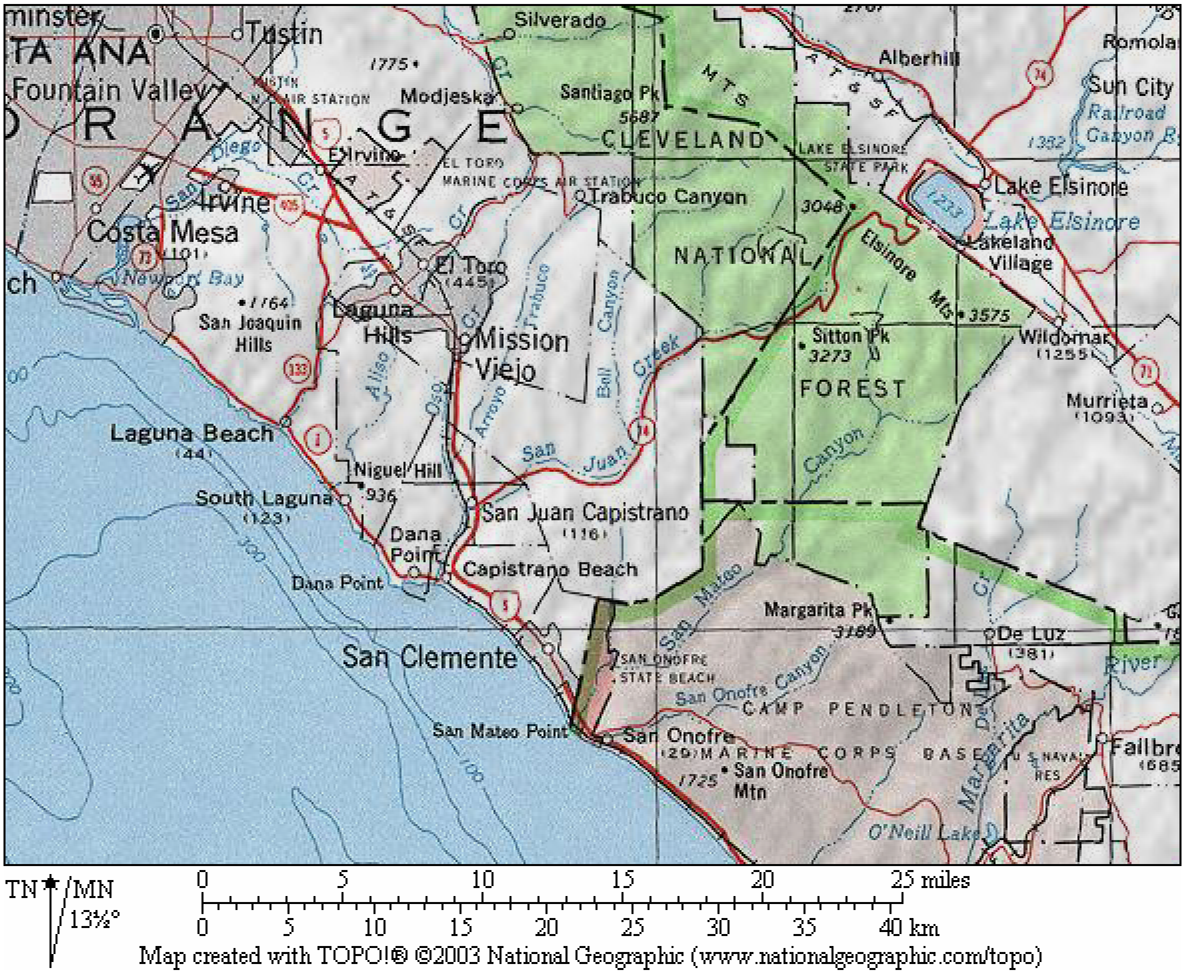


Figure 1. General Project Location.

part of the Santa Ana Mountains and the Peninsular Ranges Province that stretches from the Transverse Ranges through the Los Angeles Basin to the tip of Baja California (Norris and Webb 1976). The climate of the area is Mediterranean type, with dry summers and moist winters. Rainfall averages 10-15 inches annually on the coastal plain and up to 40 inches in the interior mountains (Hornbeck 1983).

The project is situated in south Orange County along Chiquita Creek, Gobernadora Creek, San Juan Creek, Cristianitos Creek, numerous unnamed drainages, and their adjacent terraces. Topographically, the study area is characterized by rolling hills, narrow ridgelines, and knolls separated by narrow canyons, localized drainages, and broad watercourses (Orange County Planning Department 1971). Elevations in the project area vary from a low of 160' in the floodplain of San Juan Creek to a high of 660' in upper Cristianitos Canyon.

Geologically, the study area is underlain by marine Upper Cretaceous deposits (Trabuco, Ladd or Williams Formations) and by Tertiary age, marine sedimentary rocks (Morton and Miller 1981), along with Quaternary and recent alluvium. Mapped formations include the marine Upper Cretaceous Ladd and Williams Formations, the marine Paleocene Silverado Formation, the marine Eocene Santiago Formation, the terrestrial Oligocene Sespe/Vaqueros undifferentiated Formation, the marine Middle Miocene Topanga and Monterey Formations, the marine and non-marine Middle Miocene San Onofre Breccia, the Upper Miocene Capistrano Formation, and unnamed Quaternary and recent alluvium. Soils in the study area vary from gray-brown to red-brown clayey loam on the upper terraces and knolls to light tan, sandy/silty sediments with abundant cobbles on the creek bottoms and adjacent terraces.

Lithic raw material derived from these and other formations in the Santa Ana Mountains include the Bedford Canyon metasediments (argillite) and quartzites; the Santiago Peak volcanics (rhyolite, andesite, and basalt) and metavolcanics; as well as granitics, quartz, chert, and chalcedony. These lithics occur as stream float in the local drainages. These raw materials were utilized by aboriginal populations to create chipped and ground stone tools and ornaments.

Six plant communities as defined by Munz and Keck (1959) are present in the project area. These communities (Chaparral, Coastal Sage-scrub, Grassland-herbland, Oak Woodland, Riparian, and Freshwater Marsh) would have provided a variety of seasonal plant resources to the prehistoric and early historic inhabitants of the region. For a detailed description of these resources and their uses, see Demcak et al. (1989).

CULTURAL SETTING

Prehistory

Wallace (1955) and Warren (1968) have both proposed syntheses of the local cultural sequence. These summaries continue to be useful in defining the prehistoric period in southern California. The two researchers propose that aboriginal populations remained hunters and gatherers before Spanish contact.

The Milling Stone Horizon, or Encinitas Tradition, is the earliest occupation that has been properly documented for Orange County. Highly mobile populations adapted to a littoral, or coastal, environment during this occupation. Small native groups gathered plant foods, including seeds, tubers, and berries, collected shellfish, and hunted small and large game. They used milling stone and muller, more commonly called metate and mano, to grind seeds. Hunting tools included wide, thick, and heavy projectile points. They were presumably utilized as spear points, based on their weights (Fenenga 1953), and launched by atlatls, or wooden spear-throwers. Cog stones and discoidals, wheel-shaped and disc-shaped ceremonial stones respectively, and red argillite beads are diagnostic artifacts, or time-markers, for this earliest known occupation in Orange County.

During the subsequent Intermediate Horizon, or Campbell Tradition, prehistoric populations expanded their resource base to include more hunting and fishing. The mortar and pestle, tools associated with the processing of acorns and other fleshy plant foods, were introduced into the area. Projectile points remained relatively large and heavy.

In the final prehistoric occupation, the Late Horizon Cultures (Shoshonean and Hokan speakers), local economies expanded markedly. Artifact assemblages reveal an increase in the number and types of tools, reflecting population growth and task specialization. Non-utilitarian items, such as beads and ornaments, were also on the increase in the Late Horizon compared to earlier occupations. Local groups continued to rely primarily upon plants, shellfish, and terrestrial game, which they hunted with small, lightweight arrow points and the bow.

Steatite, obsidian, and other non-local lithic resources were traded into the area. Pottery was introduced into Kumeyaay territory in San Diego County and small quantities reached Orange County in the very late prehistoric period. Pestles and portable mortars, especially of the basket-hopper type, and bedrock mortars were utilized locally for acorn processing. Seed grinding continued to be carried out with manos and metates, as well as on bedrock grinding slicks.

Ethnohistory

Ethnographically, the study area falls within the territory of the Juaneño people. The Juaneños were named by their association with the Mission San Juan Capistrano. They are closely related to the Luiseños, who were associated with the Mission San Luis Rey (Bean and Smith 1978; Bean and Shipek 1978). Shoshoneans, they are Takic speakers of the wider Uto-Aztecan family of languages. Uto-Aztecan speakers are presumed to have entered California prior to 2000 B.C. (Moratto 1984:541) and perhaps arrived in the Los Angeles Basin by 1000 B.C. (Kowta 1969:50).

Hunter-gatherers, these Native populations exploited a diverse set of microenvironments from the coast, coastal plain, foothills, Santa Ana Mountains, to the interior valleys of southern California. Their territory is traditionally described as bounded on the north by Gabrielino territory at Aliso Creek. However, David Belardes (pers. comm.), member of the Juaneño Band of Mission Indians, asserts that the northern boundary of Juaneño territory was actually the mouth of the Santa Ana River. Inland, their territory extended to the upper reaches of the Santa Ana Mountains where it adjoined Luiseño territory. Southward, Juaneño territory reportedly exxtended to the area between the San Onofre and Las Pulgas drainages (Kroeber 1925:636) and westward to the Pacific Ocean.

With the coming of the Spanish in 1769, Native populations were brought into the mission system and forced to adapt to a new social and economic order with drastic consequences for the Natives. Their populations were radically reduced in number and their aboriginal way of life was largely eliminated. Certain populations, among them Juaneños who managed to escape into the interior mountains, were spared the forced acculturation for a short time. Then they too were overwhelmed by Spanish, Mexican, and later American Period developments. Despite considerable hardship, many of their descendents still live and work in the area surrounding the Mission San Juan Capistrano.

The Juaneño Band, or Acjachemem Nation, strives to keep its distinct culture and language from extinction. After decades of struggle for recognition, the band was formally recognized by the California State Legislature in September, 1993 as the "...original native tribe of Orange County" (Hall 1993:A3). Band members continue to seek federal recognition as a tribal unit.

Historical Overview

The arrival of the Portolá Expedition in 1769 marked the first efforts at extending Spanish control into Alta California through the establishment of Catholic missions. This move by the Spanish King Carlos III was intended to protect Pacific Coast shipping against Russian or English occupation of the area. Beginning in San Diego, the padres surveyed the lands as far north as Monterey Bay and secured them for the Spanish Crown. Mission sites were selected on the way north by Fathers Crespi and Gomez (Hallan-Gibson 1986).

The Portolá party arrived in Orange County on July 22, 1769, at a site in Cristianitos Canyon where two sick children were baptized by the fathers. The following day the travelers camped near the Mission Vieja site (CA-ORA-29) at the mouth of Gobernadora Canyon. The next day the expedition continued northwestward and out of the survey area to the western edge of the Plano Trabuco and camped at the San Francisco Solano campsite at the present location of the Trabuco Adobe. Altogether they stopped at seven campsites (Smith 1965) in what became Orange County.

Missions, presidios, and pueblos were established by the Franciscan fathers, and in 1775, the Mission San Juan Capistrano was begun. Within days, however, a Native American uprising at the mission in San Diego forced the fathers to abandon the local mission, hastily bury its bells, and with the soldiers hurry southward to assist their fellow priests. The fathers returned the following year to re-establish the mission at a different site. There on November 1, 1776, the mission was officially founded. On October 4, 1778, the mission was removed to its present location closer to the Arroyo Trabuco, a dependable water source (Hallan-Gibson 1986). Substantially expanded in 1784, the mission continues in use and is believed to be the oldest building extant in California, according to Friis (1965).

The Native inhabitants were brought under the control of the mission. They were converted to Catholicism and provided the mission with a large labor pool. The padres taught them the necessary skills to grow crops, tend cattle, produce wine, pottery and other crafts. The missions intended to prepare them to look after their own lands, which were held in trust for them. Spanish legislators called for the dissolution of the missions and turning over the lands to the natives as early as 1813. However, it was not until the Mexican Period that secularization was begun.

At the end of the Mexican Revolution, mission lands were seized and turned over to Mexican citizens of the Catholic faith and of good character. The Mission San Juan Capistrano was the first mission to be secularized in 1834. A pueblo for Native Americans was set up at Mission San Juan Capistrano, but, after years of mismanagement, failed (Dixon 1988; Hallan-Gibson 1986). A town was instead chartered and land became available to petitioners, including the Natives. Eventually, the town itself failed, and the mission was sold by Governor Pio Pico to his brother-in-law John Forster and James McKinley, a trader (Hallan-Gibson 1986). Forster maintained his residence at the mission until his claim to the property was denied (Muñoz 1980).

A series of land grants, or grazing rights, was issued by the Spanish Crown. The land between the Santa Ana and San Gabriel rivers was given to Manuel Nieto in 1784; this was the first land grant in Orange County. The second, called Rancho Santiago de Santa Ana, went to Juan Grijalva and Jose Yorba, his son-in-law. The grant was confirmed in 1810 to Yorba and Grijalva's grandson (Hallan-Gibson 1986). There followed a period of growth and development as rancheros built adobe homes, ran large herds of cattle and sheep, engaged in foreign trade, and dabbled in politics.

California was drawn into the Mexican-American War in 1846, and Governor Pico fled the oncoming American Army. His son-in-law John Forster, an American sympathizer, tipped off the Union soldiers marching through Orange County that a large contingent of enemy soldiers was on its way. This may have saved their force from defeat by 600 Mexicans (Hallan-Gibson 1986). After the Treaty of Guadalupe Hidalgo ended the war in 1848 and California entered the Union, the land claims of the rancheros were scheduled to be upheld, but subsequent laws required the land owners to prove their claims, requiring considerable time and expense. Most of the land claims in Orange County were eventually confirmed by the courts.

In the American Period, life on the ranchos continued much as before although squatters, rustlers, and mounting debts grew troublesome. Large landholdings were increasingly broken up; towns and settlements grew in number. Mission San Juan Capistrano was returned to the Catholic Church in 1865 when the U.S. Government denied Forster's claim to the property. Forster took his family and moved southward to Rancho Santa Margarita, home of his relatives, the Picos (Hallan-Gibson 1986).

During the 1860s, severe drought, smallpox, and torrential rains alternately took their toll on the large landholders and other settlers in southern California. The cattle market collapsed, land was devalued, and a diversified economy developed. The end of the Civil War brought an impetus to settlement. Land was cheap, and thousands flocked to the Golden West. A real estate boom ensued in the 1880s. The arrival of the Union Pacific, Southern Pacific, and Santa Fe Railroad provided transportation for people and products into and out of California. Sheep ranching became highly profitable due to the scarcity of cotton in the South. Large land grants were partitioned. Development proceeded at a rapid pace through the late nineteenth and early twentieth century. Improvements in transportation and communication contributed to the boom. The citrus industry with its associated beekeeping was one of the most successful enterprises in the area.

In the post-World War II period, southern California has been characterized by expanding urbanization, business and industry. The aerospace industry, movie and television industries, automobile manufacturing, and tourism have spurred local growth and continue to attract visitors and potential residents. The last ranchos have been developed or are in the process of being developed.

Mission Viejo, or La Paz, and O'Neill Ranch

This large rancho comprising 46,500 acres was granted to Jose Estudillo in 1841. Juan Forster acquired the holding in 1845 after having grazed his cattle there for at least a year. Forster, who played a significant role in the development of southern Orange County and northern San Diego County, was an Englishman by birth but a naturalized Mexican citizen. He was married to Pio Pico's sister, possessed vast land holdings, and was one of the wealthiest and most influential men of his day. His ranching success was partly due to an increased demand for beef that brought about a cattle boom once the gold rush had begun in 1848.

In 1882, the heirs of Juan Forster, whose land was heavily mortgaged due to various business failures, sold the Rancho Santa Margarita y Las Flores to Richard O'Neill and James C. Flood. Thus began the O'Neill Ranch, which includes the project area.

O'Neill, an Irishman, had come to California and established a successful ranching business and later meat-packing establishment. With his friend Flood, he acquired the Forster property. With various innovations, such as installing feedlots, O'Neill was highly successful and bought more land. The land holding reached its maximum of 260,000 acres under the care of Jerome O'Neill, Richard's son, at the turn of the century (Emmons 1974).

After Jerome's death, the ranch became the property of the Rancho Santa Margarita Corporation in 1926; and the O'Neills' stocks were held in trust. The Floods retained half interest in the corporation and ran the ranch until the 1930s when they sold their share (now Camp Pendleton) and the O'Neills divided their half interest. The land itself remained in trust. In 1943, after Richard O'Neill, Jr., died, an effort by trust officers to sell the property was halted by his widow.

In 1964 Mission Viejo Company was formed. The heirs and Richard O'Neill, Jr.'s, widow retained a 20% share of the company. Local development was initiated, and in 1972 the company was sold to the Phillip Morris Company, whose development became the Mission Viejo Planned Community. Santa Margarita Company launched its first large development, Rancho Santa Margarita, on the upper Plano Trabuco and on the adjacent hills to the south and southeast. Development has continued southward and now includes the Las Flores and Ladera Ranch communities.

The O'Neill family continues to operate Rancho Mission Viejo as it has since 1882. Ranching is still being carried out on the project area except for leased acreage. Herds still roam the hills and cowboys still conduct spring round-ups, repair fence lines, and patrol the range. Working windmills and cattle troughs dot the landscape.

PART II. RESEARCH DESIGN AND FIELD METHODS

RESEARCH QUESTIONS

The project sites were tested to determine their significance, or potential for providing data to answer important questions in prehistory or history. A series of research questions was developed to guide the fieldwork at the sites.

The first set of research questions is directed toward the refinement of the local and regional chronology. The lack of absolute dates available to researchers, when the cultural sequences proposed by Wallace (1955) and Warren (1968) were formulated, has led to problems in recognizing and interpreting the Milling Stone/Intermediate/Late Prehistoric framework. These sequences can be used as hypotheses open to further refinement and/or alteration.

Basic to all research questions is rigorous temporal control of the data, ideally through chronometric dating. A proper ordering of artifact types, assemblages, sites or cultures in time is the necessary first step in detecting patterning on the intersite and regional levels. Once chronological sequences are delineated, contemporaneity of sites and/or components can be established, thus enabling meaningful comparisons to be made.

The presence of ecofacts, chipped and ground stone artifacts, and midden accumulation at the project sites provided an opportunity to address a number of research questions through the recent field and laboratory investigations. Certain of these research questions focused on chronology. Outlined below are the questions as well as the requisite data to answer them.

Chronology

1. When and for how long were the sites occupied?

To answer this question, it is necessary to date the cultural deposit and to gauge the intensity of use. One of the aims of the current investigation, therefore, was to recover datable materials, such as organics for radiocarbon assay, and obsidian for hydration measurements, in careful stratigraphic context. The recovery of time-sensitive artifacts such as projectile points, beads, ceramics, and discoidals, used to assign relative dates, was also a goal. Depth of the cultural deposit would be suggestive of the length of occupation at the site when coupled with the dated items.

2. Was occupation continuous? or was the site occupied successively?

Cultural hiatuses, or sterile levels, would imply a discontinuous occupation. Careful stratigraphic recording would be sought to recognize occupational strata.

3. How do the project sites relate to other sites within the same time frame? Can the sites provide data to refine the regional syntheses?

A comparison of relative frequencies of artifact types, ecofacts, and site types within the same time frame would add to an understanding of settlement and subsistence patterns as well as to the local and regional cultural/historical framework. Providing absolute dating for specific time markers, such as discoidals, would help to clarify their chronological placement.

4. What is the cultural affiliation of the site/component? Do any of the sites contain evidence of pre-Shoshonean or post-European contact?

Several of the project sites are located adjacent to or proximate to the ethnographically known coastal-inland trail called El Potrero de los Pinos/San Juan Hot Springs Trail (present-day Ortega Highway, or SR 74) and thus might contain data relevant to an hypothesized inland to coastal migration of Shoshonean peoples in the late period. The project sites are also located near Mission San Juan Capistrano and the purported mission outpost, or old mission site (Mission Vieja, CA-ORA-29). See Van Wormer (2002) for discussion. The possibility of encountering Mission period occupational levels is recognized for the project area.

Subsistence Strategies

The second set of research questions deals with the reconstruction of subsistence strategies, a past lifeway. In other words, how did the occupants of the site make their living? The recovery of ecofactual material as well as the tools used in food procurement and processing would be helpful to address questions of subsistence, such as:

1. What were the food resources utilized by the site occupants? Was there a change over time?

The range and types of ecofacts (shellfish remains, vertebrate faunal bone) present at the site can be quantified and their relative numbers compared through the occupation levels. The environments of exploitation, or site catchment, can be determined from analyses of the recovered species, and non-local resources can be isolated (exchange?). Analyses of tool types, especially plant processing equipment, and their evolution over the span of occupation at the sites can aid in reconstructing past subsistence practices.

2. In which season were the ecofacts procured?

Seasonality studies on shellfish (Chione) and vertebrate fauna, eg. deer, may shed light on the placement of the site within the seasonal round of subsistence and settlement hypothesized by Hudson (1971) for the aboriginal populations in the area.

3. What tool technology is represented by the artifacts? What raw materials were utilized in tool manufacture? Were they locally derived?

Analyses of technology of manufactured items aid in placing the site and its occupants within the local cultural and historical framework and permit the recognition of novelty, or innovation, in tool production within a regional pattern. Raw material analyses enable researchers to determine preferences for particular raw materials; these data in turn lead to questions regarding sourcing of raw materials, such as geological or physical environment of origin, direct procurement versus exchange for non-local materials, crafts production, etc.

4. What are the range and types of artifacts represented? Is there a change over the span of occupation, e.g., a trend toward increasing specialization in tool types?

Artifact classes and types can be analyzed for the various levels of the sites and their relative frequencies compared. The presence of specialized tools, such as fishhooks, shaft straighteners, arrowpoints, drills, and awls in the upper site levels would be indicative of this trend.

5. Is there variability in the horizontal or vertical distribution of artifact/ecofacts which would indicate internal site patterning such as activity areas?

Analysis of the spatial positioning of individual species of fauna or possibly flora may permit researchers to hypothesize that particular site areas, either vertically or horizontally delineated, were utilized for specific activities or were utilized alternately over the span of occupation of the site.

Settlement Patterns

A third set of research questions is directed toward the reconstruction of another past lifeway, settlement patterning. Data recovered from a group of sites rather than from a single site is more amenable to answering questions of a regional nature such as this. These questions are concerned with the definition of site types and the illustration of their relationship to the landscape and to each other, such as:

1. What are the site types represented within the project area? Are they villages/rancherias? base camps? special activity areas?

A recognition of site types can be accomplished by reference to frequencies and types of artifacts present, frequencies of ecofacts relative to artifacts, accumulation of midden, nature of midden deposit (depth; shell, charcoal, fire-affected rocks; features present?), size of artifact/ecofact scatter, presence of internal patterning reflective of village or rancheria, or specialized assemblage reflective of hunting camp or plant processing station.

2. What is the spatial relationship of the sites to each other and to the environment? What were the determinants of site location? Topography? Access to water, plant, animal or mineral resources? Access to lithic raw materials, trails or trade routes? Does site function relate to these determinants?

Analysis of the spatial patterning of the sites in relation to each other can aid in the prediction of locations of additional sites within the project area. Environmental determinants of site location or site type in the area can be hypothesized and tested in future research.

3. During what periods of the year were the sites occupied and/or utilized?

Seasonality studies on fauna or flora may help to pinpoint the season of occupation or utilization, or specific tool types may be indicative of seasonally-available resources, such as acorns.

4. Can a change in settlement patterns over time be detected in the occupational sequence?

Control of chronology through stratigraphic recording and/or dating of ecofacts or obsidian over the span of occupation is critical to an interpretation of change in settlement. Environmental factors (flooding, drought, bay siltation) may contribute to an explanation of a change in settlement.

Social Networking

The fourth set of research questions deals with social networking. The interaction of various groups of Native Americans in prehistory can be detected in the archaeological record by the presence of non-local, or exotic, goods which moved from group to group through exchange networks (Earle and Ericson 1977; Earle 1982). Examples of an exchanged good in southern California are obsidian, fused shale, steatite, asphaltum, and marine shells usually in bead form (Davis 1961). Motivation for such exchange may be sought in the resource base (site catchment) available to site occupants. The proximity of the project area to El Potrero de los Pinos/San Juan Hot Springs Trail makes exchange issues highly relevant. The following research questions apply to social networking/exchange:

1. What is the local resource base, or catchment, in terms of lithic and other inorganic raw materials, invertebrate and vertebrate fauna, and flora? Are any critical resources (water, salt, lithics, foodstuffs) missing or periodically in short supply?

An analysis of the local environment and its organic and inorganic components will define the effective environment for site occupants. Missing critical resources can be noted and their possible means of procurement suggested.

2. Are non-local resources (obsidian, steatite, shells) present at any of the sites? If so, in what form are the exotic materials found? As finished or partially finished artifacts? Chipping waste? Unmodified? What are the sources of the non-local materials? How are exotic materials obtained? Through trade? Direct procurement?

Analyses of raw materials of artifacts and ecofacts will allow researchers to determine local versus non-local resources. Sourcing studies of obsidian are easily done and can reveal the geological origin of those lithics; other lithic raw materials (fused shale, various cherts) are not yet amenable to such sourcing. The morphology of the exchanged item (modified or unmodified) may indicate whether it was imported in manufactured form or as raw material. Distance (physical and social) from the source can be analyzed and may provide insights into the method of procurement. In general, if the physical distance is not too great, and the social group inhabiting the source area is receptive, direct procurement rather than exchange may be responsible for the presence of a non-local resource in a site.

3. Is there a change over time in the amounts and types of exotic materials present? Are non-local materials preferred over local materials for particular artifacts?

Analyses of site components, or occupation levels, may reveal a change in exotic frequencies over time. Analyses of individual artifact types and their raw materials will permit researchers to isolate examples of preferred materials where local alternatives are available. Motivation for such exchange may be rooted in a need for the perpetuation of social networking even where non-essential items are imported.

4. Are the site functions in any way reflective of a trade corridor location? How do the amounts of non-local materials present at the project sites compare to others in the area?

A comparative study of the project sites and other excavated sites in the area or in the region may allow researchers to detect patterns (group to group; trail utilization) in the exchange relations among the local populations in prehistory.

FIELD METHODS

At each of the prehistoric study sites, ARMC crew members carried out field walkover surveys of each site to locate surface artifacts. Transects, both north-south and east-west, measured 1-5 meters in width to provide maximum coverage. Artifacts were marked with pin flags. Flag locations were then shot in with a surveyor's transit. The artifacts were then labeled, bagged, and returned to the ARMC lab. Although locations sometimes contained multiple items; each item was later given a unique catalog number.

Based upon the number and kinds of items found on various areas of the sites, locations for Test Units or Shovel Test Pits (STP's) were chosen. Where no items or few items were found, test units or STP's were placed evenly around the sites to provide comprehensive coverage. The units and STP's were excavated manually with pick and shovel. Rock picks and trowels were used for finer recovery, such as feature exposure. All matrix was screened through 1/8-inch mesh hardware cloth. STP's were excavated to a minimum of 30 centimeters (cm) below datum (present ground level). Depths of test units varied between 20 and 110 cm below unit datum. The majority reached 30 cm or greater in depth. See Tables 1-4 below for excavation summaries, presented by project segment (canyon). See Appendix A for site maps showing locations of STP's, test units, and surface collection locations.

Table 1. Chiquita Canyon Excavation Summary.

SITE NO.	**TEST UNIT/STP**	**AREA (M^2)**	**VOLUME (M^3)**
ORA-1559	Unit 1	1.00	0.30
	Unit 2	1.00	0.30
	STP 1	0.20	0.06

	STP 2	0.20	0.06
	STP 3	0.20	0.06
	STP 4	0.20	0.06
		Total: 2.80	Total: 0.84
ORA-1560	Unit 1	1.00	0.30
	Unit 2	1.00	0.20
		Total: 2.0	Total: 0.50
ORA-1561	STP 1	0.20	0.06
	STP 2	0.20	0.06
	STP 3	0.20	0.06
	STP 4	0.20	0.06
		Total: 0.80	Total: 0.24
ORA-1562	STP 1	0.20	0.06
	STP 2	0.20	0.06
	STP 3	0.20	0.06
	STP 4	0.20	0.06
		Total: 0.80	Total: 0.24
ORA-1105	STP 1	0.20	0.06
	STP 2	0.20	0.06
	STP 3	0.20	0.06
	STP 4	0.20	0.06
	STP 5	0.20	0.08
	STP 6	0.20	0.06
	STP 7	0.20	0.06
	STP 8	0.20	0.06
		Total: 1.60	Total: 0.50

Table 2. Gobernadora Canyon Excavation Summary.

SITE NO.	**TEST UNIT/STP**	**AREA (M^2)**	**VOLUME (M^3)**
Ora-1446	Unit 1	1.00	0.40
	STP 1	0.20	0.06
	STP 2	0.20	0.06
	STP 3	0.20	0.06
	STP 4	0.20	0.06
	STP 5	0.20	0.06
	STP 6	0.20	0.06
	STP 7	0.20	0.06
		Total: 2.40	Total: 0.82
ORA-1564	Unit 1	1.00	0.20

	Unit 2	1.00	0.15
		Total: 2.00	Total: 0.35
ORA-1565	Unit 1	1.00	0.20
	Unit 2	1.00	0.20
		Total: 2.00	Total: 0.40
ORA-1566	Unit 1	1.00	0.30
	Unit 2	1.00	0.30
		Total: 2.00	Total: 0.60

STP's were excavated as bulk samples. Test units were dug by contour excavation and by an arbitrary 10 cm per level. Features were excavated and mapped by level, and then recovered and analyzed as a single entity. All test units and STP's were backfilled after excavation was complete.

Table 3. Trampas Canyon Excavation Summary.

SITE NO.	**TEST UNIT/STP**	**AREA (M^2)**	**VOLUME (M^3)**
Ora-653	Unit 1	1.00	0.30
	Unit 2	1.00	0.30
		Total: 2.00	Total: 0.60
Ora-654	Unit 1	1.00	0.30
	Unit 2	1.00	0.30
		Total: 2.00	Total: 0.60
Ora-655	Unit 1	1.00	0.30
	Unit 2	1.00	0.30
		Total: 2.00	Total: 0.60
Ora-657	Unit 1	1.00	0.30
	Unit 2	1.00	0.30
		Total: 2.00	Total: 0.60
Ora-658	Unit 1	1.00	0.30
	Unit 2	1.00	0.30
		Total: 2.00	Total: 0.60

Table 4. Cristianitos Canyon Excavation Summary.

SITE NO.	**TEST UNIT/STP**	**AREA (M^2)**	**VOLUME (M^3)**
ORA-1124	Unit 1	1.00	0.30
	Unit 2	1.00	0.30
		Total: 2.00	Total: 0.60

ORA-1184	Unit 1	1.00	0.30
	Unit 2	1.00	0.30
		Total: 2.00	Total: 0.60
ORA-1450	Unit 1	1.00	0.30
	Unit 2	1.00	0.30
	Unit 3	1.00	0.30
	Unit 4	1.00	0.30
		Total: 4.00	Total: 1.20
ORA-1550	STP 1	0.20	0.12
	STP 2	0.20	0.10
	STP 3	0.20	0.10
	STP 4	0.20	0.10
		Total: 0.80	Total: 0.42
ORA-1554	Unit 1	1.00	0.30
	Unit 2	1.00	0.30
	Unit 3	1.00	0.30
	Unit 4	1.00	0.30
		Total: 4.00	Total: 1.20
ORA-1555	Unit 1	1.00	0.30
	Unit 2	1.00	0.30
	Unit 3	1.00	0.30
	Unit 4	1.00	0.30
		Total: 4.00	Total: 1.20
ORA-1556	Unit 1	1.00	0.60
	Unit 2	1.00	0.60
	Unit 3	1.00	0.70
	Unit 4	1.00	1.10
	STP 1	0.20	0.12
		Total: 4.20	Total: 3.12

Field methods at the historic site 30-176632 consisted first of a close site walkover survey to relocate the outlines of the cobble, wood, metal, and brick feature observed during the original survey (Demcak 2000). First ARMC crew members found the outer limits of the scatter, laid out a 6 x 8-meter grid over it, and mapped the surface items in plan view. Then the feature was excavated to sterile bedrock.

PART III. PREHISTORIC SITES ARTIFACT ANALYSES

Artifacts from the project sites were all lithic (rock) types. ARMC lithic analysts first sorted the artifacts on the basis of morphology, or form, resulting in their being cataloged as flakes, cores, manos, metates, discoidals, etc. (Appendix B, artifact databases). Then the tools were analyzed as to use wear, or inferred function; edge angles were measured and wear patterns noted. The flakes and cores were measured and checked for presence/absence of cortex, or rind (Appendix C, functional analysis database). The results of the two sets of analysis are presented below by canyon and individual site.

CHIQUITA CANYON

Six sites were tested in Chiquita Canyon: CA-ORA-1105, -1559, -1560, -1561, -1562, and -1563. Site CA-ORA-1105 produced no artifacts. The recovered items from the remaining sites are discussed below by individual site.

CA-ORA-1559

Site CA-ORA-1559 produced artifacts of both chipped stone and ground stone. Twelve types of artifacts were identified. Chipped stone items outnumbered ground stone 40 to 10. See Table 5 for the artifact inventory for the site.

Table 5. CA-ORA-1559 ARTIFACT INVENTORY.

ARTIFACT TYPE	**FREQUENCY**
CHIPPED STONE	
Hammerstones	5
Flakes	12
Cores	3
Utilized Flakes	2
Flake Tools	1
Plano-convex Tools	13
Drills/reamers	2
Utilized Cores	1
Core Tools	1
GROUND STONE	
Manos	7
Metates	2
Discoidals	1
	Total: 50

The five hammerstones were all surface finds and made of metavolcanic raw material. All were angular in form, suggesting their use in the re-roughening of grinding surfaces on such tools as manos and metates. They may also have been utilized in the production of both chipped stone and ground stone tools at the site. Use wear analysis revealed that all five exhibited crushing wear. Edge angles of the wear patterns on the five hammerstones ranged from 75-90°. See Tables 6 and 7 respectively below for the inferred function for the type of wear and for the edge wear angle.

Table 6. Edge Modification and Inferred Function.

MODIFICATION	INFERRED FUNCTION	SOURCE
Nibbling	Transverse action from scraping, shaving, and planing	Tringham et al. (1974)
Crushing	Work on hard materials, eg. antler or bone	Tringham et al. (1974)
Stepflaking	Work on hard materials, eg. antler, bone, and wood; Bone working and wood working	Tringham et al. (1974) Ahler (1971)

Table 7. Edge Angle and Inferred Function.

ANGLE RANGE	INFERRED FUNCTION	SOURCE
30°	Fine cutting Butchering	Wilmsen (1974) Hester et al. (1976)
45°	Whittling	Semenov (1964)
60°	Skinning, hide scraping, and heavy cutting	Wilmsen (1974)
75°	Wood working, bone working	Wilmsen (1974)
90°	Plant pulping, fiber preparation	Kowta (1969)

The waste flakes (n=12) and cores (n=3) represent the discards (debitage) in the production of chipped stone tools. Flakes also result from the reshaping of tools or from the resharpening of tools that have become dull from use. Raw materials of the flakes included chalcedony (n=4), metasedimentary and quartzite (3 each), and one each of chert and felsite. Raw materials were all of local origin. Eleven of the flakes were recovered from STP's or test units; only one came from the surface.

The flakes from CA-ORA-1559 represent three stages of core reduction. Initial reduction of a core produces primary flakes that have full cortex on their bulbs of percussion. In the middle stage, the core is further reduced such that only some of the cortex is still present, resulting in secondary flakes. In the final stage, all cortex has been removed, resulting in tertiary flakes. Most of the flakes (n=8) were tertiary, while some (n=3) were secondary (n=2), and one was a primary flake. The majority (n=9) of the flakes were small, measuring no greater than 1" in length and probably represent tool maintenance, or reshaping following use or damage. Two flakes measured from 1-2"and one from 2-3 inches. These larger flakes may represent the deliberate removal of flakes to create flake or core tools.

The cores consisted of two surface metasedimentary finds and one metavolcanic find from a test unit. The cores measured from 2-3". Each had some cortex remaining and thus had not been fully reduced, or exhausted.

Two flakes were utilized without modification as tools (#15, #48). Both possessed edge angles of 45° and both exhibited nibbling, or small flake removal, as a use wear pattern. One flake (#30) had been modified into a tool, used, and then retouched (re-sharpened) for additional use. This tool had an edge angle of 60° and both nibbling and stepflaking as wear patterns.

Thirteen plano-convex tools, often called scraper-planes (cf. Kowta 1969), were collected at the site. The overwhelming majority (n=11) of the edge angles on these tools fell in the 75-90° range. All of the tools showed nibbling and stepflaking as use wear patterns. These massive core tools were reportedly used by Native populations to scrape hides, process *Agave* sp. pads into food and fiber, and perhaps for woodworking (Hester and Heizer 1972; Castetter et al. 1938).

Two perforators were recovered from the site. Both had been shaped to form a triangular bit for piercing materials, such as hides, stone, or shell. Specimen #6, a surface find, was made of metasedimentary material and had a broken bit. A quartzite specimen (#49) was recovered from STP 2.

One quartz core from the site was utilized as a tool (#13) without modification. Its edge angle measured 60°; nibbling and stepflaking were the two use wear patterns. A metasedimentary core was shaped into a tool (#2). Its edge angle measured 75°; nibbling and stepflaking were the use wear patterns.

Seven manos, hand stones used in grinding, were recovered from the site. Six were made of granitic material; one was made of granitic porphyry. All were oval in form, although only four were complete. All had been pecked for shaping or for resharpening of their working surfaces. All were bifacial, i.e. had two working faces. Four of the manos showed battering wear, suggesting secondary use as hammerstones.

Two fragmentary metates were recovered. One granitic specimen (#27) was a surface find and was too incomplete to be typed. A schist deep-basin type (#46) was recovered from an STP.

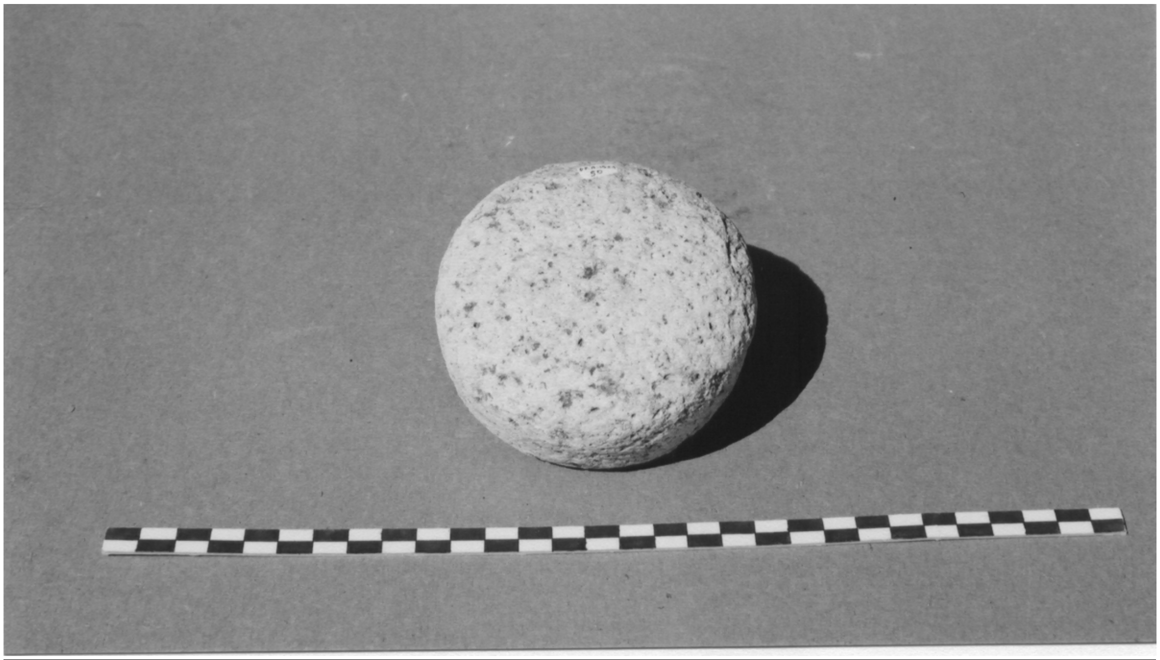


Figure 2. Discoidal from CA-ORA-1559.

A ceremonial stone called a discoidal (#50; Figure 2 above) was recovered from the surface of the site during the survey phase of the study (Demcak 2000) and has been added to the site inventory. This granitic disc-shaped stone measures 9.8 cm in diameter and 5.8 cm in thickness, a ratio of 1.7:1, or common proportion as defined by Moriarty and Broms (1971). Its faces are slightly convex, while its edge, or surface (profile), is concave. This type of ceremonial stone is time sensitive in southern California, reflecting a Milling Stone occupation. See Part VII for a discussion of chronology of discoidals.

CA-ORA-1560

This site produced both ground and chipped stone items during the test phase. Eight individual types of artifact were identified among the 37 items. Twenty-five were ground stone, while 12 were chipped stone. See Table 8 for a complete artifact inventory.

Table 8. CA-ORA-1560 Artifact Inventory.

ARTIFACT TYPE	**FREQUENCY**
CHIPPED STONE	
Hammerstones	1
Flakes	2
Cores	4
Flake Tools	1
Plano-convex Tools	3
Core Tool	1
GROUND STONE	
Manos	16
Metates	9
	Total: 37

The recovered hammerstone (#18) was made of quartzite. It was found on the surface. The item is angular and suggests its use in pecking ground stone surfaces.

Only two flakes were recovered from CA-ORA-1560. They came from the surface of the site at the same location. One was made of metavolcanic material, the other of basalt. One was a tertiary flake, the other secondary. They measured from 2-3” in length.

Four cores were found on the surface. The specimens were made of four different local raw materials: basalt, metavolcanic, metasedimentary, and chalcedony. The cores had some cortex present. They measured from 2-3” in length.

A single basalt flake tool (#19) was recovered from the surface of the site. The flake had been modified into a tool, used, and then retouched. Its edge angle measured 45°, and it exhibited nibbling use wear.

Three plano-convex tools, or scraper planes, were found on the surface of the site. Two were made of metavolcanic raw material (#9, #22) and showed use wear and retouch. A third (#4) was created from volcanic porphyry and revealed a flattened profile compared to the others. Their edge angles measured between 75 and 90° and exhibited nibbling and stepflaking use wear.

A core tool (#10) made of volcanic porphyry was found on the surface. Its edge angle measured 75°. It showed nibbling and stepflaking use wear.

Manos were the most numerous artifacts at CA-ORA-1560. Nine were fragmentary, while seven were whole. Granitic specimens predominated (n=9), followed by granitic porphyry and quartzite (3 each), and volcanic porphyry (n=1). Two showed battering wear, suggesting secondary use as hammerstones. Two showed fire affects and may have been hearthstones at one time, may have been stored too close to a hearth, or may have been exposed to a natural fire.

Fourteen of the manos were bifacial, one was unifacial, and one (#33) was trifacial. This mano had been broken and re-used, producing a third grinding surface (Figure 3). All of the manos were oval, and all had been pecked for shaping or for resharpening the working edges.

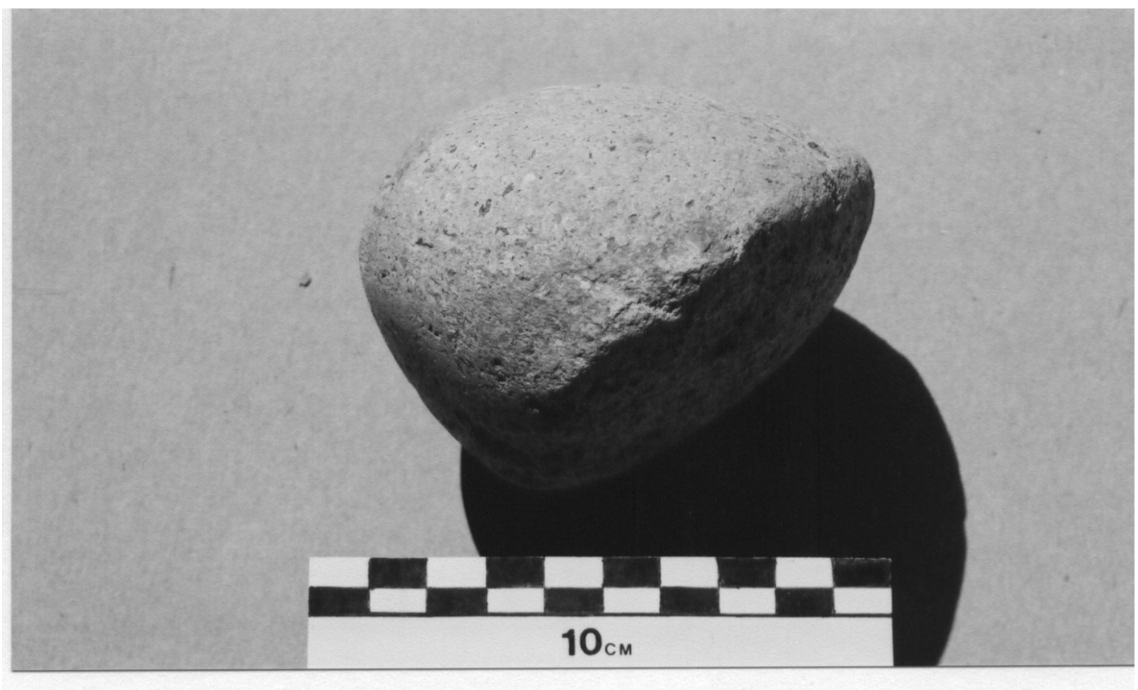


Figure 3. Trifacial Mano from CA-ORA-1560.

One of the manos (#21) had been pecked resulting in a small round depression on one face. The specimen has been converted into a nutting stone, or nut anvil. An acorn would have been placed in the depression holding it in place. The acorn would then have been struck and cracked by a blow from a hammerstone (Hudson and Blackburn 1981:89-93). See Chronology, Part VII.

The nine metates from CA-ORA-1560 were all fragmentary. All were made of schist, and all had been pecked for resharpening or shaping. Eight were found on the surface; one was recovered from Test Unit 2, 0-10 cm. Three fragments (#2, #3, #7) were parts of the same shallow-basin metate before it was broken. Two fragments (#8, #11) were parts of the same deep-basin metate. Two fragments (#24, #25) belonged to the same shallow-basin metate originally. Only one metate fragment came from a test unit. Item #1, an untypable fragment, was recovered from the 0-10 cm level of Test Unit 2. Number 15, a surface find, was also untypable due to its incompleteness.

CA-ORA-1561

A single artifact, a plano-convex tool (#1) made of metavolcanic material, was recovered from this site during the test phase. It was a surface find. Its edge angle measured 60°, and it revealed nibbling and stepflaking use wear. See Table 9 for the artifact inventory.

Two discoidals, or ceremonial stones, were recovered from the surface of the site during the survey phase and have been added to the site inventory. One (#2: Figure 4) was made of granitic raw material and measured 9.7 cm in diameter and 6.2 cm in thickness, a ratio of 1.6:1, a common proportion according to Moriarty and Broms (1981). Its faces were convex-convex, and its edge (surface) was flat. The item had been nicely polished into a nearly perfect circle. The second discoidal (#3; Figure 5) was larger, measuring 12.9 cm in diameter and 5.8 cm in thickness, resulting in a ratio of 2.2:1, or common proportion. The faces were flat-flat, and the edge was slightly convex. The specimen was made of diorite raw material and had been very well shaped and polished.

Table 9. CA-ORA-1561 Artifact Inventory.

ARTIFACT TYPE	**FREQUENCY**
CHIPPED STONE	
Plano-convex Tools	1
GROUND STONE	
Discoidals	2
	Total: 3

For a discussion of the chronology of discoidals, see Part VII.

Figure 4. Discoidal (#2) from CA-ORA-1561.

Figure 5. Discoidal (#3) from CA-ORA-1561.

CA-ORA-1562

Only seven artifacts were collected from CA-ORA-1562 during the test phase. Two were chipped stone, and five were ground stone. All were surface finds. Table 10 presents the artifact inventory from the site.

One hammerstone (#4) of metasedimentary raw material was recovered from the site. The artifact was angular in form, suggesting its use in pecking ground stone surfaces. Its edge angle measured 90°, and it revealed crushing wear. A single flake (#3) of metavolcanic material was also recovered. It measured 3" in length and was a secondary flake.

Three fragmentary manos were collected from the surface. All had been pecked for shaping or for re-roughening of the working surfaces. Two unifacial (one working face) manos were made of granitic (#2) and gneiss (#5). A specimen (#6) of granitic porphyry was bifacial.

Two untypable granitic metate fragments were also recovered. Both had been pecked.

Table 10. CA-ORA-1562 Artifact Inventory.

ARTIFACT TYPE	**FREQUENCY**
CHIPPED STONE	
Hammerstones	1
Flakes	1
GROUND STONE	
Manos	3
Metates	2
	Total: 7

CA-ORA-1563

Sixteen artifacts were recovered from the site. Twelve were chipped stone; four were ground stone. Eight came from the surface, all chipped stone. Eight came from units, primarily Test Unit 1. See Table 11 for the artifact inventory for CA-ORA-1563.

One quartz hammerstone (#9) was recovered from the surface. It was angular in form suggestive of use in re-roughening or shaping ground stone surfaces. Its edge angle measured 75°, and it revealed crushing use wear.

Five flakes (three metavolcanic, one each metasedimentary and basalt) were collected from the surface (n=4) and from test units (n=1) at site CA-ORA-1563. Most of the flakes (n=4) were less than 1" in length; these were all tertiary flakes. One flake measured 2" and was a secondary type.

Three cores were also recovered. They consisted of one each of chalcedony, metavolcanic, and quartz. The cores were small, ranging from 1-2"in length. Two had no cortex remaining, and one had some cortex present.

Two plano-convex tools, both metavolcanic, were found at the site, one on the surface and one from a test unit. Their edge angles measured from 60-75°; both showed nibbling use wear.

A single chopper (#50) was also recovered from the site from the 0-10 cm level of Test Unit 1. With an edge angle of 60°, the tool revealed nibbling use wear.

Four manos (three fragmentary) were made of granitic raw material (n=3) or granitic porphyry (n=1). All were oval in outline. One specimen (#12) was fired. Specimen #16 was pecked and bifacial. The others were unifacial.

Table 11. CA-ORA-1563 Artifact Inventory.

ARTIFACT TYPE	**FREQUENCY**
CHIPPED STONE	
Hammerstones	1
Flakes	5
Cores	3
Plano-convex Tools	2
Choppers	1
GROUND STONE	
Manos	4
	Total: 16

GOBERNADORA CANYON

Four sites were tested in Gobernadora Canyon: CA-ORA-1446, -1564, -1565, and –1566. The artifact data are presented below by individual site.

CA-ORA-1446

At CA-ORA-1446 a total of nine artifacts was recovered. Six were chipped stone, and three were ground stone items. Table 12 shows the artifact inventory.

Table 12. CA-ORA-1446 Artifact Inventory.

ARTIFACT TYPE	**FREQUENCY**
CHIPPED STONE	
Hammerstones	1
Flakes	4
Disc bead blank	1
GROUND STONE	
Manos	1
Metates	2

	Total: 9

The chipped stone items were chiefly surface finds (n=4). One flake and the disc bead blank came from Test Unit 1, 0-10 cm and 20-30 cm respectively.

One hammerstone (#1) was found at the site. It revealed crushing wear and an edge angle of 90 degrees.

The six flakes were made of metavolcanic (n=3), andesite, quartzite, and metasedimentary (one each) raw material. They ranged in size from 1-3' in length. Two were tertiary flakes, and two were secondary.

A disc bead blank (#8) of metavolcanic material was recovered. The blank shows shaping by chipping. It has not been drilled or polished and measures 1.5 cm in diameter and 0.3 cm thick. See Chronology, Part VII.

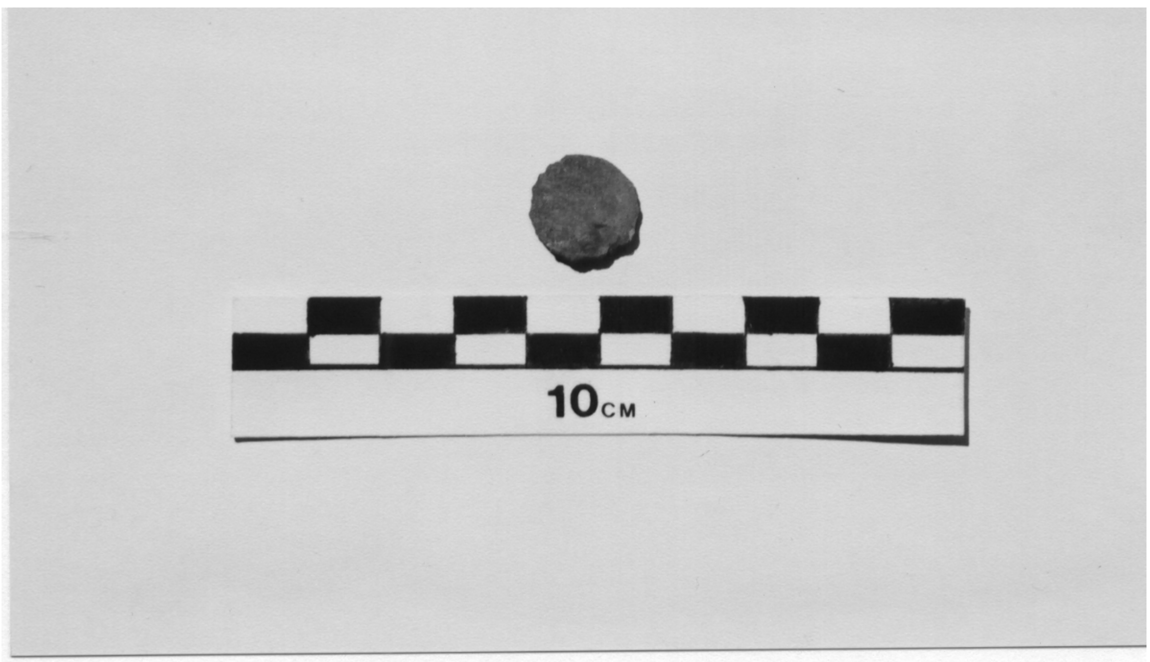


Figure 6. Disc Bead Blank (#8) form CA-ORA-1446

The ground stone tools consisted of one fragmentary mano and two fragmentary metates. The granitic mano (#5) is bifacial, has been shaped by pecking and polishing, and is oval in outline. One of the metate fragments (#6) is a basalt slab type. The other (#9) is granitic, has been pecked for resharpening and shaping, and is a shallow basin type.

CA-ORA-1564

Artifacts at CA-ORA-1564 totaled 13, 12 chipped stone and one ground stone. All were found on the surface of the site. See Table 13 for the artifact inventory.

Among the chipped stone items, there were three metavolcanic flakes. Two measured 3" and were tertiary flakes; one measured 2" and was a secondary flake. A metavolcanic core was also recovered. It measured 3" and had some cortex present.

One metavolcanic utilized flake was recovered from the site. Its edge angle measured 45°; its use wear consisted of nibbling and stepflaking. Two flake tools, one (#4) of felsite and one (#2) of metasedimentary material, were also collected. Their edge angles measured 45°; both showed nibbling wear.

Three plano-convex tools (scraper-planes) were recovered. Each was made of a different material: metasedimentary (#7), metavolcanic (#8), and basalt (#13). All three had edge angles of 75° and showed nibbling wear. One (#8) also revealed stepflaking. Two utilized cores of felsite (#10) and basalt (#11) rounded out the chipped stone items. Both of these tools had edge angles of 45°, and both showed nibbling and stepflaking use wear.

The single ground stone item was a fragmentary mano (#3) of granitic raw material. Both faces had been used in grinding.

Table 13. CA-ORA-1564 Artifact Inventory.

ARTIFACT TYPE	**FREQUENCY**
CHIPPED STONE	
Flakes	3
Cores	1
Utilized Flakes	1
Flake Tools	2
Plano-convex Tools	3
Utilized Cores	2
GROUND STONE	
Manos	1
	Total: 13

CA-ORA-1565

Thirty-three items were collected from CA-ORA-1565. Thirty were chipped stone and three were ground stone. Twenty-eight were surface finds; two came from Test Unit 1, 0-10 cm in depth. Table 14 presents the artifact inventory from the site.

Four hammerstones were found on the surface. Three were metavolcanic; one was metasedimentary. All were angular, indicating their probable use to re-roughen ground stone surfaces. Their edge angles measured 90°; each exhibited crushing wear.

Ten flakes were recovered. Seven metavolcanic and one felsite specimen came from the surface of the site, while two flakes (andesite and basalt) came from Test Unit 1, 0-10 cm. Most were secondary flakes (n=6); a few were tertiary. The single primary flake was also the smallest, measuring ½ inch; the rest measured between 1-3 inches.

Four utilized flakes were recovered. Metavolcanic specimens predominated (n=3); a fourth specimen was made of quartzite (#21). Edge angles varied from 30-60°. Three showed nibbling wear; one of these also showed stepflaking.

Two flake tools were also found. One was made of metavolcanic raw material, another of felsite. Both had 45° edge angles, and both exhibited nibbling wear. Stepflaking was also present on item #9.

Six plano-convex tools were recovered from CA-ORA-1565. Five were metavolcanic, and one was quartzite. Specimen #5 was a spent core that had been used as a scraper-plane. Specimen #12 had been used and retouched on its working edge. Edge angles ranged from 60-90°. All showed nibbling use wear, while most (n=4) also exhibited stepflaking.

One perforator (#14) was found at the site. It revealed a broken triangular bit and was made of quartzite. See Chronology, Part VII.

A metavolcanic chopper (#2) was found on the surface. With an edge angle of 60°, the tool showed nibbling use wear. A utilized metavolcanic core (#22), also found on the surface, had an edge angle of 60° and use wear patterns of nibbling and stepflaking.

A metavolcanic core tool (#29) was also found on the surface of the site. Its edge angle was 60°, and it exhibited nibbling and stepflaking as use wear.

The three ground stone tools were all manos. A whole granitic specimen (24) was bifacial and pecked. Two granitic fragmentary manos (#3, #13) were bifacial and pecked for shaping or re-roughening of their working surfaces.

Table 14. CA-ORA-1565 Artifact Inventory.

ARTIFACT TYPE	FREQUENCY
CHIPPED STONE	
Hammerstones	4
Flakes	10
Cores	1
Utilized Flakes	4
Flake Tools	2
Plano-convex Tools	5
Perforators	1
Choppers	1
Utilized Cores	1
Core Tools	1
GROUND STONE	
Manos	3
	Total: 33

CA-ORA-1566

Only fourteen specimens were recovered from site CA-ORA-1566. Twelve were surface finds; two came from test units. Five were chipped stone, while nine were ground stone items. Table 15 shows the artifact inventory.

Two flakes were recovered from the surface; one was metasedimentary, the other metavolcanic. Both were secondary flakes. They ranged in size from 2-3 inches.

One quartzite plano-convex tool (#13) was a surface find. Its edge angle measured 45°; nibbling was the use wear pattern. Two utilized cores, one each of quartz and metavolcanic, showed nibbling wear and edge angles ranging from 60-75 degrees.

The ground stone items consisted of manos and metates. Five fragmentary manos and three whole manos were found at the site. All were bifacial, pecked, and oval shaped. Seven manos showed battering wear suggesting their secondary use as hammerstones; only #4 was not battered. Only one mano (#3) showed fire affects. Half were made of granitic raw material (#'s 1, 2, 3, and 10). Half were made of granitic porphyry (#'s 4, 5, 7, and 14). A single schist metate fragment (#11) was a shallow basin type that had been pecked to shape it.

Table 15. CA-ORA-1566 Artifact Inventory.

ARTIFACT TYPE	FREQUENCY
CHIPPED STONE	
Flakes	2

Plano-convex Tools	1
Utilized Cores	2
GROUND STONE	
Manos	8
Metates	1
	Total: 14

TRAMPAS CANYON

Although five sites (CA-ORA-653, -654, -655, -657, and –658) were tested in Trampas Canyon, only one site produced any artifacts: CA-ORA-654.

CA-ORA-654

No surface artifacts were found at this site. One mano (#1), broken into two halves (labeled 1A, 1B), was recovered from the 0-10 cm level of Test Unit 2 at the site. Made of granitic material, the mano was bifacial and had been pecked for re-roughening and shaping.

CRISTIANITOS CANYON

Although eight sites were tested in Cristianitos Canyon, two sites (CA-ORA-1450 and -1184) did not produce any artifacts. The recovered items from CA-ORA-1124, -1550, -1554, -1555, and –1556 are discussed by individual site below.

CA-ORA-1124

Only one artifact, a felsite flake, was recovered from the 0-10 cm level of Test Unit 1. The flake measured 3" and was secondary.

CA-ORA-1550

Four artifacts were recovered from CA-ORA-1550. All were surface finds. Three of them were ground stone, and one was chipped stone. Table 16 provides the artifact inventory.

An andesite plano-convex tool (#3), or scraper plane, was recovered. With an edge angle of 60°, the tool revealed nibbling and stepflaking as use wear patterns.

Table 16. CA-ORA-1550 Artifact Inventory.

ARTIFACT TYPE	**FREQUENCY**
CHIPPED STONE	
Plano-convex Tools	1
GROUND STONE	

Manos	1
Metates	1
Discoidal	1
	Total: 4

An oval, bifacial, granitic mano (#2) from the site showed battering wear, suggesting its secondary use as a hammerstone. A shallow-basin type, granitic metate fragment (#1) was also recovered from the site.

A ceremonial stone, a granitic discoidal (#4), was recovered from the site during the survey phase (Demcak 2000). The item was cracked and discolored from fire effects. The well shaped circular disc measures 10.4 cm in diameter and 5.6 cm in thickness. This ratio of 1.9:1 places it in the common proportion category (Moriarty and Broms 1971). Its faces are convex-convex. Its surface (edge) is also convex in profile. See Part VII for further discussion of this and other discoidals.

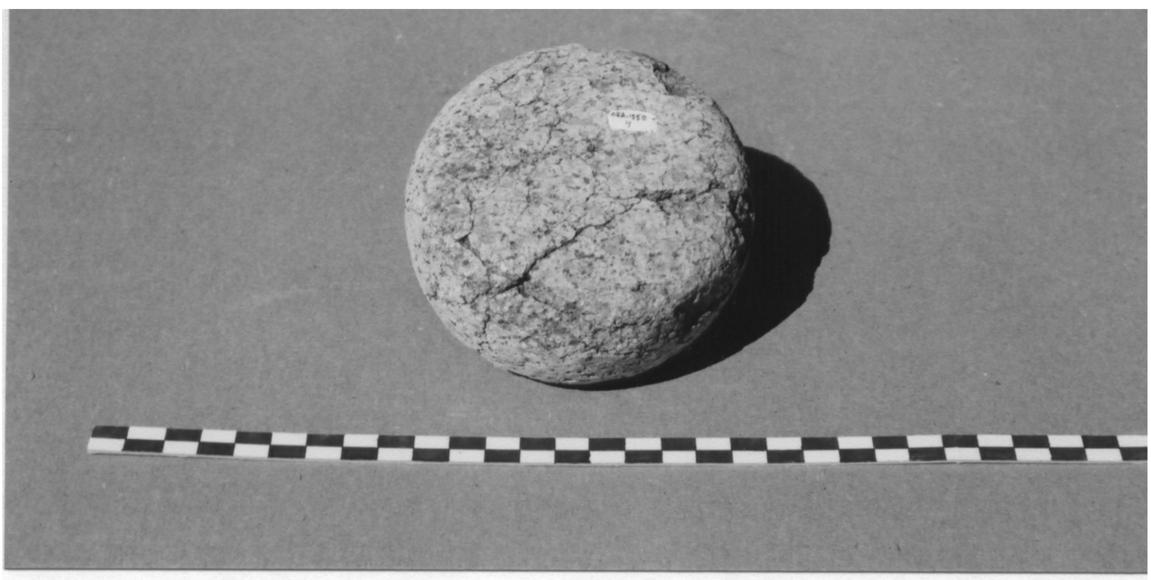


Figure 7. Discoidal (#4) from CA-ORA-1550.

CA-ORA-1554

Artifacts at CA-ORA-1554 included 33 chipped stone and 11 ground stone items. All of the chipped items were surface finds. All of the ground stone items came from Feature 1, Test Unit 1. See Table 17 for the artifact inventory.

Table 17. CA-ORA-1554 Artifact Inventory.

ARTIFACT TYPE	**FREQUENCY**
CHIPPED STONE	
Hammerstones	7
Flakes	17
Utilized Flakes	2
Flake Tools	3
Plano-convex Tools	3
Projectile Points	1
GROUND STONE	
Manos	3
Metates	8
	Total: 44

Seven hammerstones were recovered from CA-ORA-1554. Two each were made of metavolcanic, felsite, and metasedimentary raw material; one was quartzite. All were angular in form suggesting their primary use in re-roughening or shaping of ground surfaces. Edge angles ranged from 60-90°; the majority (n=4) measured 90 degrees. All showed crushing wear from use.

Seventeen flakes were collected. The majority (n=10) were made of metavolcanic raw material, followed in relative frequency by two each of metasedimentary, rhyolite, and quartzite, and one of andesite. A large (3”) flake from the site was primary (#20); no data are available for the remainder of the flakes.

Two utilized flakes, one each of andesite and quartzite, were recovered. Both had been retouched (re-sharpened) after use. Both exhibited nibbling and stepflaking. Edge angles were not measured.

Three flake tools, two of metavolcanic and one of felsite, were collected. Two (#19, #25) had been used and retouched. With edge angles of 60° and 45° respectively, the tools displayed nibbling and stepflaking as use wear patterns.

Three plano-convex tools, all of metasedimentary material, were surface finds. Two specimens (#11, #10) had an edge angle of 60° and exhibited nibbling and stepflaking use wear. The third (#7) has an edge angle of 75° and showed nibbling only.

A single projectile point (#44; Figure 8) was recovered during the earlier survey of the site (Demcak 2000). This small, Cottonwood triangular arrowpoint weighs 1.5 grams, and measures 1.6 x 1.7 x 0.5 cm. Its base is slightly concave and has been lightly thinned by rough pressure flaking. One margin has been carefully shaped (nearly serrated) by pressure flaking on one face; the other face has been only roughly shaped. The other margin has been roughly shaped by pressure flaking on both faces. This artifact is time sensitive and helps to date the site. See Part VII, Chronology for a discussion of the time association of the projectile point.

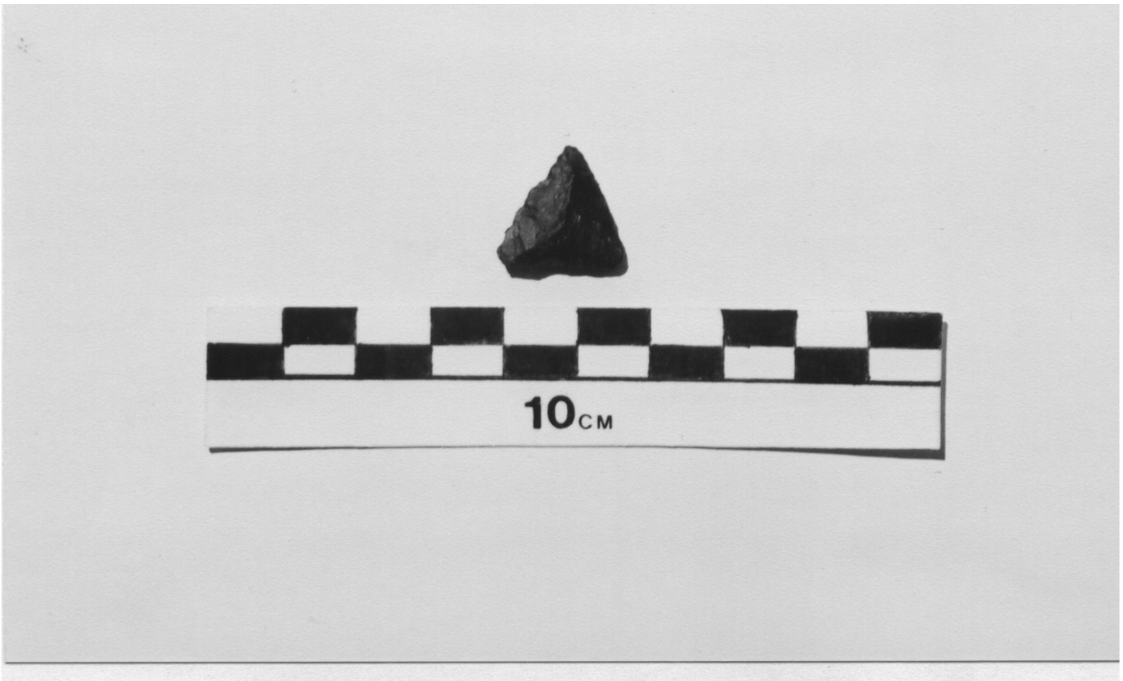


Figure 8. Projectile Point (#44) from CA-ORA-1554.

Ground stone items consisted of three manos and eight metate fragments. The three manos were all whole, bifacial, granitic, and oval shaped. One (#12) came from surface location 10, while two (#35, #37) came from Test Unit 1, Feature 1. Mano #37 also appeared to have had secondary use as an abrader; it exhibited battering and was also fire affected. Two (#12, #37) had been pecked for shaping or re-roughening.

Eight metate fragments were collected at CA-ORA-1554. Two were surface finds (#31, #34), and six came from Test Unit 1, Feature 1. Four were made of schist raw material, and four of granitic raw material. One was a shallow basin type (#31); the remainder were deep basin types. One had been deliberately "killed"; a portion of the metate's center had been punched out. This technique of rendering the item useless would normally be done at the death of the owner/user of the metate. There was no evidence that this was a grave good; no human remains were found at the site, in fact, no bone at all.

<u>CA-ORA-1555</u>

This site produced 92 artifacts: 80 chipped stone, 12 ground stone. Surface finds numbered 81, with 11 items from excavation units. See Table 18 for the artifact inventory.

Three hammerstones were surface finds. Two were made of metasedimentary raw material, and one of andesite. All three were angular, likely used for re-roughening ground stone surfaces. Two (#81, #23) had 75° edge angles; the third (#43) had a 90° angle. All three exhibited crushing use wear.

Flakes (n=63) were the most numerous single artifact type recovered from the site. Fifty-five came from the surface, and eight came from units. Andesite (n=30) were the most frequent, followed by quartzite (n=15) and basalt (n=11). Felsite contributed four flakes, metasedimentary two flakes, and rhyolite one flake. The vast majority (n=51) ranged in size from 2-3". Most were tertiary flakes (n=45); eighteen were secondary, and only one was primary.

Table 18. CA-ORA-1555 Artifact Inventory.

ARTIFACT TYPE	FREQUENCY
CHIPPED STONE	
Hammerstones	3
Flakes	63
Cores	4
Utilized Flakes	1
Flake Tools	2
Plano-convex Tools	5
Perforators	2
GROUND STONE	
Manos	9
Metates	3
	Total: 92

Four cores were collected, three from the surface and one from an excavation unit. There were two basalt and two andesite cores. The cores ranged in size from 2-3" and displayed some cortex and thus were not completely reduced, or exhausted.

One utilized flake (#84) was recovered. It revealed an edge angle of 75° and nibbling as use wear.

Two flake tools were also found at the site. A rhyolite specimen (#1) came from Test Unit 2, 0-10 cm level, while #11, a felsite one, was recovered from Test Unit 3, 10-20 cm below datum. The tools had edge angles of 30° and 45°, respectively. Both revealed nibbling and stepflaking as use wear patterns.

Five plano-convex tools, also known as scraper planes, were recovered. Three were made of andesite raw material, and one each of quartzite and rhyolite. Specimen #90 was heeled, i.e., had a hand hold opposite the working edge. Three had edge angles of 90°, and two had 75° angles. One of the specimens (#34) showed crushing wear; the others showed nibbling and stepflaking.

Two perforators (#59, #17) were also collected from CA-ORA-1555. Both were made of andesite and had triangular-shaped bits. Figure 9 below shows perforator #17, a particularly well made specimen. See Chronology, Part VII.

Figure 9. Perforator (#17) from CA-ORA-1555.

Twelve ground stone items included nine manos and three fragmentary metates. All were made of granitic raw material and collected from the surface of the site. Seven manos were whole; two were fragments (#20, #86). Two were battered (#49, #63). Six were bifacial (#'s 20,29,38,48,67,78). Five were pecked (#'s 20,29,38,63,78). All but one oval shaped; #86 was too incomplete to determine its shape.

All three metate fragments were surface finds. Two were made of granitic material (#'s 91 and 92); the former #91 was a deep basin type, the latter a shallow basin type that had been pecked.

CA-ORA-1556

Site CA-ORA-1556 produced the greatest number of artifacts of the project sites. A total of 101 items included 92 chipped stone and 9 ground stone. See Table 19 for the artifact inventory.
Table 19. CA-ORA-1556 Artifact Inventory.

ARTIFACT TYPE	**FREQUENCY**
CHIPPED STONE	
Hammerstones	2
Flakes	79
Cores	5
Flake Tools	2
Plano-convex Tools	2
Choppers	1
Core Tools	1

GROUND STONE	
Manos	3
Metates	5
Discoidals	1
	Total: 101

Two andesite hammerstones were collected, one from the surface and one from Test Unit 2, 20-30 cm level. Both were angular in form, suggesting that they were used in re-roughing or shaping of ground stone tools. Both had 90° edge angles and showed crushing wear.

Seventy-nine flakes were collected. Andesite (n=20), quartzite (n=19) predominated, followed by metasedimentary and basalt (10 each), felsite (n=6), metavolcanic (n=5), rhyolite (n=4), and one each of quartz, chert, chalcedony, jasper, and volcanic porphyry. Only four were surface finds; three came from STP's, and the remaining 72 were from excavation units. The majority (n=68) of the flakes ranged in size from 1-2", 10 flakes were as small as ½ inch in length, and one was 3" in length. Most of the flakes were tertiary (n=66); 11 were secondary and two were primary.

Five cores were recovered. There were two each of andesite and rhyolite, and one of basalt. Two were surface finds, and three came from excavation units. The cores ranged in size from 2-3 inches. Two cores had no cortex present, and three had some cortex left.

Two flake tools were collected from the same excavation unit, Test Unit 1. The felsite specimen (#37) came from the 30-40 cm level and been used and resharpened (retouched). The felsite specimen had a 45° edge angle and showed nibbling and stepflaking, consistent with use and retouch. The rhyolite tool (#41) came from the 40-50 cm level and may be a preform for a projectile point or other biface. The tool had a 45° edge angle and revealed only stepflaking. It would appear that this tool was either being reshaped into a projectile point or other biface, or being resharpened (retouched) after use.

Two plano-convex tools were recovered from the site. One (#1) was made of quartz, had been retouched, and was found at 27 cm below datum in STP 1. It has an edge angle of 60° and shows nibbling and stepflaking use wear. The metavolcanic specimen (#13) was retouched and was found on the surface. Its edge angle is 75° and it exhibits nibbling and stepflaking use wear.

A single chopper (#68) was recovered. It was made of chert and came from the 10-20 cm level of Test Unit 3. It has an edge angle of 60° and shows nibbling use wear.

A basalt core tool (#95) came from Test Unit 2, 20-30 cm below datum. Its edge angle is 60° and it shows nibbling use wear.

Ground stone included manos, metate fragments, and a discoidal. All three manos were fragmentary, oval shaped, bifacial, pecked, and all were surface finds. Two granitic specimens (#20, #21) were fire affected; #20 had been broken and re-used. The third mano fragment (#10) was made of gneiss.

Metate fragments numbered five. All were granitic, fire affected, and surface finds. The five pieces represent three different metates. Fragments #7 and #9 belong to the same shallow basin metate. Fragment #8 belongs to a deep basin metate. Fragments #18 and #19 belong to the same deep basin although a different one than #8.

Figure 10. Discoidal (#17) from CA-ORA-1556.

A single discoidal (#17; see Figure 10 above), a ceremonial stone, was recovered from the surface. The well-shaped disc is made of red volcanic porphyry and is 90% complete; small portions have been fractured off both faces. It has been pecked to produce a very smooth disc shape. The specimen measures a maximum of 10.1 cm in diameter and 5.2 cm in thickness. Its roughly 2:1 ratio of diameter to thickness makes it a regular type, as opposed to either wafer or barrel types (Moriarty and Broms 1972). Its faces are concave, concave. Its surface (edge) is also concave. Discoidals are time sensitive and help to date the site. See Part VII for further discussion of discoidals.

PART IV. PREHISTORIC SITE FEATURE: CA-ORA-1554.

Among the prehistoric project sites, only one produced a feature: CA-ORA-1554. While ARMC crew members were collecting surface artifacts, they noted two ground stone artifacts (#1, a schist metate fragment, and #3, a granitic metate fragment) positioned tightly together on the ground. They marked the area for further investigation and completed the surface collection. Later they returned to the area and set up a 1x1-meter excavation unit, centering it over the two artifacts.

The crew retained the surface artifacts in place and dug an arbitrary 10-cm level into the deposit. They discovered additional artifacts that eventually extended the feature into subsequent levels 10-20 cm and 20-30 cm. As the artifacts and cobbles were exposed, they were mapped in plan view, and their depths below datum were recorded (Figure 11). The feature artifacts were then collected, identified, and bagged for return to the ARMC lab for cataloging and analysis.

The feature was a ground stone cache. Feature artifacts included two whole manos, or hand grinding stones. The manos were bifacial (ground on both faces), granitic, and oval shaped. Three individual metates, or base grinding stones, can be pieced together from the six recovered fragments. Two schist fragments (#38, #39) are part of the same "killed", or intentionally destroyed, deep-basin incomplete metate. Two granitic fragments (#36, #42) together form an incomplete deep-basin metate. Two schist fragments (#40, #41) form part of a third incomplete metate in the feature. The cobbles shown in the plan view in Figure 11 were examined by the ARMC crew. Since the stones did not show any fire effects or any other evidence of cultural activity, they were discarded in the field.

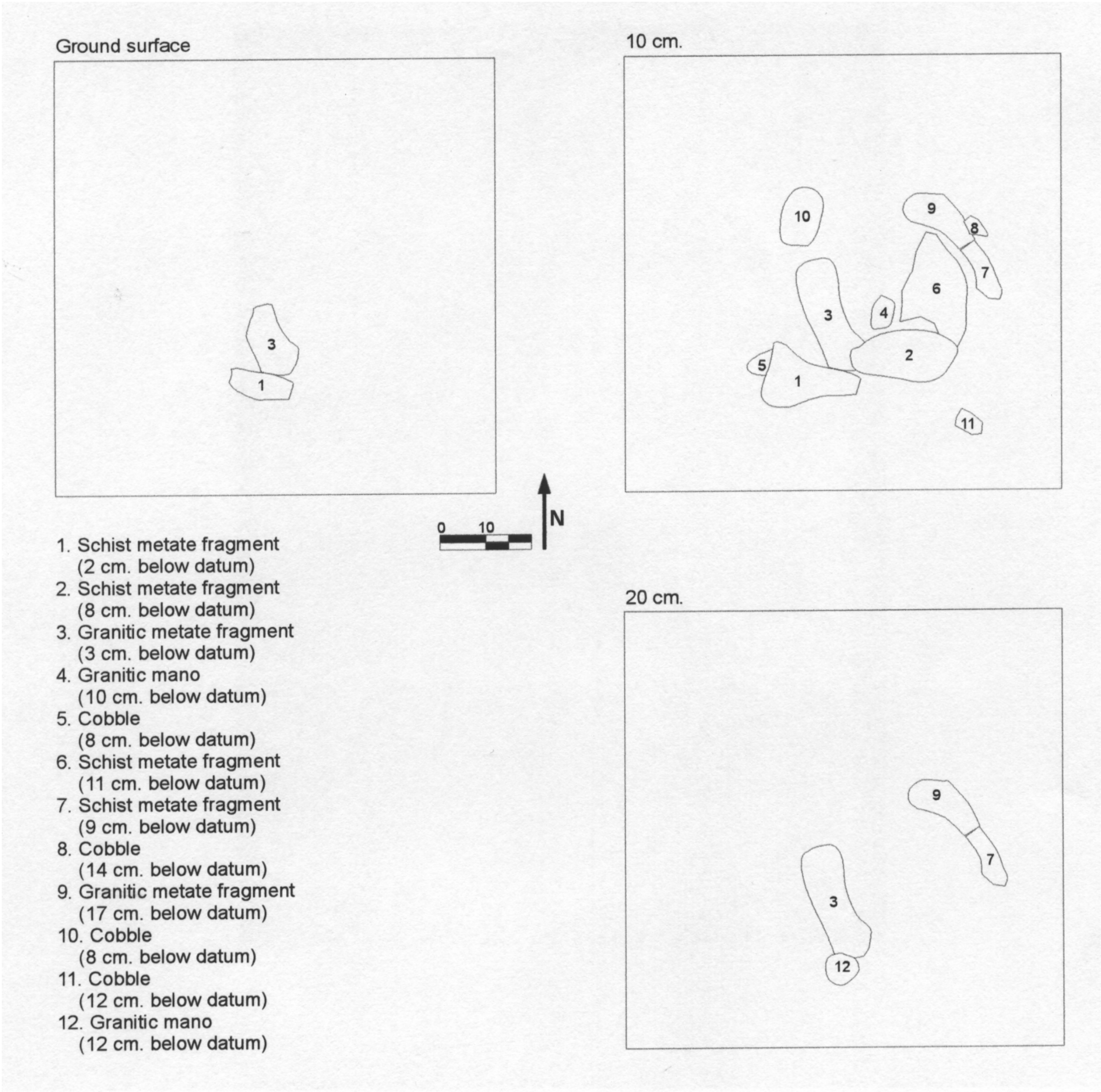


Figure 11. CA-ORA-1554, Feature 1, Plan View, Levels 0-30 cm.

PART V. HISTORIC SITE FEATURE: SITE 30-176632

Two historic sites, 30-176632 and CA-ORA-29, were tested during this project. Only 30-176632 is discussed in this report; CA-ORA-29 (Mission Vieja) is treated in a separate report (Van Wormer 2002). Van Wormer (pers. comm.) also provided the technical analysis for this report.

30-176632

This site consisted of a single large feature, or historic scatter. Feature items consisted of bricks, glass, metal objects, wood and charcoal. The ARMC crew set out a grid measuring 8 x 8 meters to enclose the artifacts. After removing the surface dried grass, the crew members mapped each 2 x 2-meter segment in plan view. See Figure 12 below for a composite map of the feature.

The majority of the artifacts at the site were building materials (Table 20) with bricks being the most numerous. No precise count or weight of the bricks was carried out since they would skew the sample so greatly. The bricks were examined in the field and then were discarded on site. The bricks were handmade of soft mud, pressed into wooden forms, swiped with a wooden slab to remove excess material, then fired in a freestanding kiln composed of the unfired bricks themselves. The bricks showed various levels of firing relative to their position in the kiln, interior bricks closer to the heat source being most heavily fired and more distant ones less well fired. This technique of brick making dates roughly to the period from 1900 to World War II.

Table 20. Historic Artifacts from Site 30-176632.

CAT. NO.	GROUP	ITEM	COUNT	WEIGHT	REMARKS
1	Consumer Item	Bottle	4	12 g	Clear glass
2	Building material8	Window glass	101	167 g	2 mil. thick
3	Building material	Window glass	25	120 g	3-4 mil.thick; green glass
4	Building material	Nails	71	47 g	Round nails except one horseshoe type
5	Building material	Hinge	2	67 g	1 hinge w/screws
6	Hardware	Strapping	43	151 g	1 pc. handcut
7	Building material	Tile backing	36	105 g	Metal grid for tile
8	Hardware	Auto part	1	340 g	
9	Building material	Wood	11	158 g	Partly burned
10	Building material	Charcoal	3	14 g	

11	Household item	Bucket	1	4190 g	Modified/wire handle

Three types of glass were collected from the site: 1) thin, clear, curved bottle glass; 2) thin, clear, flat window glass; and 3) thicker, clear flat auto glass or possibly icebox shelf glass. Only the bottle glass is diagnostic; it dates to post-1930s. It is manufactured, not hand blown; it shows no bubbles.

The bucket, although not a part of the feature proper, was collected from some 60 meters to the southwest because it appeared to be a diagnostic, or time-sensitive, artifact that might help to date the scatter. The item was originally a large steel canister imported from Morris, Little & Son, Ltd., of Doncaster, England. It was modified to serve as a bucket by the addition of a baling wire handle. Its precise date of manufacture or date of import could not be determined. At minimum it dates to pre-World War II.

The nails were all round types, except for one horseshoe nail, and their date of manufacture is indeterminate. The remaining metals were all manufactured and may date to post-World War II; their timing is indeterminate. The age of the wood and charcoal fragments could not be determined.

The historic feature appears to represent one or more dumping episodes of unknown date(s). The lack of diagnostic artifacts rules out any time assignment. Those items that were found provide conflicting data; some are handmade, some manufactured.

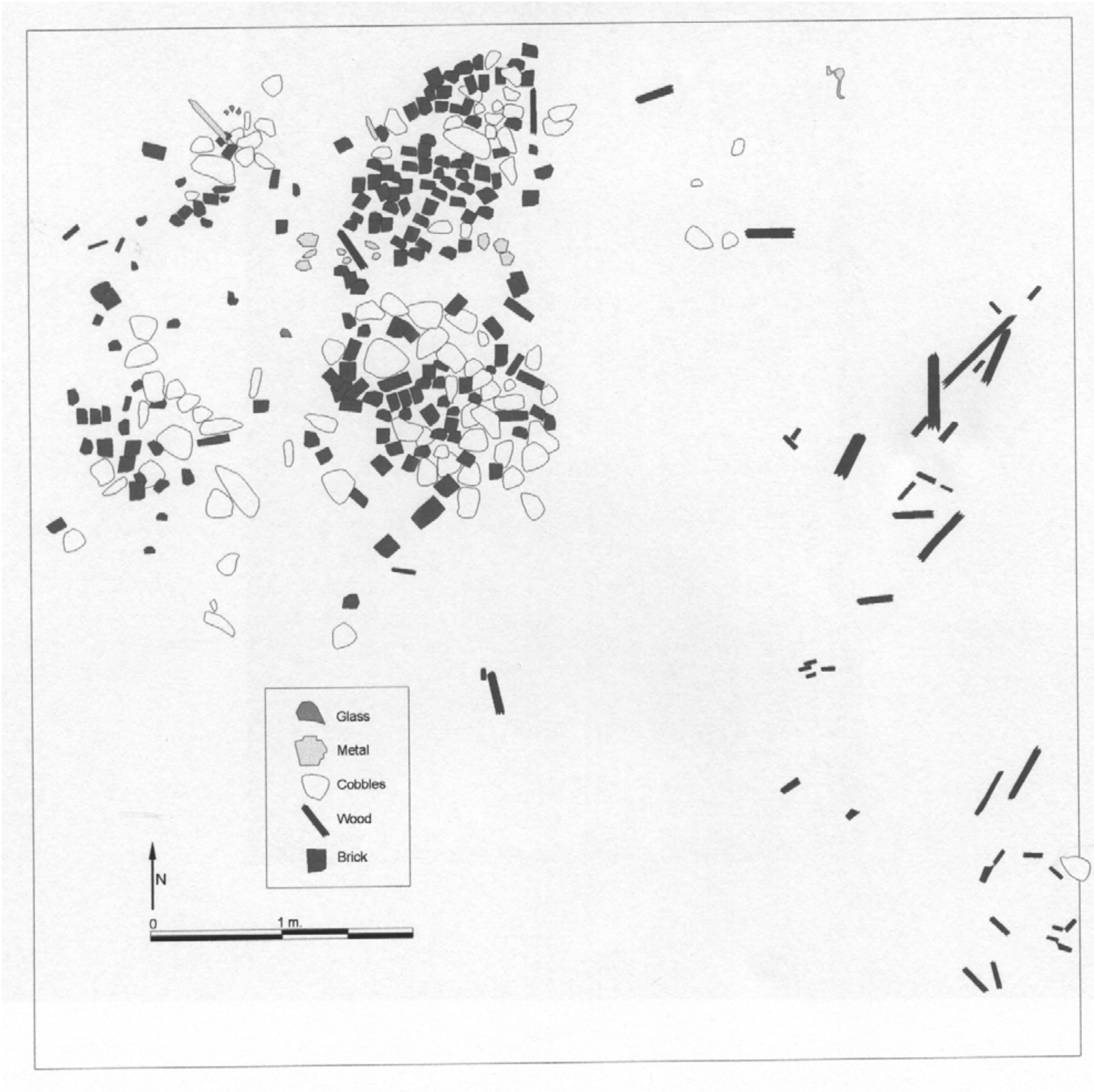


Figure 12. Plan View of Historic Feature, Site 30-176632.

PART VI. STRATIGRAPHY

Only two sites in the study area produced excavation units that revealed any visible stratigraphy: CA-ORA-1555 and CA-ORA-1556. The stratigraphic profiles from each site are presented below.

CA-ORA-1555

Test Unit 1 (Figure 13) revealed a maximum deposit of 60 cm below datum. The uppermost layer consisted of a fine sandy loam matrix, followed by a sandy clay with cobbles. Deeper still came a firm, sandy clay matrix, followed in succession by a compact sandy clay and compact clay (penetrated into but not excavated). Both of the final layers were sterile, i.e., contained no cultural resources. Rodent disturbance was limited to the second layer.

CA-ORA-1556

In Test Unit 1 (Figure 14) the deposit reached a maximum of 60 cm below datum. The upper layer consisted of a light tan, sandy silty loam with gravel. A cobble layer followed. The terminal layer was a sterile clay. No rodent disturbance was noted.

In Test Unit 2, the deposit reached a maximum of 60 cm below datum (Figure 15). The root zone at the top of the deposit was succeeded by a slightly compact sandy clay/loam in which a core (#101) was mapped in place. A more compact sandy clay lay below. The deposit terminated with a very compact sandy clay. Rodent disturbance was minimal and limited to the second layer.

In Test Unit 3 (Figure 16) the deposit reached a maximum of 80 cm below datum. A root zone layer gave way to a less compact, sandy clay/loam. A more compact sandy clay followed. A very compact sandy clay terminated the deposit. Rodent disturbance was limited to the second layer.

Test Unit 4 (Figure 17) reached 110 cm below datum. The root zone was thin. A thick deposit of a less compact, sandy clay/loam followed. A more compact sandy clay succeeded that layer. A very compact sandy clay matrix terminated the cultural deposit. Rodent disturbance was minimal, limited to the uppermost portion of the second layer.

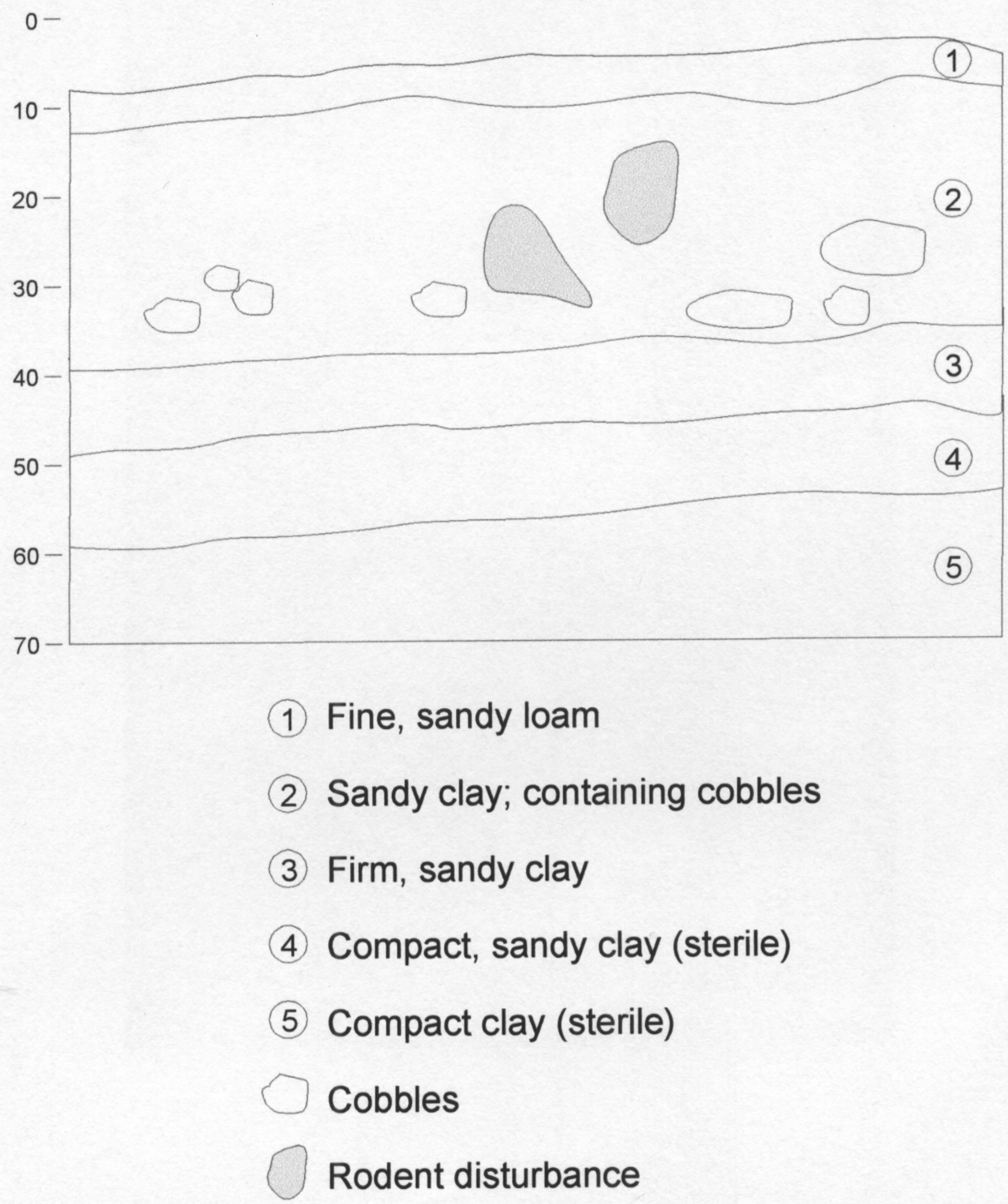


Figure 13. CA-ORA-1555: Test Unit 1, Northern Wall Profile.

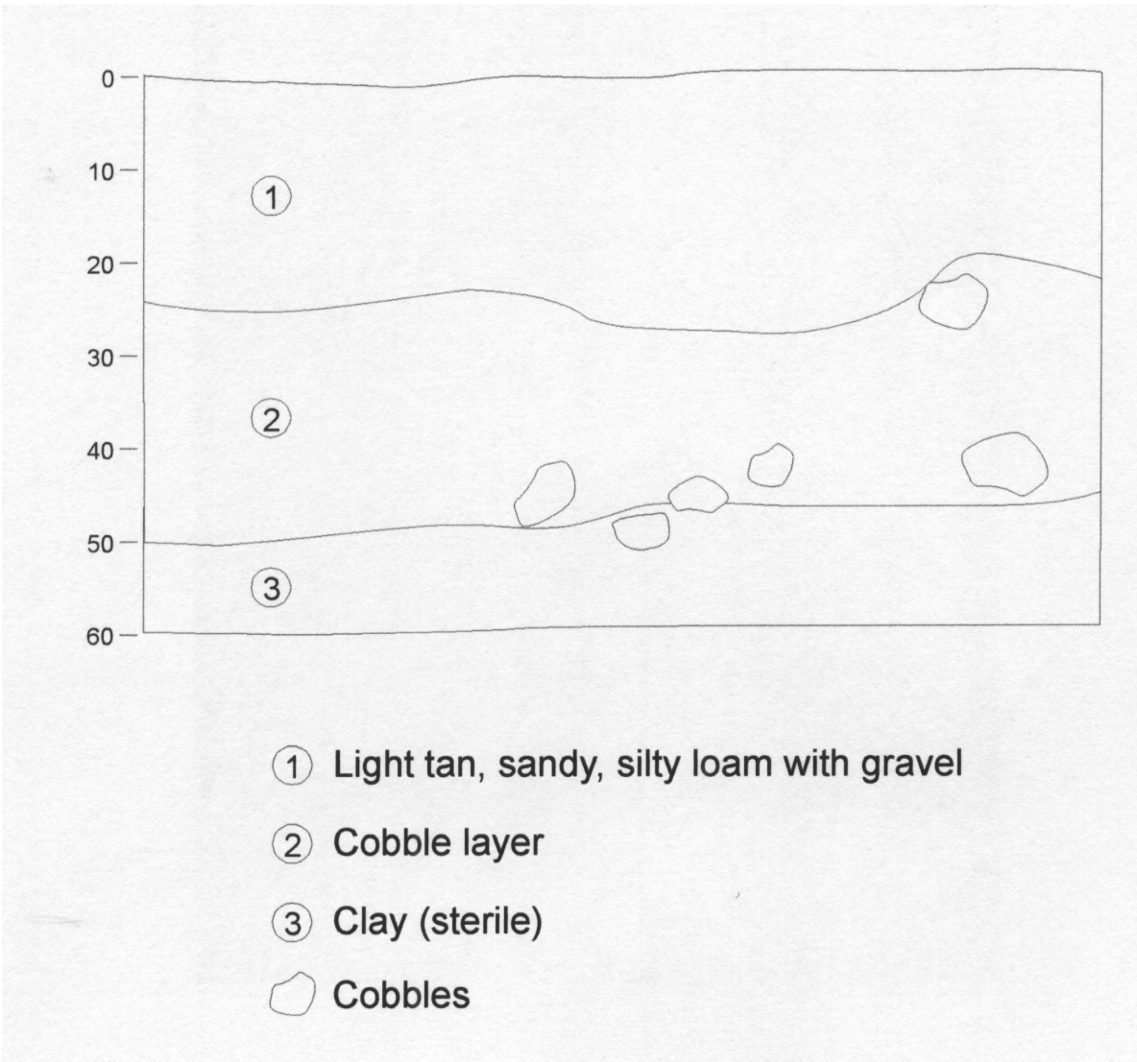


Figure 14. CA-ORA-1556: Test Unit 1, Western Wall Profile.

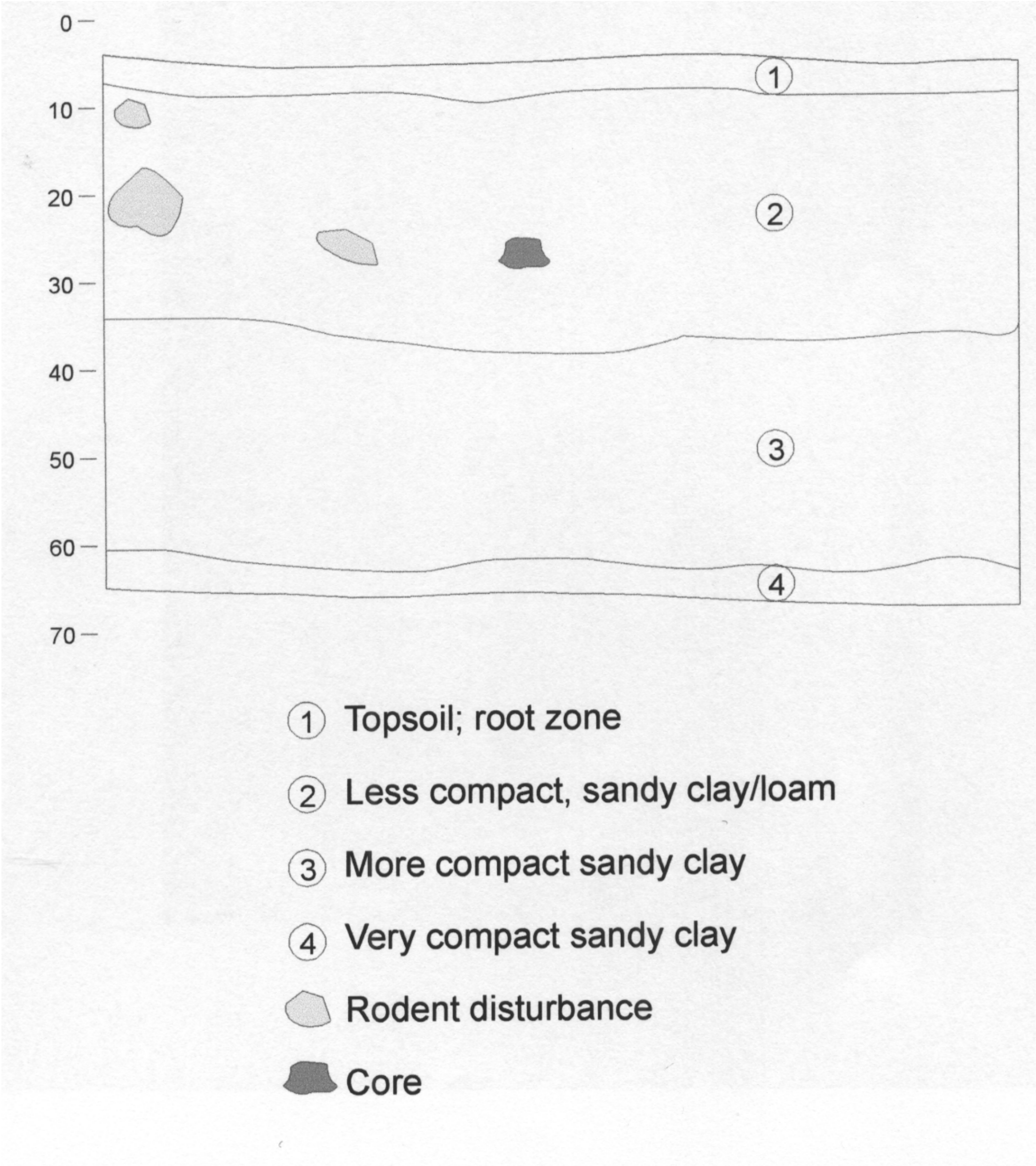


Figure 15. CA-ORA-1556: Test Unit 2, Northern Wall Profile.

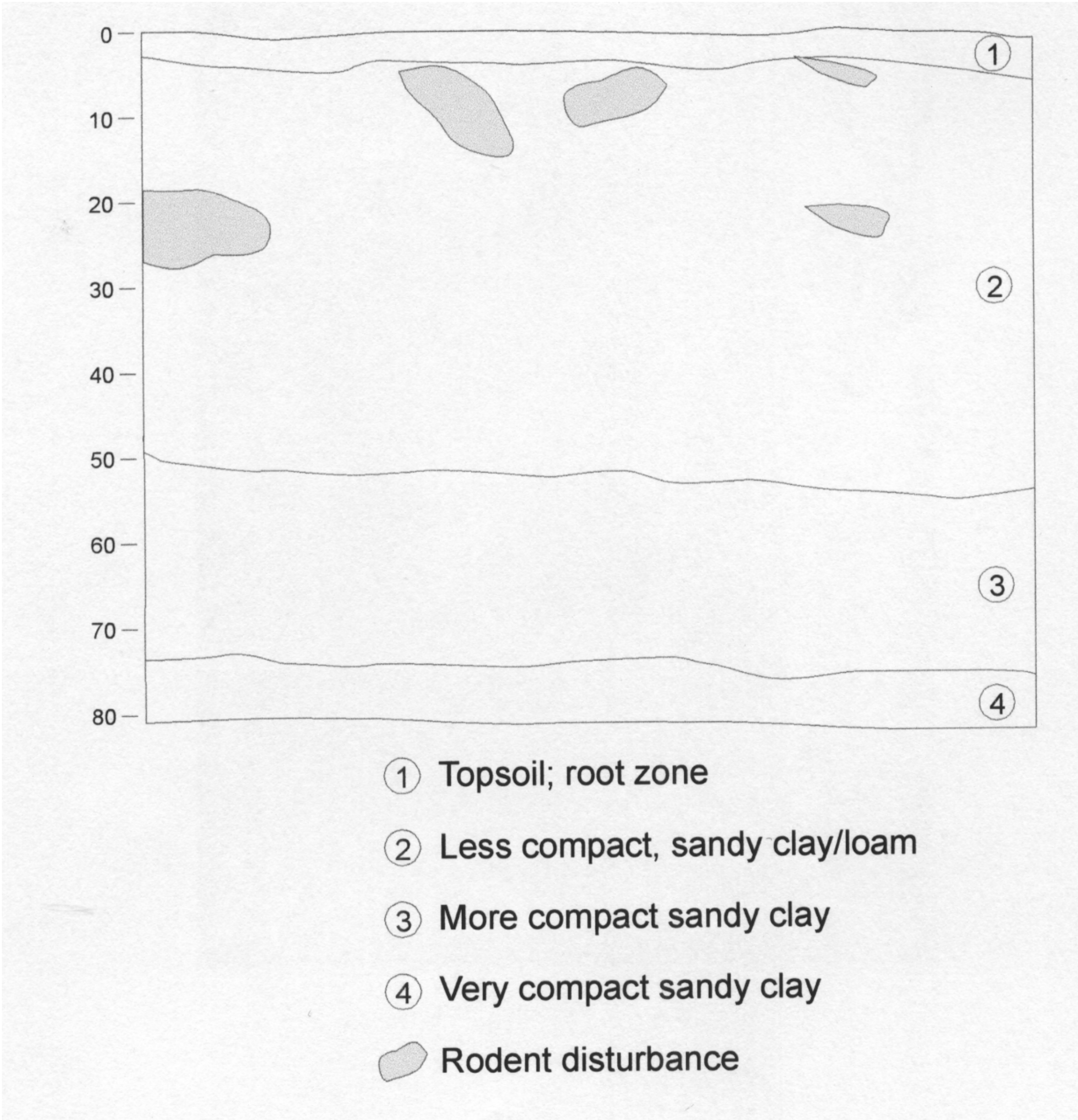


Figure 16. CA-ORA-1556: Test Unit 3, Northern Wall Profile.

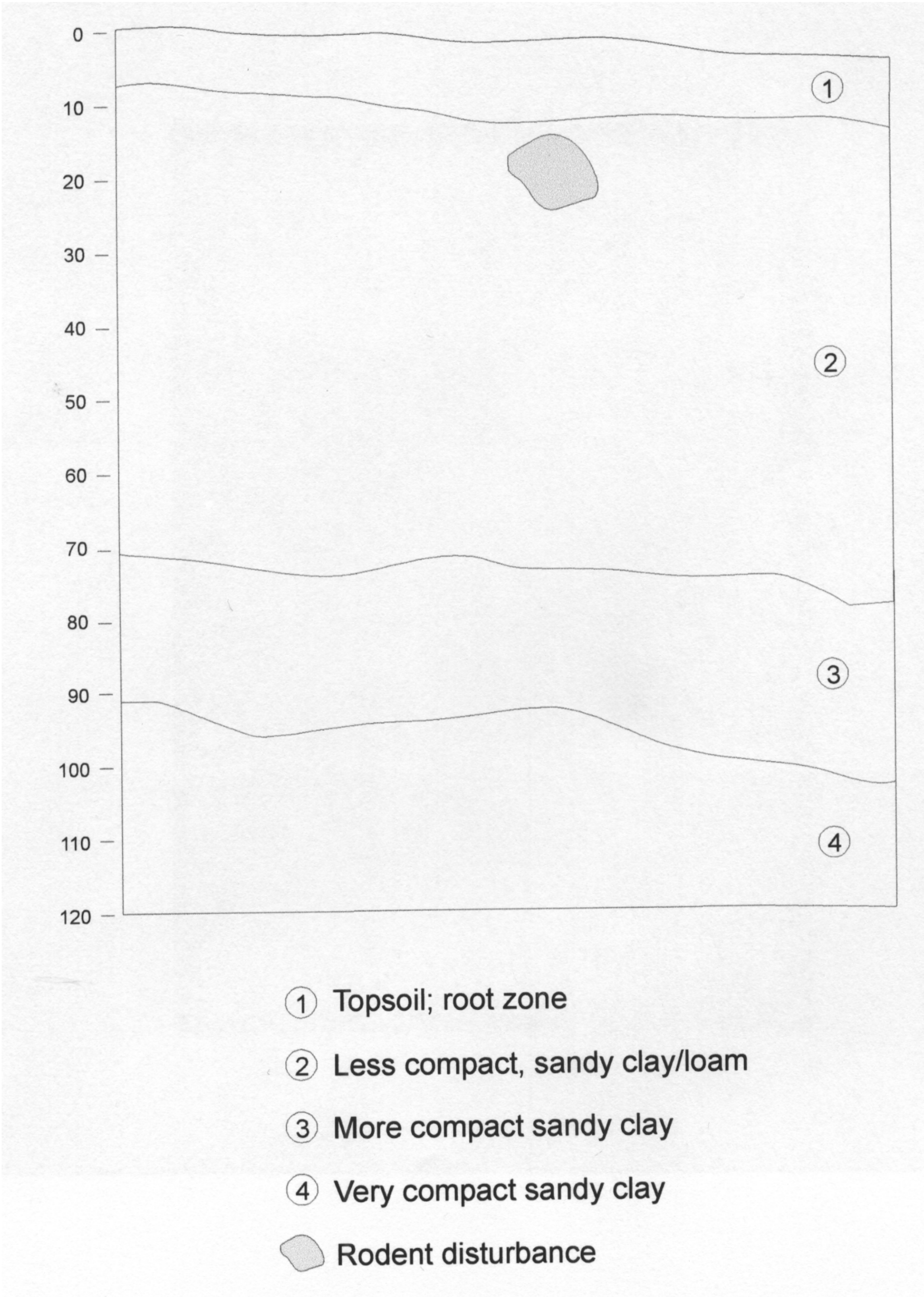


Figure 17. CA-ORA-1556: Test Unit 4, Northern Wall Profile.

PART VII. INTERPRETATION

CHRONOLOGY

The project sites did not yield any materials that could be absolutely dated, eg. charcoal, shell, etc. However, the sites did produce diagnostic artifacts that can be used to provide relative dates for the sites. The diagnostic artifacts are discussed below along with their time associations.

Projectile Point

Only one projectile point was recovered from the project sites. A triangular, concave-based Cottonwood arrowpoint (#1) was found on the surface of CA-ORA-1554 during the survey of Cristianitos Canyon (Demcak 2000). Unlike earlier and larger projectiles that were propelled by an atlatl, or wooden spear thrower, these small, lightweight points were launched with a bow and arrow. The Cottonwood series was first proposed by Lanning (1963) to describe a group of arrowpoints from the Rose Spring Site. He proposed a beginning date of AD 1300 for these points.

Radiocarbon dates from the Great Basin give a range of AD 900 – 1620 for the Cottonwood series (Hester and Heizer 1973). Using data from the Marana Site in Riverside County, Bettinger and Taylor (1974) place the points at circa AD 1300. In Orange County, Koerper and Drover (1983) assign them to the Late Prehistoric tradition and place their occurrence as post AD 750±250. Throughout southern California and the Great Basin, the Cottonwood series co-occurs with Desert Side-notched points and both persist into the early historic period.

Perforators

Perforators may have functioned as drills to place holes in leather, shell or stone beads, ornaments, plaques, gorges, fishhooks, and other items that were to be strung, or may have been used as gravers to incise stone. Three sites produced perforators: CA-ORA-1555, –1559, and -1565.

Two perforators were collected from CA-ORA-1555 in Cristianitos Canyon. Both were made of andesite and had been deliberately shaped. Specimen #59 had a triangular-shaped bit. Specimen #17 had a triangular bit that revealed crushing wear from use.

Two perforators were recovered from CA-ORA-1559 in Chiquita Canyon. Both had been shaped to form a triangular bit. Specimen #6, a surface find, was made of metasedimentary material and had a broken bit. A quartzite specimen (#49) was recovered from STP 2.

A single perforator (#4) made of quartzite was recovered from the surface at CA-ORA-1565 in Gobernadora Canyon. It displayed a triangular bit.

Perforators were most often employed by Late Prehistoric cultures (Wallace 1955: Warren 1968). Small microlith drills of chert were frequent finds in the upper level (Late Prehistoric Horizon) at the Malaga Cove Site (Wallace 1955).

Nut Anvil

One of the manos (#21) at CA-ORA-1560 in Chiquita Canyon had been pecked to create a nutting stone, or nut anvil (Hudson and Blackburn 1981:89-93) to process acorns. Nutting stones, or nut anvils, are part of the mortar-pestle complex of tools. They are among the artifacts used to process acorns into mush. Acorn mush was a staple food for the late Intermediate to Late Prehistoric cultures in southern California, circa 3000 BP to historic times.

Stone Bead

In Gobernadora Canyon, a stone bead blank made of metavolcanic material (#8) was recovered at site CA-ORA-1446 from Test Unit 1, 20-30 cm below datum. Koerper and Drover (1983:20) indicate that drilled, non-steatite stone ornaments are found in Milling Stone occupation sites, suggesting an age of circa 6500 years BP at the earliest.

Discoidals

Discoidals, or disc-shaped stones, are rare finds in southern California. Because of their unusual shapes, lack of use wear, and non-recognition by Native groups at contact or more recently, the function of these artifacts is unknown.

Five discoidals were recovered from the project sites. All were surface finds. Chiquita Canyon produced three discoidals. A granitic specimen (#50) came from CA-ORA-1559. A granitic (#2) and a diorite specimen (#3) came from CA-ORA-1561. All were of regular type, i.e., not wafer or barrel shaped.

Cristianitos Canyon produced two discoidals. A granitic specimen (#4) came from CA-ORA-1550. The specimen (#17) from CA-ORA-1556 was made of granitic porphyry. These two were also of regular type.

Discoidals are often called “gaming stones” in southern California archaeology. Most come from sites with some degree of sedentism, or settled life. The high degree of workmanship is consistent with groups having the time and leisure to develop sophisticated technological traits. Such groups have the leisure time to engage in recreational activities; discoidals were very likely involved in some of these activities. Indeed historical records in the Southeast refer to “chunkey” or “chungke” stones being used in a game in which a man rolled a stone disc forward along a course. Two players then charged the rolling stone; each slid a long forked pole along the ground and attempted to land the pole in such a way that the stone came to rest in the fork of the pole (Martin, Quimby, and Collier 1947:38-39 in Moriarty and Broms 1972:27).

“Chunkey” is viewed as a variant of the widespread “hoop-and-pole “ game of North American Indians (Moriarty and Broms 1972). The Luiseño are described by Kroeber (1925:846) as playing a version of this game. The Chumash Indians of the Santa Barbara area reportedly used a barrel-shaped stone ring at which contestants shot arrows in an attempt to penetrate the opening while the stone was in motion (Culin 1907:472).

Some of the discoidals in southern California are perforated. Some are fully perforated and are called “donut stones”. These items are also called digging stick weights.

Discoidals in southern California are most often referred to as “ceremonial stones” due to their apparent non-utilitarian form, their use in rituals (Walker 1951), and their co-occurrence with cog stones in ceremonial contexts (Eberhart 1961). Moreover their use in games strengthens the ceremonial classification of the stone discs. All games played in prehistoric North America were primarily ceremonial. Culin (1907), after lengthy research into the games of these Native peoples, concluded that behind the games and ceremonies there existed some widespread myth that served as the impulse for both. He maintains that the ”...games appear to be played ceremonially, as pleasing to the gods, with the object of securing fertility, causing rain, giving and prolonging life, expelling demons, or curing sickness (Culin 1907:34).

Based upon data from CA-ORA-119A, Koerper and Drover (1983) speculate that discoidals developed during the Intermediate cultures from the earlier cog stones. However, the data accumulated from a variety of sites in southern California (Table 21) suggest that discoidals first appeared in sites with a Milling Stone occupation, circa 6500 years before the present (BP). Based upon their simpler forms, discoidals very likely served as the antecedent for the more complex cog stones.

Table 21. Chronology of Discoidals and Cog Stones in Southern California.

Site No.	Discoidal	Cogstone	C14 (BP)	Obsidian (BP)	Relative Dating	References
LAN-267		X	6310± 100:6870 ±100		Milling Stone Assemblage	King (1967)
La Jolla #1	X		6320± 210			Moriarty and Broms (1971)
LAN-138 (Malaga Cove)	X		6510± 100		Level II, Milling Stone	Flint and Deevey (1960)
Scripps Estates I	X		5410± 100			Moriarty and Broms (1971)
LAN-174 (Zuma Creek)		X	4950± 200		Milling Stone	Flint and Deevey (1960)
LAN-518x			4820-2510		Milling Stone	Wasson et al. (1978)
ORA-183	X		4320± 210;2974± 190			Drummy-Chapel et al. (1983)

ORA-861	X			3890;2860	Milling Stone	Demcak et al. (1990)
ORA-58	X	X	3685± 100	4270-1510		Dixon (1970)
LAN-215	X		3000± 100		Milling Stone	Flint and Deevey (1964);
LAN-283	X	X		2680-1790	Intermed. Component	Butler (1974)
ORA-466	X			2130	Intermed. Component	Cottrell (1982)
LAN-2	X		2550± 150		Milling Stone	Johnson (1966)
LAN-21	x			2550-1480;3120-2450	King's Bead Chronology	Tartaglia (1980)
Porter Ranch	X				Milling Stone	Walker (1952)
LAN-339	X				Milling Stone	Eberhart and Wasson (1975)
ORA-1048	X			2130;1360	Pre-late Component	Demcak et al. (1989)
Torrey Pines	X		2090± 150			Moriarty and Broms (1971)
ORA-119A	X	X	1450± 100	2170	Intermed. Component	Koerper (1981)

To summarize the chronology of the sites in Cristianitos Canyon, site CA-ORA-1554 can be assigned a relative date of AD 1300 based upon the presence of a Cottonwood triangular arrowpoint. Site CA-ORA-1555 may be given a relative placement in the Late Prehistoric Horizon , AD 750±250 years (Koerper and Drover 1983:11) due to the presence of perforators. CA-ORA-1556 had a discoidal linking it to other Milling Stone culture sites and a timeframe of circa 6500 years BP.

In Gobernadora Canyon, a stone bead blank at site CA-ORA-1446 indicates a Milling Stone occupation, circa 6500 years BP.

In Chiquita Canyon, site CA-ORA-1559 can be identified as a multi-component site based on two diagnostic artifacts: discoidal and perforators. The discoidal indicates a Milling Stone occupation, circa 6500 years BP; the perforators suggest a Late Prehistoric occupation, AD 750±250 (Koerper and Drover 1983:11). The nut anvil at CA-ORA-1560 links the site with a Late Intermediate to Late Prehistoric occupation, circa 3000 BP to historic times. The discoidals at nearby site CA-ORA-1561 indicate a Milling Stone occupation, circa 6500 years BP.

SUBSISTENCE AND SETTLEMENT PATTERNS

The data from the test phase established that the inhabitants of the project sites were hunter-gatherers with varying degrees of sedentism, or settled way of life. Some of the project sites served as semi-permanent villages, or base camps, where generalized subsistence and related activities took place (Hudson 1971). Others were temporary camps where specialized activities were carried out.

Chiquita Canyon (CA-ORA-1559, -1560, and –1561)

Site CA-ORA-1559 produced a wide range of activity sets and corresponding artifact types. They included the following: chipped stone tool manufacture (flakes, cores, hammerstones); resharpening of grinding surfaces (angular hammerstones); hard seed processing (manos and metates); bone and wood working (utilized flakes, flake and core tools); and yucca pulping and fiber processing (plano-convex tools); leather piercing, stone or shell beadmaking (perforators); and ceremonial activities (discoidal). This wide range of activities suggests that the site was a village, or base camp. The site did not have much midden (refuse) accumulation (max. 30 cm). It must have been occupied for much of the year, based upon the range of activities. It may have served as a base camp intermittently or non-intensively. With a small population, such an occupation would not result in much midden development.

Site CA-ORA-1560 is located just down slope and northwest of CA-ORA-1559. Six activity sets were identified there. They consist of the following: chipped stone tool manufacture (flakes, cores, hammerstone); resharpening of grinding surfaces (angular hammerstones); hard seed processing (manos and metates); acorn processing (nut anvil); bone and wood working (flake tools and core tool); and yucca pulping and fiber processing (plano-convex tools). The wide range of activities identifies this site as a base camp, or village. Although the midden accumulation was not great (max. 30 cm), the site was apparently occupied for a goodly portion of the year, based upon the range of activities. Perhaps the site was only used as a base camp intermittently or non-intensively. With a small population, the refuse accumulation would not be great.

Site CA-ORA-1561 exhibited a very limited range of activities. Only two activity sets were present: yucca pulping and fiber processing (plano-convex tool), and ceremonial activities (discoidals). This site appears to have served as a ceremonial camp for the inhabitants of CA-ORA-1559 and CA-ORA-1560.

Elsewhere in Chiquita Canyon are found two temporary camps: CA-ORA-1562 and –1563. Neither camp showed much midden accumulation (max. 30 cm), suggesting short-term or non-intensive use. CA-ORA-1562 exhibits only three activity sets: chipped stone tool manufacture (flake, hammerstone); resharpening of grinding surfaces (angular hammerstones); and hard seed processing (manos and metates). The predominance of grinding tools over chipping tools argues that this site was used for hard seed processing, most likely in the summer to fall months when seeds were ripening. CA-ORA-1563 produced four activity sets: chipped stone tool manufacture (flakes, cores, hammerstone), resharpening of grinding surfaces (angular hammerstones); hard seed processing (manos and metates); and yucca pulping and fiber processing (plano-convex tools). A temporary camp used for toolmaking and plant processing, this site may have been associated with the base camp CA-ORA-1559 to the south.

<u>Gobernadora Canyon</u>

Site CA-ORA-1564, northernmost of the four sites tested in Gobernadora Canyon, produced four activity sets: chipped stone tool manufacture (flakes, cores, hammerstones); hard seed processing (mano); bone and wood working (utilized flakes, flake and core tools); and yucca pulping and fiber processing (plano-convex tools). There was minimal midden accumulation (max. 30 cm), so the site was either used intermittently or non-intensively. The range of activities suggests the site served as a temporary camp, perhaps occupied seasonally for plant procurement and processing. It may have been associated with a nearby village, or base camp, such as CA-ORA-1565.

Site CA-ORA-1565 exhibits a wide range of activity sets that include the following: chipped stone tool manufacture (flakes, cores, hammerstones); resharpening of grinding surfaces (angular hammerstones); hard seed processing (mano); bone and wood working (utilized flakes, flake and core tools); and yucca pulping and fiber processing (plano-convex tools and choppers); and leather piercing, stone or shell beadmaking (perforators). Although the midden accumulation was not great (max. 30 cm), the site was apparently occupied for a goodly portion of the year, based upon the range of activities. Perhaps the site was only used as a base camp intermittently or non-intensively. With a small population, the refuse accumulation would not be great.

CA-ORA-1446 produced three activity sets: chipped stone tool manufacture (flakes, hammerstone); hard seed processing (mano and metates); and stone bead making (bead blank). Midden accumulation was slight (max. 30 cm). This site was probably a temporary camp associated with a nearby base camp, perhaps CA-ORA-1565.

CA-ORA-1566 produced only four activity sets: chipped stone tool manufacture (flakes); hard seed processing (manos and metates); bone and wood working (core tool); and yucca pulping and fiber processing (plano-convex tools and choppers). Midden accumulation was minimal (max. 30 cm). This site was probably a temporary camp associated with a nearby base camp, such as CA-ORA-1565.

<u>Cristianitos Canyon: CA-ORA-1550, -1554, -1555, and -1556</u>

CA-ORA-1550 contained only four artifacts reflective of three activity sets: hard seed processing (manos and metates); yucca pulping and fiber processing (plano-convex tools and choppers), and ceremonial activities (discoidal). The site had no midden build-up and no sub-surface cultural deposit. It appears to have been a ceremonial area almost exclusively.

CA-ORA-1554 was a trail site that contained a mano and metate cache/feature, as well as six activity sets: hunting (arrowpoint); chipped stone tool manufacture (flakes, hammerstones); resharpening of grinding surfaces (angular hammerstones); hard seed processing (manos and metates); bone and wood working (utilized flakes, flake tools); and yucca pulping and fiber processing (plano-convex tools). Based upon the wide range of activities, one may infer that this site served as a base camp, or village. The site exhibited only a minimal midden accumulation (max. depth 30 cm), but a small population would not accumulate much refuse, or a group that used the site intermittently. The trail upon which the site is located probably began as a game trail, was used by Native Americans (see social networking, obsidian trade), and may have been used by the Portolá party on its trek northward out of Cristianitos Canyon. The trail is situated in the upper canyon where the travelers sought a path to San Juan Creek.

CA-ORA-1555 exhibited six activity sets, among them the following: chipped stone tool manufacture (flakes, cores, hammerstones); resharpening of grinding surfaces (angular hammerstones) ; hard seed processing (manos and metates); bone and wood working (utilized flakes, flake tools); leather piercing, stone or shell beadmaking (perforators); and yucca pulping and fiber processing (plano-convex tools). Based upon the wide range of activities at the site, CA-ORA-1555 served as a base camp, where generalized activities took place. The site had little midden accumulation (max. 30 cm). It may have been used intermittently or non-intensively; a small population group's occupancy would not have created much midden.

CA-ORA-1555 is part of site CA-ORA-1222 (Romani et al. 1997). Although they were recorded as separate sites (Demcak 2000; Brown 1989), the lithic scatter comprising the sites is continuous. As a result of testing at CA-ORA-1222 (Romani et al. 1997), the site revealed the following activity sets: hunting and butchering (bifaces); chipped stone tool manufacture (flakes, core, abrader); hard seed processing (manos, metates, ground stone fragments); and possibly pulp and fiber processing (core tool). The site contained spatially distinct loci, or activity areas. Area A was deep, reaching 100 cm at its maximum, and was apparently used for lithic reduction and tool production and some hard seed processing. Area A abuts directly on the southern boundary of CA-ORA-1555. Area B reached 900 cm in depth, and was used mostly for lithic reduction. Area C reached 60 cm in depth and was used for lithic reduction along with plant processing, as evidenced by manos and metates on the surface in this area. The site is characterized as a processing station rather than a primary habitation due to the absence of subsistence items (Romani et al. 1997:103). The absence of subsistence items may simply be due to the poor preservation provided by the site soils.

CA-ORA-1556 revealed six activity sets: chipped stone tool manufacture (flakes, cores, hammerstones); resharpening of grinding surfaces (angular hammerstones); hard seed processing (manos and metates); bone and wood working (flake and core tools); yucca pulping and fiber processing (plano-convex tools, chopper); and ceremonial activities (discoidal). The midden accumulation at the site reached 110 cm in depth. The wide range of activities and the heavy midden accumulation both indicate that the site functioned as a base camp, or semi-permanent village, which was occupied for most or all of the year.

SOCIAL NETWORKING

The interraction, or social networking, of Native Americans in prehistory can be traced in the archaeological record by noting the presence of non-local goods at sites. Such non-local, or exotic, goods in the study area would include obsidian, fused shale, pottery, steatite, asphaltum, and marine shells.

No exotic items were recovered from the project sites during the recent testing. All of the recovered items were lithics that are available either directly on site or nearby, or they occur as float in the drainages in proximity to the site, namely Cristianitos Creek and San Juan Creek.

At CA-ORA-1222, immediately down slope from CA-ORA-1555 (one site; parts recorded separately), Greenwood and Associates (Romani et al. 1997) recovered two obsidian flakes during a test phase at the site. The flakes were not sourced (Eastern California, Salton Sea??), so their origin is unknown. The flakes were not submitted for hydration rim measurement (rim increases with time after flaking), so no relative dating for this site is available. The presence of obsidian, a trade good, in the upper canyon argues that the trail (see CA-ORA-1554) served as a conduit for trade as well as a transportation route in prehistory and perhaps the early historic period (Portolá Expedition).

PART VIII. SIGNIFICANCE EVALUATION

The sites in the project area are being evaluated based upon their significance, or research potential, and their integrity. Their significance will be determined by their potential to provide data relevant to the investigation of scientific problems, such as those contained in the research design for this project. Each site will be judged by the data it can provide toward answering research questions now and in the future. Integrity will be measured as it affects potential for data recovery at the sites.

Generally the research design (Part II) for the Ranch Plan is focused on four major research problems:

1) Chronology (cultural-historical framework)
2) Subsistence (provisioning of basic needs, technology)
3) Settlement (placement in space relative to environment, natural or cultural)
4) Social Networking (interactions among groups, eg. exchange).

These research problems, or major research topics, are not unique to the project area; rather, they may be applied universally. Problems of a more nearly local or regional nature have been included as specific research questions under the larger headings.

Six prehistoric sites (CA-ORA-1554, -1555, -1556, -1559, -1560, and –1565) are considered eligible for the National Register of Historic Places (NRHP) and are discussed briefly below. Their significance, or research potential, is outlined with reference to their possession of data that might be applied to the investigation of specific research issues, either outlined in Part II, or elsewhere.

The remaining project sites do not possess the research potential to answer important research questions; therefore they would not be NRHP eligible. These non-eligible sites include CA-653, -654, -655, -657, -658, -1105, -1124, -1184, -1446, -1450, -1550, -1561, -1562, -1563, -1564, –1566, and historic site 30-176632.

CA-ORA-1554

Located in upper Cristianitos Canyon along a trail, CA-ORA-1554 was recorded in 2000 (Demcak 2000) and tested during this project. As a result of the test investigations, one may infer that the site was a base camp, or village, where generalized activities took place (hunting, stone tool making, resharpening of grinding surfaces, hard seed processing, bone and wood working, and pulp and fiber processing). A mano and metate cache was recorded in Feature 1 at the site.

The site contained no organic materials, such as charcoal or shell, which could be used for absolute dating. A Late Prehistoric occupation is recognized there based upon the recovery of a Cottonwood Triangular arrowpoint. A small amount (30 cm. max) of midden accumulation was found during the test of the site, suggesting that it may have been occupied intermittently or non-intensively; a small population group would generally create little accumulated midden.

Although no historic artifacts were found during the fieldwork at CA-ORA-1554, the site is situated on a trail that leads down slope into San Juan Canyon. The trail most likely started as a game trail that was later used by Native Americans (obsidian trade). It may also have been used by the members of the Portolá Expedition as they made their way through Cristianitos Canyon and west, northwest to their campsite, CA-ORA-29 (Mission Vieja) on the banks of San Juan Creek and opposite the entrance to Gobernadora Canyon. The trail would then be part of the historic Camino Real.

The site has demonstrated the potential for providing data to answer questions of chronology (arrowpoint), subsistence (chipped stone tools; ground stone tools; debitage; mano and metate cache), settlement (site's relationship to the environment and to other sites in the canyon), and social networking (Indian trail; trade route; historic trail, part of Camino Real).

The integrity of the site has been slightly affected by erosion, cattle grazing and some vehicular use as part of ranching activities. Overall site integrity is very good.

CA-ORA-1555

This site in upper Cristianitos Canyon was recorded in 2000 (Demcak 2000) during the survey phase of investigations. As a result of the test investigations, it has been determined that CA-ORA-1555 was a base camp, or village, where generalized activities took place (stone tool making; resharpening of grinding surfaces; hard seed processing; bone and wood working; leather piercing, stone or shell beadmaking; and pulp and fiber processing).

The site contained no organic materials, such as charcoal or shell, which could be used for absolute dating; however, a Late Prehistoric occupation is recognized there based upon the recovery of two perforators. A small amount (30 cm. max) of midden accumulation was found during the test of the site, suggesting that it was used intermittently or non-intensively; little midden accumulation would be expected from a small population group.

Site CA-ORA-1555 has the potential for providing data to answer questions of chronology (perforators; obsidian; see further), subsistence (chipped stone tools; ground stone tools; debitage), settlement (site's relationship to the environment and to other sites in the canyon), social networking (obsidian trade, see CA-ORA-1222), and the identification/location of the historic village of *Tobe* (Boscana in Harrington1934:61; Evans 2000:6-7).

Note that CA-ORA-1222 (of which CA-ORA-1555 is a part) is already considered NRHP eligible (Romani et al. 1997:127).

Site integrity is excellent. Although cattle graze in the area, only game animals pass through this site because it is largely covered with vegetation.

CA-ORA-1556

This site is located in upper Cristianitos Canyon and was recorded in 2000 (Demcak 2000) and tested during the current project. As a result of the test investigations, it has been determined that the site was a base camp, or village, where generalized activities took place (stone tool making, resharpening of grinding surfaces, hard seed processing, bone and wood working, pulp and fiber processing, and ceremonial activities).

The site contained no organic materials, such as charcoal or shell, which could be used for absolute dating; however, a Milling Stone occupation is indicated by the recovery of a discoidal. Unlike the other two base camps in the upper canyon, CA-ORA-1556 had an extensive midden buildup (110 cm max.). The site was probably occupied year round and/or over a long period. The earliest inhabitants may have been a Milling Stone group. There is no evidence of a cultural hiatus, or discontinuity, in the site deposit, so the site may have been occupied into the Intermediate, Late Prehistoric or early historic period.

Site CA-ORA-1556 has the potential for providing data to answer questions of chronology (discoidal; depth as indicator of time), subsistence (chipped stone tools; ground stone tools; debitage), settlement (site's relationship to the environment and to other sites in the canyon), and ceremonialism among the Juaneño (discoidal).

The integrity of CA-ORA-1556 has been slightly affected by a road cut and a drainage. The dirt road passes through the uppermost, northwestern portion of the site to a depth of perhaps 15-30 cm below present ground surface. The road affects no more than 5% of the total site area. The drainage to the southwest of the site accounts for minor erosion of site materials. Overall site integrity is very good.

CA-ORA-1559

Site CA-ORA-1559 was recorded in 2000 (Demcak 2000) and tested during the current project. This site, located in middle Chiquita Canyon, has been determined to be a base camp, or village, where generalized activities took place (stone tool making; resharpening of grinding surfaces; hard seed processing; bone and wood working; pulp and fiber processing; leather piercing, stone and shell beadmaking; and ceremonial activities).

The site contained no organic materials, such as charcoal or shell, which could be used for absolute dating; however, a Milling Stone occupation is indicated by the recovery of a discoidal, and a Late Prehistoric occupation is indicated by the recovery of two perforators. CA-ORA-1559 had a minimal midden buildup (30 cm max.). The site may have been occupied intermittently or non-intensively; little midden accumulation would be expected by a small group's use of the site.

Site CA-ORA-1559 has the potential for providing data to answer questions of chronology (discoidal; perforators), subsistence (chipped stone tools; ground stone tools; debitage), settlement (site's relationship to the environment and to other sites in the canyon), and ceremonialism among the Juaneño (discoidal).

CA-ORA-1560

Site CA-ORA-1560 was recorded in 2000 (Demcak 2000) and tested during the current project. This site is located in middle Chiquita Canyon down slope to the northwest of CA-ORA-1559. The site has been determined to be a base camp, or village, where generalized activities took place (stone tool making; resharpening of grinding surfaces; hard seed processing; acorn processing; bone and wood working; and pulp and fiber processing).

The site contained no organic materials, such as charcoal or shell, which could be used for absolute dating. A Late Intermediate to Late Prehistoric occupation is indicated by the recovery of a nut anvil, or nutting stone, part of the mortar-pestle complex used to process acorns. CA-ORA-1560 had a minimal midden buildup (30 cm max.). The site may have been occupied intermittently or non-intensively; a small population group would not generally create much midden buildup.

Site CA-ORA-1560 has the potential for providing data to answer questions of chronology (discoidal; nut anvil), subsistence (chipped stone tools; ground stone tools; debitage; acorn processing technology), and settlement (site's relationship to the environment and to other sites in the canyon).

CA-ORA-1565

Site CA-ORA-1565 was recorded in 2000 (Demcak 2000) and tested during the recent project. This site, located in upper Gobernadora Canyon, has been determined to be a base camp, or village, where generalized activities took place (stone tool making, resharpening of grinding surfaces, hard seed processing, bone and wood working, pulp and fiber processing, and leather piercing, stone and shell beadmaking).

The site contained no organic materials, such as charcoal or shell, which could be used for absolute dating; however, a Late Prehistoric occupation is indicated by the recovery of two perforators. CA-ORA-1565 had a minimal midden buildup (30 cm max.). The site may have been occupied intermittently or non-intensively; occupation by a small population group would not be expected to create much midden accumulation.

Site CA-ORA-1565 has the potential for providing data to answer questions of chronology (perforators), subsistence (chipped stone tools; ground stone tools; debitage), and settlement (site's relationship to the environment and to other sites in the canyon and in other canyons). Although no historic artifacts were found at the site, there exists the possibility that the Portolá Expedition may have visited the site. A research goal would be to recover evidence of that visit.

The site's integrity has been slightly affected by agricultural activities. Disturbance has been limited to vertical movement of artifacts in the upper 15 cm of the deposit. There is minor erosion on the down slope portions of the site. Overall the integrity is very good.

PART IX. REFERENCES CITED

Ahler, S.A.
1979 Functional Analysis of Nonobsidian Chipped Stone Artifacts: Terms, Variables, and Quantification. In *Lithic Use-Wear Analysis*, edited by B. Hayden, pp. 301-328. Academic Press, San Diego.

Bean, L.J., and F.C. Shipek
1978 Luiseño. In *Handbook of North American Indians*, Vol. 8, California, edited by R.F. Heizer, pp. 550-563. Smithsonian Institution, Washington.

Bean, L.J., and C.R. Smith
1978 Gabrielino. In *Handbook of North American Indians*, Vol. 8, California, edited by R.F. Heizer, pp. 538-549. Smithsonian Institution, Washington.

Bettinger, R., and R.E. Taylor
1974 Suggested Revisions in Archaeological Sequences of the Great Basin in Interior Southern California. *Nevada Archaeological Survey, Research Paper* No. 5. Reno.

Brown, J.C.
1989 Archaeological Site Survey Record, CA-ORA-1222. On file, SCCIC.

Castetter, E.F., W.H. Bell, and A.R. Grove
1938 The Early Utilization and the Distribution of Agave in the American Southwest. *University of New Mexico Bulletin, Biological Series* 5(4).

Cottrell, M.G.
1982 CA-ORA-466: An Intermediate Horizon Site Overlooking the Arroyo Trabuco in the Mission Viejo Area of Orange County, California. Copy on file, South Central Coastal Information Center (SCCIC), California State University, Fullerton, Department of Anthropology, 800 N. State College Blvd., Fullerton, CA 92834-6846.

Culin, S.
1907 *Games of the North American Indians*. Bureau of American Ethnology, 24th Annual Report, pp. 3-809. Washington, DC.

Davis, J.T.
1961 Trade Routes and Economic Exchange among the Indians of California. *Reports of University of California Archaeological Survey*, No. 54. University of California Press, Berkeley.

Demcak, C.R.
2000 Report of Archaeological Resources Survey for The Ranch Plan, Rancho Mission Viejo, South Orange County, California. Copy on file, SCCIC.

Demcak, C.R., K.C. Del Chario, and P. Martz
1989 Test Level Investigations at the San Juan Creek Sites, CA-ORA-1125, CA-0RA-656, CA-ORA-1123, CA-ORA-1121, CA-ORA-1048, and CA-ORA-1043, Santa Margarita Water District South County Pipeline Project, Orange County, CA. Copy on file, SCCIC.

Demcak, C.R., C.S. Jones, K.C. Del Chario, and K.M. Ward
1990 Test Level Investigations at CA-ORA-861, Plano Trabuco, South Orange County, California. Prepared for the Santa Margarita Company. Copy on file, SCCIC.

Dixon, K.A.
1988 Indian Communities in History. In *A Hundred Years of Yesterdays: A Centennial History of the People of Orange County and Their Communities*, edited by E.R. Cramer, K.A. Dixon, D. Marsh, P. Brigandi, and C.A. Blamer, pp. 11-18. The Orange County Centennial, Inc., Santa Ana.

1970 A Brief Report on Radiocarbon and Obsidian Hydration Measurements from CA-Ora-58 (The Banning Norris or Fairview Hospital Site), Orange County, California. *Pacific Coast Archaeological Society Quarterly* 6(4):61-67. Costa Mesa.

Drummy-Chapel, V., M. Cottrell, and C. Cameron
1983 Archaeological Investigations Conducted at CA-ORA-183, the Newland House Site, Area Located within the Fenced Yard. Prepared for the Huntington Beach Historical Society. Copy on file, ARMC.

Earle, T.K.
1982 Prehistoric Economies and the Economics of Exchange. In *Contexts for Prehistoric Exchange*, edited by J.Ericson and T.K. Earle, pp. 1-11. Academic Press, New York.

Earle, T.K., and J.E. Ericson
1977 *Exchange Systems in Prehistory*. Academic Press, New York.

Eberhart, H.
1961 TheCogged Stones of Southern California. American Antiquity 26(3):361-370.

Eberhart, H., and W. Wasson
1975 The Sassone Site (LAn-339): A Milling Stone Horizon Station in the San Gabriel Valley, California. *California Anthropologist* V:9-45.

Emmons, S.
1974 O'Neil Ranch Empire. *Los Angeles Times*, January 13, 1974.

Evans, N.H.
2000 Rancho Mission Viejo: An Ethnohistory. Copy on file, SCCIC.

Fenenga, F.
1953 The Weights of Chipped Stone Points: A Clue to Their Functions. *Southwestern Journal of Anthropology* 9(3):309-323. Albuquerque.

Flint, R.F., and E.S. Deevey, Jr. (editors)
1960 *American Journal of Science Radiocarbon Supplement*, Vol. 2.

1964 *American Journal of Science Radiocarbon Supplement*, Vol. 6.

Friis, L.
1965 Orange County Through Four Centuries. Santa Ana.

Hall, L.
1993 A Mission Fulfilled: After 140 Years, Juaneno Tribe Is Officially Recognized by the State. *Los Angeles Times, South Bay Edition*, December 1, 1993.

Hallan-Gibson, P.
1986 *The Golden Promise: An Illustrated History of Orange County*. Windsor Publications, Northridge.

Hester, T.R., and R.F. Heizer
1972 Problems in the Functional Interpretation of Artifacts: Scraper Planes from Mitla and Yagul, Oaxaca. *Contributions to the University of California Archaeological Research Facility*, No. 14, pp. 107-123. Berkeley.

Hester, T.R., L. Spencer, C. Busby, and J. Bard
1976 Butchering a Deer with Obsidian Tools. *Contributions to the University of California Archaeological Research Facility*, No. 33, pp. 45-56. Berkeley.

Hornbeck, D.
1983 *California Patterns: A Geographical and Historical Atlas*. Mayfield Publishing, Palo Alto, CA.

Hudson, D.T.
1971 Proto-Gabrielino Patterns of Territorial Organization in Southern Coastal California. *Pacific Coast Archaeological Society Quarterly*, 7(2):51-71. Costa Mesa.

Hudson, T., and T.C. Blackburn
1981 *The Material Culture of the Chumash Interaction Sphere*. Volume II: Food Preparation and Shelter. Ballena Press/Santa Barbara Museum of Natural History Cooperative Publication, Santa Barbara.

Johnson, K.R.
1966 Site LAN-2: A Late Manifestation of the Topanga Complex in Southern California Prehistory. *Anthropological Records* 23. University of California Press, Los Angeles.

King, C.D.
1967 The Sweetwater Mesa Site (LAn-267) and Its Place in Southern California Prehistory. *Archaeological Survey Annual Report* 1967, University of California, Los Angeles.

Koerper, H.C.
1981 CA-ORA-119-A: A Site Report. Ms. on file, ARMC.

Koerper, H.C., and C.E. Drover
1983 Chronology Building for Coastal Orange County: The Case from CA-ORA-119A. *Pacific Coast Archaeological Society Quarterly* 19(2):1-34. Costa Mesa.

Kowta, M.
1969 *The Sayles Complex: A Late Millingstone Assemblage from Cajon Pass and the Ecological Implications of its Scraper Planes*. University of California Press, Berkeley and Los Angeles.

Kroeber, A.L.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology, Bulletin 78. Smithsonian Institution, Washington, D.C.

Lanning, E.P.
1963 The Archaeology of the Rose Spring Site (INY-372). *University of California Publications in American Archaeology and Ethnology* 49(3):237-336. Berkeley.

Moratto, M.J.
1984 *California Archaeology*. Academic Press, San Diego.

Moriarty, J.R. and R.S. Broms

1971 The Antiquity and Inferred Use of Stone Discoidals in the Southwest. Anthropological Journal of Canada 9(1):16-36.

Morton, P. and R. Miller
1981 *Geological Map of Orange County, California, Bulletin 204, Plate 1*. California Division of Mines and Geology, Sacramento.

Muñoz, J.
1980 Historic Resources of Talega Parcel. Prepared for Rancho Mission Viejo. Ms. on file, ARMC.

Munz, P.A., and D.D. Keck
1959 *A California Flora*. University of California Press, Berkeley.

Norris, R.N., and R.W. Webb
1976 Peninsular Ranges. In *Geology of California*. Wiley and Sons, New York.

Orange County Planning Department
1971 *The Physical Environment of Orange County*. A General Planning Program Report. County of Orange, Santa Ana.

Romani, J.F., G.R. Romani, A.G. Toren, D.A. Larson, S. Winzler, J. Schmidt, and J. Schmidt
1997 Phase II Investigations and Determination of Eligibility for CA-ORA-916, -907, -921/1127, -997, -1144, -1222, and –1452/1126, Located along the BX and CP Alignments for the Proposed Foothill Transportation Corridor-South, Orange County, California. Copy on file, SCCIC.

Semenov, S.A.
1964 *Prehistoric Technology*. Barnes and Noble, Totowa, NJ.

Smith, H.
1965 The Portolá Camps Revisited. *Pacific Coast Archaeological Society Quarterly* 1(4):28-32. Costa Mesa.

Tartaglia, L.J.
1980 An Archaeological Assessment of the Walker Cairn Site (4-Lan-21), Chatsworth, California. Copy on file, SCCIC.

Tringham, R.E., G. Cooper, G. Odell, B. Voyteck, and A. Whitman
1974 Experimentation in the Formation of Edge Damage: A New Approach. *Journal of Field Archaeology* 1:171-196.

Van Wormer, S.R.
2002 La Casa de la Misión Vieja: CA-ORA-29, The Ranch Plan, Phase II-A Test Investigations, South Orange County, California. Report on file, SCCIC.

Walker, E.F.

1952 *Five Prehistoric Sites in Los Angeles County*. Publications of the Frederick Webb Hodge Anniversary Publication Fund, Vol. 6, pp. 1-116. Southwest Museum, Los Angeles.

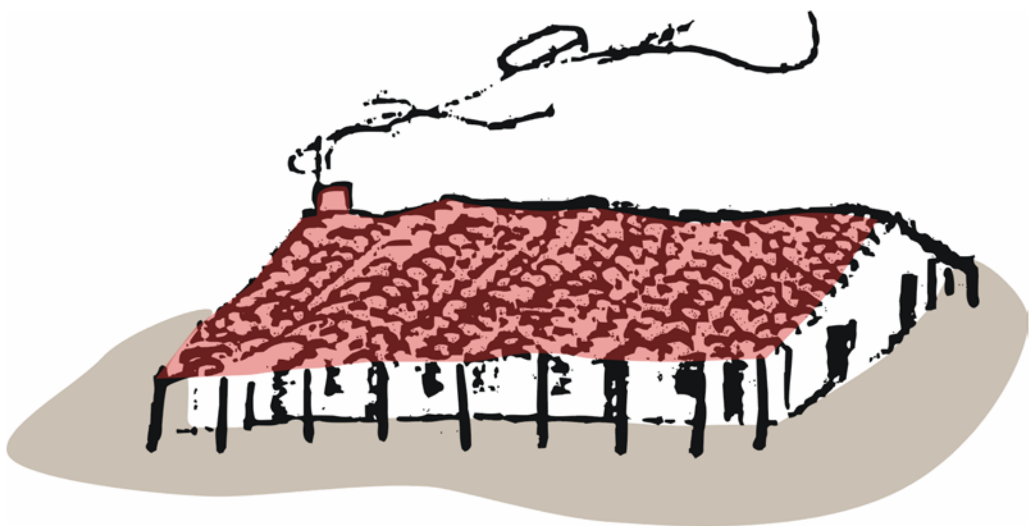
Wallace, W.J.
1955 A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology*, 11: 214-30. Albuquerque.

Warren, C.N.
1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. In Archaic Prehistory of the Western United States, C. Irwin-Williams, ed. *Eastern New Mexico Contributions in Anthropology*. Vol. 1(3), pp. 1-14. Portales.

Wilmsen, E.N.
1974 Lithic Analysis in Paleoanthropology. In Contemporary Archaeology, M. Leone, ed., pp. 195-205. Southern Illinois University Press, Carbondale.

La Casa de la Misión Vieja: CA-ORA-29, The Ranch Plan, Phase II-A Test Investigations, South Orange County, California.

By:
Stephen R. Van Wormer



Of:
Archaeological Resource Management Corporation
1114 N. Gilbert Street
Anaheim, CA 92801

For:
Rancho Mission Viejo L.L.C.
P.O. Box 9
San Juan Capistrano, CA 92693

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INTRODUCTION

This report describes results of a limited test excavation of the Misión Vieja Ranch House site (CA-ORA-29) located approximately 3 miles east of the city of San Juan Capistrano in Orange County, California (Figure 1). The purpose of the test was to assess the condition and integrity of the adobe ruins and assess its eligibility for the National Register of Historic Places (NRHP). The project resulted in identification of the remains of two separate structures that probably represent different construction phases. Features included cobble foundations, floors, exterior surfaces and interior dividers. Artifact analysis resulted in identification of an estimated minimum number of 241 items. The majority of the artifacts appear to represent Basque sheep herders who occupied the adobe in the late 1870s and early 1880s.

PART I. HISTORICAL BACKGROUND

The early history of the Misión Vieja site is obscure. Originally a rancho of Mission San Juan Capistrano, buildings may have existed in the vicinity as early as 1800. Following mission secularization in the mid-1830s the area became a privately owned rancho. By the early 1840s it had been granted to Augustin Olvera who probably built a house on the site. In 1845 Olvera sold Misión Vieja to Juan Forster who built a large adobe house at the location of the present ruins. His family occupied the house until 1848 when they returned to San Juan Capistrano. The building was used by ranch employees and Basque and French sheep herders until the end of the nineteenth century when it fell into ruin.

The Juaneño Indians inhabited the area surrounding San Juan Capistrano for centuries before the Spanish colonized upper California. Traditionally hunters and gatherers, their occupation in an area tended to be seasonal, with bands moving throughout a specific territory in order to exploit major food resources

(Kroeber 1925:709-725, plate 57). The permanent founding of Mission San Juan Capistrano in 1776 drastically changed the lifestyle and culture of the area's

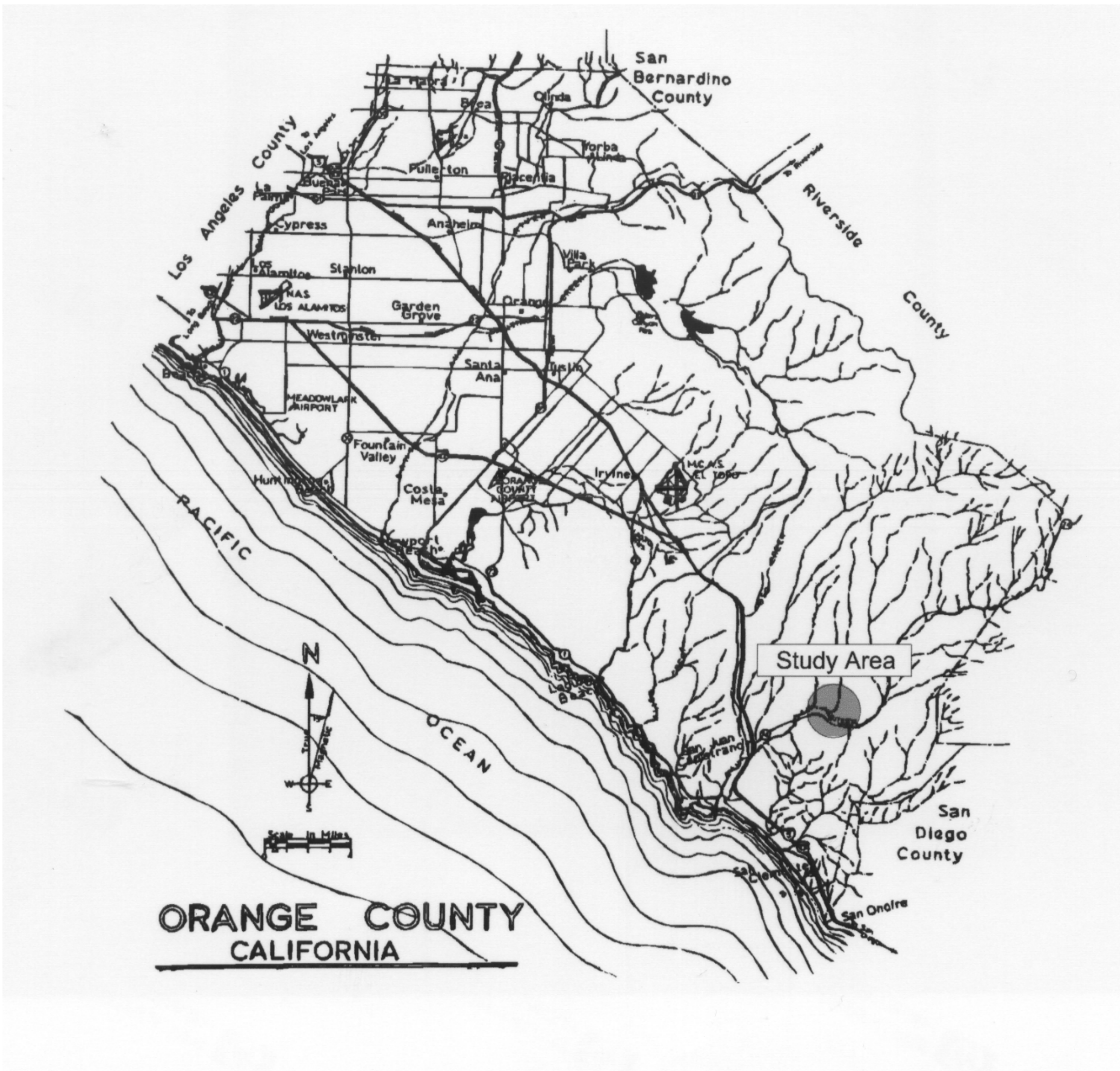


Figure 1. Project Location.

native population. Although the Spanish established missions in California in order to "civilize" the Indians, their efforts resulted in the near destruction of the very people they intended to save (Heizer 1978:121-137).

Mission San Juan Capistrano was founded on October 30, 1775, approximately two miles east of its present location within the area of the present-day Lacouague Ranch (Geiger 1967; Meadows 1967). However, an Indian revolt in San Diego required immediate abandonment of the site. Just over a year later on November 1, 1776, the mission was reestablished at the same place (Bancroft 1886 II:248–249; Englehardt 1922; O'Neill 1977). It was moved to its current site on October 4, 1778 due to the lack of a secure water source at the original location (Geiger 1987:39).

Controversy existed among scholars for several decades over the location of the original mission. Following San Juan Capistrano's reestablishment closer to the coast, the term Misión Vieja, meaning Old Mission, was used to describe the general area of the original site (Evans 2000). San Juan Creek became known as El Arroyo de la Misión Vieja and the name was applied to the rolling hills surrounding the creek and the land along many of its tributary drainages (Bancroft 1886 II:556; Estudillo 1840; Olvera 1842; *Diseño* 1845). Over the centuries the actual location of the original mission structures was forgotten; during the twentieth century many assumed that the dirt and rubble mound that is the subject of this report was the original mission site. This occurred for two reasons. The Annual Reports for Mission San Juan Capistrano from 1779 through 1793 that described the original location remained lost for a century and a half. Later generations, not realizing the true origins of the adobe ruins on the northern side of San Juan Creek at its junction with *Cañada* Gobenadora, assumed they represented the original mission site due to the fact that the area was called Misión Vieja or Rancho Mission Viejo. In 1967 Reverend Geiger O.F.M. found the San Juan Capistrano Annual Reports in the *Archivo General de la Nación* in Mexico City. Research by Geiger and historian Don Meadows provided substantial evidence that the original mission site had been on the southern side of San Juan Creek and more than a mile down stream from the adobe site (Evans 2000, Geiger 1967; Meadows 1967).

San Juan Capistrano was one of a chain of 21 missions established by the Spanish in California. These institutions, combined with military fortifications known as *presidios* at San Diego, Monterey and San Francisco, and a handful of small settlements or pueblos, constituted Spain's tenuous hold on the west coast of its northern provinces. The combined system of missions, presidios, and pueblos was a tested institution by which Spain had successfully extended its colonial frontiers and established Spanish law, language and culture among what were seen as the "uncivilized" tribes of her American possession (Bolton 1917; Bannon 1979; Moorehead 1975). To the Spaniards, Native Americans existed without law or religion, living in unorganized settlements with little apparent sense of moral decency. The Spanish, therefore, believed that rather than imposing their ways upon an existing culture with its own values and social institutions, they were giving civilization and moral salvation to the natives (Heizer 1978). The goal of the missions was to convert the Indians to Christianity and to educate them so that they could eventually be released to lead useful and productive lives. In this manner the frontier could be colonized with its original population (Bolton 1917:46).

The inducement offered by the missionaries for aboriginal cultural conversion rested upon their ability to feed and clothe the native population (Jelinek 1979). Establishment of successful agricultural endeavors was therefore crucial for the mission system. Although crop production played an important role, livestock was the prime emphasis with cattle, horses, and sheep the priorities. Mission Indians became excellent horseman and skilled herders, allowing missions to expand their pasturage well beyond the immediate church compound. All the lands between the San Mateo and the Santa Ana Rivers fell under the jurisdiction of San Juan Capistrano. Outlying ranchos were developed in favorable areas where a native *mayordomo* (foreman) aided by a few *vaqueros* (cowboys) cared for thousands of head of livestock. Ranchos at San Juan Capistrano included Trabuco, Santa Ana, San Joaquin, San Mateo, and Misión Vieja (Bancroft 1886 II:556; III:626). In addition to cattle the missionaries introduced sheep, goats, and swine. Like horses and cattle, these herds also prospered and numbered in the thousands. The livestock was used for much more than supplying meat. Sheep provided the mission looms with wool and were seldom butchered (Jelinek 1979:13). Cattle supplied a ready source of meat for both missions and presidios, as well as hides and tallow for soap and candles.

By the early 1800s, the native inhabitants of the Misión Vieja area had all been relocated to San Juan Capistrano. The rolling hills and canyons became one of the ranchos used to pasture sheep and other livestock. Between 1790 and 1800 horses and cattle belonging to San Juan Capistrano increased from 2,500 to 8,500. At the end of the decade there were also over 17,000 sheep, more than at any other mission (Bancroft I:657). Later decades saw further increases in livestock. In 1810, 34 years after establishment of the mission, cattle had multiplied to 10, 213. The mission also had 693 horses and 11,500 sheep (Evans 2000 from Bancroft 1886 II:110). The size of the herds declined over the next 20 years. In 1817 there were 14,000 cattle, sheep and horses. By 1830 the number had fallen to 10,978 (Bancroft 1886 II: 349, 556).

The Juaneño Indians, trained in livestock handling, cared for the vast herds at the mission's outlying ranchos. Each ranch had its own adobe house for the Indian mayordomo, who lived there with his family and crew of neophyte vaqueros. Orange County historian Jim Sleeper estimates that by1800 Misión Vieja had been occupied and an adobe house built (Sleeper 1985). Reports between 1828 and 1830 list ranchos Santa Ana, San Joaquin, Trabuco, and San Mateo. The 1828 report describes much of the land as useless on account of the mustard which the missionaries found impossible to eradicate; and damage caused by both ocean and stream bed waters which did more harm than the mustard. During dry seasons the arroyos of Trabuco and Misión Vieja had no water, and in winter they became torrents, frequently changing their channels and destroying pasture and crop land. Most of the livestock at that time was pastured near the Santa Ana River (Bancroft 1886 II:556). An 1835 inventory of mission property listed ranchos San Joaquin and Misión Vieja valued at $12,019 suggesting improvements and standing structures at both locations (Bancroft 1886 III: 626).

In spite of several decades of prosperity, the missionaries nearly destroyed the California natives under their control (Cook 1976; Guest 1979). They subjected the Indians to unaccustomed labor and disease and disrupted family ties, social relationships, and cultural values, which caused the physical and cultural decline of the aboriginal population (Heizer 1978). At their peak, the 21 California missions controlled approximately 74,000 neophytes (Bolton 1917). By 1834, the year before secularization took the institutions away from the missionaries, only 17,000 natives remained (Heizer 1978). Population at San Juan Capistrano reached its highest point at 1,361 baptized Native Americans in 1812. For the entire decade of 1810–20, however, population decreased by six percent and deaths exceeded baptisms so that by 1820 the number of native inhabitants stood at 1,064. By 1830 the number of individuals had dropped to 926, and by 1840 there were probably less than 500 natives in the region of San Juan, with fewer than 100 at the pueblo proper (Bancroft 1886 II: 349, 556; III: 625-628).

The late 1820s and early 1830s saw a gradual decline and eventual end to the mission's economic strength, replaced in the rise to power of a secular ranchero aristocracy. The new found power base of privately owned ranchos came from mission secularization and the hide and tallow trade.

Mission secularization resulted from the long standing hostilities between Spanish missionaries and the civilian population of Alta California. By the time Mexico achieved independence from Spain in 1821, California missions were facing an alarming decline in the native population, while the number of secular Hispanic civilians residing in the province numbered over 3,000. As the civilian population continued to grow, their need for land increased. Frustrations began to mount because the missions owned almost all the desirable land in Alta California (Jelinek 1979:15).

Civilian agitation resulted in the Mexican government's secularization of the California missions by 1835. Mission San Juan Capistrano became one of the first missions to experience secularization. As an experiment, Governor Figueroa liberated the Juaneño Indians in October of 1833 and gave them lands they already occupied as well as garden plots. The Indians claimed they already supported themselves upon these lands without the aid of the missionaries (Bancroft 1886 III:332).

Following secularization, former mission lands throughout the province became the property of a small ranchero aristocracy who controlled large estates of grazing land consisting of thousands of acres each. Ranches were several miles from each other and depended upon a small number of coastal pueblos that served as ports, market towns, and social centers (Jelinek 1979:15). By 1846, 16 ranchos had been granted within the boundaries of present-day Orange County which were served by the small pueblo of San Juan Capistrano (Robinson 1948; Hallen 1975).

The ranchero aristocracy established a society based on the one that they and their forefathers had known in Mexico. During the colonial period, Spaniards used various methods of land allotment, combined with an Indian labor force. These were known in turn as *Encomienda*, *Repartamiento*, and *Hacienda*. Although used in different geographical regions and at different times in colonial development, all three systems were based on large tracts of lands, an Indian labor force, and agricultural production, usually involving a single cash product. The system was patriarchal with the male landowner exerting control over his lands, family, and the Indian work force (Burns 1972: 21– 41). Mexican California ranchos were a re-establishment of these institutions. The patriarchal ranchero family usually controlled large tracts of land and numerous Indian servants and vaqueros (Pitt 1966:30).

The California ranchero put little effort into improving his surroundings, allowing cattle and horses to roam freely over open ranges, feeding and reproducing naturally. Cultivation amounted to planting only enough to feed the small population. Grain and other produce for export or livestock feed was not grown and manufacturing was almost nonexistent (Cleland 1941).

The chief economic activity during the period consisted of hides and tallow. Mexican independence in 1821 opened California ports to foreign trade and coincided with the expansion of the American shoe industry. Suddenly cow hides, one of the few items California produced in abundance that could withstand the long transportation by ship to market, were in great demand (Francis 1976:21-55).

By the late 1820s, cattle were raised specifically for their hides and approximately 40,000 were exported annually. By the mid-1830s the number had risen to 100,000 (Bancroft 1886 III: 641). For the first time California began to enjoy the benefits of a reliable source of manufactured goods from the East Coast of the United States and England and a ready market for their products. The California economy, however, was a Neocolonial one, dependent on a single product that resulted in its control by Boston merchants, and the needs of the New England leather market. Neocolonial economies dominated by either the United States or Great Britain were common throughout Latin America during the nineteenth century (Burns 1972:53; Ogden 1927; 1929; Dallas 1955).

Misión Vieja became a typical rancho for the period. It was first occupied in 1840 by José A. Estudillo of San Diego. His petition to the governor requesting ownership of the property stated that the "place named *Misión Vieja* pertaining to the establishment of the Mission of San Juan Capistrano . . . is absolutely vacant, the said establishment not having occupied the same for five years" (Estudillo 1840). In March of 1841 Father Zalvidia, who had remained at San Juan after secularization, complained to Governor Alvarado and requested that Santiago Arguello at Trabuco and Estudillo at Misión Vieja be ordered to remove their cattle from these lands since they belonged to the Indians (Departmental State Papers 5:53). Alvarado, however, felt differently and granted the sixteen square leagues of land known as *Misión Vieja* to Estudillo (Bowman 1958:441). The wealthy San Diegan soon abandoned the rancho and in February 1842. Augustine Olvera, of Los Angeles, petitioned for ownership of the grant claiming "the place of *La Misión Vieja* provisionally granted to Don José Antonio Estudillo during the last year is totally abandoned; for there is no house put up, nor anything else showing a desire to stock and cultivate it as a necessary measure to justify the right he may have of said place." Olvera made the request "in order to put there on some livestock I have acquired…for the support of my mother and my family who depend on my efforts, and to increase said stock and labor there on, according to the nature of the place to induce the improvement there of" (Olvera 1842). Olvera occupied the ranch and built a house there. On April 4, 1845, Governor Pio Pico granted him the rancho that consisted of 46,432 acres. By this time an Englishman, John Forster, living in San Juan Capistrano, had begun to graze cattle on the rancho, undoubtedly with Olvera's permission. Two days after Olvera received clear title to Rancho Misión Vieja he sold it to Forster (Sleeper 1985). A survey (*diseño*) of the grant made at this time by either Olvera or Forster shows a house located on the northern side of Arroyo de la *Misión Vieja* (San Juan Creek) and its junction with Cañada Gobenadora. The tract was called "Rancho de la Paz, formerly known as *Misión Vieja*" (Figure 2).

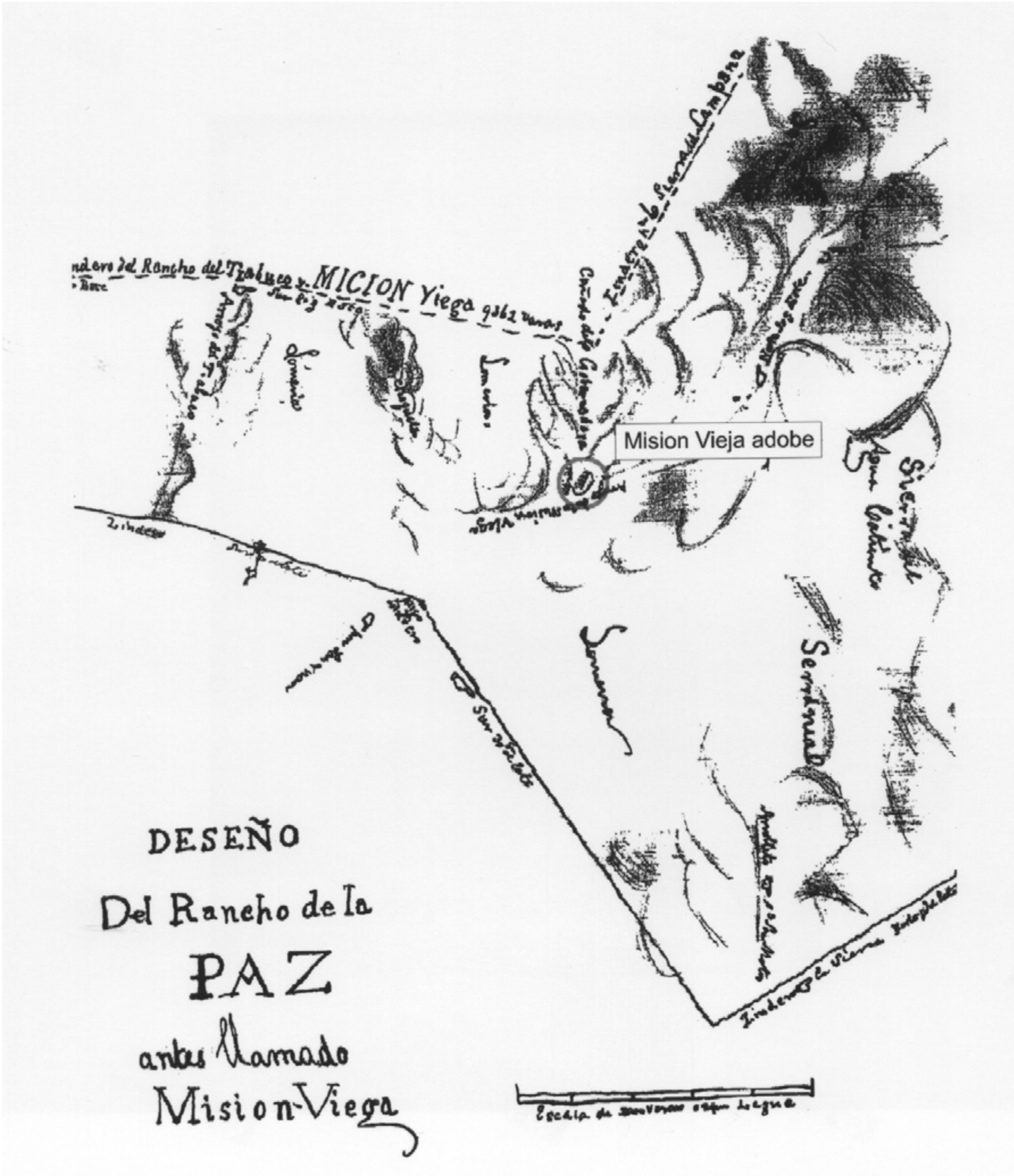


Figure 2. Diseño, 1845.

John Forster became the dominant land owner and cattle baron in present-day Orange and northern San Diego counties between 1840 and 1880. He came to California in 1833 to work for his uncle's import business headquartered in Sonora, Mexico. In 1836 he decided to remain in the province. The following year he was baptized Juan Forster in the Catholic Church and soon thereafter married Isadora Pico. The bride's brother, Pio Pico, stood as godfather at the wedding (Bancroft 1886 III:744; Evans 2000).

The Forsters moved to San Pedro where Juan continued to work as a shipping agent for his uncle. While there he became captain of the port. In 1844 he decided to go into the cattle business and moved his family to San Juan Capistrano, where he purchased the mission buildings for $710 and resided in the complex with his wife and six children (Evans 2000; Bancroft 1886 III:744).

As already noted, the following year Juan Forster purchased Rancho Misión Vieja from Olvera. At this time the Forsters built a large, "fine" adobe house on the ranch. They lived there until 1848 when, due to hostile Indian activities and the War between the United States and Mexico, the family moved back to the mission for safety. After hostilities had ceased the Forster family stayed in the adobe for extended periods each year, dividing their time between the ranch and the mission (Evans 2000; Stephenson 1939:59). There is little doubt that the ruins at the junction of Cañada Gobernadora and San Juan Creek are the remains of Forster's ranch house. As will be discussed in the following sections, he may have added to a smaller building that was already on the site which had probably been built by Olvera but could have been constructed at an earlier date by the mission.

In 1848 the adobe on Misión Vieja provided shelter for Juan's brother-in-law and godfather, Governor Pio Pico, while he eluded capture by the American invaders. Pico stayed at the house for several weeks before fleeing to Mexico (Evans 2000; Stephenson 1936:59).

Following the acquisition of California by the United States, all Mexican period land grants had to be reviewed and their titles confirmed by the U.S. Land Commission. Juan Forster filed claims in 1852 for both Ranchos Trabuco and Misión Vieja. The claims were accepted by the U.S. Land Commission on October 31, 1854. Both patents were issued to Forster on August 6, 1866, fourteen years after they had been filed (Evans 2000:17). In 1864 Pio Pico sold Rancho Santa Margarita in northern San Diego County (currently the U.S. Marine Corps' Camp Pendelton) to Forster. The family left Misión Vieja and San Juan Capistrano to reside on Rancho Santa Margarita. From there Juan Forster oversaw a contiguous tract of grazing land consisting of 46,432.65 acres that included Ranchos Trabuco, Misión Vieja and Santa Margarita (Sleeper 1985).

After the Forster's move to Santa Margarita the Misión Vieja Ranch House became the residence of many different individuals. According to Orange County historian Jim Sleeper, Manuela Yorba de Pico lived in the adobe in 1870 (Sleeper 1985). Given her surname she appears to be related to the Picos by marriage but what she did while living at Misión Vieja has not been recorded. In 1877 a French sheep rancher, Don Luis D'Artigas, lived at the house and pastured a herd of 10,000 sheep on the ranch (Evans 2000; Sleeper 1985). In the late 1870s and early 1880s Misión Vieja was used only for sheep pasturage, and supported an average herd of 15,000 head.

On February 20, 1882 Juan Forster died. In order to pay debts his heirs sold the ranchos to Richard O'Neill and James C. Flood for $250,000. O'Neill lived at the Santa Margarita Ranch adobe from which he managed the property.

The house at Misión Vieja continued to be used by laborers and sheep herders working for the O'Neills. During the closing years of the nineteenth and early twentieth century an Indian mayordomo, Ambrosio Aguilar, and his wife lived in the adobe ranch house (Evans 2000). By the 1890s cattle had once again become the dominant livestock. In 1891 2,000 cattle and 200 horses were shipped from the Rancho (Hallen 1975:60-61).

Sometime before 1920 the adobe house built by the Forster family on Rancho Misión Vieja appears to have been abandoned. It soon fell into ruin and legends of it being the original mission site began to circulate. Richard O'Neill's grandson, John Jay Baumgartner Jr., remembered "I would get frightened when we'd get close to that Mission Viejo, that old place there, because people would go there and dig holes looking for gold that the fathers had left" (Evans 2000:34). It was also during this period that the misuse of the Spanish word "*Viejo*" was commonly applied to the name of the Rancho so that it became known as Rancho Mission Viejo rather than the correct Spanish usage of *Misión Vieja*.

By the early 1930s all standing remains of the Forster adobe had disappeared. Historian C. E. Roberts noted that "nothing is left of this adobe save a huge mound of adobe clay and broken tile, but it is well remembered by many people living in the region. The last residents were Basque sheep men, after whose occupancy the building was abandoned" (Roberts 1936). In 1935 the site was "mined" for roof tile by the O'Neills for the adobe house at Rancho Santa Margarita (Sleeper 1985). The same year San Juan Capistrano historian Alfonso Yorba visited and recorded the ruins. His rough pencil sketch and Spanish text shows a rectangular building with a kitchen (*cocina*), parlor (*sala*), and another room (*cuarto*) (Yorba 1935a) (Figure 3). Yorba also recorded a drawing and floor plan based on an interview with Marcos H. Forster, the son of Don Juan Forster. The drawing show a large rectangular tile roofed building with 10 rooms. The kitchen is located in the northeast corner of the building and long covered corridors run along the eastern and western sides (Yorba 1935b) (Figure 4).

Figure 3. Alfonso Yorba Drawing, 1935.

Figure 4. Alfonso Yorba Drawing, 1935.

PART II. ARCHAEOLOGICAL INVESTIGATIONS

Site Description and Stratigraphy

The site consisted of a roughly rectangular shaped mound measuring approximately 80 by 40 feet and rising about 6 feet above the surrounding terrace on the northern side of San Juan Creek. The mound is oriented with the long axis on a magnetic north–south alignment. Except for a few scattered tile fragments on the northern end, there were no visible architectural features.

Generally the site is covered with a brown colored, fine-grained, adobe melt building rubble. Large amounts of roof tiles and *ladrillos* are mixed throughout this layer. It overlies more specific architectural features and surfaces including foundations, floors, interior dividing wall footings, and exterior surfaces. Some of these surfaces can be easily detected because they are covered with dense concentrations of in situ ceramic roof tile where portions of the roof have collapsed as a single event covering the original surface. The color and texture of the adobe melt is identical to the native soil on which the buildings were constructed and into which the foundation trenches were excavated. This suggests that the adobe blocks of these buildings were made on-site of native soil. Unfortunately, this has made detection of still articulated adobe block wall segments or wall fall extremely difficult.

Field Work and Results

Ten days of field work were conducted between September 3 and September 14, 2001. In order to locate foundation alignments and other features, so that hand excavation could be more precisely focused, a total of 20 trenches of various lengths were excavated using a backhoe with a 12-inch bucket. The backhoe excavated in a slow, meticulous fashion removing the soil in approximately 6-inch increments which allowed the detection of features with minimal disturbance. Field supervisors monitored soil removal. Samples of soil were screened through 1/8-inch mesh from all trenches for artifact retrieval. A sample of 5 to 10 screen fulls of soil from each trench was examined. If productive, screening was continued. Where significant quantities of material were not found screening ceased. A total of 11 Units were excavated by hand in stratigraphic levels adjacent to trenches where major features had been encountered. The same screening procedure was used for units as had been adopted for trenches.

A site datum was established at the highest point on the mound. Trench and unit locations were mapped from this datum using a transit and stadia rod. Unit datum elevations were measured below site datum allowing the determination of the depth of all features and surfaces below site datum. All features encountered in trenches and units were cleaned and photographed. Complex features uncovered in the units by hand excavation were drawn to scale.

Archaeological excavations resulted in the exposure of several architectural features and the recovery of 77.380 kilograms (kg) of artifactual material. The architectural remains represent two structures built adjacent to each other but at different times. They contain a variety of features including cobble foundations, floors, exterior surfaces and interior dividers. Artifact analysis resulted in identification of an estimated minimum number of 241 items.

PART III. ARCHITECTURAL MATERIALS

Remains of two separate and distinct structures were encountered suggesting that the adobe began as a small building at the northern end of the present mound and was extensively expanded later to form the final configuration (Figure 5). A wide variety of building materials was encountered which will be defined first before the description of the architectural features.

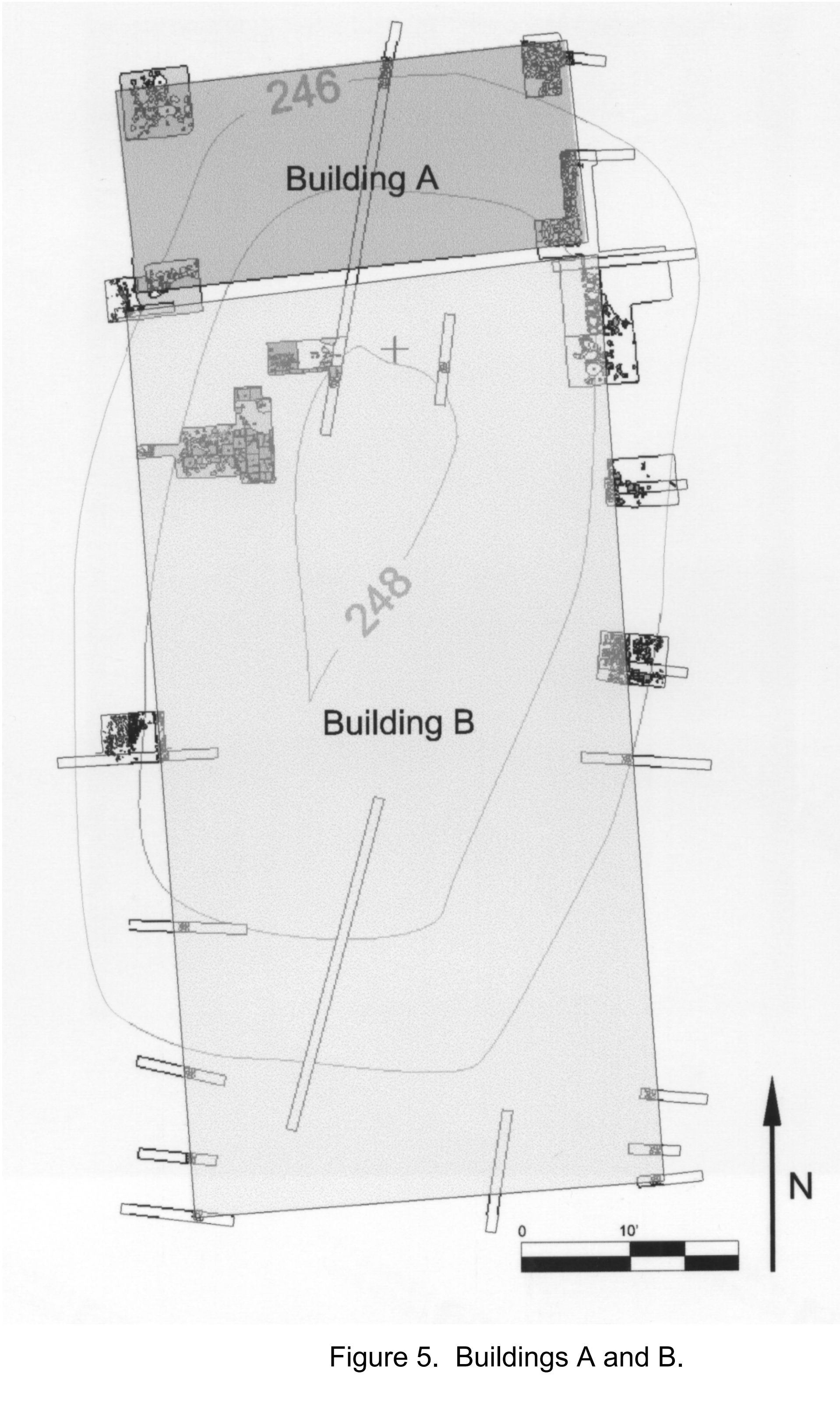


Figure 5. Buildings A and B.

ADOBE BLOCKS

An adobe building is constructed of sun-dried mud blocks. Adobe blocks were not fired and were not made of clay. To make blocks, a trough was dug into the ground and filled with soil and straw or other available tempering material. Water was added to bring the mixture to a stiff mud. Workers (usually Indians) waded and trod the mud and straw until they were thoroughly mixed. The mixture was then placed in wooden molds that consisted of rectangular frames without tops or bottoms. The molds usually had a center partition so two blocks could be formed at one time. After thoroughly wetting the molds laborers set them on a stretch of dry level ground. They next carried the mud mixture to the molds in leather buckets, poured or shoveled it in, tamped it down, and leveled it off. The frame was then lifted and the blocks left to dry. After a number of days in the sun where they were frequently turned, the dried adobe blocks were ready for use. Sizes of blocks varied according to location and the period in which they were made. During the mission period an average size was approximately 11 x 23 x 4 inches. When dry, a block weighed about 60 pounds (Webb 1952:105).

Only in one instance at this site was the characteristic horizontal banding indicating courses of adobe blocks detected. This occurred in the western sidewall of Unit 2 and was west of the foundation alignment uncovered in that unit (Figure 8). The banded material may have represented articulated wall fall. Dimensions of individual blocks could not be determined.

The only other evidence of possibly intact adobe wall construction was associated with Structure A in Unit 7, at the southwest corner of the unit where a very hard, dense segment of soil was in line with a cobble stone foundation encountered in that unit. Although no visible evidence of blocks could be detected, the extreme hardness, general rectangular shape, and alignment with the foundation suggest that this feature represents wall remains left in place.

TILES

Two major types of building tiles were recovered from the excavations: ladrillos and tejadas, or roof tiles. Both are mission tiles and were probably scavenged from the ruins of Mission San Juan Capistrano by Forster when he built the adobe house at Misión Vieja.

Ladrillos are flat, square or rectangular fired tiles used as floor pavers or in construction, similar to the way bricks are used. Two sizes were encountered: 14 by 14 inches by 2.5 to 3 inches thick and 14 by 7 by 1.5 inches thick. Samples show impressions of wooden molds on the sides and contain large amounts of straw temper, indicating the mixture used may have been similar to that for adobe block. No whole roof tiles were recovered. One large, broken specimen in Unit 10 measured 23 ½ inches by 3 and ¾ inches and was approximately ¾ inch thick.

Both ladrillos and roof tiles were made with wooden molds. Simple rectangular or square molds, similar but thinner and smaller than those used for adobe blocks, served for ladrillos. Mission laborers formed roof tiles on a tapered curved mold resembling a half piece of log or tree trunk. At San Juan Capistrano, all tiles were made and fired on a hillside just north of the mission (Webb 1952:100–106).

For the artifact analysis ceramic roof tiles and ladrillos posed a special problem. The site contains immense quantities of these materials. They are by far the most common artifact type anywhere on the site. Only a relatively small sample was collected weighing 69.576 kg. This quantity, however, in no way reflects the relative amounts of ceramic tile from the excavated units, yet it far outweighs any other class of artifacts. So that the weight of ceramic tile would not obscure the true quantitative relationships of other artifact classes it has not been included in the relative percentage calculations by weight of the artifacts in either the discussion of recovery by unit or in the Artifact Analysis section.

PART IV. ARCHITECTURAL FEATURES

Excavation uncovered foundation segments and interior features including dividing wall remains, packed earthen floors, and tile floors. Dense layers of roof fall on original surfaces were identified both inside and on exterior areas. Two separate building episodes could be defined. The foundation of a smaller building at the northern end of the site was designated Structure A. Its remains are adjacent to, yet physically distinct from the building remnants that occupy the southern three-quarters of the site which were designated Structure B. The two foundations are separated physically from each other and at different elevations below site datum. In addition, the Structure A foundation is much wider than the foundation for Structure B.

STRUCTURE A

The foundation alignments designated Structure A represented a small rectangular building measuring approximately 45 by 23 feet and oriented lengthwise on an east–west axis. Portions of this foundation were encountered in Trenches 4, 20, 21, 22, and 24 and Units 4, 7, 8, and 10. Corners were identified in Units 4, 7, and 8. Disturbed cobbles in Unit 10 may be remains of the southwest corner of this building. The foundation was well preserved on the eastern half of the mound where it was encountered at approximately 12 to 30 inches below the surface. Along its western alignment, however, cobbles were at or just below the ground surface and had been disturbed by discing and other activities. This foundation measures approximately 40 inches in width. It extends to a depth of about 12 to 13 inches and is constructed of two courses of water-worn river cobbles ranging from 8 to 12 inches in diameter that have been laid into the brown, fine-grained sandy soil. In places these are overlaid with smaller fist-sized cobbles.

As noted above, foundation segments in the eastern half of the site (Trenches 4, 20, 21, and 22 and Units 7 and 8) were well preserved and consisted of neat rows of tightly packed cobbles. In Unit 7 the southeast corner was encountered (Figure 6). Here an extremely hard, dense segment of soil is in line with the cobble stone foundation in the southwest corner of the unit. Although no visible evidence of blocks could be detected, the extreme hardness, general rectangular shape, and alignment with the foundation suggested that this feature represents wall remains left in place. The northeast corner of the foundation was clearly defined in Unit 8 (Figure 7).

Remains along the western alignment in Units 4 and 10 were highly disturbed and disarticulated. Cobbles in Unit 4 showed nicks from discing or other types of agricultural disturbance. In spite of this the general configuration of the northwest corner could still be detected. Unit 10 was excavated where measurements based on foundation alignments in Units 4,7, and 8 and Trench 4 indicated the southwest corner of Structure A should be located. Highly disturbed cobbles identical to those used in the foundations were encountered. No obvious alignment could be detected.

A variety of artifacts was recovered from the trenches and units where excavation exposed remains of Structure A. Unit 4 produced 9 items (4%), weighing 255 grams (g) (4%). Bottles included an olive oil container and an unidentified bottle that had turned amethyst from exposure to the sun, indicating a manufacturer date between 1880 and 1914 (Hunt 1959). Additional material included pieces of an undecorated earthenware cup, a molded patterned earthenware saucer manufactured by Pinder, Bourne and Hope between 1851 and 1862 (Praetzellis, Rivers & Schulz 1983:66, 207-202), 9 g of window glass, 4

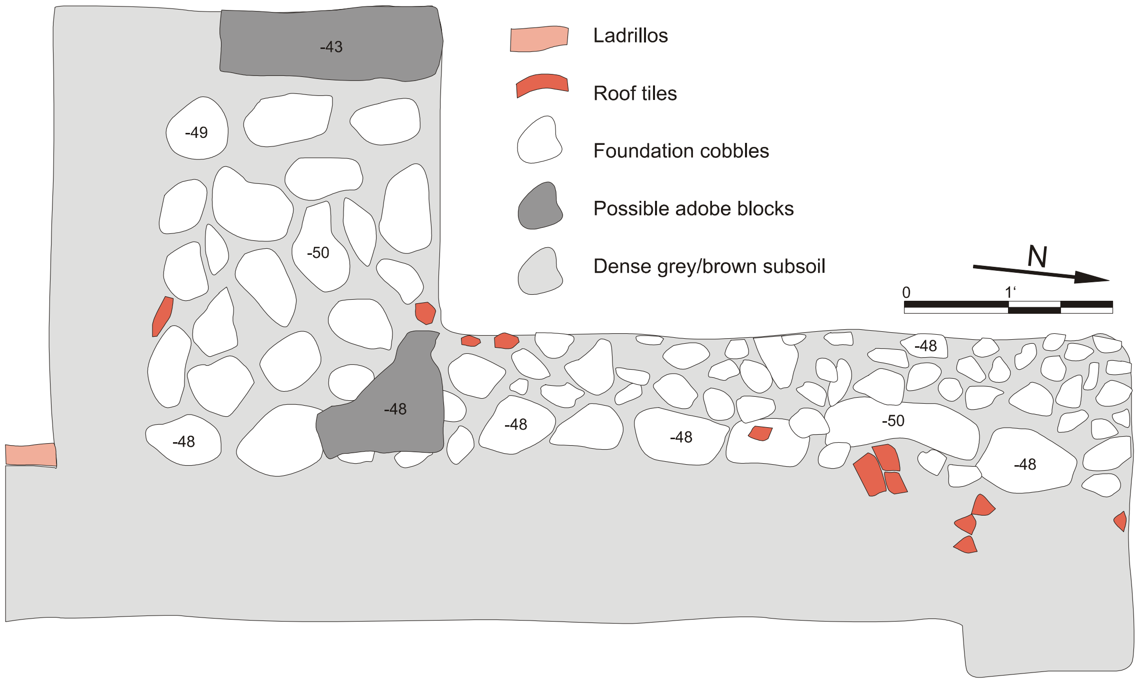


Figure 6. Unit 7, Southeast Corner of Building A.

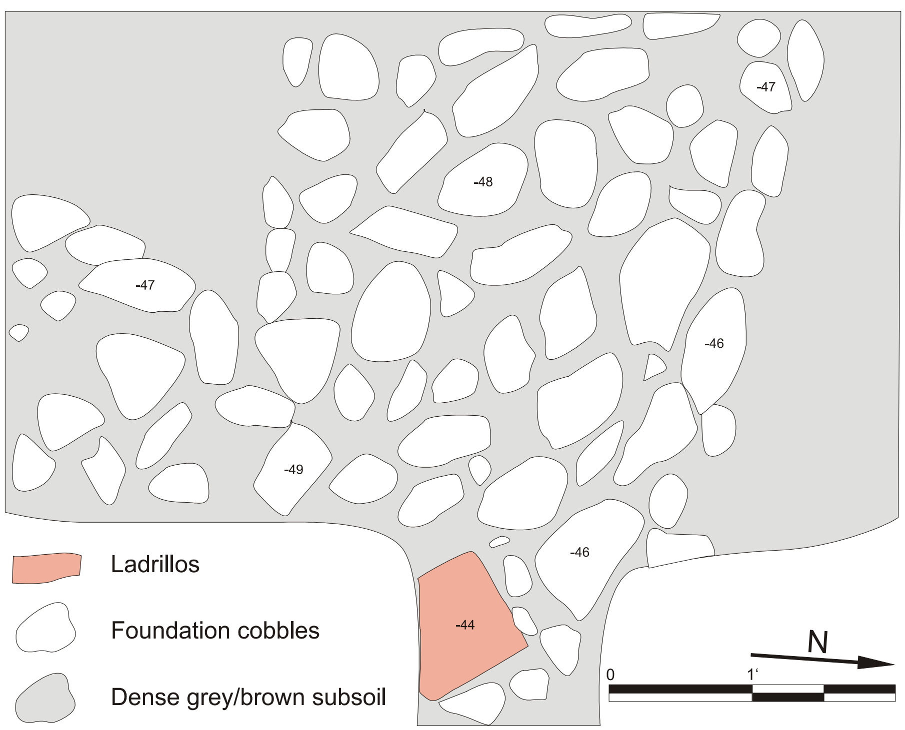


Figure 7. Unit 8, Northeast Corner of Building A.

square nails, 3 g of baling wire, a pair of sheep shears, 75 g of bone, and a piece of sea shell.

Unit 7 produced 30 items which constituted 12 percent by quantity and 16 percent by weight (969 g) of the artifacts recovered. The remains of four bottles were identified, including whisky, wine, olive oil, and spice. The wine bottle exhibited a hand formed kick-up indicating it was probably manufactured before 1885. A fragment of sun-colored amethyst bottle glass weighing 4 g was also recovered. This piece was manufactured between 1880 and 1914 (Hunt 1959). Other artifacts included part of a sun-colored, amethyst drinking tumbler, also manufactured between 1880 and 1914 (Hunt 1959), a blue edge decorated earthenware plate manufactured between 1830 and 1860 (McAllister 2001:11), 220 g of butchered animal bone, a gold-plated jewelry chain loop, a coffee or food mill piece, 1 gram of window glass, 5 g of lumber, 17 square nails, fragments of a leather shoe, and a brass screw.

Unit 8 produced fragments of a meat tin, a square nail, and 72 g of butchered bone. This made up 1 percent by estimated minimum number and .01 percent by weight (103 g) of the artifact assemblage.

From the combined excavation of Trench 17 and Unit 10, thirty-seven items were identified making up 15 percent by quantity and 4 percent (249 g) by weight of the artifactual material. Bottle glass included pieces of a wine and ale bottle both with hand-finished lips indicating they were manufactured before 1885, an unidentified amber liquor bottle, and an additional unidentified bottle. Other material included a fragment of a molded earthenware bowl made in the 1860s (Wetherbee 1985:87), a ceramic female figurine, part of a pair of sheep shears, a glass tumbler, 2 g of window glass, 11 square nails, a screw, a .22 rim fire cartridge casing, 7 g of bone, and 16 pieces of sea shell.

STRUCTURE B

The architectural remains designated as Structure B represent a building that measured 93 x 47 feet and were oriented length-wise on a north-south axis. Exposed features pertaining to this structure consisted of foundation segments, interior dividing wall alignments, tile and packed earthen floors, and dense in situ layers of roof tile resting on original exterior and interior surfaces.

Foundation segments were encountered in Trenches 1 East and 1 West, 2, 7, 8, 9, 11, 12, 13, 14, 15, 16, and 22, and Units 2, 3, 5, and 6. The foundation showed a variety of building techniques. It was previously disturbed on its southwest end.

Units 1 and 3 and Trench 22

Excavation of Trench 22 and Units 1 and 3 exposed the northeast end of the foundation and associated in situ building rubble. Here the feature was very well preserved. The edges of the construction trench could clearly be seen at the foundation surface and in side walls (Figure 8). The trench outline was 24 inches wide and around 16 inches in depth. It had been excavated into a fine brown silty loam that constituted the original topsoil horizon when construction occurred. The foundation measured 20 inches wide and consisted of a single course of elongated cobbles approximately 10–12 inches in length and 7 inches in diameter placed long axis vertically in the foundation trench in two irregular rows (Figure 9). Soil in the trench consisted of a loosely compacted brown silty loam that had been packed around the cobbles during construction. In some areas larger pieces of ladrillo had been placed vertically on the sides of the foundation trench. Small fist sized cobbles along with roof tile and ladrillo fragments were used in some areas on the top of the foundation to form a flat surface.

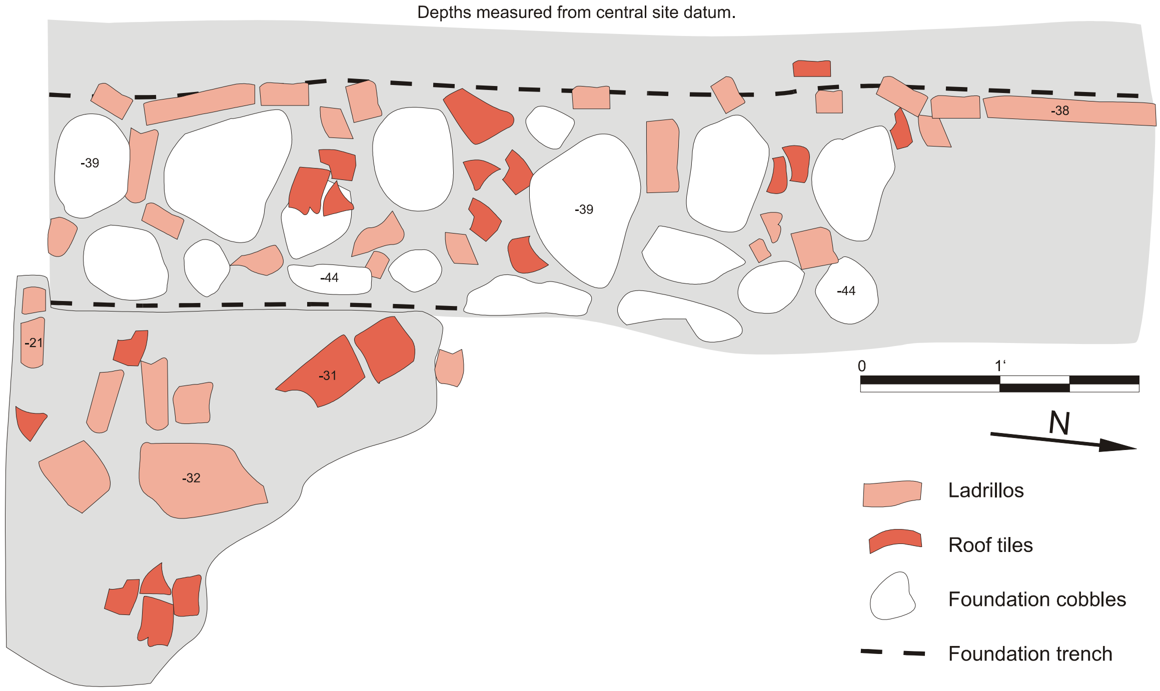


Figure 8. Unit 3 Foundation Trench.

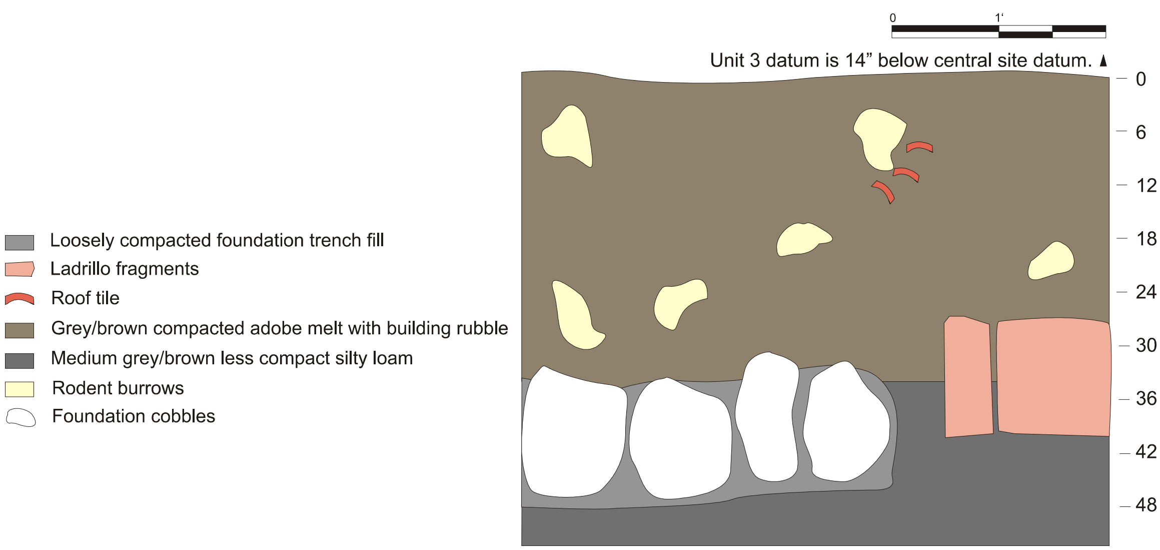


Figure 9. Unit 3 Foundation Profile, Western Wall.

No articulated courses of adobe blocks were detected on the foundation. It appeared that the blocks and mortar were made of the same fine brown silty loam as the original soil and weathering made it impossible to detect diagnostic mortar joints or parallel rows of different colored soils that often indicate intact adobe wall remains. A layer of building rubble, consisting of large cobbles mixed with ladrillo and roof tile fragments, uncovered in Unit 1, and exposed vertically in the southern side wall of Unit 3, was situated 18 inches above and directly over the Structure B foundation. It appeared to represent wall material that had dissolved and settled as the building fell into ruin, yet remained somewhat in place horizontally above the foundation. The 18 inches of soil between this rubble and the foundation may indeed be original adobe block wall material still in place. The distance would be equivalent in thickness to 4 courses of adobe block. However, no mortar joints or horizontal banding in the soil that would represent original blocks or courses could be detected in spite of examining the profile between Units 1 and 3 in various lighting conditions and wetting with a light spray of water. Excessive disturbance by rodent activity made the problem even more difficult.

Very little artifactual material was recovered from Units 1 or 3. Unit 1 produced a fragment of a cut sponge decorated earthenware vessel, 6 square nails, 7 g of bone, and 1 g of lumber fragments. They made up 3 percent by quantity and 0.1 percent by weight of the historic artifact assemblage. Materials from Unit 3 included 6 square nails, 4 g of window glass, and 47 g of bone. They constituted 2 percent by item count and 1 percent by weight of the artifacts identified.

Unit 2 and Trench 23

Unit 2 was a 1 by 2-meter unit placed on the southern side of Trench 23 where a series of articulated ladrillos had been encountered over the foundation. The three courses of ladrillos included both 14 by 14 and 14 by 7-inch sizes. They were located in the northwest corner of the unit and appeared to represent the base of the original wall (Figure 10). It was hoped that by exposing the western side wall of the unit and then scraping this sidewall back with a trowel, that intact adobe wall segments could be encountered both on the southern side of the unit and above the ladrillos. These attempts were unsuccessful. Next the surface of the foundation was exposed to the south of the articulated ladrillos in order to assess the condition of the foundation and possibly detect adobe block remains in the northern and southern sidewalls above the foundation cobbles. No intact wall remains could be identified on the foundation cobbles. The 20-inch wide foundation at this location was constructed in the same manner as in Unit 3.

Unit 2 produced 7 artifacts (3%), weighing 265 g (4%). Items included pieces of two olive oil bottles exhibiting pontil scars which indicate manufacture prior to 1880 (Spillman 1980), fragments of a tin can, a spent lead bullet, 3 square nails, 32 g of bone, and 80 g of lumber.

Unit 5 and Trench 2

Unit 5 was a 1 by 2-meter unit extended to the south from the northern side of Trench 2 to expose an articulated ladrillo feature encountered in the trench. The feature consisted of at least 5 courses of 14 by 7-inch ladrillos on top of large elongated foundation cobbles (Figure 11). A separate east–west ladrillo alignment cornered along the southern wall of the unit and a 2 by 2-inch piece of lumber was vertically situated at this corner. Some ladrillo rubble at the eastern end of the unit had fallen off the feature. These pieces were covered by and mixed with a layer of fallen roof tiles. A lens of articulated roof fall in the eastern half of the unit at 50 to 58 inches below datum indicated original ground surface (Figure 12). The foundation at this location was constructed quite differently than in Units 2 and 3. Large oval-shaped cobbles ranging in size from 20 to 30 inches in length and 16 to 20 inches wide were placed in a shallow

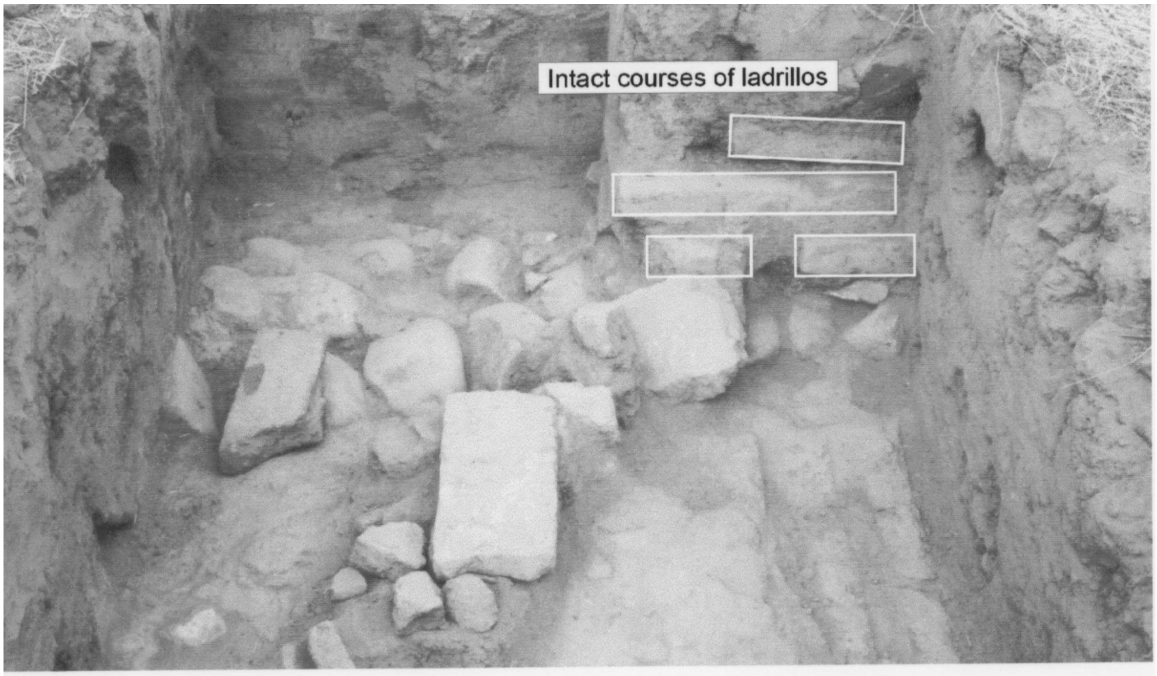


Figure 10. Unit 2, Ladrillo Courses.

Figure 11. Unit 5, Ladrillo Courses.

trench approximately 6 inches in depth so that most of the cobbles extended above the original ground level. Smaller cobbles 4 to 6 inches in diameter were used to fill gaps between the larger ones. The courses of ladrillos extended to a height of around 12 to 16 inches above the foundation cobbles and were around 24 inches wide across the top.

The combined excavation of Unit 5 and Trench 2 produced 11 items (5%) and 248 g (4%) of material. Artifacts included 2 lead bullets, 8 square nails, 166 g of bone, 36 g of metal strapping fragments, and a piece of sulfur weighing 1 gram.

<u>Unit 6 and Trench 1 West</u>

Unit 6 was a 1 by 2 meter unit extended northward from the southern wall of Trench 1 West where a dense lens of in situ roof fall and foundation cobbles for the western wall of Structure B was encountered (Figure 13). It is almost due west of Unit 5. As in Unit 5, foundation layout at this location differed from Units 2 and 3. Here the foundation was 14 inches wide and about 15 inches deep. The construction trench had been excavated approximately 9 inches into the dense gray-brown subsoil so that foundation cobbles extended about 6 inches above original ground surface. The foundation consisted of three courses of cobbles that ranged from approximately 4 to 6 inches in diameter. Fragments of ladrillo were used in the lower courses, especially along the edges of the foundation trench as well as along the top of the foundation to fill in gaps. However, at one point a single boulder 20 inches long and over 12 inches in diameter had been placed in the trench. Pieces of roof tile and ladrillo were used to fill gaps between the boulder and cobbles.

A dense lens of roof tile was uncovered in the western portion of the unit and appears to represent articulated roof fall resting where it fell on the original ground surface (Figure 14). It probably represents an extension of the building's

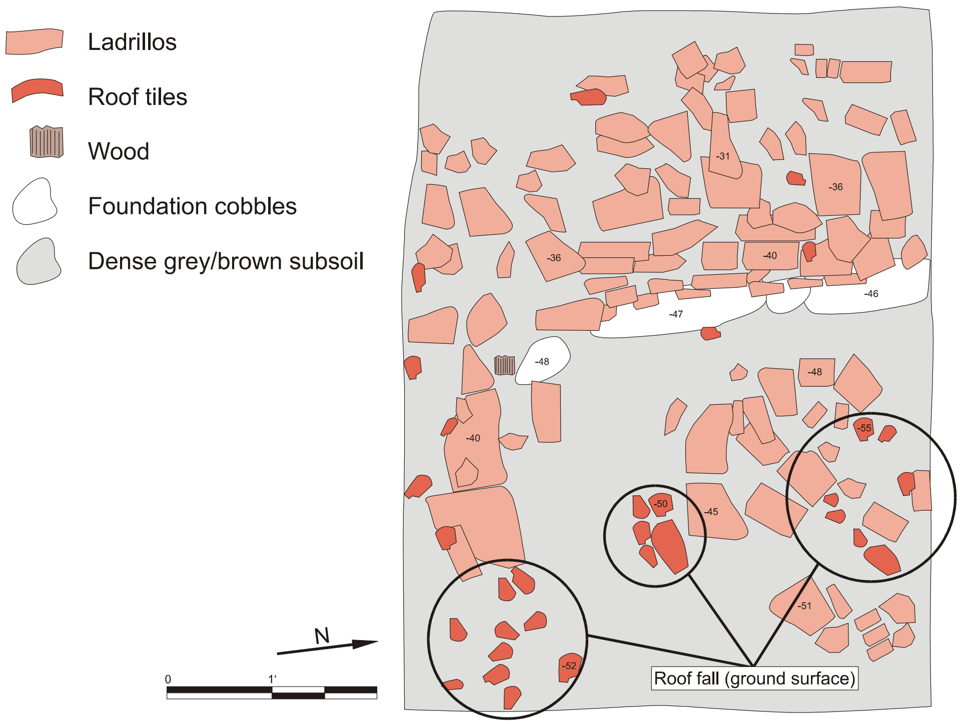


Figure 12. Unit 5, Roof Fall.

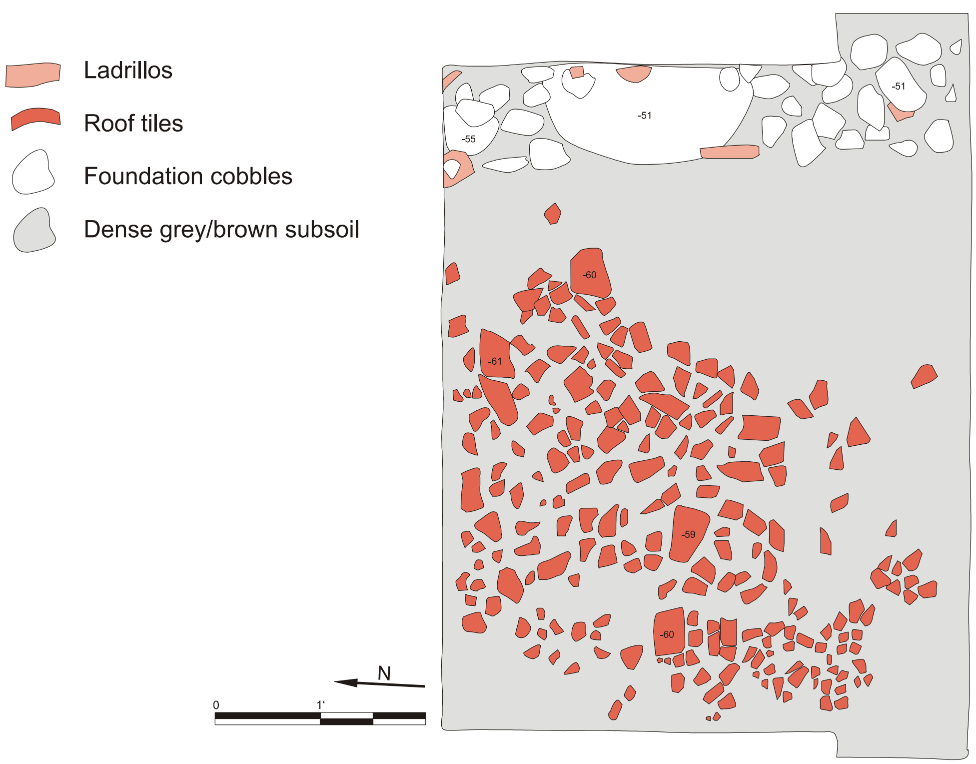


Figure 13. Unit 6, Foundation and Roof Fall.

roof to cover an exterior porch on this side of the house. In Trench 1 West it extended for approximately 12 feet to the west of the foundation. The unit was one of the richest in artifacts, producing 60 identifiable items (24%) and 1096 g (18%) of material. Artifacts are listed in Table 1.

INTERIOR FEATURES

No interior features were identified in Structure A. Interior features of Structure B included remains of an interior divider, packed earthen floors, a ceramic tile floor, and in situ roof fall. A ladrillo alignment encountered in Trenches 3 and 4 and Units 9 and 11 appears to represent an interior dividing wall. A packed earthen floor was detected in Trench 3 and Units 9 and 11. A ladrillo floor over the packed earthen surface was uncovered in Unit 11, and a dense layer of roof fall in the northern portion of Trench 5 appears to rest on an original floor surface.

Unit 9 and Trenches 3 and 4

A 14-inch wide ladrillo alignment on an east–west orientation was encountered in Trenches 3 and 4. This appeared to be the base of an interior dividing wall. On the northern side of the ladrillo alignment a packed earthen floor surface was detected in the Trench 4 sidewalls. A narrow band of broken tightly associated roof tiles paralleling the ladrillo alignment lay 4 to 6 inches above the earthen floor. Unit 9 was a 1 by 2-meter excavation laid out on the west side of Trench 4 along the northern side of the ladrillo alignment to expose a portion of the alignment, earthen floor, and roof tile concentration revealed in the trench (Figure 15). The interior dividing wall alignment consisted of two courses of ladrillos that included both 14 by 14 and 7 by 14-inch sizes (Figure 16). The roof tiles appeared to be a narrow band of roof fall adjacent to and just above the ladrillo footing at approximately 4–8 inches below the unit surface and extending only 12 to 14 inches to the north of the ladrillo alignment. The earthen floor was approximately 4 inches below the roof fall.

Figure 14. Unit 6, Roof Fall.

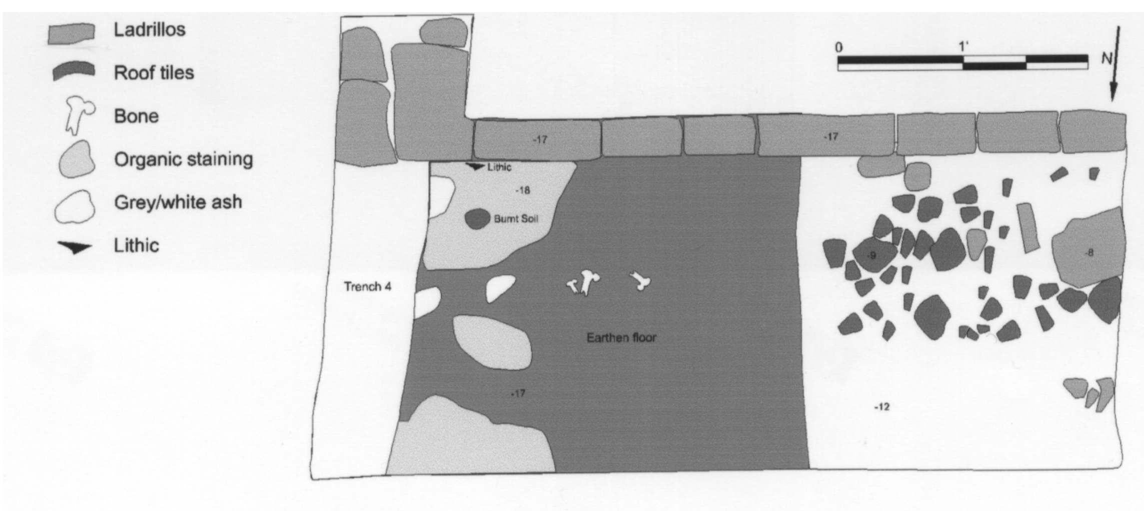


Figure 15. Unit 9, Earthen Floor and Ladrillo Wall.

Table 1. Unit 6 Artifacts.

TR.	UN.	MATERIAL	ITEM	TYPE	PRODUCT	TECHNOLOGY	DATE	REFERENCE	#	WEIGHT
-	6	Glass	Bottle	Culinary	Pepper sauce	2 pc bottom hinge mold/ribbed	1850 - 1885	-	1	150
-	6	Glass	Bottle	Culinary	Meat	Gile's jar rim sun purple	1903 - 1914	Lief 1965; Hunt 1959	1	6
-	6	Glass	Bottle glass	-	-	-	-	-	0	8
-	6	Lead	Seal to wine bottle	-	-	-	-	-	1	2
-	6	Brass	Bullet shell	Center fire	-	-	-	-	1	4
-	6	Rubber, hard black	Comb tooth	-	-	-	-	-	1	1
-	6	Bone	Bone misc.	-	-	-	-	-	0	120
-	6	Ceramic	Plate, large	Undecorated hotelware	-	Earthenware	-	-	1	8
-	6	Shell	Shell misc	California mussel (Mytelus californicus)	-	-	-	McLean 1978:66-67	1	6
-	6	Ceramic	Saucer	Undecorated hotelware	-	Earthenware	-	-	1	8
-	6	Ceramic	Unidentified hollow item	Undecorated	-	Earthenware	-	-	1	3
-	6	Ceramic	Unidentified item	Banded ware	-	Earthenware	-	-	1	1
-	6	Ceramic	Misc unidentified frags	Local native ware	-	Pottery	-	-	0	4
-	6	Ferrous	Nails	Square	-	-	-	-	24	95
-	6	Shell	Button	4 hole	-	-	-	-	1	1
-	6	Porcelain, ferrous, lead	Button	Shank, metal add on	-	-	-	-	1	2
-	6	Ferrous	Button	Shank, metal add on	-	-	-	-	1	3
-	6	Ferrous	Strapping	-	-	-	-	-	0	16
-	6	Ferrous	Wire	Baling	-	-	-	-	0	6
-	6	Glass	Bottle glass	Storage bottle – carboy	-	Blm	-	-	0	8
-	6	Ferrous	Unidentified ferrous item	-	-	-	-	-	1	16
1w	-	Glass	Bottle glass	-	-	-	-	-	0	3
1w	-	Bone	Bone misc	-	-	-	-	-	0	74
1w	-	Ceramic	Plate, large	Three friends	-	Stoneware	-	Mueller 1987:281	1	107
1w	-	Ceramic	Pitcher	Molded	-	Earthenware	1876-pre 1900	Lehner 1988:21; Freeman 1954:78	1	54
1w	-	Ceramic	Plate, unknown size	Transfer-blue	-	Earthenware	1842-1858	Samford 1997:21	1	9
1w	-	Shell	Shell misc	California mussel (Mytelus californicus)	-	-	-	McLean 1978:66-67	1	32
1w	-	Ceramic	Misc unidentified frag	Undecorated	-	Earthenware	-	-	0	2
1w	-	Glass	Window glass	-	-	-	-	-	0	2
1w	-	Ferrous	Nails	Square	-	-	-	-	5	20
1w	-	Brass	Screw	Flat standard head	-	-	-	-	1	1
1w	-	Ferrous	Unidentified ferrous item	-	-	-	-	-	1	3
									11	307
								Total	60	1096

The hard-packed earthen floor had bone and charcoal staining on its surface suggesting a possible hearth area. The floor was exposed in the eastern half of the unit and the roof fall left in place in the western half (Figure 17). The floor consisted of a hard-packed lens of ashy soil approximately 2.5 to 3 inches thick that appeared to be composed of many thin layers and probably represented more than one floor surface. In Trench 4 on the northern side of the ladrillo alignment, the floor lens could be clearly seen under the ladrillos indicating it had existed and continued toward the south before construction of the interior divider these ladrillos represent.

Unit 9 excavation produced 18 quantifiable items (7%) and 560 g of material (9%). Artifacts included remains of an olive oil bottle with a hand-finished lip, manufactured before 1885, a .22 rim fire bullet cartridge, a flowing blue–black transfer decorated earthenware plate manufactured between 1839 and 1856 (Samford 1997:24), a piece of Native American brownware pottery, 4 square nails, a ceramic button, 6 g of baling wire, a brass safety pin, a fragment of worked bone, 7 fragments of shell, and 196 g of butchered bone. A total of 150 g of this bone was encountered on the packed earthen floor further suggesting it was used as a hearth area.

<u>Unit 11</u>

Unit 11 was excavated to the east of Trench 16. The original intent was to better define a disturbed feature of cobble and ladrillo exposed in the trench that appeared to be a portion of the western wall foundation of Structure B. Almost immediately ladrillo floor pavers were encountered on the eastern side of the foundation. They were uncovered toward the east, resulting in an excavated area of 13 by 8.5 feet that revealed a portion of a tiled floor (Figure 18). The majority of the pavers measured 14 by 14 inches with thickness varying from 2.5 to 3 inches. The floor also included some pieces of the smaller 14 by 7 by 1.5-inch ladrillos. Some portions were covered with in situ ceramic tile roof fall. The

Figure 16. Unit 9, Ladrillo Dividing Wall.

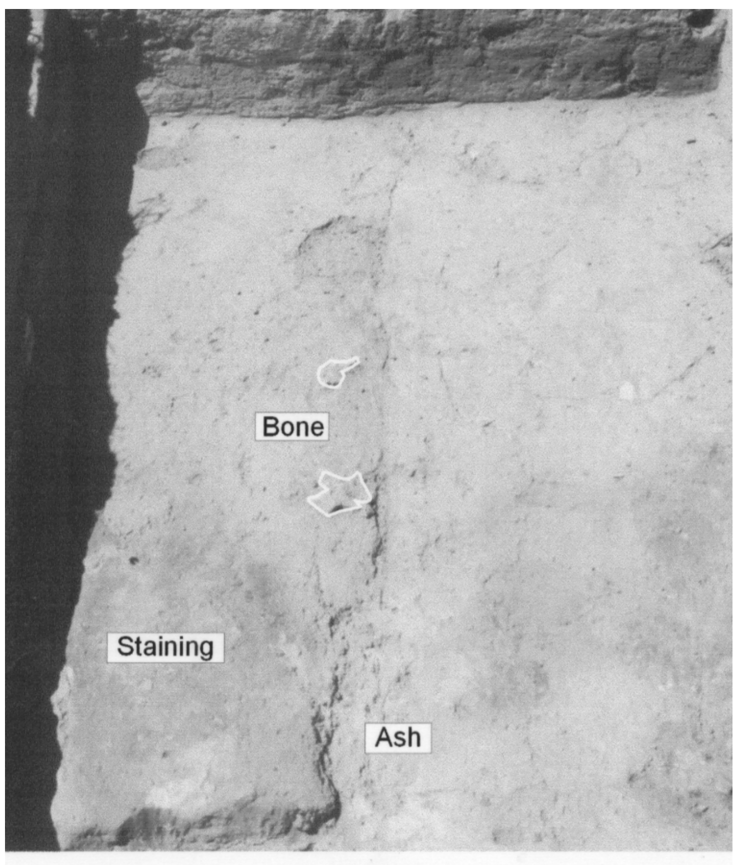


Figure 17. Unit 9, Earthen Floor.

floor is bordered on the northern side by the continuation of the ladrillo dividing wall alignment encountered in Trenches 3 and 4 and Unit 9. In a small area measuring approximately 6 by 8 inches, the same packed earthen floor uncovered in Unit 9 was revealed, indicating the ladrillo floor tiles were placed over the earlier original earthen floor, possibly at the same time as the construction of the interior wall ladrillo alignment (Figure 19).

The unit and trench produced 67 (28%) quantifiable items and 245 g (4%) of material. Artifacts included remains of a case-style bitters bottle, a case gin bottle, two .22 rim fire bullet casings, a footed glass dish, 6 square nails, 1 shell button, a screw, 54 pieces of shell, 67 g of butchered bone, 11 g of lumber, 3 g of baling wire, and an unidentified item of brass and polished bone.

Trench 5 Interior Roof Fall

A dense lens of roof tile approximately 3 inches thick that represented in situ roof fall resting on an original interior floor surface was exposed in the side walls of Trench 5. It began approximately 12 feet from the northern end of the trench and extended in a southerly direction for 10 feet.

DISTURBED AREAS

In the southern end of Trench 5 significant site disturbance was encountered. A concentration of jumbled building materials consisting of broken ladrillos, roof tile fragments, and adobe rubble was encountered to a depth of 5 feet or more below the surface at the southern end of the trench. The disturbance extended northward for a distance of approximately 14 feet (Figure 20). Additional signs of disturbance were encountered in this area of the site. Foundation stones in Trenches 11, 12, 23, 14 and 15 were disturbed and disarticulated. Combined with the rubble deposit in the southern end of Trench 5 it appears that the southwest

Figure 18. Unit 11, Ladrillo Floor.

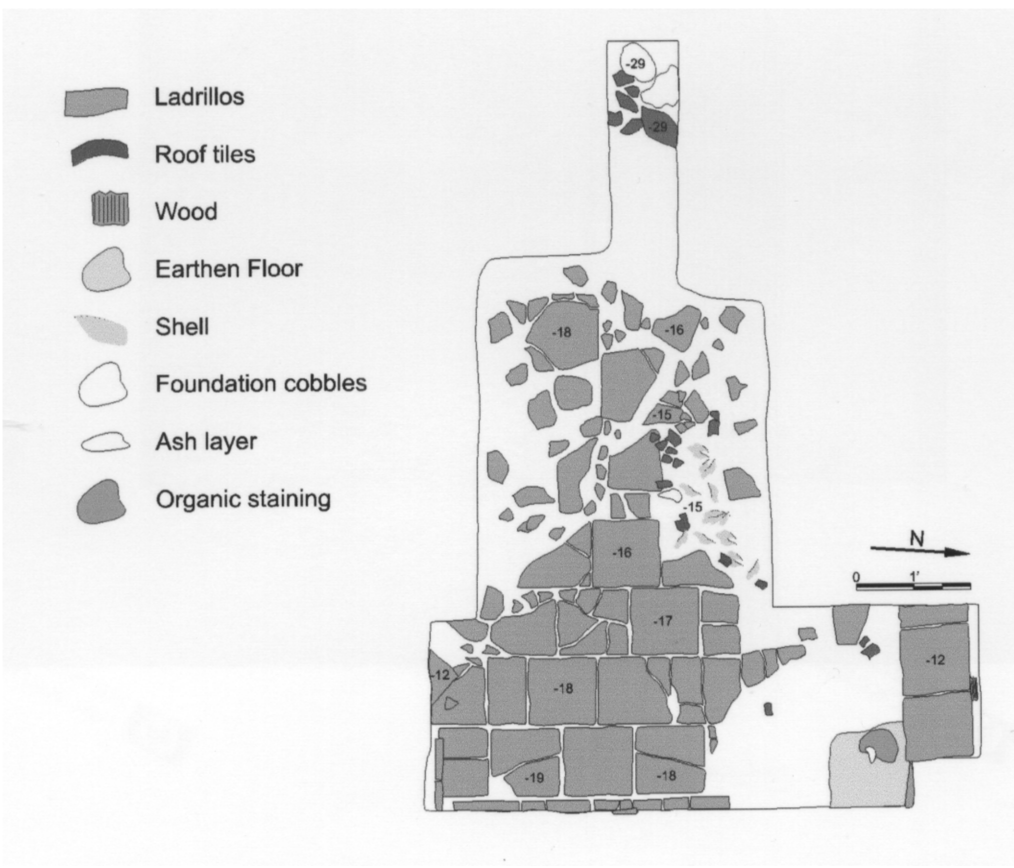


Figure 19. Unit 11; Earthen Floor, Ladrillo Floor, and Foundation.

corner of the site has been highly disturbed. This may be the area that was "mined" for roof tiles in 1935 for the Santa Margarita Adobe (Sleeper 1985).

PART V. ARCHITECTURAL DATA SYNTHESIS

Excavation revealed remains of two structures that probably signify two building episodes. Structure A at the northern end of the site measured approximately 45 by 23 feet, oriented lengthwise on an east–west axis. Structure B, composing the southern three-quarters of the site, measured 93 by 47 feet and was oriented lengthwise on a north–south axis. When both buildings were completed the adobe house at Rancho Misión Vieja measured 116 by 47 feet.

The foundation of Structure A is physically separate from that of B. This is most apparent in Units 7 and 3 (Figure 21). There is a gap of approximately 28 inches between the two foundations. In addition, the foundation alignment for Structure A is 18 inches to the west of the foundation alignment of B. The surface of the Structure A foundation in Unit 7 is approximately 50 inches below site datum, while the surface of Structure B's foundation in Unit 3 is 10 inches higher at 40 inches below site datum.

Measuring approximately 40 inches wide and 12 to 13 inches in depth, the foundation for Structure A was much wider than the foundation for Structure B, which averaged around 20 to 24 inches wide and 14 to 16 inches in depth.

This analysis has assumed that because Structure A was smaller it was built first. There is no evidence at this time to know if this is true, although further excavation could probably provide answers. If it was built first it may represent a home constructed by the missionaries for the Mayordomo of Misión Vieja during the early 1800s. It may also have been built by Augustine Olvera when he occupied the rancho between 1842 and 1845. The assumption that smaller

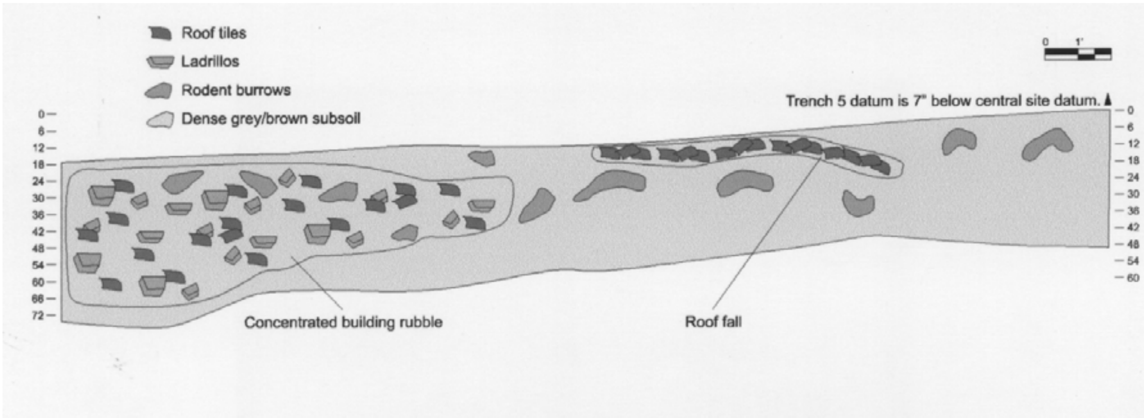


Figure 20. Trench 5, Western Wall Profile.

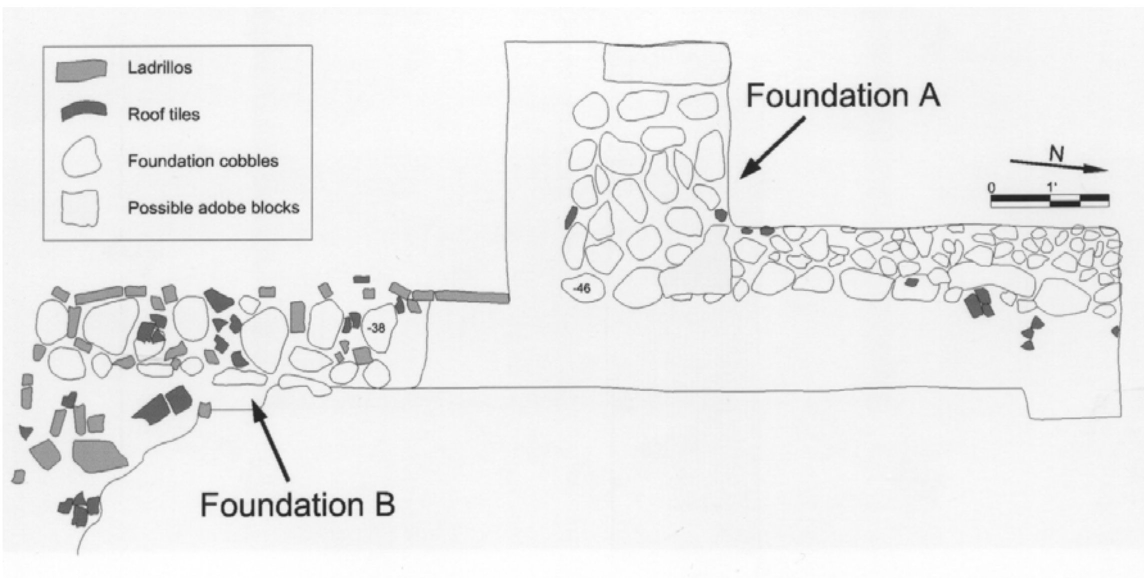


Figure 21. Foundation for Building A and B.

equals earlier, however, is not necessarily true. Structure A could actually represent a later addition to the northern end of an already standing adobe house represented by the remains of Structure B.

Regardless of which section was built first, there is little doubt that Structure B represents the "fine" adobe house built by Juan Forster when he acquired the ranch in 1845 and occupied by his family until 1848. Excavation revealed a large number of intact features that represent this complex building. As already noted this adobe house measured 93 by 47 feet on a north–south axis. Based on in situ roof fall in Trenches 1 and 5 as well as Units 5, 6, 9, and 11, the house was covered with a mission tile roof that extended to cover exterior porches along the eastern and western sides. A ladrillo alignment at the northern end of the structure encountered in Trenches 3 and 4 and Units 9 and 11 may have supported an interior dividing wall. The adobe originally had a packed earthen floor, encountered in Trench 4 and Units 9 and 11. On the northern side of the dividing wall alignment this surface was later covered with the ladrillo floor tile encountered in Unit 11.

One of the more interesting elements of Structure B was the fact that the interior living surfaces were elevated almost 18 to 20 inches above ground level so that one would have had to step up to enter the adobe. Depths below site datum of interior surfaces, foundations, and original ground surfaces have been plotted on a chart in (Figure 22). The ladrillo floor in Unit 11 is approximately 11 inches above the top of the foundation in the same unit. This indicates that there is nearly a foot of fill on the interior of the adobe. Roof fall outside the adobe foundation is between 6 to 8 inches below the top of the foundation. Although no thresholds were located, there must have been steps in the doorways leading up into the raised interior of the house from the covered corridors along the exterior (Figure 23).

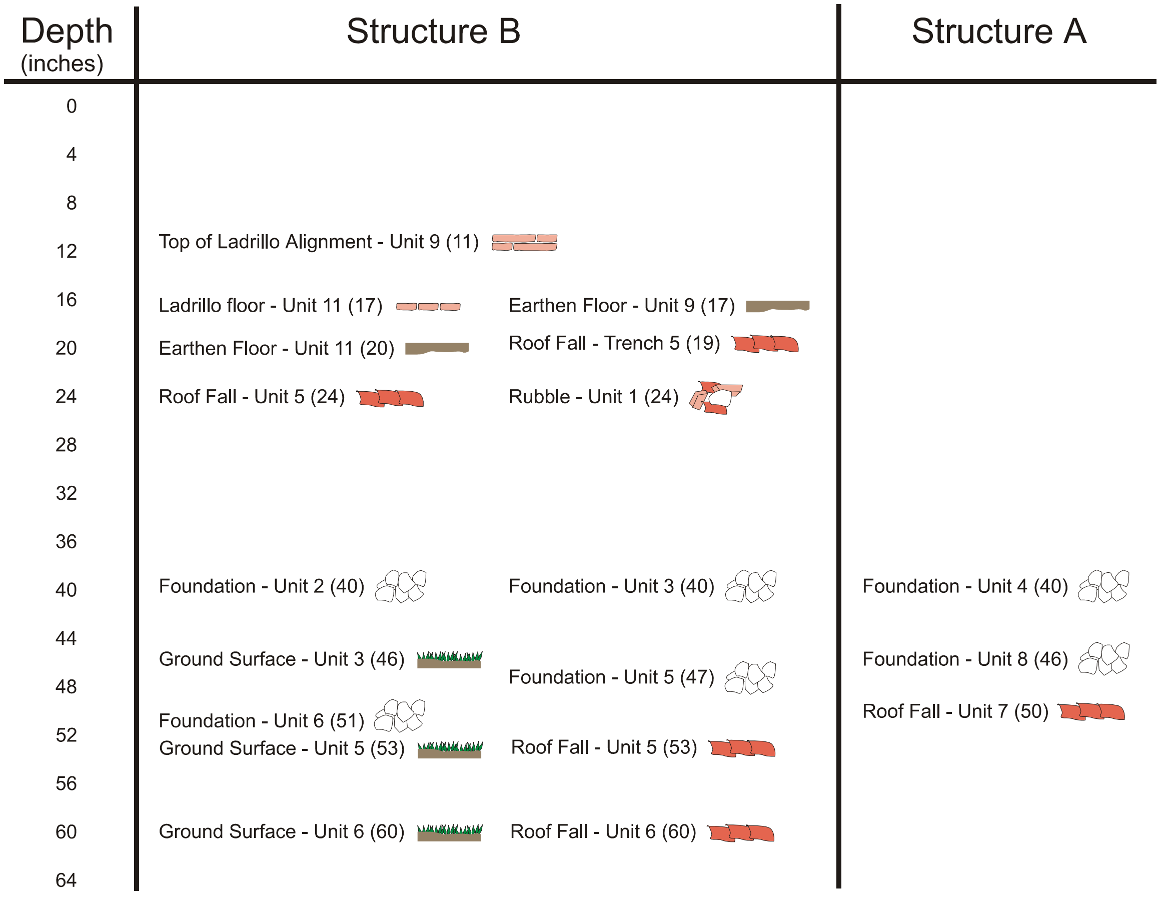


Figure 22. Feature Depths, Building A and B.

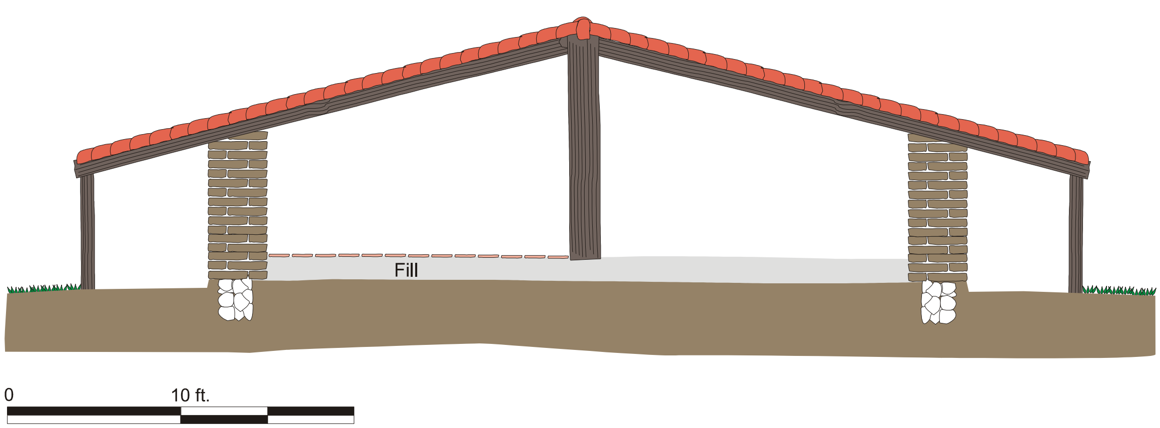


Figure 23. Side Profile, Building B.

The architectural remains conform quite well to the configuration of the Misión Vieja adobe as remembered by Don Marcos Forster and recorded by historian Alfonso Yorba. It was an unusually large rectangular adobe building with a mission tile roof that extended to cover long corridors along the eastern and western sides. Although Yorba recorded only tile (ladrillo) floors, both tile and packed earth interior surfaces were encountered during this investigation.

PART VI. ARTIFACT IDENTIFICATION AND ANALYSIS

INTRODUCTION

From the excavation a total of 77.380 kg of historical material was recovered. Analysis was conducted for the purpose of developing functional artifact patterns or profiles as described by South (1977) and resulted in the identification of an estimated minimum number of 241 items representing 11 of the 20 activity group categories listed on Table 2.

Based on methods originally developed by Stanley South and others, the purpose of functional pattern analysis is to develop functional artifact patterns or profiles. In order to determine the types of activities represented, artifacts are divided into functional categories or groups to allow detection of relationships between functionally defined artifact groups at a generalized level of analysis and to thereby define broad patterned regularities (South 1977). South's models used a classification system with eight artifact groups. This analysis uses a system of 20 artifact groups which has proven successful for various site types in southern California (Van Wormer 1996a, 1996b; Van Wormer and Schaefer 1991; Phillips and Van Wormer 1991). Artifacts in each group are quantified by estimated minimum number of items and weight and the amount converted into a percentage of the total number and weight of artifacts from the deposit. It can thus be determined to what degree different activities are represented, resulting in a functional pattern or profile of the artifact assemblage. Bulk items such as ceramic tile, brick fragments, window glass, and lumber fragments are usually so fragmented that estimated minimum numbers cannot be calculated and in many cases would be inappropriate. These artifact types are quantified by weight only, and are not used in the functional profiles based on estimated minimum number of items.

Table 2. Activity Groups Used In Artifact Pattern Analysis.

<u>Consumer Items Group</u>: Items containing products purchased and consumed on a regular basis Bottles Bottle caps, can lids, and related items Jars Tin cans and other tins	<u>Personal Items Group</u>: Belonging to a single individual Eye glasses Jewelry Musical instruments Smoking pipes Toiletry items (comb, hairbrush, razor, toothbrush, etc.) Toys and gaming items Watches
<u>Kitchen Group</u>: Food preparation and serving Butchered bone Canning jars Canning jar lids and related items Ceramic kitchen and tableware Cooking items Flatware Glass tableware Jelly tumblers Seeds Shellfish Stove parts	<u>Furniture Parts Group</u>: All furniture parts Bed and other furniture frames and springs Cabinet hinges Drawer pulls Scroll trim Springs Trunk parts Upholstery tacks
<u>Household Items Group</u>: Daily household maintenance Batteries Household ceramics Household glassware Lamp parts Light bulbs Medical items Miscellaneous household items	<u>Hardware Group</u>: Miscellaneous hardware not included in a specific group Baling wire Bolts and nuts Chain links Cotter pins Metal bands and strapping Rivets Screws Washers Wire fencing
<u>Garment Items Group</u>: All clothing items Buckles Buttons Clothing rivets Collar stays Corset Hardware Garter clasps Hook and eyes Shoe parts Snaps Straight pins Strap slides Suspender clasps	<u>Tools Group</u>: All hand tools Artist's tools Carpenter's tools Gardener's tools Jeweler's tools Mason's tools Mechanic's tools Other miscellaneous hand tools

Table 2. Activity Groups Used In Artifact Pattern Analysis (Continued).

Livery Items Group: Horse and horse-drawn vehicle items	Machinery Items Group: All machine parts except agricultural implements
Bridle parts Buggy parts Harness parts Horse shoes and nails Saddle parts Wagon parts	Forge Materials Group: All forge, furnace, and stove wastes Coal, clinkers, and slag
Munitions Items Group: All firearms and related items Bullets, cartridges, musket balls, and shotgun parts	Agricultural Implements Group: All farm machinery Chain belting Cultivator parts Harrow parts Hay rake parts Manure spreader parts Mower parts Plow parts Threshing machine parts
Coins Group: All coinage and tokens	
Building Materials and Architecture Group: Asphalt Ceramic drain pipe Ceramic flue lining Concrete Construction hardware Construction materials Counter glass Door locks and parts Electrical hardware Nails and spikes Plaster Window glass	Other Occupations Group: Specialized occupation items Factory items Farmstead items Mining items Unique Items Group: Items not included in other groups Unidentified Items Group: Items that cannot be identified Intrusive Items Group: Items intrusive to a discrete dated deposit

As already noted, for this analysis ceramic roof tiles and ladrillos posed a special problem. The site contains immense quantities of these very redundant materials. They constitute by far the most common artifact type anywhere on the site. Only a relatively small sample was collected weighing 69.576 kg. This weight, however, in no way reflects the relative huge quantities of ceramic tile from the excavated units, yet it far outweighs any other class of artifacts. So that the weight of ceramic tile would not obscure the quantitative relationships of other artifact classes it has not been included in the relative percentage calculations by weight of the artifact classes. In the preceding discussions of artifact recovery by unit and the following analysis, the total weight of artifacts recovered was considered to be 7.804 kg.

CONSUMER ITEMS

Consumer items consist of packaged items purchased and consumed on a regular basis. Generally these include groceries, cosmetics, medicines, and beverages. Under most conditions consumer items found in archaeological deposits came in containers that do not deteriorate over time such as glass or ceramic bottles and jars, and in some instances, tin cans.

Consumer items constitute 9 percent (21) by item count and 20 percent (1,551 g) by weight of the artifacts recovered. A total of 17 bottles and jars were identified through an analysis of bases, necks, and sidewall fragments. They all represented hand blown in mold (blm) containers. Pontil marks and lips finished by hand without the use of a hand-lipping tool on some bottles indicate a manufacture period prior to 1885. Bottles identified are listed in Table 3. They are quantified by type on Table 4.

Table 3. Bottles.

TYPE	PRODUCT	TECHNOLOGY	PATTERN	ORIGIN	SIZE	DATE	REFERENCE	QUANTITY
Liquor	Wine	Blm - pushed up kick up.	-	-	30 oz	Pre 1885		1
Liquor	Whisky	Blm	-	-	30 oz	-	-	1
Liquor	Wine	Blm hand finished lip	-	-	30 oz	Pre 1885	-	1
Liquor	Ale	Blm junk bottle, shear lip	-	-	30 oz	Pre 1885	-	1
Liquor	Unidentified	Blm amber glass	-	-	30 oz	-	-	1
Liquor	-	Blm - case gin	-	-	16 oz	-	-	1
Culinary	Pepper sauce	2 pc bottom hinge mold/ribbed	-	-	-	1850 - 1885	-	1
Culinary	Olive oil	Blm, sheared hand finished lip	-	-	-	Pre 1880	-	1
Culinary	Olive oil	Blm pontil	-	-	-	-	-	2
Culinary	Olive oil	Blm	-	-	12 oz	-	-	1
Culinary	Spice	Blm	-	-	8 oz	-	-	1
Culinary	Olive oil	Blm - hand finished lip	-	-	-	Pre 1885	-	1
Culinary	Olive oil	-	-	-	-	-	-	1
Patent medicine	-	Blm - case bitters / Schnapps	-	-	16 oz	-	-	1
Unidentified	-	Blm	-	-	-	-	-	1
							TOTAL	17

Table 4. Bottled Products.

TYPE				Type	Type
				Quantity	Percent
	Product	*Product*	*Product*		
		Quantity	*Percent*		
Liquor				6	35.29
	Wine	*2*	*33.33*		
	Whisky	*1*	*16.67*		
	Ale	*1*	*16.67*		
	Unidentified	*2*	*33.33*		
Culinary				8	47.06
	Olive Oil	*6*	*75.00*		
	Pepper Sauce-spice	*2*	*25.00*		
Patent Medicine				1	5.88
	Case bitters / Schnapps	*1*	*100.00*		
Unidentified				2	11.76
	Unidentified	*2*	*100.00*		
TOTALS		*17*		17	100.00

Additional consumer items identified included a lead wine bottle seal, and fragments of a meat or fish tin and another tin can.

KITCHEN ITEMS

Kitchen items made up 38 percent (105) by item count and 62 percent by weight (4898 g) of the artifacts recovered, and are articles used in food preparation, serving, and consumption. The types of artifacts recovered include ceramic tableware, glass tableware, cooking items, faunal remains and shellfish. Ceramic kitchen and tableware analysis used the vessel typology developed by Worthy (1982). Items and types identified are listed in Table 5.

In addition to European manufactured ceramics four pieces of Native American-produced brownware were identified. One had a burnished finish and one may have had a slip finish. Three of the four were burned indicating their use as cooking vessels. Since all four sherds were recovered from different proveniences (Trenches 5 and 1 E, Unit 5 and Unit 6), it was assumed they represented four different vessels.

Table 5. Ceramic Tableware.

ITEM	TYPE	PATTERN / ID	ORIGIN	MANUFACTURER	DATE	REFERENCE	#
Plate, large	Bamboo / three friends	-	China	-	-	Mueller 1987:281	1
Pitcher	Molded	-	Trenton, NJ	American Crockery Co.	1876-pre 1900	Lehner 1988:21; Freeman 1954:78	1
Plate, Large	Undecorated hotelware	-	-	-	-	-	1
Plate, unknown size	Transfer-blue	-	-	-	1842-1858	Samford 1997:21	1
Plate, unknown size	Transfer flowing blue-black	-	-	-	1839-1856	Samford 1997:24	1
Plate, unknown size	Edge decorated blue	-	-	-	1830-1860	McAllister 2001:11	1
Soup plate	Molded	Fig	England	Davenport	1860s	Withered 1985:87	1
Soup plate	Molded	Fig	England	Davenport	1860s	Withered 1985:87	1
Cup	Undecorated hotelware	-	-	-	-	-	1
Saucer	Undecorated hotelware	-	-	-	-	-	1
Saucer	Molded	"Imperial..."; underglaze black	England	Pinder, Bourne & Hope	1851-1862	Praetzellis, Rivers & Schulz 1983:66,207(202)	1
Unidentified hollow item	Undecorated	-	-	-	-	-	1
Unidentified hollow item	Undecorated hotelware	-	-	-	-	-	1
Unidentified hollow item	Cut sponge, green & red	-	-	-	-	-	1
Unidentified item	Banded ware	-	-	-	-	-	1
						TOTAL	15

Glass tableware included remains of two drinking glass tumblers and a footed dish. One tumbler rim was colored amethyst from exposure to the sun indicating a manufacture date after 1880 and before 1914 (Hunt 1959). Cooking items consisted of a cast iron piece to a coffee or food mill.

Additional kitchen items included 1553 g of butchered bone and 85 pieces of sea shell. Dr. Lynn Christenson, of San Diego County Parks, conducted a cursory examination of the bone. A detailed analysis was not undertaken. Approximately 50 percent of the bone by weight consisted of sheep or sheep sized remains (*Ovis aries*). The remainder consisted mostly of cow (*Bos tarus*). There were also a few small rodent bones. The presence of skull and foot bones indicated primary butchering of both cow and sheep took place on site. All butchering marks indicated the use of a meat cleaver. There was no evidence for use of a butcher's saw. Of the shell identified, eighty–one were California mussel (*Mytelus californicus*). The remaining four consisted of chestnut cowry (*Cypraea spadicea*), limpet (*Fissurella volcano*), reversed chama (*Pseudochama exogyra*), and a worm shell (*Vermetidae sp.*).

HOUSEHOLD ITEMS

Household items constituted 0.3 percent (2) by quantity of the assemblage and 0.11 percent by weight (9 g). These artifacts consist of those things that are necessary for the daily maintenance of a household. They included a safety pin and the neck to a gallon size, blown-in-mold carboy, or storage bottle.

GARMENT ITEMS

Garment items made up 2 percent (6) by item count and 0.2 percent by weight (17 g) of the material recovered. This group consists of all the preserved evidence of clothing. Items identified included pieces of a leather shoe. Five buttons were identified: 2 shell 4-holes, 1 ceramic 4-holes, 1 metal shank; and 1 composite of porcelain, iron, and lead, with a metal shank.

PERSONAL ITEMS

Personal items are defined as the possessions of a specific individual. These artifacts made up 0.41 percent (3) by item count and 0.47 percent (37 g), by weight of the historic material recovered and included a tooth from a hard rubber comb, a ceramic female figurine, and a gold-plated loop from a jewelry chain.

TOOLS

Tools included pieces of two different sheep shears that made up 0.83 percent of the artifact assemblage by count and 3 percent (235 g) by weight.

MUNITIONS

Nine munitions made up 3.13 percent of the collection by item count and 0.4 percent (32 g) by weight of the artifact assemblage. Types identified included:

ITEM	TYPE	SIZE	#
Spent bullet	-	D=3/4"	1
Spent bullet	-	D=3/8"	1
Spent Bullet	-	-	1
Bullet shell	Center fire	-	1
Bullet shell	Rim fire	.22	1
Bullet shell	Rim fire	.22 short	1
Bullet shell	Rim fire	.22	1
Bullet shell	Rim fire	.22	1
Bullet shell	Rim fire	.22 short	1
	TOTAL		9

Most of the munitions appear to be intrusive. Five of the six cartridge casings are .22 caliber. Although introduced as early as 1880, the .22 cartridge did not become popular until the beginning of the twentieth century and most were manufactured after 1900 (Berge 1980:227). These munitions are probably the result of hunting or target practice at the site during the twentieth century after it was abandoned and the house had fallen into ruins. They do not appear to represent items lost by occupants of the adobe.

BUILDING MATERIALS

Building materials consists of all architectural materials. They made up 42 percent (101) of the artifacts by count and 7 percent (561 g) by weight of the artifacts identified. Items included lumber fragments (126 g), 100 square cut nails, and 18 g of window glass.

As already noted, immense quantities of roof tile and ladrillos were present throughout the site. In most instances these materials were not collected. The small sample of these materials that was collected included 69.576 kg of roof tile and ladrillo. The bulk of this material was weighed and discarded with only some of the more diagnostic pieces kept as examples for curation. The weight has not been included as part of the building materials for this analysis since the amount was so great it would obscure the relationships of the other artifact types.

LIVERY ITEMS

Livery items consisted of a single horseshoe half. It made up 0.41 percent (1) of the collection by count and 1.5 percent (121 g) by weight.

HARDWARE

Hardware made up 3 percent (8) of the collection by count and 2.5 percent (197 g) by weight. This group includes miscellaneous hardware that does not fit within the other defined groups. A variety of Items were identified and are listed in Table 6.

Table 6. Hardware.

Bar iron	-	1	65
Burr	-	1	2
Screw	Flat standard head	5	23
Screw parts (no head)		1	2
Strapping	-	0	59
Wire	Baling	0	18
	TOTAL	8	167

UNIDENTIFIED ITEMS

Unidentified items constituted 3 percent (7) by item count and 0.08 percent (55 g) by weight of the artifacts recovered. This group consisted of a variety of materials, each representing a single item that could not be identified. They are listed in Table 7.

Table 7. Unidentified Items.

ITEM	#	COMMENTS
Sulfur	1	-
Unidentified ferrous item	1	Flat, thin sheet material similar to tin can but without seams or any other tin can features
Unidentified ferrous item	1	Possibly a clip
Unidentified ferrous item	1	Formed flat ferrous; thickness is increased where 2 tabs of metal are bent at right angles to the flat plane of the item; also a hole to pin or fasten it to another piece
Unidentified ferrous item	1	Looks like a round nail tip in cross section, except the pointed end is squared
Unidentified item	1	Shaped bone w brass posts which held it to another part
Worked bone	1	Identified in the field as worked; looks rodent chewed
TOTAL	7	

PART VII. ARTIFACT DATA SYNTHESIS

Data synthesis will consist of summarizing and interpreting analytical attributes of the artifact assemblage that give indications of the social and economic class of the population it represents. The data synthesis includes distribution analysis, temporal analysis, functional artifact patterning analysis, bottled product consumption pattern analysis, and economic analysis.

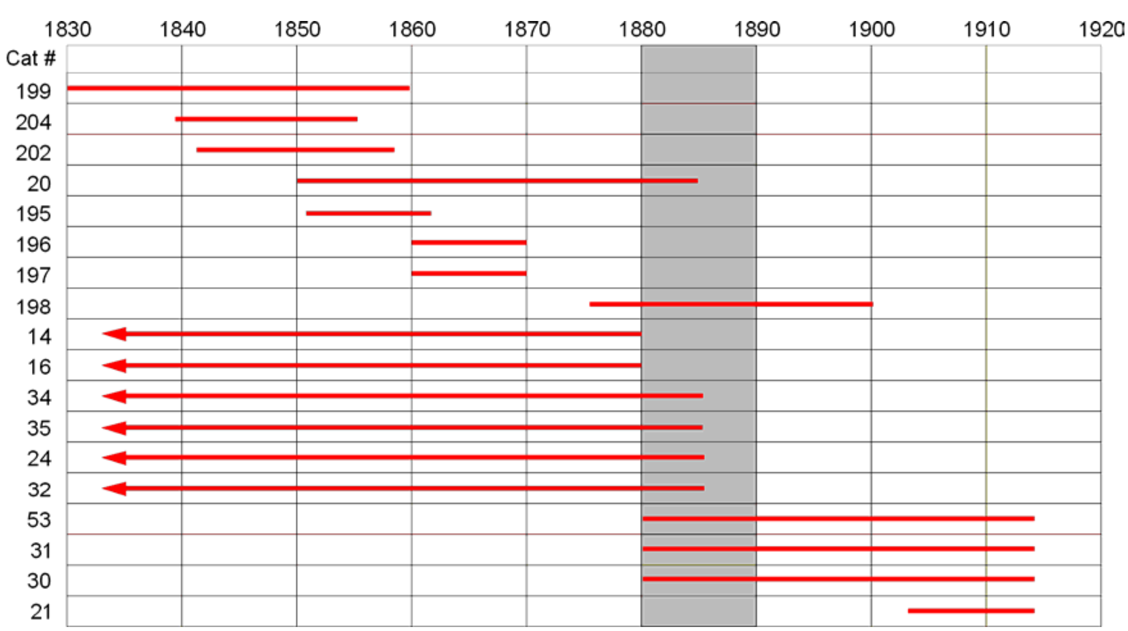
The data suggest that the majority of the artifacts represent Basque sheep herders who occupied the building in the 1880s, using the northwestern portion as a kitchen area and depositing refuse outside the western side of the building.

Artifacts were not distributed evenly throughout the site. They tended to be concentrated on the western side. Units 4, 6, 9, 10, and 11 with their associated trenches produced 79 percent by item count (191) and 40 percent by weight (2.405 kg) of the artifact assemblage. Material was especially concentrated in Unit 6 that produced 60 items (1.186 kg of material) and Unit 11 with 67 items (245 g of material).

In Table 8 a bar graph timeline is used to determine the years of artifact deposition. Manufacturing periods of datable artifacts have been plotted as horizontal lines. Vertical lines were drawn to bracket the period where most of

Table 8. Artifact Deposition Timeline.

Cat #	Trench	Unit	Item	Technology	ID	Date	Reference	#
								1
199		7	Plate, Unk. Size	Earthenware		1830-1860	McAllister 2001:11	1
204		9	Plate, Unk. Size	Earthenware		1839-1856	Samford 1997:24	1
202	1W		Plate, Unk. Size	Earthenware		1842-1858	Samford 1997:21	1
20		6	Bottle		On Bottom: Pat Sep 28, 18_	1850-1885		1
195		4	Saucer	Earthenware	Imperial; Under-glaze Black	1851-1862	Praetzellis, Rivers & Schulz 1983:66,207,202	1
196	IE		Soup Plate	Earthenware		1860s	Wetherbee 1985:87	1
197		10	Soup Plate	Earthenware; Pearlware		1860s	Wetherbee 1985:87	1
198	1W		Pitcher	Earthenware		1876-Pre 1900	Lehner 1988:21; Freeman 1954:78	1
14			Bottle Glass	BLM, sheared Hand Finished Lip		Pre 1880		1
16		2	Bottle Glass	BLM Pontil		Pre 1880	Spillman 1980	2
34		10	Bottle Glass	BLM Hand Finished Lip		Pre 1885		1
35		10	Bottle Glass	BLM Junk Bottle, Shear Lip		Pre 1885		1
24		7	Bottle Glass	BLM-Pushed Up Kick-Up		Pre 1885	Encino	1
32		9	Bottle Glass	BLM Hand Finished Lip		Pre 1885		1
53		4	Bottle Glass	1 Fragment Sun Colored		1880-1914	Hunt 1959	1
31		7	Bottle Glass	1 Fragment Sun Colored		1880-1914	Hunt 1959	1
30		7	Glass Tableware	Manganese Sun-Colored		1880-1914	Hunt 1959	1
21		6	Bottle Glass	Giles Jar Rim Sun-Colored		1903-1914	Lief 1965; Hunt 1959	1



the lines can be intersected which represents the most probable period of artifact deposition. The left bar was placed on the introduction date of the most recent non-intrusive artifact in the assemblage, thereby providing a date after which the deposit was made. The right bar was placed so that it would intersect most of the items included on the graph thereby providing a date before which the refuse was deposited. The area between the bars was shaded to represent the probable years of deposition.

The 19 datable artifacts from the Misión Vieja Adobe show a wide range of dates representing the building's long period of occupation. A series of items date from circa 1875 to 1885, suggesting this is when most of the refuse recovered was deposited. Many of those items manufactured before 1875 are ceramic tableware vessels. These could represent items from earlier occupations or they may simply be old pieces still in use until they were broken and finally discarded in the '80s. One artifact, a Giles jar introduced in 1903 (Lief 1965), has a much later manufacture date than the other items on the graph. It, like the munitions, probably represents an intrusive item deposited after the building had been abandoned.

The material appears to represent kitchen and household refuse. Table 9 and Figure 24 present the activity profile for the artifacts. Building materials and intrusive munitions have been eliminated so that the relationships of the other activity groups can be more clearly seen. In addition, shellfish has been removed from the kitchen items count so only artifacts (as opposed to a mixture of artifacts and faunal material) are represented. The assemblage ranks highest in consumer items at 31 percent followed very closely by kitchen items at 30 percent. Hardware at 12 percent, followed by garment items at 9 percent, also made up significant portions of the assemblage.

Culinary data suggest the cultural material may represent Basque sheep herders. The bone assemblage included large portions of sheep and sheep-sized bones butchered with a knife and meat cleaver. This closely resembles the pattern of meat consumption and butchering from features representing Basque sheep herders excavated at the Encino Road House (Reynolds 1980: 2-2 - 5-3).

Table 9. Site Activity Profile.

ACTIVITY	NO.	%
Consumer	21	31
Livery	1	1
Personal	2	3
Agricultural	2	3
Kitchen	20	30
Garment	6	9
Hardware	8	12
Household	1	1
Unidentified	7	10
TOTAL	68	100

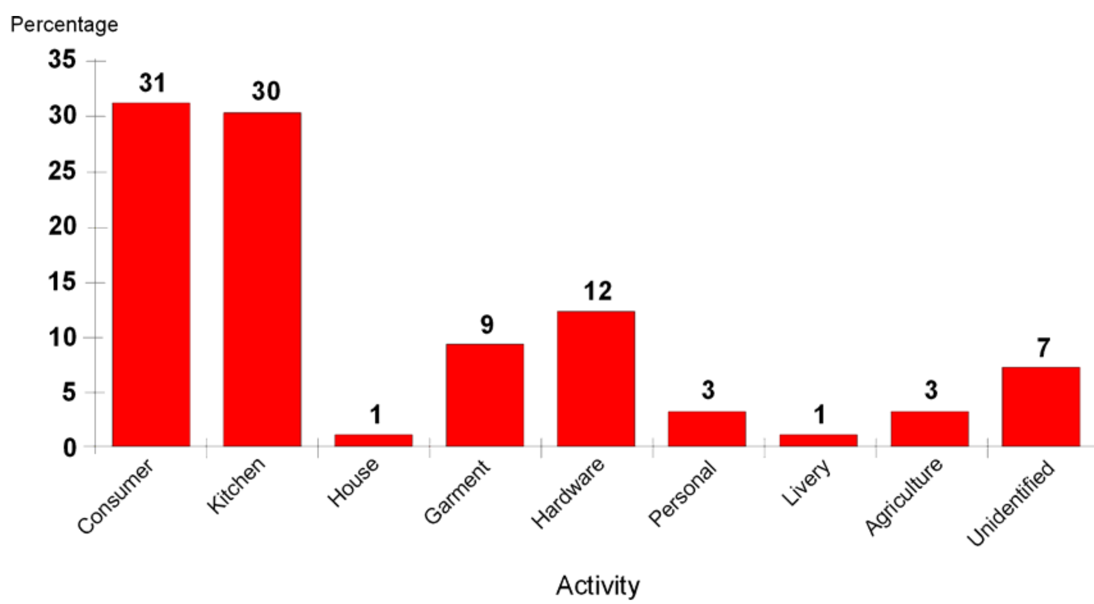


Figure 24. Misión Vieja Activity Profile.

The culinary bottles are also suggestive of Basque cooking. Intersite comparison of culinary bottles is shown in Figure 25. The Misión Vieja assemblages are compared to collections representing Latin American and southern European as well as Anglo-American populations. Five sites were used and include the San Diego 1910 City Dump, refuse from the foundation units of the Encino Roadhouse, Santa Ana, Encino Roadhouse Features 1 and 3, the Pio Pico Adobe in Whittier, the Diaz Adobe in Monterey and the Aguirre Adobe in Old Town San Diego. The San Diego City Dump, Encino foundation units and Santa Ana represent Anglo-American culinary traditions (Van Wormer 1983a; 1991; Elliott 1985). The other sites represent southern European and Hispanic populations. Features 1 and 3 of the Encino Roadhouse represent a Basque population, while the Aguirre, Pio Pico and Diaz adobes were occupied by Mexican Californio families (Van Wormer 1983a; 1983b; Felton and Schulz 1983, Phillips *et al*. 2001).

The Hispanic and southern European assemblages are high in percentages of pepper sauce, spice, and olive oil and exhibit a distinct lack of other culinary products (Van Wormer 1983a). The San Diego, Santa Ana, and Encino foundation unit assemblages resemble each other in the wide variety of products and their dominance by packer lip, club sauce, and catsup bottles. These products make up 10 percent or less of the southern European and Hispanic sites which exhibit far fewer products than the Anglo American assemblages. They are dominated by spice, pepper sauce and olive oil, which constitute four percent or less of the Anglo-American culinary bottle assemblages. The Misión Vieja assemblage shows high percentages of spice-pepper sauce and olive oil bottles while exhibiting very low percentages of other products, suggesting the inhabitants of the adobe during the 1860s followed a Southern European and Hispanic culinary tradition. The patterns closely resemble those of Encino Roadhouse, features 1 and 3, which represent a Basque culinary tradition.

The data suggest that the majority of the artifacts represent Basque sheep herders who occupied the building in the late 1870s and early 1880s, using the northwestern portion as a kitchen area and depositing refuse outside the western side of the building. Scorched areas and concentrations of bone on the earthen floor in Unit 9, as well as concentrations of California mussel in Units 10 and 11 indicate food preparation and disposal in the northwestern portion of Structure B. This, combined with the relatively large number of artifacts from Unit 6, indicates a general refuse scatter along most of the western side of the building. Recovery of sheep shears in Unit 10 and Trench 17 are obvious indications of sheep herding activity. The faunal and culinary bottle consumption patterns are indicative of Basque culinary traditions. The bone remains included large quantities of sheep that had been butchered with a knife and meat cleaver. No saw cut bone was identified.

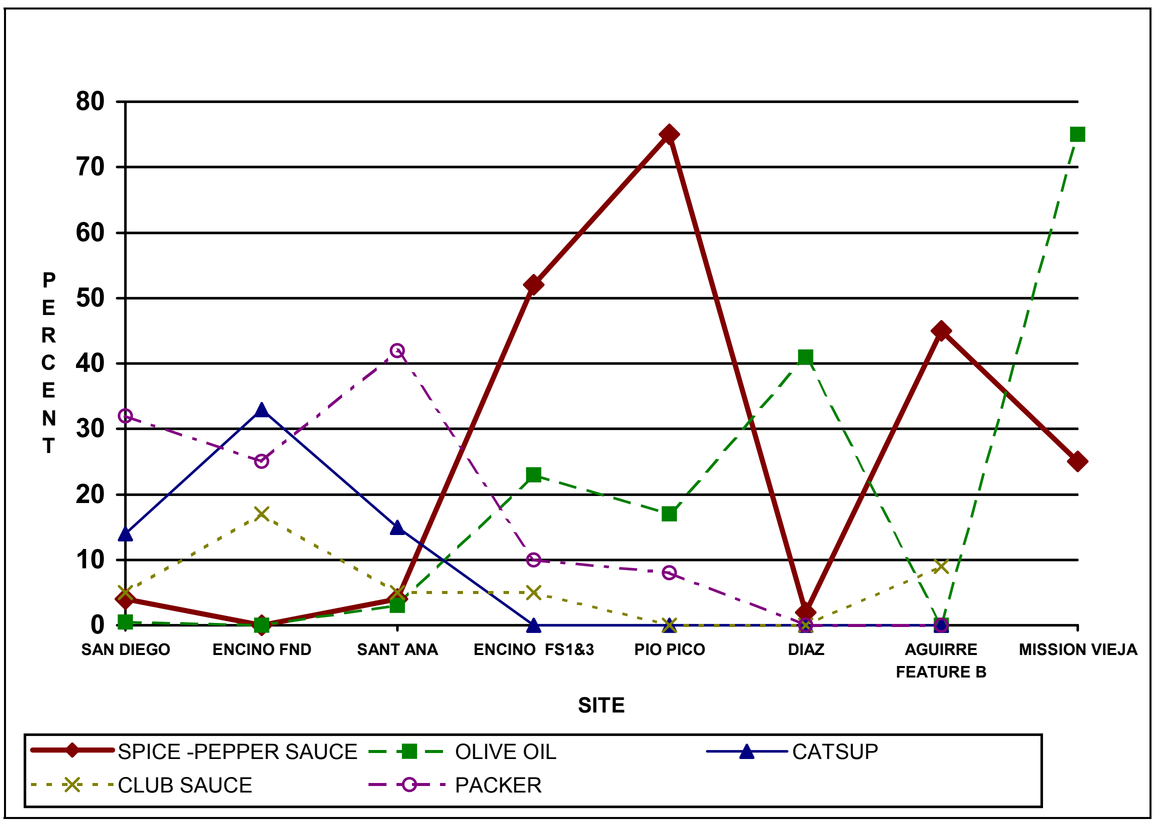


Figure 25. Intersite Culinary Bottle Comparison.

The culinary bottle consumption pattern dominated by olive oil and spice bottles is indicative of a Southern European and Hispanic dietary tradition. Both the bone and culinary bottle patterns closely resemble those representing Basque sheep headers from the Encino Road House excavations (Reynolds 1980; Van Wormer 1983).

PART VIII. NATIVE AMERICAN LITHIC ANALYSIS

In direct association with the historic manufactured artifacts, 51 Native American lithic (stone) artifacts were recovered during the test excavations at CA-ORA-29. Forty-one were flakes, or stone chips struck off a core (nucleus of raw material). One was a core, and six were actual stone tools. The tools included a pestle, two utilized flakes, a flake tool, a chopper, and a plano-convex tool.

The artifacts will be discussed below by their provenience, or origin on site, beginning with trenches and units on the eastern portion of the site, followed by those on the western portion of the site.

EASTERN PORTION

Trench 1, Eastern Half

Excavators recovered 11 flakes and a pestle from this trench. The flakes were made of locally available raw materials. There were four basalt and three metavolcanic flakes, and one each of felsite, chalcedony, quartzite, and quartz. None of the flakes had been modified or used. The schist pestle, artifact #24 (Figure 26), was well shaped (pecked and smoothed) and well used. Native Americans used a pestle in a stone mortar to process acorns into mush. The pestle was recovered at the eastern foundation of Structure B.

Figure 26. Pestle (Catalog # 24).

Unit 1

A single flake tool, or flake that had been modified to create a suitable working edge, was recovered from this unit. The tool (#50) was made of metavolcanic and had not been used.

Unit 2

Six flakes came from Unit 2. Three were made of basalt, two of metavolcanic, and one of quartzite. None of the flakes had been modified or used.

Unit 3

One quartz flake and one basalt chopper were recovered from Unit 3. The chopper (#51) has a well-defined working edge formed by two faces coming together at an approximate 30-45 degree angle. This tool edge showed crushing wear from use. Choppers may have been used by native people to process yucca or other tough materials.

Unit 7

Unit 7 produced a quartzite and a metavolcanic flake, unmodified and unused, and a quartzite utilized flake (#37) that had been re-sharpened (retouched) after use. Its approximate 60-degree working edge angle would be suitable for skinning, hide scraping, and heavy cutting (Wilmsen 1974).

Unit 8

This unit revealed the northeast corner of Structure A. A plano-convex tool (#17) made of basalt was recovered during the excavation of Unit 8. A plano-convex tool, also called a scraper plane, has a flat base with steep sides that is useful in the reduction of yucca and agave fiber into cordage (Kowta 1969) or in processing hides, or other planing activities.

Trench 8

Two flakes, one each of felsite and metavolcanic, were recovered from Trench 8. Neither flake had been modified or used.

WESTERN PORTION

Trench 1, Western Half

One basalt flake came from this trench. It had not been modified or used.

Trench 3

Two unmodified and unused flakes, one each of basalt and metavolcanic, were recovered from Trench 3, along with a felsite utilized flake (#49). The working edge angle of this tool approximated 45 degrees, suitable for whittling (Semenov 1964).

Unit 6

A flake each of basalt and metavolcanic were recovered from Unit 6. Neither flake had been modified or used.

Unit 9

Three flakes, one each of felsite, metavolcanic, and metasedimentary, were recovered from Unit 9. The metavolcanic flake was found on the packed earthen floor of the unit and inside Structure B.

Trench 5

Six flakes (four metavolcanic, one basalt, and one quartzite) were found in this trench. None had been modified or used. These flakes came from a highly disturbed context on the south end of Structure B.

Unit 11/Trench 16

Three flakes, one quartzite and two metavolcanic, were recovered from the excavation. None of the flakes had been modified or used. The flakes were located inside Structure B.

Trench 19

A single flake of basalt came from Trench 19. It was not modified or used. The flake was recovered from the outside of Structure A.

SUMMARY

The presence of these flakes, cores, and tools attests to a continuing tradition of stone tool making and use by Juaneños into the mid to late 1800s on Rancho Mission Viejo. Their presence also suggests that the Indians either did not have regular access to manufactured tools or that they preferred their own stone tools. Note that one of the tools, the pestle, would have been at home in any American household at the time.

PART IX. SIGNIFICANCE EVALUATION

Preliminary test excavations revealed that the Misión Vieja Adobe site possesses a substantial degree of integrity. The site is significant and potentially eligible for the National Register of Historic Places under Criterion D, in that it contains information that can answer valid scientific and historical research questions. The project resulted in identification of the remains of two separate structures that probably represent different construction phases from the 1840s or earlier. Features included cobble foundations, floors, exterior surfaces and interior dividers. The majority of the artifacts appear to represent Basque sheep herders who occupied the adobe in the late 1870s and early 1880s.

PART X. CONCLUSIONS

The test excavation provided evidence that gave some insight into the building's construction history and design. Two distinct building episodes are represented by the remains of two separate structures that are adjacent to each other. Structure A, at the northern end of the site, measured approximately 45 by 23 feet, oriented lengthwise on an east–west axis. Structure B, composing the southern three-quarters of the site, measured 93 by 47 feet and was oriented lengthwise on a north–south axis. When both buildings were completed the adobe house at Rancho Misión Vieja measured 116 by 47 feet.

The period of construction for Structure A is uncertain. It might represent a house built by the missionaries for a Mayordomo of Misión Vieja during the early 1800s. It could also have been built by Augustine Olvera when he occupied the rancho between 1842 and 1845. The possibility also exists that Structure A could actually be a later addition to the northern end of an already standing adobe house represented by the remains of Structure B.

Structure B represents the adobe house built by Juan Forster when he acquired the ranch in 1845. His family lived in the dwelling until 1848, and continued to occupy it for parts of the year until 1864. Based on in situ roof fall the house was covered with a mission tile roof that extended to cover exterior porches along the eastern and western sides. A ladrillo alignment at the northern end of the structure encountered in Trenches 3 and 4 and Units 9 and 11 may have supported an interior dividing wall. The adobe originally had a packed earthen floor. On the northern side of the dividing wall alignment this surface was later covered with the ladrillo floor tile encountered in Unit 11. Interior living surfaces were elevated 18 to 20 inches above ground level.

Analysis indicated that the majority of the artifacts represent Basque sheep herders who occupied the building in the late 1870s and early 1880s. Both butchered bone and culinary bottle patterns closely resembled those representing Basque sheep headers from the Encino Road House excavations. Scorched areas and concentrations of bone on the earthen floor in Structure B, along with concentrations of California mussel, provided evidence of food preparation in the northwestern portion of the structure. The relatively large number of artifacts recovered along the western side of the site indicated a general refuse scatter along most of that side of the adobe. Recovery of sheep shears in Unit 10 and Trench 17 were obvious indications of sheep herding activity.

The presence of the Native American lithic artifacts attests to a continuing tradition of stone tool making and use by Juaneños into the mid to late 1800s on Rancho Mission Viejo. Their presence also suggests that the Indians either did not have regular access to manufactured tools or that they preferred their own stone tools.

REFERENCES

Bancroft, Hubert H.
1886 *The History of California. Vols. I-VII*. The History Company, San Francisco, republished 1970 by Wallace Hebbard, Santa Barbara.

Bannon, John Francis
1979 The Mission as a Frontier Institution: Sixty Years of Interest and Research. *The Western Historical Quarterly* 10(3):303-321.

Berge, Dale L.
1980 *Simpson Springs Station, Historical Archaeology in Western Utah: 1974-75*. Utah State Office, Bureau of Land Management.

Bolton, H. E.
1917 The Mission as a Frontier Institution in the Spanish-American Colonies. *American Historical Review* 23:42-61.

Bowman, J. N.
1958 Index of the Sapnish American Land Grants Recorded and Cases of California. On microfilm, National Archives and Record Center, Laguna Niguel, California.

Burns, E. Bradford.
1972 *Latin America: A Concise Interpretive History*. Prentice Hall, Inglewood Cliffs, New Jersey.

Cleland, Robert Glass
1941 *The Cattle on a Thousand Hills, Southern California 1850-1880*. Huntington Library, San Marino.

Cook, Sherburne F.
1976 The Indian Versus the Spanish Mission and the Physical and Demographic Reaction of the Non-Indians in Colonial and Provincial California. In *The Conflict Between the California Indian and White Civilization*-250. University of California Press, Berkeley.

Dallas, Sherman F.
1955 The Hide and Tallow Trade In Alta California 1822 1846. Unpublished Doctoral Dissertation, Indiana State University, Department of Economics.

Departmental State Papers
1841 Volumes cited in text. Bancroft Library, Berkeley.

D*iseño*
1845 Deseño Del Ranco de La Paz, antes Llamada Mission Viega (sic.), Map of Espediente No. 437, Spanish Archives Microfilm, National Archives and Record Center, Laguna Niguel, California.

Elliott, John F.
1985 Chapter 2: History in Excavations in *Early Santa Ana: The OCTD Terminal Site [CA-Ora-1031H]*, edited by James Brock. Orange County Transit District, Garden Grove, CA.

Englehardt, Fr. Zephyrin, O.F.M.
1922 *San Juan Capistrano Mission*. The James H. Barry Company, San Francisco.

Estudillo, José Antonio
1840 Expediente No. 137, Misión Vieja. Spanish Archies Microfilm, Vol 7: 506. National Archives and Records Center, Laguna Niguel, CA.

Evans, Nancy H.
2000 Rancho Mission Viejo: An Ethnohistory. Report prepared for Mission Viejo L.L.C., San Juan Capistrano by Archaeological Resource Managment Corporation, Anaheim, CA.

Felton, David L., and Peter D. Schulz
1983 The Diaz Collection: Material Culture and Social Change in Mid-Nineteenth-Century Monterey. *California Archaeological Reports No. 23*. California Department of Parks and Recreation, Sacramento.

Francis, Jessie Davis
1976 *An Economic and Social History of Mexican California 1822–1846: Vol. 1: Chiefly Economic*. Arno Press, New York.

Freeman, Larry
1954 *Ironstone China*. Century House, Watkins Glen, NY.

Geiger, Maynard
1967 New Data on Mission San Juan Capistrano. *Southern California Quarterly* 49(1):37-45

Guest, Francis F. O.F. M.
1979 An Examination of the Thesis of S. F. Cook on the Forced Conversion of Indians in the California Missions. *Southern California Quarterly* 61 (Spring 1979): 1-77.

Hallen, Pamela
1975 *Dos Cientos Anos En San Juan Capistrano*. Lahman Publishing Company, Irvine, CA.

Heizer, Robert
1978 Impact of Colonization on the Native California Societies. *The Journal of San Diego History* 24 (1):487-506.

Hunt, Charles B.
1959 Dating Mining Camps with Tin Cans and Bottles. *Geo Times* Vol. 3, No. 8: 8-10,34.

Jelinek, Lawrence J.
1979 *Harvest Empire: A History of California Agriculture*. Boyd and Fraser Publishing Co., San Francisco.

Kowta, M
1969 *The Sayles Complex: A Late Millingstone Assemblage from Cajon Pass and the Ecological Implications of its Scraper Planes*. University of California Press, Berkely and Los Angeles.

Krober, A. L.
1925 Handbook of the Indians of California. Bureau of American Ethnology Bulletin 78, Smithsonian Institution, Washington D. C. (Reprinted by Dover Publications, New York, 1976)

Lehner, Lois
1988 Lehner's Encyclopedia of U.S. Marks on Pottery, Porcelain, and Clay. Collector Books, Paducah, KY.

Lief, Alfred
1965 *A History of Closures: History and Progress*. Glass Container Manufacturer's Institute, NY.

McAllister, Lisa
2001 *Collector's Guide to Fether Edge Ware*. Collector Books, Paducah, KY.

McLean, James H.
1978 *Marine Shells of Southern California*. Science Series 24, Revised Edition. Natural History Museum of Los Angeles County.

Meadows, Don
1967 The Original Site of Mission San Juan Capistrano. Southern California Quarterly 49 (3):337-343.

Moorehead Max L.
1975 *The Presidio, Baston of the Spanish Borderlands*. University of Okahoma Press, Norman, OK.

Mueller, Fred W., Jr.
1987 Asian Tz'u: Porcelain for the American Market. In *Wong Ho Leum: An American Chinatown*, Vol.2, Archaeology. The Great Basin Foundation, San Diego.

Ogden, Adele
1927 Hides and Tallow. McColloch, Hartnell and Company, 1822-1828. *California Historical Quarterly* 7(4):487-506.

Olvera, Augustine
1842 Expidiente No. 135, Misión Vieja. Spanish Archies Microfilm, Vol 7: 546. National Archives and Records Center, Laguna Niguel, CA.

O'Neill, Ynez
1977 Father Serra Plans the Founding of Mission San Juan Capistrano. California Historical Society Quarterly 56 (11):46-51.

Phillips, Roxana, and Stephen R. Van Wormer
1991 *Results of a Monitoring Program for the East Mesa Detention Facility, San Diego California*. Submitted to the San Diego County Department of Public Works by ERCE, San Diego.

Pitt, Leonard
1966 The Decline of the Californios: A Social History of the Spanish-Speaking Californians, 1846-1890. University of California Press, Berkeley.

Praetzellis, Mary, Betty Rivers and Jeanette K. Schulz
1983 Ceramic Marks from Old Sacramento. *California Archaeological Reports* No. 22. Department of Parks and Recreation, Sacramento, CA.

Reynolds. Richard
1980 Encino Roadhouse Complex Animal Remains. In Historical Report on the Encino Roadhouse Complex. Scientific Resource Surveys, Santa Ana.

Roberts, C E
1936 Adobes of Orange County. U.S. Works Project Administration, California. Orange County Series. WPA Research Project No. 3105. Santa Ana, 1936 – 1937

Robinson , William W.
1948 The Old Spanish and Mexican Ranches of Orange County. Union Title Insurance Company, Los Angeles.

Samford, Patricia M.
1997 Responses to Market: Dating English Underglaze Transfer Printed Wares. *Historical Archaeology*, 31 (2):1-30

Semenov, S.A.
1964 Prehistoric Technology. Barnes and Noble, Totowa, NJ.

Sleeper, Jim
1985 Rancho Mission Viejo (A Chronological History). Ms. On file, Rancho Mission Viejo, P. O. Box 9, San Juan Capistrano, CA.

South, Stanley
1977 *Method and Theory in Historical Archaeology*. Academic Press, New York.

Spillman, Jane S.
1980 Written communication to Stephen R. Van Wormer, January 2. (Curator, American Glass, The Corning Museum of Glass, Corning New York.

Stephenson, Terry E.
1936 Forster vs. Pico. *Historical Society of Southern California* 18(1):22-30, 18(2):50-68).

Van Wormer, Stephen R.
1983a Beer, Wine, and Sardines With a Dash of Pepper Sauce: An Analysis of the Glass and Tin Cans of the Encino Roadhouse. *Pacific Coast Archaeological Society Quarterly* 19(1):47-66.

1983b Pio Pico Bottles, Tableware and Domestic Glass. Archaeological Report, Pio Pico Research Project, Vol. II. Scientific Resource Surveys, Huntington Beach, CA.

1991 *Even the Kitchen Sink: Archaeological Investigations of SDi-10258: The 1908 to 1913 San Diego City Dump*. Report prepared for City of San Diego Development and Environmental Planning Division by RECON, San Diego.

1996a *Home Avenue Trunk Sewer(SDI-10,528H) Cultural Resource Mitigation*. Report prepared for City of San Diego Development and Environmental Planning Division by RECON, San Diego.

1996b Revealing Cultural, Status, and Ethnic Differences Through Historic Artifact Analysis. . *Proceedings of the Society For California Archaeology, Volume 9* 1996

Van Wormer, Stephen R. and Jerry Schaefer
1991 *Hardscrabble Ranch: Archaeological Investigations at the Robert Israel Adobe*. Brian F. Mooney Associates, San Diego

Webb, Edith Buckland
1952 *Indian Life at the Old Missions*. University of Nebraska Press, Lincoln (Reprinted 1982).

Wetherbee, Jean
1985 *A Second Look at White Ironstone*. Wallace-Homestead Book Company, Lombard, Illinois.

Wilmsen, E.N.
1974 Lithic Analysis in Paleoanthropolgy. In *Contemporary Archaeology*, M Leone, ed., pp. 195-205. Southern Illinois University Press, Carbondale.

Worthy, Linda H.
1982 Classification and Interpretation of Late Nineteenth- and Early Twentieth-Century Ceramics. In *Archaeology of Urban America: The Search for Patterns and Process*, edited by Roy S. Dickens, Jr. Academic Press, New York.

Yorba, Alfonso
1935a Librito de Notas # 2. Yorba - Conde Collection, on file with David Belardes, Chief – Chairman, Juaneño Indian Band, San Juan Capistrano, CA.

1935b Blue Bird Junior Notebook # 1, 1934 –35. Yorba - Conde Collection, on file with David Belardes, Chief – Chairman, Juaneño Indian Band, San Juan Capistrano, CA.

REPORT OF ARCHAEOLOGICAL TESTING FOR THE RANCH PLAN, PHASE II-B, RANCHO MISSION VIEJO, SOUTH ORANGE COUNTY, CALIFORNIA

By:

Carol R. Demcak, RPA
and
Stephen R. Van Wormer

Of:

Archaeological Resource Management Corporation
3756 Hightide Drive
Rancho Palos Verdes, CA 90275
310/265-7244

For:

Rancho Mission Viejo, LLC
P.O. Box 9
San Juan Capistrano, CA 92693

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REPORT OF ARCHAEOLOGICAL TESTING FOR THE RANCH PLAN, PHASE II-B, RANCHO MISSION VIEJO, SOUTH ORANGE COUNTY, CALIFORNIA

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SECTION A. PREHISTORIC SITES

PART I. BACKGROUND TO THE STUDY

INTRODUCTION

At the request of Laura Coley Eisenberg of Rancho Mission Viejo, LLC, personnel from Archaeological Resource Management Corporation (ARMC) conducted archaeological testing of eight prehistoric sites and two historic sites in south Orange County for the Ranch Plan, Phase II-B. Sites selected for this test phase were determined according to their likelihood of being impacted by the proposed Ranch Plan project or alternatives to the Ranch Plan project. Due to the number of sites to be tested, the test phase was divided and documented separately as Phase II-A (Demcak 2002) and Phase II-B (present volume). The sites are all located on Rancho Mission Viejo. They include the following: CA-ORA-1111, -1125, -1135, -1449, -1551, -1553, -1557, -1573, and historic sites 30-176634, and 30-176635.

The senior author, a Society of Professional Archeologists (SOPA) certified field archaeologist and Registered Professional Archaeologist (RPA), with over 20 years of experience in southern California archaeology, was overall Project Director and supervised the fieldwork on the prehistoric sites. Stephen R. Van Wormer, historian and Society of Professional Archeologists (SOPA) certified field archaeologist, supervised the fieldwork on the two historic sites. Chris Demcak worked on the field crew and prepared the report graphics. Jack Demcak worked on the field crew and assisted in lithic analysis. The fieldwork took place from January 7 – March 14, 2003.

The results are that three prehistoric sites are considered significant, i.e., potentially eligible for the National Register of Historic Places (NRHP): CA-ORA-1125, -1449 and -1551. The two historic sites (30-176634 and 30-176635) were also considered significant.

NATURAL SETTING

The project area (Figure 1) generally consists of Trampas Canyon, Cristianitos Canyon, and upper Gabino Canyon. The foothills that characterize the study area are part of the Santa Ana Mountains and the Peninsular Ranges Province that stretches from the Transverse Ranges through the Los Angeles Basin to the tip of Baja California (Norris and Webb 1976). The climate of the area is Mediterranean type, with dry summers and moist winters. Rainfall averages 10-15 inches annually on the coastal plain and up to 40 inches in the interior mountains (Hornbeck 1983).

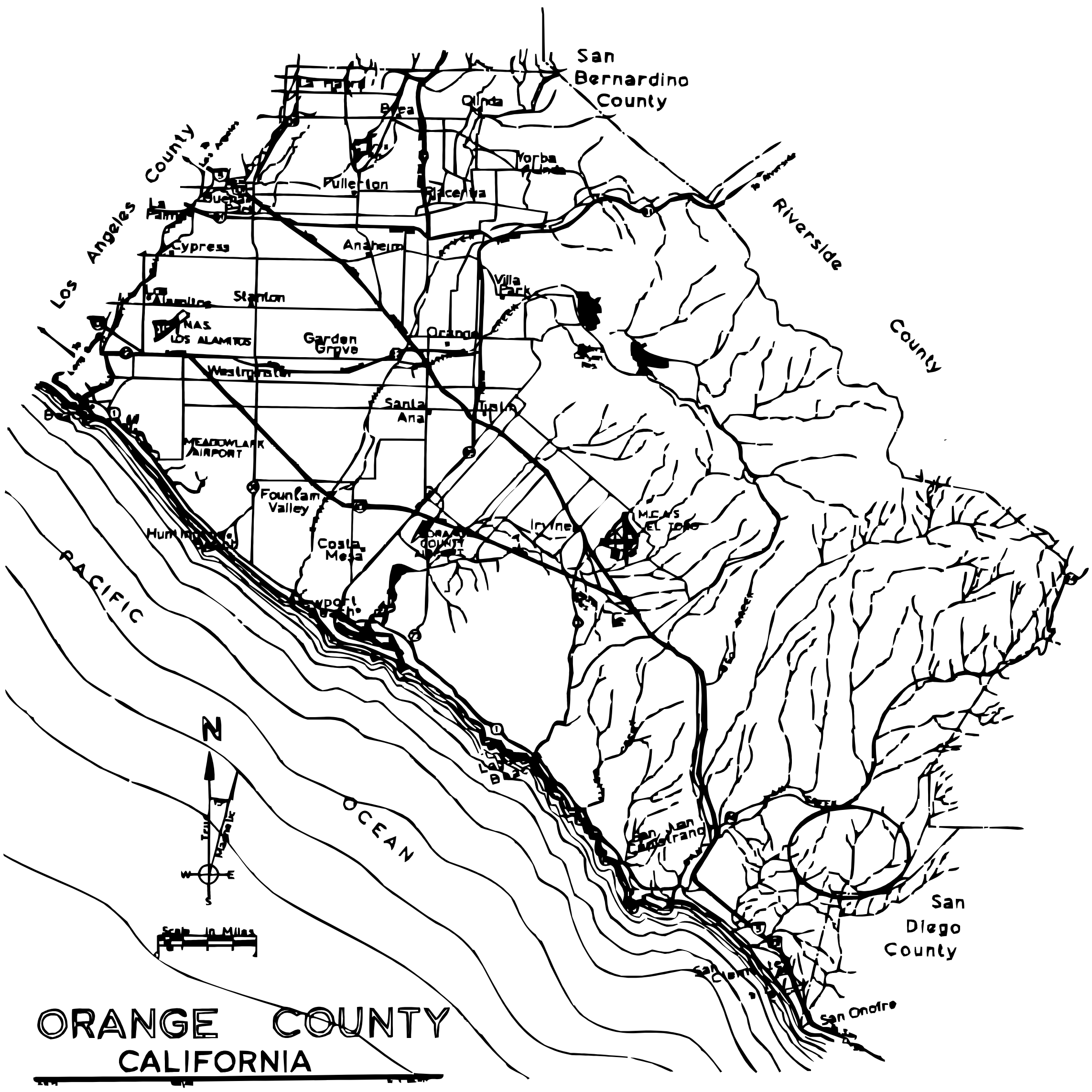


Figure 1. General Project Location.

The project is situated in south Orange County along San Juan Creek and numerous unnamed drainages and their adjacent terraces. Topographically, the study area is characterized by rolling hills, narrow ridgelines, and knolls separated by narrow canyons, localized drainages, and broad watercourses (Orange County Planning Department 1971). Elevations in the project vicinity vary from a low of 160’ in the floodplain of San Juan Creek to a high of 900’ in upper Gabino Canyon.

Geologically, the study area is underlain by marine Upper Cretaceous deposits (Trabuco, Ladd or Williams Formations) and by Tertiary age, marine sedimentary rocks (Morton and Miller 1981), along with Quaternary and recent alluvium. Mapped formations include the marine Upper Cretaceous Ladd and Williams Formations, the marine Paleocene Silverado Formation, the marine Eocene Santiago Formation, the terrestrial Oligocene Sespe/Vaqueros undifferentiated Formation, the marine Middle Miocene Topanga and Monterey Formations, the marine and non-marine Middle Miocene San Onofre Breccia, the Upper Miocene Capistrano Formation, and unnamed Quaternary and recent alluvium. Soils in the study area vary from gray-brown to red-brown clayey loam on the upper terraces and knolls to light tan, sandy silty sediments with abundant cobbles on the creek bottoms and lower terraces.

Lithic raw material derived from these and other formations in the Santa Ana Mountains include the Bedford Canyon metasediments (argillite) and quartzites; the Santiago Peak volcanics (felsite, andesite, and basalt) and metavolcanics; as well as granites, quartz, chert, and chalcedony. These lithics occur as stream float in the local drainages. These raw materials were utilized by aboriginal populations to create chipped and ground stone tools and ornaments.

Five plant communities as defined by Munz and Keck (1959) are present in the project area. These communities (Chaparral, Coastal Sage-scrub, Grassland-herbland, Oak Woodland, and Riparian) would have provided a variety of seasonal plant resources to the prehistoric and early historic inhabitants of the region. For a detailed description of these resources and their uses, see Demcak and Del Chario (1989).

CULTURAL SETTING

<u>Prehistory</u>

Wallace (1955) and Warren (1968) have both proposed syntheses of the local cultural sequence. These summaries continue to be useful in defining the prehistoric period in southern California. The two researchers propose that aboriginal populations remained hunters and gatherers before Spanish contact.

The earliest recognized culture in southern California belongs to the Early Holocene San Dieguito Tradition (Warren 1968), a manifestation of the Western Pluvial Lakes Tradition (Moratto 1984). Defined primarily by its type site, the C.W. Harris Site (CA-SDI-149), typical San Dieguito artifacts include patinated scrapers (side and end types);

scraper planes, choppers; crescentics; large leaf-shaped knives (bifaces) and projectile points. Lake Mohave and Silver Lake stemmed and shouldered point types also are found in these early assemblages. Manos and metates (hard seed grinding equipment), may be absent or are sparsely represented in the San Dieguito Tradition. It is usually characterized as a hunting tradition as opposed to the seed-gathering tradition that succeeded it in coastal and interior southern California. Sites are generally found on elevated terraces above permanent water sources and with little or no cultural deposit subsurface. The San Dieguito Tradition has rarely if ever been documented in Orange County. It is also not reported for the Camp Pendleton area immediately adjacent to the project area (Reddy et al. 2000).

The Milling Stone Horizon, or Encinitas Tradition, is the earliest occupation that has been properly documented for Orange County. Highly mobile populations adapted to a littoral, or coastal, environment during this occupation. Small native groups gathered plant foods, including seeds, tubers, and berries, collected shellfish, and hunted small and large game. They used milling stone and muller, more commonly called metate and mano, to grind seeds. Hunting tools included wide, thick, and heavy projectile points. They were presumably utilized as spear points, based on their weights (Fenenga 1953), and launched by atlatls, or wooden spear-throwers. Cogstones and discoidals, wheel-shaped and disc-shaped ceremonial stones respectively, and red argillite beads (Demcak 1999) are diagnostic artifacts, or time-markers, for this earliest known occupation in Orange County.

During the subsequent Intermediate Horizon, or Campbell Tradition, prehistoric populations expanded their resource base to include more hunting and fishing. The mortar and pestle, tools associated with the processing of acorns and other fleshy plant foods, were introduced into the area. Projectile points remained relatively large and heavy.

In the final prehistoric occupation, the Late Horizon Cultures (Shoshonean and Hokan speakers), local economies expanded markedly. Artifact assemblages reveal an increase in the number and types of tools, reflecting population growth and task specialization. Non-utilitarian items, such as beads and ornaments, were also on the increase in the Late Horizon compared to earlier occupations. Local groups continued to rely primarily upon plants, shellfish, and terrestrial game, which they hunted with small, lightweight arrow points and the bow.

Steatite, obsidian, and other non-local lithic resources were traded into the area. Pottery was introduced into Kumeyaay territory in San Diego County and small quantities reached Orange County in the very late prehistoric period or early historic period. Pestles and portable mortars, especially of the basket-hopper type, and bedrock mortars were utilized locally for acorn processing. Seed grinding continued to be carried out with manos and metates, as well as on bedrock grinding slicks.

Ethnohistory

Ethnographically, the study area falls within the territory of the Juaneño people. The Juaneños were named by their association with the Mission San Juan Capistrano. They are closely related to the Luiseños, who were associated with the Mission San Luis Rey (Bean and Smith 1978; Bean and Shipek 1978). Shoshoneans, they are Takic speakers of the wider Uto-Aztecan family of languages. Uto-Aztecan speakers are presumed to have entered California prior to 2000 B.C. (Moratto 1984:541) and perhaps arrived in the Los Angeles Basin by 1000 B.C. (Kowta 1969:50).

Hunter-gatherers, these Native populations exploited a diverse set of microenvironments from the coast, coastal plain, foothills, Santa Ana Mountains, to the interior valleys of southern California. Their territory is traditionally described as bounded on the north by Gabrielino territory at Aliso Creek. However, David Belardes (pers. comm.), member of the Juaneño Band of Mission Indians, asserts that the northern boundary of Juaneño territory was actually the mouth of the Santa Ana River. Inland, their territory extended to the upper reaches of the Santa Ana Mountains where it adjoined Luiseño territory. Southward, Juaneño territory reportedly extended to the area between the San Onofre and Las Pulgas drainages (Kroeber 1925:636) and westward to the Pacific Ocean.

With the coming of the Spanish in 1769, Native populations were brought into the mission system and forced to adapt to a new social and economic order with drastic consequences for the Natives. Their populations were radically reduced in number and their aboriginal way of life was largely eliminated. Certain populations, among them Juaneños who managed to escape into the interior mountains, were spared the forced acculturation for a short time. Then they too were overwhelmed by Spanish, Mexican, and later American Period developments. Despite considerable hardship, many of their descendents still live and work in the area surrounding the Mission San Juan Capistrano.

The Juaneño Band, or Acjachemem Nation, strives to keep its distinct culture and language from extinction. After decades of struggle for recognition, the band was formally recognized by the California State Legislature in September, 1993 as the "...original native tribe of Orange County" (Hall 1993:A3). Band members continue to seek federal recognition as a tribal unit.

Historical Overview

The arrival of the Portolá Expedition in 1769 marked the first efforts at extending Spanish control into Alta California through the establishment of Catholic missions. This move by the Spanish King Carlos III was intended to protect Pacific Coast shipping against Russian or English occupation of the area. Beginning in San Diego, the padres surveyed the lands as far north as Monterey Bay and secured them for the Spanish

Crown. Mission sites were selected on the way north by Fathers Crespi and Gomez (Hallan-Gibson 1986).

The Portolá party arrived in Orange County on July 22, 1769, at a site in Cristianitos Canyon where two sick children were baptized by the fathers. The following day the travelers camped near the Mission Vieja site (CA-ORA-29) at the mouth of Gobernadora Canyon. The next day the expedition continued northwestward and out of the survey area to the western edge of the Plano Trabuco and camped at the San Francisco Solano campsite at the present location of the Trabuco Adobe. Altogether they stopped at seven campsites (Smith 1965) in what became Orange County.

Missions, presidios, and pueblos were established by the Franciscan fathers, and in 1775, the Mission San Juan Capistrano was begun. Within days, however, a Native American uprising at the mission in San Diego forced the fathers to abandon the local mission, hastily bury its bells, and with the soldiers hurry southward to assist their fellow priests. The fathers returned the following year to re-establish the mission at a different site. There on November 1, 1776, the mission was officially founded. On October 4, 1778, the mission was removed to its present location closer to the Arroyo Trabuco, a dependable water source (Hallan-Gibson 1986). Substantially expanded in 1784, the mission continues in use and is believed to be the oldest building extant in California, according to Friis (1965).

The Native inhabitants were brought under the control of the mission. They were converted to Catholicism and provided the mission with a large labor pool. The padres taught them the necessary skills to grow crops, tend cattle, produce wine, pottery and other crafts. The missions intended to prepare them to look after their own lands, which were held in trust for them. Spanish legislators called for the dissolution of the missions and the transfer of land ownership to the native populations as early as 1813. However, it was not until the Mexican Period that secularization was begun.

At the end of the Mexican Revolution, mission lands were seized and turned over to Mexican citizens of the Catholic faith and of good character. The Mission San Juan Capistrano was the first mission to be secularized in 1834. A pueblo for Native Americans was set up at Mission San Juan Capistrano, but, after years of mismanagement, failed (Dixon 1988; Hallan-Gibson 1986). A town was instead chartered and land became available to petitioners, including the Natives. Eventually, the town itself failed, and the mission was sold by Governor Pio Pico to his brother-in-law John Forster and James McKinley, a trader (Hallan-Gibson 1986). Forster maintained his residence at the mission until he moved his family to the Mission Viejo Adobe (Van Wormer 2002).

The Spanish Crown issued a series of land grants, or grazing rights. The land between the Santa Ana and San Gabriel rivers was given to Manuel Nieto in 1784; this was the first land grant in Orange County. The second, called Rancho Santiago de Santa Ana, went to Juan Grijalva and Jose Yorba, his son-in-law. The grant was confirmed in 1810 to Yorba and Grijalva's grandson (Hallan-Gibson 1986). There followed a period of growth and development as rancheros built adobe homes, ran large herds of cattle and sheep, engaged in foreign trade, and dabbled in politics.

California was drawn into the Mexican-American War in 1846, and Governor Pico fled the oncoming American Army. His son-in-law John Forster, an American sympathizer, tipped off the Union soldiers marching through Orange County that a large contingent of enemy soldiers was on its way. This may have saved their force from defeat by 600 Mexicans (Hallan-Gibson 1986). After the Treaty of Guadalupe Hidalgo ended the war in 1848 and California entered the Union, the land claims of the rancheros were scheduled to be upheld, but subsequent laws required the land owners to prove their claims, requiring considerable time and expense. The courts eventually confirmed most of the land claims in Orange County.

In the American Period, life on the ranchos continued much as before although squatters, rustlers, and mounting debts grew troublesome. Large landholdings were increasingly broken up; towns and settlements grew in number. Mission San Juan Capistrano was returned to the Catholic Church in 1865 when the U.S. Government denied Forster's claim to the property. Forster took his family and moved southward to Rancho Santa Margarita, home of his relatives, the Picos (Hallan-Gibson 1986).

During the 1860s, severe drought, smallpox, and torrential rains alternately took their toll on the large landholders and other settlers in southern California. The cattle market collapsed, land was devalued, and a diversified economy developed. The end of the Civil War brought an impetus to settlement. Land was cheap, and thousands flocked to the Golden West. A real estate boom ensued in the 1880s. The arrival of the Union Pacific, Southern Pacific, and Santa Fe Railroad provided transportation for people and products into and out of California. Sheep ranching became highly profitable due to the scarcity of cotton in the South. Large land grants were partitioned. Development proceeded at a rapid pace through the late nineteenth and early twentieth century. Improvements in transportation and communication contributed to the boom. The citrus industry with its associated bee keeping was one of the most successful enterprises in the area.

In the post-World War II period, southern California has been characterized by expanding urbanization, business and industry. The aerospace industry, movie and television industries, automobile manufacturing, and tourism have spurred local growth and continue to attract visitors and potential residents. The last ranchos have been developed or are in the process of being developed.

<u>Rancho Mission Viejo, or La Paz, and O'Neill Ranch</u>

This large rancho comprising 46,500 acres was granted to Jose Estudillo in 1841. Juan Forster acquired the holding in 1845 after having grazed his cattle there for at least a year. Forster, who played a significant role in the development of southern Orange County and northern San Diego County, was an Englishman by birth but a naturalized

Mexican citizen. He was married to Pio Pico's sister, possessed vast land holdings, and was one of the wealthiest and most influential men of his day. His ranching success was partly due to an increased demand for beef that brought about a cattle boom once the gold rush had begun in 1848.

In 1882, the heirs of Juan Forster, whose land was heavily mortgaged due to various business failures, sold the Rancho Santa Margarita y Las Flores to Richard O'Neill and James C. Flood. Thus began the O'Neill Ranch, which includes the project area (Muñoz 1980).

O'Neill, an Irishman, had come to California and established a successful ranching business and later meat-packing establishment. With his friend Flood, he acquired the Forster property. With various innovations, such as installing feedlots, O'Neill was highly successful and bought more land. The land holding reached its maximum of 260,000 acres under the care of Jerome O'Neill, Richard's son, at the turn of the century (Emmons 1974).

After Jerome's death, the ranch became the property of the Rancho Santa Margarita Corporation in 1926; and the O'Neills' stocks were held in trust. The Floods retained half interest in the corporation and ran the ranch until the 1930s when they sold their share (now Camp Pendleton) and the O'Neills divided their half interest. The land itself remained in trust. In 1943, after Richard O'Neill, Jr., died, an effort by trust officers to sell the property was halted by his widow.

Developers persisted, and in 1964, Mission Viejo Company was formed. The heirs and Richard O'Neill, Jr.'s, widow retained a 20% share of the company. Local development was initiated, and in 1972 the company was sold to the Phillip Morris Company, whose development became the Mission Viejo Planned Community which is nearly complete. Santa Margarita Company launched its first large development, Rancho Santa Margarita, on the upper Plano Trabuco and on the adjacent hills to the south and southeast. Development has continued southward and now includes the Las Flores and Ladera Ranch communities.

The O'Neill family continues to operate Rancho Mission Viejo as it has since 1882. Ranching is still being carried out on the project area except for leased acreage. Herds still roam the hills and cowboys still conduct spring round-ups, repair fence lines, and patrol the range. Working windmills and cattle troughs dot the landscape.

PART II. RESEARCH DESIGN AND FIELD METHODS

RESEARCH QUESTIONS

The project sites were tested to determine their significance, or potential for providing data to answer important questions in prehistory or history. A series of research questions was developed to guide the fieldwork at the sites.

The first set of research questions is directed toward the refinement of the local and regional chronology. The lack of absolute dates available to researchers, when the cultural sequences proposed by Wallace (1955) and Warren (1968) were formulated, has led to problems in recognizing and interpreting the San Dieguito/Milling Stone/Intermediate/Late Prehistoric framework. These sequences can be used as hypotheses open to further refinement and/or alteration.

Basic to all research questions is rigorous temporal control of the data, ideally through chronometric dating. A proper ordering of artifact types, assemblages, sites or cultures in time is the necessary first step in detecting patterning on the intersite and regional levels. Once chronological sequences are delineated, contemporaneity of sites and/or components can be established, thus enabling meaningful comparisons to be made.

The presence of ecofacts, chipped and ground stone artifacts, and midden accumulation at the project sites provided an opportunity to address a number of research questions through the recent field and laboratory investigations. Certain of these research questions focused on chronology. Outlined below are the questions as well as the requisite data to answer them.

<u>Chronology</u>

1. When and for how long were the sites occupied?

To answer this question, it is necessary to date the cultural deposit and to gauge the intensity of use. One of the aims of the current investigation, therefore, was to recover datable materials, such as organics for radiocarbon assay, and obsidian for hydration measurements, in careful stratigraphic context. The recovery of time-sensitive artifacts such as projectile points, beads, ceramics, and discoidals, used to assign relative dates, was also a goal. Depth of the cultural deposit would be suggestive of the length of occupation at the site when coupled with the dated items.

2. Was occupation continuous? or was the site occupied successively?

Cultural hiatuses, or sterile levels, would imply a discontinuous occupation. Careful stratigraphic recording would be sought to recognize occupational strata.

3. How do the project sites relate to other sites within the same time frame? Can the sites provide data to refine the regional syntheses?

A comparison of relative frequencies of artifact types, ecofacts, and site types within the same time frame would add to an understanding of settlement and subsistence patterns as well as to the local and regional cultural/historical framework. Providing absolute dating for specific time markers, such as discoidals, would help to clarify their chronological placement.

4. What is the cultural affiliation of the site/component? Do any of the sites contain evidence of pre-Shoshonean or post-European contact?

Several of the project sites contain flaked tool assemblages that may be related to an Early Holocene cultural pattern, the San Dieguito Tradition. Thus there is considerable potential for the discovery of a pre-Shoshonean occupation in this area. Some of the project sites are located adjacent to or proximate to the ethnographically known coastal-inland trail called El Potrero de los Pinos/San Juan Hot Springs Trail (present-day Ortega Highway, or SR 74) and thus might contain data relevant to an hypothesized inland to coastal migration of Shoshonean peoples in the late period. The project sites are also located in proximity to Mission San Juan Capistrano and to the Portolá Expedition route in Cristianitos Canyon. The possibility of encountering Mission period occupational levels is recognized for the project area.

Subsistence Strategies

The second set of research questions deals with the reconstruction of subsistence strategies, a past lifeway. In other words, how did the occupants of the site make their living? The recovery of ecofactual material as well as the tools used in food procurement and processing would be helpful to address questions of subsistence, such as:

1. What were the food resources utilized by the site occupants? Was there a change over time?

The range and types of ecofacts (shellfish remains, vertebrate faunal bone) present at the site can be quantified and their relative numbers compared through the occupation levels. The environments of exploitation, or site catchment, can be determined from analyses of the recovered species, and non-local resources can be isolated (exchange?). Analyses of tool types, especially plant processing equipment, and their evolution over the span of occupation at the sites can aid in reconstructing past subsistence practices.

2. In which season were the ecofacts procured?

Seasonality studies on shellfish (Chione) and vertebrate fauna, eg. deer, may shed light on the placement of the site within the seasonal round of subsistence and settlement hypothesized by Hudson (1971) for the aboriginal populations in the area.

3. What tool technology is represented by the artifacts? What raw materials were utilized in tool manufacture? Were they locally derived?

Analyses of technology of manufactured items aid in placing the site and its occupants within the local cultural and historical framework and permit the recognition of novelty, or innovation, in tool production within a regional pattern. Raw material analyses enable researchers to determine preferences for particular raw materials; these data in turn lead to questions regarding sourcing of raw materials, such as geological or physical environment of origin, direct procurement versus exchange for non-local materials, crafts production, etc. The presence or absence of patination (accumulation of cortex) may be used to determine relative age of the artifacts as it represents elapsed time since the tool was created or modified.

4. What are the range and types of artifacts represented? Is there a change over the span of occupation, e.g., a trend toward increasing specialization in tool types?

Artifact classes and types can be analyzed for the various levels of the sites and their relative frequencies compared. The presence of specialized tools, such as fishhooks, shaft straighteners, arrowpoints, drills, and awls in the upper site levels would be indicative of this trend.

5. Is there variability in the horizontal or vertical distribution of artifact/ecofacts which would indicate internal site patterning such as activity areas?

Analysis of the spatial positioning of individual species of fauna or possibly flora may permit researchers to hypothesize that particular site areas, either vertically or horizontally delineated, were utilized for specific activities or were utilized alternately over the span of occupation of the site. Similarly the spatial dimensions of the artifact assemblage would inform on specific use areas.

Settlement Patterns

A third set of research questions is directed toward the reconstruction of another past lifeway, settlement patterning. Data recovered from a group of sites rather than from a single site is more amenable to answering questions of a regional nature such as this. These questions are concerned with the definition of site types and the illustration of their relationship to the landscape and to each other, such as:

1. What are the site types represented within the project area? Are they villages/rancherias? base camps? special activity areas?

A recognition of site types can be accomplished by reference to frequencies and types of artifacts present, frequencies of ecofacts relative to artifacts, accumulation of midden, nature of midden deposit (depth; shell, charcoal, fire-affected rocks; features present?), size of artifact/ecofact scatter, presence of internal patterning reflective of village or rancheria, or specialized assemblage reflective of hunting camp or plant processing station.

2. What is the spatial relationship of the sites to each other and to the environment? What were the determinants of site location? Topography? Access to water, plant, animal or mineral resources? Access to lithic raw materials, trails or trade routes? Does site function relate to these determinants?

Analysis of the spatial patterning of the sites in relation to each other can aid in the prediction of locations of additional sites within the project area. Environmental determinants of site location or site type in the area can be hypothesized and tested in future research.

3. During what periods of the year were the sites occupied and/or utilized?

Seasonality studies on fauna or flora may help to pinpoint the season of occupation or utilization, or specific tool types may be indicative of seasonally-available resources, such as acorns.

4. Can a change in settlement patterns over time be detected in the occupational sequence?

Control of chronology through stratigraphic recording and/or dating of ecofacts or obsidian over the span of occupation is critical to an interpretation of change in settlement. Environmental factors (flooding, drought, bay siltation) may contribute to an explanation of a change in settlement.

Social Networking

The fourth set of research questions deals with social networking. The interaction of various groups of Native Americans in prehistory can be detected in the archaeological record by the presence of non-local, or exotic, goods which moved from group to group through exchange networks (Earle and Ericson 1977; Earle 1982). Examples of an exchanged good in southern California are obsidian, fused shale, steatite, asphaltum, and marine shells usually in bead form (Davis 1961). Motivation for such exchange may be sought in the resource base (site catchment) available to site occupants. The proximity of the project area to El Potrero de los Pinos/San Juan Hot Springs Trail and to the Portolá route (El Camino Real) makes exchange issues highly relevant. The following research questions apply to social networking/exchange:

1. What is the local resource base, or catchment, in terms of lithic and other inorganic raw materials, invertebrate and vertebrate fauna, and flora? Are any critical resources (water, salt, lithics, foodstuffs) missing or periodically in short supply?

An analysis of the local environment and its organic and inorganic components will define the effective environment for site occupants. Missing critical resources can be noted and their possible means of procurement suggested.

2. Are non-local resources (obsidian, steatite, shells) present at any of the sites? If so, in what form are the exotic materials found? As finished or partially finished artifacts?

Chipping waste? Unmodified? What are the sources of the non-local materials? How are exotic materials obtained? Through trade? Direct procurement?

Analyses of raw materials of artifacts and ecofacts will allow researchers to determine local versus non-local resources. Sourcing studies of obsidian are easily done and can reveal the geological origin of those lithics; other lithic raw materials (fused shale, various cherts) are not yet amenable to such sourcing. The morphology of the exchanged item (modified or unmodified) may indicate whether it was imported in manufactured form or as raw material. Distance (physical and social) from the source can be analyzed and may provide insights into the method of procurement.

3. Is there a change over time in the amounts and types of exotic materials present? Are non-local materials preferred over local materials for particular artifacts?

Analyses of site components, or occupation levels, may reveal a change in exotic frequencies over time. Analyses of individual artifact types and their raw materials will permit researchers to isolate examples of preferred materials where local alternatives are available. Motivation for such exchange may be rooted in a need for the perpetuation of social networking even where non-essential items are imported.

4. Are the site functions in any way reflective of a trade corridor location? How do the amounts of non-local materials present at the project sites compare to others in the area?

A comparative study of the project sites and other excavated sites in the area or in the region may allow researchers to detect patterns (group to group; trail utilization) in the exchange relations among the local populations in prehistory.

FIELD METHODS

At each of the prehistoric study sites, ARMC crew members carried out field walkover surveys of each site to locate surface artifacts. The crew walked transects, both north-south and east-west, measuring 1-5 meters in width to provide maximum coverage. Artifacts were marked with pin flags. Flag locations were then shot in with a surveyor's transit. The artifacts were then labeled, bagged, and returned to the ARMC lab. Although locations sometimes contained multiple items, each item was later given a unique catalog number.

Based upon the number and kinds of items found on various areas of the sites, locations for test units were chosen. Where no items or few items were found, test units were placed evenly around the sites to provide comprehensive coverage. Only one shovel test pit (STP) was excavated on the project sites. At CA-ORA-1551 the test units had been located in a sticky clay that was very difficult to excavate, and they were still yielding cultural material at 30 cm. An STP, measuring 75-cm in diameter, was excavated to probe deeper into the cultural deposit.

The test units (1x1-meter) and STP (75-cm diameter) were excavated manually. All matrix (soil) was screened through 1/8-inch mesh hardware cloth. Depths of test units varied between 10 and 80 cm below unit datum, averaging 31.25 cm. The STP was excavated to 80 cm. See Table 1 below for excavation summaries. Appendix A-1 contains site maps with locations of surface collection points, test units, and an STP.

Table 1. Excavation Summary for The Ranch Plan Sites, Phase II-B.

SITE No.	TEST UNIT/STP	MAX. DEPTH (cm)	VOLUME (m^3)
ORA-1111	TU 1	0.50	0.30
	TU 2	0.40	0.35
		Total vol.	0.65
ORA-1125	TU 1	0.50	0.50
	TU 1	0.50	0.45
	TU 3	0.50	0.45
	TU 4	0.50	0.45
	TU 5	0.10	0.10
	TU 6	0.10	0.10
		Total vol.	2.15
ORA-1135	TU 1	0.20	0.20
	TU 2	0.10	0.10
		Total vol.	0.30
ORA-1449	TU 1	0.80	0.75
	TU 2	0.80	0.75
	TU 3	0.10	0.10
	TU 4	0.50	0.45
	TU 5	0.20	0.15
	TU 6	0.10	0.10
		Total vol.	2.30
ORA-1551	TU 1	0.30	0.30
	TU 2	0.30	0.30
	STP 1	0.80	0.80
		Total vol.	0.95
ORA-1553	TU 1	0.20	0.20
	TU 2	0.20	0.20
		Total vol.	0.40
ORA-1557	TU 1	0.20	0.15
	TU 2	0.30	0.30
		Total vol.	0.45
ORA-1573	TU 1	0.20	0.15
	TU 2	0.20	0.15
		Total vol.	0.30

PART III. ARTIFACT ANALYSES

Artifacts from the project sites were all lithic (rock) types. ARMC lithic analysts first sorted the artifacts on the basis of morphology, or form, resulting in their being cataloged as flakes, cores, plan-convex tools, perforators, manos, metates, etc. (Formal Analysis). Then the tools were analyzed as to use wear, or inferred function (Functional Analysis). Their use-wear edge angles were measured using a simple template, and the use-wear patterns were observed using a 10x magnifier. The flakes were checked for presence/absence of cortex (rind) to determine reduction stage (primary, secondary, or tertiary), measured using a template (= or <.25, 0.5, 1.0, 2.0, 3.0, 4.0, or 5.0"). The flakes were then analyzed for biface reduction attributes. The results of the two analyses are presented below by individual site. See Appendix A-2 for database files (catalog).

FORMAL ANALYSIS

<u>CA-ORA-1111</u>

Site CA-ORA-1111 produced 19 artifacts. Eighteen were chipped stone, and one was ground stone. Four artifact types were identified. See Table 2 for the artifact inventory for the site.

Table 2. CA-ORA-1111 Artifact Inventory.

ARTIFACT TYPE	FREQUENCY
CHIPPED STONE	
Hammerstones	2
Flakes	15
Flake Tools	1
GROUND STONE	
Ground stone fragments	1
	Total: 19

One of the two hammerstones was a surface find (#4) made of argillite; the second (#19) made of andesite was recovered from TU 2, 30-40 cm level. They are angular rather than cobble form.

The waste flakes (n=15) represent the discards (debitage) in the production of chipped stone tools. Flakes also result from the reshaping of tools or re-sharpening (rejuvenation) of tools that have become dull with use. The 15 flakes were made of quartz (n=8), metavolcanic (n=5) and andesite (n=2). Raw materials were all of local origin. Thirteen of the flakes were recovered from test units; only two came from the surface. Seven (#'s 1, 2, 8, 9, 10, 12, 13, 17) are biface reduction flakes; the remaining eight are core reduction flakes, following Carrico et al. (1991). One may infer biface production and/or rejuvenation (resharpening of the working edge) on site, although no bifaces were recovered.

The flakes from CA-ORA-1111 represent three stages of core reduction. Initial reduction of a core produces primary flakes that have full cortex (surface rind) on their bulbs of percussion. In the intermediate stage, the core is further reduced such that only some of the cortex is still present, resulting in secondary flakes. In the final stage, all cortex has been removed, resulting in tertiary flakes. Fourteen were tertiary flakes and one was a secondary flake; no primary flakes were recovered. The two flake types represent final and intermediate stages of core reduction at the site. The absence of primary flakes indicates that cores, or nuclei of raw material, were partially reduced before being brought to the site.

On the size template seven flakes measured 1", and eight measured 2" in length. Smaller flakes (1" or less) likely represent rejuvenation flakes or thinning flakes. Larger ones (>1") may reflect deliberate flake production or preliminary shaping of a core to produce a core tool, biface, or other tool type.

One argillite flake tool (#5) was recovered from the surface. The tool is highly patinated.

A single ground stone fragment (#3) was recovered from the surface. The granite specimen was fire affected, indicating that it had perhaps formed part of a hearth at one time or had been affected by brush fires, common to the project area.

In addition to the artifacts, three small bone fragments, weathered and unidentifiable, were recovered from the 0-10 cm level of TU 1. They may or may not be cultural and are not helpful in defining site activities.

<u>CA-ORA-1125</u>

This site had been tested earlier (Demcak and Del Chario 1989) for a water pipeline project and yielded two ground stone items and 14 flaked items. A subsequent test (Toren et al. 1997) for the Foothill Transportation Corridor produced 104 flakes, 3 manos, amd a core/hammerstone from a test unit that reached 60 cm in depth. During the current testing, a similar assemblage was recovered. Fifty-eight items were flaked stone, and nine were ground stone. Eight individual types of artifact were identified among the 67 total items. See Table 3 for inventory.

Table 3. CA-ORA-1125 Artifact Inventory.

ARTIFACT TYPE	FREQUENCY
CHIPPED STONE	
Hammerstones	2
Flakes	48
Cores	2
Flake Tools	1
Plano-convex Tools	4
Bifaces	1
GROUND STONE	

Manos	6
Metates	2
Ground Stone Fragment	1
	Total: 67

Forty-eight flakes were recovered from CA-ORA-1125. Forty were recovered from units, and eight came from the surface. The flakes were fashioned from metavolcanic and argillite (n=11 each), quartzite (n=9), and felsite (n=7) primarily. Other raw materials included andesite (n=5), basalt (n=4), and chalcedony (n=1). All are available in the local area. Six were primary flakes, one was secondary, and the majority (n=41) were tertiary flakes. Based on these data, final core reduction was the focus of flaking activities at the site.

The flakes were varied in size: 0.5" (n=2); 1" (n=21); 2" (n=24); and 3" (n=1). Smaller flakes (1" or less) likely represent rejuvenation flakes or thinning flakes. Larger ones (>1") may reflect deliberate flake production or preliminary shaping of a core to produce a core tool, biface, or other tool type. The majority (n=30) of the flakes can be classified as biface reduction flakes, implying biface production or repair on the site; three bifaces were recovered from the site.

Two cores were found on the site. Specimen #6, made of milky quartz, was recovered from the surface. The second core (#51) was made of felsite and came from the 0-10 cm level of TU 3.

An argillite flake tool (#46) was recovered from TU 2, 10-20 cm level. It was patinated.

Four plano-convex tools were recovered. Specimen #12, made of basalt, was a surface find. Three specimens were found in test units: #34 (felsite), TU 1, 30-40 cm; #57 (quartzite), TU 2, 30-40 cm; and #55 (felsite), a patinated specimen, TU 3, 30-40 cm.

The plano-convex tools from CA-ORA-1125 were classified as either high-back or low-back scraper planes (scrapers), based upon their height to basal length ratio, following Kowta's analysis of the Sayles Complex (1969:20-23). Three of the plano-convex tools were classified as high-back scraper planes (type 1; #'s 12, 34, 55), reflecting a ratio of = or >0.5 ratio of height versus maximum basal dimension. Lengths varied between 4.3 and 6.7 cm. Heights were nearly identical, either 3.2 or 3.3 cm (Table 4). Their profiles, while not carefully flaked, tended toward a dome shape. Specimen #'s 12 and 55 were heeled, i.e., exhibited a heel (handhold) of unworked margin opposite the working edge of the tool (type 1H). The fourth specimen (#57) was a low-back type with a maximum basal dimension of 6.7 cm and a height of 2.5 cm, resulting in a relatively flat profile. This tool was also heeled (type 2H).

The plano-convex tools are subtyped based upon basal outline, dorsal configuration, etc. Descriptions of the plano-convex codes are as follows:

Type 1 – High back (height/base = or >0.5) - Figure 4))
- 1H – Heeled (handhold) – Figure 8
- 1K – Keeled (center ridge) - Figure 5)
- 1M – Multiple basal platforms
- 1T – Thumbnail scraper

Type2 – Low back (height/base <0.5)
- 2C – Half cobble w/cortex surrounding worked margin
- 2H – Heeled
- 2I – Irregular platform w/flat dorsal surface – Figure 9
- 2L – Lunate platform outline
- 2M – Multiple platforms
- 2O – Ovoid platform outline
- 2P – Pyramid shaped platform
- 2R – Rectangular shaped platform – Figure 7
- 2T – Teshoa (primary) flake) – Figure 6

Other characteristics of scraper planes, "crude percussion-flaked implements"(Kowta 1969:20), are the following: 1) edge angle approaching 90°; 2) retained cortex on dorsal surface; 3) asymmetrical angularity on dorsal surface, and 4) made predominately of local felsite material (Kowta 1969:20-21). The scraper planes from CA-ORA-1125 generally conform to this pattern; however, edge angles are generally smaller than Kowta's "approaching 90°". The choice of felsite, basalt or metavolcanic for ¾ of the specimens reveals the same strong preference for raw materials of volcanic origin that is found at the Sayles Complex.

Table 4. Plano-convex Tools from CA-ORA-1125.

Catno	Mat.	Type	Basal Dimension (cm)	Height	Height/ Base Ratio	Edge Angle	Wear	Cortex Dorsal Surface
34	Felsite	1	5.8	3.3	0.6	2	N/S/C	No
55	Felsite	1H	7.1	3.9	0.5	3	N/S	Yes
12	Basalt	1H	4.3	3.2	0.7	3	N/S	Yes
57	Quartzite	2H	6.7	2.5	0.4	2	N/S	Yes

One artifact (#56) was classified as a biface. This pebble tool made of andesite shows flake removal around 75% of its margin. Its surface is patinated. One face has been minimally modified. It was recovered from the 30-40 cm level of TU 3.

Six granite manos or fragments were recovered from the site. Three were whole and oval in form, and three were fragmentary and of uncertain form. One (#7) had a unifacial ground surface and one (#16) a trifacial wear/grinding pattern. The remaining manos were all bifacial. Six came from the surface and one came from a test unit, TU 5, 0-10 cm level, essentially a surface find as well. See Table 5 for the attributes of the manos.

Table 5. Manos from CA-ORA-1125.

CatNo.	Mat.	Proven.	Whole/ fragment	Angle	Pecked	Shape
4	Grt.	Surf. #19	F	2		
5	Grt.	Surf. #19	F	2		
7	Grt.	Surf. #10	F	1		
15	Grt.	Surf. #18	W	2	Yes	Oval
16	Grt.	Surf. #17	W	3	Yes	Oval
67	Grt.	TU 5,0-10	W	2	Yes	Oval

Two metate fragments were also recovered from the surface of the site. Both were too incomplete to type (basin or slab). Specimen #1 was made of granite; specimen #17 was made of diorite.

One ground stone fragment (#2) made of granite raw material was recovered from the surface. The item showed fire affects and thus may have been part of a hearth at one time or may have been subjected to intense burning in brush fires, common to the area.

<u>CA-ORA-1135</u>

This small site produced a correspondingly small collection of artifacts in the test phase. Only seven items were recovered: one core, three plano-convex tools, one crude biface, one mano fragment, and one metate fragment. All were surface finds. Both test units were sterile.

The core (#3) was red argillite, what is locally called "red bead material". Red beads are a diagnostic artifact for the Milling Stone Horizon in Orange County (Demcak 1999). The raw material is found in the Sespe Formation and apparently occurs naturally at this location.

Two plano-convex tools were recovered. Both are classified as high-back scraper planes. Item #6 has multiple working platforms (type 1M), and item #2 is heeled (1H). They are crude, percussion-flaked tools. See Table 6.

Table 6. Plano-convex Tools from CA-ORA-1135.

Catno	Mat.	Type	Dimensions (cm)		Height to Basal Ratio	Edge Angle	Wear	Cortex on Dorsal Surf.
			Basal	Height				
2	Felsite	1H	8.7	4.7	0.5	3	N/S	Yes
6	Meta-volc.	1M	5.2	5.4	1.0	4	N/S	No

One crude metavolcanic percussion-flaked bifacial tool (#4) was recovered from the site. It is asymmetrical and thick in cross section.

One granite mano fragment (#5) was also found at the site. It has one ground surface. A fragmentary granite metate, approximately 60% complete, was also recovered from the site. It is a deep basin type and appears to have deliberately destroyed, or “killed”. A roughly circular hole was punched out of its base, effectively rendering it useless. This ritual “killing” accompanies the death of its user/owner, according to local Shoshonean customs.

CA-ORA-1449

A large collection of chipped stone and ground stone items was recovered from the testing of CA-ORA-1449. A total of 165 artifacts included 160 chipped stone and five ground stone artifacts. Ten formal types of artifacts were analyzed. See Table 7 for an artifact summary.

Table 7. CA-ORA-1449 Artifact Inventory.

ARTIFACT TYPE	FREQUENCY
CHIPPED STONE	
Hammerstones	3
Flakes	121
Cores	7
Utilized Flakes	2
Flake Tools	5
Plano-convex Tools	12
Bifaces	7
Amorphous Core Tools	3
GROUND STONE	
Manos	3
Metates	2
	Total: 165

Hammerstones were not numerous at CA-ORA-1449. Only three were recovered, and all were angular, suitable for pecking ground stone and for making and repairing stone tools. Two were surface finds (#’s 45, 49), and one (#124) was found in the 50-60 cm level of TU1 in Feature 1. See Features discussion.

Flakes were the most numerous artifacts and accounted for 121/165 (73.3%) of the total. Andesite, metavolcanic, felsite, and quartzite were the most frequent raw materials, providing 27, 23, 23, and 21 flakes respectively, followed by argillite (n=16), basalt (n=7), chalcedony and quartz (2 each). Forty-five were surface finds; 76 came from test units. Six were primary flakes, 20 secondary flakes, and 95 tertiary flakes.

These data suggest that the terminal stages of core reduction were the focus of flaking on the site. A flake size analysis revealed the following frequencies: 1) 0.25' (n=1); 2) 0.50" (n=22); 3) 1" (n=42), 4) 2" (n=49); 5) 3" (n=6); 6) 5" (n=1). The greater number of smaller flakes (<1") implies that intermediate and final stages of core reduction were predominant at the site, although the full range of reduction is indicated. Roughly half (n=61) appeared to be biface reduction flakes, implying biface production and/or modification at the site.

Seven cores were recovered from the surface. Equal numbers of quartzite, metavolcanic, and argillite (n=2) examples were present. One was made of basalt. Specimen #78 was a multi-platform core.

Two utilized flakes were recovered; both were surface finds. Specimen #31 is made of andesite. Specimen #51 is made of felsite. Both were patinated.

Five flake tools were recovered. Three came from the surface and two from test units. All have been used and retouched. Item #'s 26 and #71 (andesite), as well as #18 (quartzite), were surface finds. Specimen #'s 130 and #151 (felsite) came from the 0-10 cm and 60-70 cm levels respectively of TU 2. Specimens #71 and #130 were patinated.

Twelve plano-convex tools were recovered from CA-ORA-1449. Following Kowta's (1969) typology, six are classified as high-back and six as low-back scraper planes (or scrapers). See Table 8. Seven were from the surface and five from test units. Argillite (n=5), quartzite (n=4), felsite (n=2), and metavolcanic (n=1) were the raw materials of these crude percussion-flaked tools. Eight had cortex present on the dorsal surface, indicative of their being rather minimally shaped for use. Seven had patinated surfaces.

Table 8. Plano-convex Tools from CA-ORA-1449.

Catno	Mat.	Type	Dimensions (cm)		Height to	Edge	Wear	Cortex on Dorsal surf.
			Basal	Height	Basal Ratio	Angle		
60	MVC	2R	7.0	2.5	0.4	2	N/S	Yes
57	ARG	2H	6.7	3.0	0.4	5	N/S	Yes
79	ARG	2	5.9	2.5	0.4	5	N/S	No
70	ARG	1H	5.2	2.4	0.5	4		Yes
58	QTZ	1R	5.4	2.9	0.5	5	N/S	No
67	QTZ	1R	6.0	2.8	0.5	3	N/S	No
35	ARG	1	5.4	2.6	0.5	4	N/S	Yes
131	FEL	2	6.6	2.6	0.4	4	N/S	No
112	FEL	2H	7.2	2.8	0.4	4	N/S	Yes
163	FEL	2H	14.3	5.8	0.4	3	N/S	Yes
113	ARG	1H	5.8	2.9	0.5	5		Yes
159	QTZ	2H	8.1	2.4	0.3	3	N/S/C	Yes

Three amorphous core tools were recovered from the site. Such tools are too non-poorly defined to be assigned to specific tool types. Item #'s 15 (metavolcanic), #20 (quartzite), and #46 (andesite) are minimally utilized cores.

Crude bifacial tools numbered seven at the site. Five were made of felsite, one of quartzite, and one of argillite. Six were surface finds; one (#163) came from the 0-10 cm level of TU 5. Two were utilized and retouched (#'s 56, 64). Four were patinated (#'s 23, 56, 63, 64).

Three manos or fragments were found at the site. Two were on the surface and one in a test unit. One whole mano (#16) and one fragmentary mano (#39) were surface finds. The other whole mano (#155) was recovered from the 70-80 cm level of TU 2 and was part of Feature 1. Sandstone, granite porphyry, and granite were the raw materials of the manos. Both whole manos were bifacial, had been pecked, and were oval in outline. The fragmentary mano was unifacial and had not been pecked. See Table 9 for a summary of the manos from CA-ORA-1449.

Table 9. Manos from CA-ORA-1449.

CATNO	MATERIAL	WHOLE/FRAG.	FACES	PECKED	SHAPE
16	Sandstone	Whole	2	Yes	Oval
39	Granite porphyry	Fragment	1		Oval
155	Granite	Whole	2	Yes	Oval

Two metate fragments were also recovered from the site. Schist item #12, a surface find, was a slab type. Item #125 was a shallow basin type made of granite porphyry. It was recovered from TU 1, 50-60 cm level, as part of Feature 1.

<u>CA-ORA-1551</u>

The overwhelming majority of artifacts from CA-ORA-1551 were chipped stone (213/227, or 93.8%). Only 14 ground stone items were found at the site (see Table 10). The most numerous chipped stone items were flakes (N=116), accounting for roughly half of the total artifacts recovered at the site. In terms of formal tool types, i.e., excluding flakes and cores, plano-convex tools predominated, accounting for 36 of a total of 97 tools.

Only one hammerstone (#146) was found at the site. This result is quite surprising considering the large numbers of flakes, cores, flake and core tools, and grinding tools that were recovered. Hammerstones were used to produce flakes from cobbles, to shape core and flake tools, and to re-roughen grinding surfaces by native stoneworkers. Made of andesite porphyry, the hammerstone fragment was angular in outline.

Table 10. CA-ORA-1551 Artifact Inventory.

ARTIFACT TYPE	FREQUENCY
CHIPPED STONE	
Hammerstones	1
Flakes	117
Cores	15
Utilized Flakes	11
Flake Tools	22
Plano-convex Tools	36
Perforators	2
Projectile Points	3
Bifaces	4
Stemmed Tools	2
GROUND STONE	
Manos	12
Metates	1
Ground Stone Fragment	1
	Total: 227

The 117 flakes were made of nine different raw materials. Volcanics and metavolcanics accounted for 81 flakes (69.8%). Quartzite, argillite, chert, and chalcedony supplied the remaining flakes in order of frequency. See Table 11 for a summary of the flake raw materials. Seventy-eight of the flakes were recovered from the surface, 30 from test units and eight from an STP. Nine were primary flakes, 28 secondary, and 80 tertiary. These data imply that intermediate and final core reduction were the focus of flaking at the site. In terms of size, 57 flakes measured 1" or less in length, 42 flakes measured >1" and >2", and 16 measured >2", the largest being 5" (n=3). This skewing toward the smaller flakes (<1") suggests that indeed final core reduction or tool shaping/sharpening (rejuvenation) was a major task of the stone tool crafters at CA-ORA-1551. The very small flakes (<0.5") attest to fine tool adjustments, more specifically retouching, being carried out there. Sixty-seven of the flakes appear to be biface reduction flakes; thus biface production and/or rejuvenation can be posited as site activities.

Only 17 cores were recovered. Raw materials included the following: felsite (n=7), basalt (n=3), argillite, andesite, and quartzite(2 each), and metavolcanic (n=1). Core #148 was a multi-platform type.

The 11 utilized flakes from CA-ORA-1551 were made of various materials, including argillite (n=5), felsite (n=3), andesite, quartzite, and metavolcanic (1 each). Six had been retouched after use. Only one (#197) came from subsurface, namely the 20-30 cm level of TU 1. One (#2) was made of red argillite, used for red bead making in Orange County. Nine were patinated (#'s 2, 40, 53, 67, 101, 127, 167, 175, 197).

Table 11. Flake Raw Materials from CA-ORA-1551.

RAW MATERIAL	FREQUENCY	PERCENTAGE
Felsite	31	26.7
Metavolcanic	20	17.2
Quartzite	16	13.8
Andesite	16	13.8
Argillite	15	12.1
Basalt	12	10.3
Chalcedony	3	2.6
Chert	2	1.7
Felsite porphyry	2	1.7

Twenty-two flake tools were found at the site. All were used and retouched. Half (n=11) were made of felsite, followed by argillite (n=5), andesite (n=2), quartzite, chert, basalt porphyry, and metavolcanic (1 each). Twenty-one were surface finds; one (#190) came from TU 1, 0-10 cm level. Fourteen were patinated (#'s 10, 24, 27, 37, 76, 83, 95, 104, 118, 130, 158, 168, 169, 170). See Figure 2 for an unusual side scraper (#27) and Figure 3 for three side and end scrapers (#'s 168, 130, 10).

Figure 2. Side Scraper (#27) from CA-ORA-1551.

Figure 3. Side and End Scrapers (#'s 168, 130, 10) from CA-ORA-1551.

Thirty-five plano-convex tools were recovered from CA-ORA-1551. All were surface finds. Ten are classified as high-back (type 1) and 22 as low-back scrapers (type 2). The tools ranged in length from 4.1 to 16.1 cm; heights varied from 1.6 to 6.9 cm. Twenty-seven had retained cortex on the dorsal surface, indicative of the fairly minimal shaping of the tool (Table 12). See Figures 4-9 for examples of these tools.

Table 12. Plano-convex Tools from CA-ORA-1551.

CatNo	Mat.	Type	Dimensions (cm) Basal	Height	Height to Basal Ratio	Edge Angle	Wear	Cortex on Dorsal
59	MVC	1M	4.1	2.5	0.6	3	N/S/C	No
71	FEL	1	6.6	3.4	0.5	3	N/S	Yes
117	MVC	2H	9.0	2.1	0.2	1	N/S	Yes
70	ARG	2H	5.8	2.6	0.4	4	N/S	Yes
60	AND	2H	8.7	1.9	0.2	3	N/S	No
113	BAS	2H	9.4	2.5	0.3	2	N/S	Yes
77	FEL	2H	9.1	3.0	0.3	3	N/S	Yes
128	ARG	1P	6.4	3.1	0.5	4	N/S	No
136	AND	2I	16.1	3.4	0.2	4	N/S	Yes
109	FEL	2I	10.1	3.4	0.3	4	N/S	No
91	FEL	2I	12.0	3.8	0.3	3	N/S	Yes
112	ARG	2R	9.1	2.4	0.3	4	N/S	No
39	ARG	1	8.5	6.0	0.7	3	N/S	Yes
72	AND	2L	8.4	3.1	0.4	2	N/S	No
79	MVC	2R	11.3	3.0	0.3	1	N/S	Yes
85	QTZ	2I	10.2	4.0	0.4	3	N/S	Yes
131	BAS	2I	5.5	2.4	0.4	3	N/S	No

135	QTZ	1	7.8	4.8	0.6	4	N/S	Yes
149	APR	2H	11.7	3.9	0.3	3	N/S	Yes
150	FEL	2H	8.8	3.1	0.4	4	N/S	Yes
152	AND	1	13.9	6.5	0.5	3	N/S	No
173	CHT	1T	3.4	2.3	0.7	4	N/S	No
181	FEL	2R	8.3	2.3	0.3	4	N/S	Yes
176	MVC	2O	8.9	1.9	0.2	4	N/S	Yes
172	APR	1	11.0	6.9	0.6	4	N/S	Yes
184	AND	1H	6.5	3.4	0.5	4	N/S	Yes
13	MVC	2P	7.3	3.1	0.4	3	N/S	Yes
28	AND	2L	9.2	3.5	0.4	3	N/S	No
19	AND	2P	6.3	2.1	0.3	4	NS	Yes
26	AND	2R	6.8	2.7	0.4	4	N/S	No
31	APR	2I	11.3	4.1	0.4	4	N/S	Yes
30	FEL	1K	6.4	4.4	0.7	4	N/S	Yes
36	APR	2T	15.3	3.1	0.2	3	N/S	Yes
47	APR	2T	11.0	2.5	0.2	2	N/S	Yes
137	AND	2O	8.2	2.9	0.4	3	N/S	Yes
43	FEL	2R	9.2	2.3	0.3	4	N/S	No

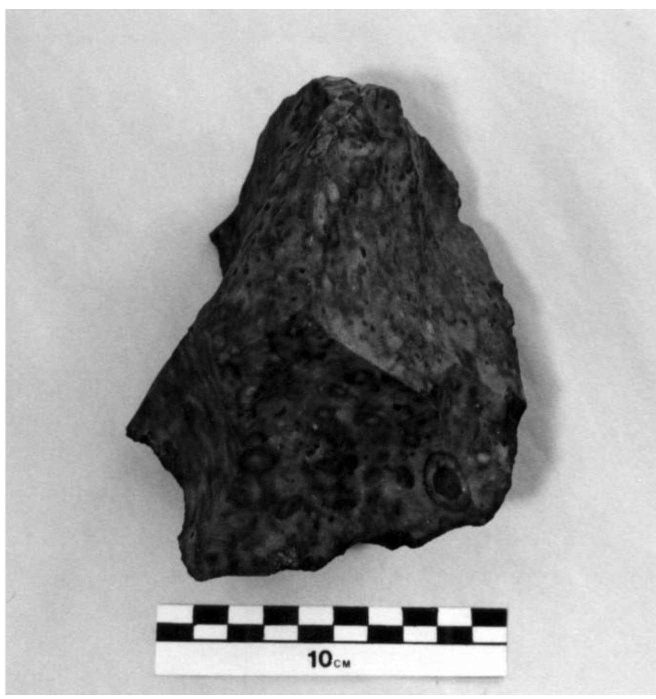


Figure 4. Plano-Convex Tool (#152) from CA-ORA-1551, Type 1.

Figure 5. Plano-Convex Tool (#30) from CA-ORA-1551, Type 1K.

Figure 6. Plano-Convex Tool (#36) from CA-ORA-1551, Type 2T.

Figure 7. Plano-Convex Tools (#43, 137) from CA-ORA-1551, Type 2R.

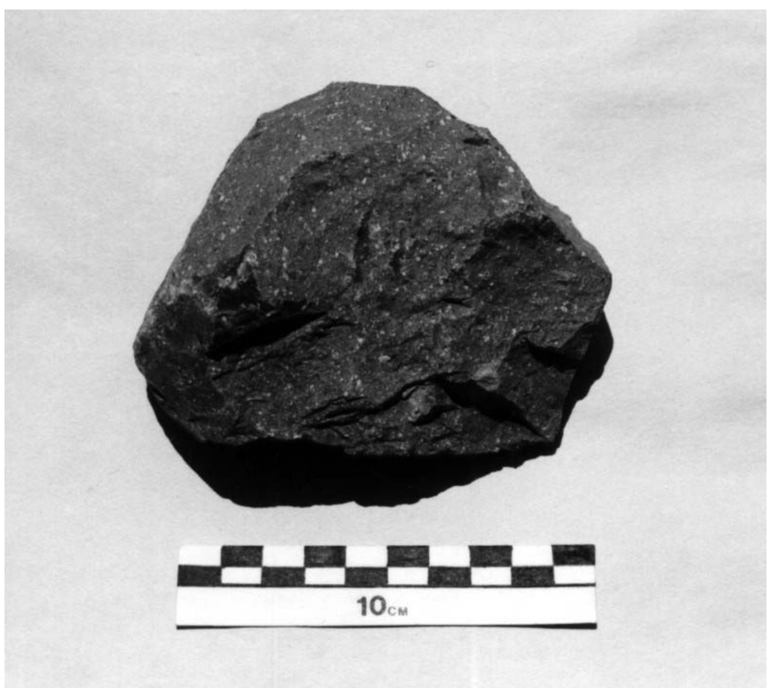


Figure 8. Plano-Convex Tool (#47) from CA-ORA-1551, Type 1H.

Figure 9. Plano-convex Tools from CA-ORA-1551, Type 2I.

Two perforators were recovered from the site. One (#145) is a large primary felsite flake that has been modified to produce a bit, its tip now fractured off. The lunate-shaped margin to either side of the bit may also have a tool function. Perforator #122 is a basalt core fragment that has been flaked to produce a bit, its tip now broken off.

Three artifacts at CA-ORA-1551 have been classified as projectile points. All are foliate dart point fragments that are lenticular in cross-section. Two are preforms; they lack only thinning. The other is a mid-section. All three are patinated. The artifacts are described in Table 13 below. See also Figure 10.

Table 13. Dart Points from CA-ORA-1551.

CATNO	PROVEN.	MAT.	LEN. (cm)	WID. (cm)	THK. (cm)	WT. (g)	REMARKS
92	Surf. #54	Felsite	(5.1)	4.1	1.4	29.9	Preform
132	Surf. #77	Metavolcanic	(5.2)	4.2	1.7	41.5	Preform
185	TU1,0-10	Andesite	(4.9)	3.1	1.0	23.1	Mid-section

Figure 10. Dart Point Fragments (#'s 92, 185, 132) from CA-ORA-1551.

Four bifaces have been identified at the site. All were surface finds. They are unfinished forms. The bifaces are lenticular and thick in cross-section, incompletely reduced in bulk. They represent a stage in manufacturing that lies somewhere between a tool blank and a finished form. They may have been intended as projectile points. All but one were patinated. See Table 14 below for a summary of the bifaces. See also Figure 11.

Table 14. Bifaces from CA-ORA-1551.

CATNO	MATERIAL	LENGTH (cm)	WIDTH (cm)	THICKNESS (cm)	WEIGHT (g)	REMARKS
116	Quartzite	6.3	3.2	1.5	29.0	Foliate knife?
*62	Felsite porphyry	7.1	4.0	2.5	56.4	Bipointed;rough crescent shape
*25	Meta-volcanic	7.1	4.0	2.9	92.5	Ovoid; thinned at base
*49	Meta-volcanic	7.0	4.7	2.8	112.1	Cortex on one face

* Patinated

Figure 11. Biface (#25) from CA-ORA-1551.

Two unifacial stemmed tools have been identified among the chipped stone artifacts. Artifact #84 is made of argillite, is trianguloid in cross-section, unifacial, keeled, and has been stemmed for hafting. The piece is broken at its tip (Figure 12).

Figure 12. Stemmed Tool (#84) from CA-ORA-1551.

The second stemmed tool, also made of argillite (#82; Figure 13), is an ovate form, with extensive flaking of one face, especially at its base where flakes have been removed so that the tool could be hafted. These are unusual tools; only one other site (CA-ORA-1553) produced a stemmed tool during the test phase, and it is considerably larger. Both tools were patinated.

Figure 13. Stemmed Tool (#82) from CA-ORA-1551.

Twelve manos or mano fragments were recovered from the site. All were oval in outline. Eight were whole, and four were mano fragments. Ten were surface finds; two came from units: #186, TU1, 0-10cm, and #205, TU2, 0-10 cm. Ten were made of granite or granite porphyry, and one each of diorite and quartzite. Seven had been pecked to re-roughen the grinding surface or for shaping. See Table 15 for a summary of the manos and fragments.

Table 15. Manos from CA-ORA-1551.

CATNO	MATER.	WHOLE/FRAG.	FACES	PECKED	SECONDARY USE
38	Granite	W	2		
46	Granite	F	2		Poss. pestle
48	Granite	W	2	Yes	

50	Quartzite	W	2	Yes	
54	Granite	W	2	Yes	
103	Granite porphyry	W	2	Yes	
124	Granite	W	2		
133	Granite porphyry	F	1		
162	Granite porphyry	W	2	Yes	
171	Granite porphyry	F	2	Yes	
186	Granite	W	2		Abrader
205	Granite	F	2	Yes	

One metate fragment (#74) was recovered from CA-ORA-1551. Made of granite porphyry, it was a shallow basin type.

One diorite ground stone fragment (#14) was found on the surface at the location of Datum B. It was too incomplete to type.

CA-ORA-1553

Chipped stone artifacts were more numerous (n=48) than ground stone (n=18) at CA-ORA-1553. See summary in Table 16 below.

Two hammerstones, both angular, were surface finds. One (#26) was made of andesite and the second (#32) of felsite porphyry.

Only 11 flakes were recovered from the site. Nine were found on the surface; two came from units: TU 1, 0-10 cm; and TU 2, 0-10 cm. Metavolcanic, quartzite, felsite, and andesite provided two flakes each. Basalt, crystalline quartz, and argillite produced one flake each of the total. Four were secondary flakes, and seven were tertiary; none was primary. Intermediate to final stages of core reduction are implied by these data. Biface reduction flakes numbered four, indicative that some biface production and/or rejuvenation were taking place at the site. Only very small flake of crystalline quartz (0.5”) was present; ten measured 2” or greater. One flake measured 2”, seven measured 3”, one measured 4”, and one measured 5”. These size data indicate that all stages of tool production were taking place, with greater emphasis on the intermediate to final stages.

The crystalline quartz fragment (#55) came from the 0-10 cm level of TU 2. Quartz crystals had magico-religious significance for Shoshonean peoples in prehistory. See Interpretation.

Five cores were recovered. Three were felsite; one was andesite, and one argillite. All were surface finds. Two (#s 10, 33) were multi-platform types.

Eight flake tools were found at the site. All were surface finds. Five were andesite, two argillite, and one metavolcanic. One (#48) had been used and retouched. Five have been classified as side scrapers (#'s 1, 14, 21, 27, 32), two as end scrapers (#'s 25, 48), and one as a side and end scraper (#36). Five were patinated (#'s 1, 14, 21, 25, 36).

Table 16. CA-ORA-1553 Artifact Inventory.

ARTIFACT TYPE	FREQUENCY
CHIPPED STONE	
Hammerstones	2
Flakes	*11
Cores	5
Flake Tools	8
Plano-convex Tools	15
Perforators	3
Core Tool	1
Stemmed Tools	1
GROUND STONE	
Manos	6
Metates	11
Ground Stone Fragment	1
	Total: 64

* Included quartz crystal fragment

Fifteen plano-convex tools were recovered from the site. Ten were made of volcanic or metavolcanic raw material: 5 felsite, 3 argillite, 2 andesite, 2 basalt, 2 metavolcanic, and 1 quartzite. Only one (#54, TU 2, 10-20 cm) came from subsurface. Ten may be classified as high-back scraper planes (type 1), while five are low-back types (type 2). Twelve were patinated (#'s 2, 4, 5, 6, 18, 26, 29, 30, 38, 49, 53, 54). See Table 17 for a summary of the plano-convex tools from CA-ORA-1553.

Table 17. Plano-convex Tools from CA-ORA-1553.

Catno	Mat.	Type	Dimensions (cm)		Height to	Edge	Wear	Cortex on
			Basal	Height	Basal Ratio	Angle		Dorsal surface
4	ARG	1	11.4	6.9	0.6	2	N/S/C	Yes
18	FEL	1H	4.1	3.2	0.8	2	N/S	Yes
26	FEL	1	5.2	2.8	0.5	2	N/S	Yes
30	FEL	1I	5.7	5.0	0.9	2	N/S	Yes
49	BAS	1H	5.4	3.1	0.6	2	N/S	Yes

53	MVC	1H	8.3	5.1	0.6	2	N/S	Yes
2	ARG	1I	12.6	5.3	0.5	3	N/S	Yes
5	FEL	2H	6.2	2.7	0.4	2	N/S	Yes
6	ARG	1H	9.1	4.4	0.5	2	N/S/C	Yes
15	MVC	1H	7.2	3.3	0.5	2	N/S	Yes
23	BAS	2H	11.2	4.0	0.4	2	N/S	Yes
29	FEL	2I	9.4	4.2	0.4	2	N/S	Yes
38	FEL	2H	10.2	3.1	0.3	2	N	Yes
47	QTZ	1H	10.6	5.2	0.5	2	N/S/C	Yes
54	AND	2R	7.7	2.4	0.3	2	N	Yes

Three perforators were surface finds at the site. All have their bits fractured off. Two (#'s 11, 31) are made of felsite. A third (#24) is made of metavolcanic material. Perforator #11 has a narrow bit, perhaps intended for initial piercing of leather for sewing, while the others have wider bits, suggesting their use as reamers to widen a hole already begun.

One basalt porphyry stemmed tool (#7: Figure 14) was recovered from this site. It is large (12.5 x 6.8 x 3.7 cm) and weighs 337.5 grams. It is trapezoidal in cross-section and has been minimally modified on the dorsal face; one large flake and one small flake have been removed. The tool is lightly patinated. The ventral face has been thinned and shaped into an ovate form with a narrower stem/base. This tool gives the impression of a dagger, an adze, or possibly a digging implement. It has no use wear.

Figure 14. Large Stemmed Tool (#7) from CA-ORA-1553.

One core tool (#8) was recovered from the surface. It is a large utilized core fragment made of basalt porphyry. The tool is patinated.

Six manos or mano fragments were recovered from the surface of the site. Three were granite, two diorite, and one andesite porphyry. Four were whole and two fragmentary. One (#52) was end battered, suggesting secondary use as a hammerstone. Two had been pecked to re-roughen a ground surface or to shape the tool. Most were oval in outline. See Table 18 for a summary of the manos from CA-ORA-1553.

Table 18. Manos from CA-ORA-1553.

CATNO	FRAGMENT/ WHOLE	MATERIAL	FACES	PECKED	BATTERED	SHAPE
3	W	Diorite	2	Yes		Oval
22	F	Diorite	1			Oval
45	W	Granite	1			Trianguloidl
46	W	Andesite Porphyry	2	Yes		Oval
50	F	Granite	2			Oval
52	W	Granite	2		Yes	Oval

Thirteen metate fragments representing six individual metates were recovered from the surface of the site. Five (#'s 57–61) were pieces of one slab metate (Figure 15). Four pieces (#'s 39 a,b and 40 c,d) were part of the same incomplete metate. Three complete slab metates (#s 62-64) were also recovered. A final metate fragment (#37) represents yet another metate. See Table 19 for a summary of the metates.

Table 19. Metates from CA-ORA-1553.

CATNO	MATERIAL	FIRED	FRAGMENT/ WHOLE	TYPE	REMARKS
37	Granite		F		Isolate
39	Granite porphyry		F		2 pcs.(a,b); see #40
40	Granite porphyry		F		2 pcs. (c,d); see #39
57-61	Granite porphyry		F	Slab	One metate (5 pcs.)
62	Diorite	Yes	W	Slab	Thick oval
63	Diorite	Yes	W	Slab	Thick oval
64	Granite porphyry		W	Slab	Thick oval

Figure 15. Slab Metate (#'s 57-61) from CA-ORA-1553.

CA-ORA-1557

Chipped stone items were the most numerous at CA-ORA-1557, accounting for 139 of 140 total artifacts. One ground stone item was collected. Table 20 summarizes the recovered artifacts.

Table 20. CA-ORA-1557 Artifact Inventory.

ARTIFACT TYPE	FREQUENCY
CHIPPED STONE	
Flakes	109
Cores	3
Utilized Flakes	7
Flake Tools	7
Plano-convex Tools	10
Projectile Points	1
GROUND STONE	
Metates	1
	Total: 140

Flakes were the most frequent of the chipped stone items (n=109). Metavolcanic, felsite, and argillite provided the most flakes (30, 29, and 25 respectively). Quartzite (n=13), basalt N=6), andesite (n=5), and chert (n=1) rounded out the flake collection. Eighty-eight came from the surface and 21 flakes from test units. Eighty-five were tertiary flakes, 18 secondary flakes, and 6 primary flakes, indicating that intermediate and final core reduction were the primary flaking activities at the site. Fifty-four flakes were apparently biface reduction flakes; from these data, it may be inferred that biface production and/or reduction was occurring at the site. The only biface recovered from the site was a dart point fragment.

Four cores were collected from the surface of the site. Two were made of basalt, and one each of basalt and metavolcanic raw material.

Seven utilized flakes were recovered from CA-ORA-1557. Four came from the surface. Three came from the 0-10 cm level of TU 2. Three were made of argillite, two of andesite, and two of felsite. All had been used and retouched. Six have been classified as side scrapers (#'s 40, 53, 114, 118, 119, 123), and one as an end scraper (#65). All were patinated.

Seven flake tools came from the surface of the site. Three were made of felsite, two of argillite, and one each of basalt and metavolcanic raw material. Six had been used and retouched; one (#43) had no retouch. Three have been classified as end scrapers (#'s 11, 80, 116), two as side scrapers (#'s 38, 43), and two as side and end scrapers (#'s 33, 39). All were patinated.

Ten plano-convex tools were collected at the site. Eight were surface finds; two came from the 0-10 level of TU 1. Four metavolcanic, three felsite, two andesite, and one argillite plano-convex tool were found. Eight of the tools were typed as high-back (type 1) scraper planes; height to basal ratios varied from 0.5 to 0.7. Two were classified as low-back scrapers (type 2). Eight exhibited cortex on their dorsal surface, an indication of their being incompletely shaped. All of the plano-convex tools were patinated. See Table 21 for a summary of these tools.

Table 21. Plano-convex Tools from CA-ORA-1557.

SiteNo	Catno	Type	Dimensions (cm) Basal	Height	Height to Basal Ratio	Edge Angle	Wear	Cortex on Dorsal
1557	1	1H	7.8	4.4	0.6	4	N/S/C	No
1557	5	1H	7.3	3.9	0.5	4	N/S	Yes
1557	6	1H	7.1	4.3	0.6	3	N/S	Yes
1557	9	1	9.1	4.7	0.5	3	N/S	Yes
1557	19	1K	5.2	3.4	0.7	4		No
1557	108	1H	9.5	6.3	0.7	4	N/S	Yes
1557	115	1H	6.7	3.7	0.6	3	N/S	Yes
1557	4	2C	9.7	4.0	0.4	4	N/S	Yes
1557	92	2M	7.9	3.1	0.4	4	N/S	Yes
1557	117	1	7.2	3.5	0.5	3	N/S	Yes

An andesite perforator (#25) was recovered from the surface of the site. It has been shaped to form an elongate bit, its tip now blunted (Figure 16). The fairly wide bit suggests use as a reamer, or hole enlarger.

Figure 16. Perforator (#25) from CA-ORA-1557.

One projectile point fragment (#25; Figure 17) was recovered from the surface at CA-ORA-1557. It is the tip and part of the mid-section of a dart point made of metavolcanic raw material. The fragment measures (5.8) x (3.2) x 1.0 cm. The leaf-shaped specimen weighs 20.5 grams. It has been percussion flaked around both margins. The flaking on both faces is fairly random in pattern. The piece is lenticular in cross-section. Its general sloping toward a missing base suggests that it is more than half complete. The finished point may have measured as much as 8 or 9 cm total. One can only imagine its base.

In shape, size, and weight this dart point fragment resembles the illustrated large points from the C.W. Harris site (Moratto 1984:98).

Figure 17. Dart Point Fragment from CA-ORA-1557.

The single ground stone item recovered from the site was a whole granite metate (#1). It is an oval slab type. It was a surface find.

CA-ORA-1573

Only eight items were collected from this small lithic scatter. Six were flakes, two felsite and four andesite. Five were secondary flakes and one a tertiary flake, indicative of intermediate and final core reduction at the site. Flake sizes included four 3" and 2 4" flakes. Such large flakes generally reflect initial flake removal in tool preparation. Three were biface reduction flakes, pointing to some biface production and/or rejuvenation at the site.

Only two formal tools were found at the site. One was a felsite flake tool (#6) that had been retouched. A single plano-convex tool (#4) also was recovered. The item had a basal length of 9.1 cm and a height o 5.3 cm, resulting in a height to length ratio of 0.6. Thus is it classified as a type 1 (high-back) scraper plane. Cortex on its dorsal surface suggests that the tool was minimally shaped. Both tools were patinated.

PART IV. FUNCTIONAL ANALYSIS

In addition to formal traits, ARMC's lithic analysis included functional analysis of the tool types found at the sites. They are discussed below by individual site.

CA-ORA-1111

Both hammerstones exhibited crushing wear, indicative of work on hard surfaces (see Table 22 below).

Table 22. Edge Modification and Inferred Function.

MODIFICATION	INFERRED FUNCTION	SOURCE
Nibbling (N)	Transverse action from scraping, shaving, and planing	Tringham et al. (1974)
Crushing (C)	Work on hard materials, eg. antler or bone	Tringham et al. (1974)
Stepflaking (S)	Work on hard materials, eg. antler, bone, and wood; Bone working and wood working	Tringham et al. (1974) Ahler (1971)

One flake tool (#5) had been used and then retouched (re-sharpened) for additional use. This tool had an edge angle of 45° and both nibbling and stepflaking as wear patterns. Fine cutting, butchering, and whittling may be inferred for this edge angle. Nibbling may indicate scraping, planing, or generally work on softer materials. Stepflaking implies work on harder, more resistant materials such as bone or wood. See Table 23 for the inferred function of use wear angles.

Table 23. Edge Angle and Inferred Function.

ANGLE (code)	INFERRED FUNCTION	SOURCE
30° (1)	Fine cutting Butchering	Wilmsen (1974) Hester et al. (1976)
45° (2)	Whittling	Semenov (1964)
60° (3)	Skinning, hide scraping, and heavy cutting	Wilmsen (1974)
75° (4)	Wood working, bone working	Wilmsen (1974)
90° (5)	Plant pulping, fiber preparation	Kowta (1969)

CA-ORA-1125

One argillite flake tool (#46) was recovered from the 10-20 cm level of TU 2. The tool had been used and retouched. Its edge angle measured 60°, and it exhibited nibbling and stepflaking. These data suggest use in processing meat, hides, and perhaps bone and wood.

The edge angles of the plano-convex tools measured between 45 and 60° (Table 4). All four specimens revealed nibbling and stepflaking; one (#34) also revealed crushing wear. These massive core tools were reportedly used by Native populations to scrape hides, process Agave sp. pads into food and fiber, and perhaps for woodworking (Hester and Heizer 1972; Castetter et al. 1938). The edge angles and wear patterns suggest that the plano-convex tools from CA-ORA-1125 could have served all of the above functions.

The biface (#56) revealed crushing wear, indicative of work on an unyielding surface, such as bone or wood. It may have been used as a hammerstone.

One mano (#67) showed battering wear on its end. This may be evidence that the tool also served as a hammerstone.

CA-ORA-1135

The two plano-convex tools recovered from the site exhibited nibbling and stepflaking, indicative of scraping, shaving, planing, and use on hard materials like wood and bone. The 60° angle is associated with skinning, hide scraping, and heavy cutting; the 75° angle suggests use in wood or bone working. The two sets of data reinforce one another.

A simple bifacial tool (#4) from the site showed nibbling, stepflaking, and crushing wear as well as retouch. It was apparently an all-purpose tool, used for fine and heavy cutting, scraping, and for processing bone and wood, and then reused after resharpening.

CA-ORA-1449

The hammerstones from the site showed crushing wear around their angular margins. This wear is consistent with use on hard materials, such as bone, wood, and stone.

Flake tools (Table 24) from this site show use wear in the form of nibbling and stepflaking, indicating their use in processing game animals (meat, sinew, bone, antlers) and wood. Edge angles range from 30 to 75°, allowing for fine cutting, whittling, heavy cutting, and processing of bone and wood. Both sets of data suggest that the tools saw multiple use.

Table 24. Flake Tools from CA-ORA-1449.

Catno	Mat.	Type	Edge Angle	Wear
31	AND	Utiliz. Flake	2	N/S
130	FEL	Flake Tool	4	N/S
71	AND	Flake Tool	3	N/S
26	AND	Flake Tool	2	N/S
51	FEL	Utiliz. Flake	1	N/S
18	QTZ	Flake Tool	2	N/S

Plano-convex tools from CA-ORA-1449 showed nibbling and stepflaking; these patterns result from use in scraping, planning, shaving, and heavy cutting. The angles ranged from 30 - 90°. These angles would permit light and heavy cutting, wood and bone working.

<u>CA-ORA-1551</u>

One hammerstone, displaying crushing wear, was recovered from the site. This pattern appears when a stone tool makes repeated contact with hard materials, such as bone, antler, wood, or stone.

The utilized flakes and flake tools from CA-ORA-1551 (Table 25) display edge angles from 30 to 75°, allowing for their use in a wide range of activities, including fine cutting (meat, sinew), heavy cutting, and processing of wood and bone. The use wear included nibbling, indicative of scraping, planing, or shaving. Some tools exhibited stepflaking, implying use on hard materials. Some tools revealed crushing wear, suggestive of wood and bone working.

Table 25. Utilized Flakes and Flake Tools from CA-ORA-1551.

Catno	Mat.	Type	Edge Angle	Wear 1/ Wear 2
53	ARG	Util. Flake	2	N
175	FEL	Util. Flake	2	N
197	QTZ	Util. Flake	3	N
67	ARG	Util. Flake	2	N
127	ARG	Util. Flake	2	N
138	MVC	Util. Flake	1	N
101	ARG	Util. Flake	2	N
167	AND	Util. Flake	4	N/S/C
107	FEL	Util. Flake	2	N
40	FEL	Util. Flake	3	N
2	ARG	Util. Flake	1	N

168	ARG	Flake Tool	3	N
169	ARG	Flake Tool	2	N
158	AND	Flake Tool	3	N
170	FEL	Flake Tool	1	N
180	FEL	Flake Tool	4	N
27	FEL	Flake Tool	2	N
118	ARG	Flake Tool	3	N/C
24	FEL	Flake Tool	3	N
95	FEL	Flake Tool	2	N
104	FEL	Flake Tool	1	N
83	ARG	Flake Tool	2	N
110	MVC	Flake Tool	1	N
56	ARG	Flake Tool	2	N
37	AND	Flake Tool	2	N
108	BPR	Flake Tool	4	N/S
141	CHT	Flake Tool	2	N
10	FEL	Flake Tool	3	N
76	FEL	Flake Tool	2	N
130	FEL	Flake Tool	2	N/S
68	ARG	Flake Tool	3	N/C
9	MVC	Flake Tool	3	N

CA-ORA-1553

Two hammerstones showed crushing wear, consistent with use on hard materials, such as bone, wood, or stone.

The flake tools (Table 26) showed nibbling wear, consistent with shaving, planning, and scraping. Edge angles ranged from 30 - 60°; these angles lend themselves to fine and heavy cutting, i.e., processing of meat, sinew, hides, wood, or bone.

Table 26. Flake Tools from CA-ORA-1553.

Catno	Mat.	Type	Edge Angle	Wear
1		Flake Tool	2	N
14		Flake Tool	2	N
21		Flake Tool	2	N
25		Flake Tool	1	N
27		Flake Tool	3	N
32		Flake Tool	1	N
36		Flake Tool	3	N
48		Flake Tool	2	N

The plano-convex tools reveal nibbling, stepflaking, and crushing wear, consistent with use in scraping, shaving, and planing, and in the processing of wood or bone. The edge angles range from 45 - 60°, allowing for wood working, bone working, skinning, hide scraping, and heavy cutting.

CA-ORA-1557

Utilized flakes and flake tools (Table 27) displayed nibbling and stepflaking use wear, consistent with meat, hide, bone, and wood processing. The edge angles of these tools ranged from 30 - 75°, suggesting their use in fine cutting, butchering, whittling, skinning, hide scraping, and heavy cutting.

Table 27. Utilized Flakes and Flake Tools from CA-ORA-1557.

Catno	Mat.	Type	Edge Angle	Wear
40	FEL	Util. Flake	1	N/S
119	ARG	Util. Flake	3	N/S
53	FEL	Util. Flake	1	N/S
123	ARG	Util. Flake	1	N
118	AND	Util. Flake	4	N/S
65	AND	Util. Flake	2	N/S
114	AND	Util. Flake	1	N/S
11	BAS	Flake Tool	1	N/S
43	FEL	Flake Tool	3	N/S
106	FEL	Flake Tool	1	N/S
33	ARG	Flake Tool	2	N/S
39	FEL	Flake Tool	1	N/S
38	MVC	Flake Tool	2	N/S
80	ARG	Flake Tool	2	N/S

The plano-convex tools from the site displayed nibbling and stepflaking, indicative of their use in fine and heavy cutting, wood and bone working. Their angles ranged from 45 - 60°, suggesting their use in skinning, hide scraping, heavy cutting, wood and bone working.

CA-ORA-1573

The flake tool and the plano-convex tool displayed nibbling and stepflaking, suggesting r their use in fine and heavy cutting, wood and bone working. The edge angle of the flake tool was 60°, implying heavy cutting, and 75° for the plano-convex tool, implying wood or bone working.

PART V. FEATURES

Only one of the tested sites produced features. Two features were recorded at CA-ORA-1449. All feature items were mapped in plan view and their depths were measured upon removal.

Feature 1 in TU 2 (Figure18) occurred in the 70-80 cm level. Two cobbles and one mano fragment were mapped in situ. The cobbles were unaltered. The mano, a grinding hand stone, informs on hard seed processing at the site. This feature represents a gender-specific (women's) activity location on site.

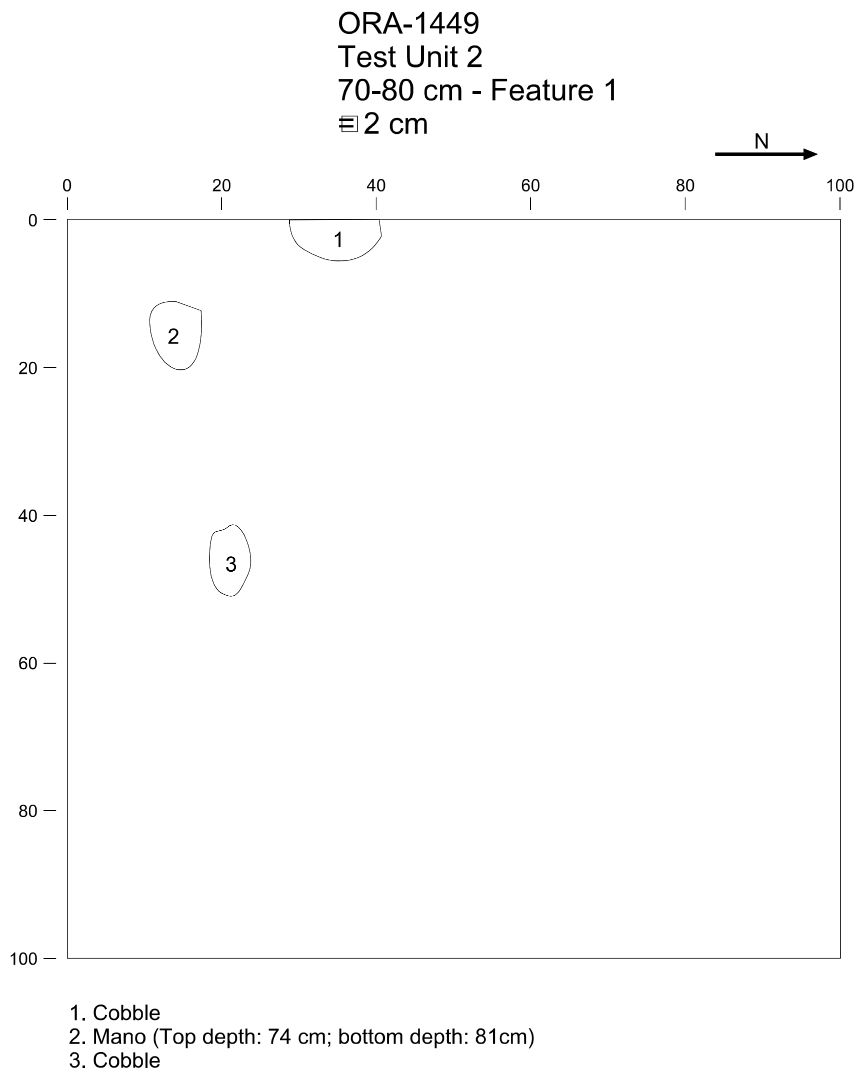
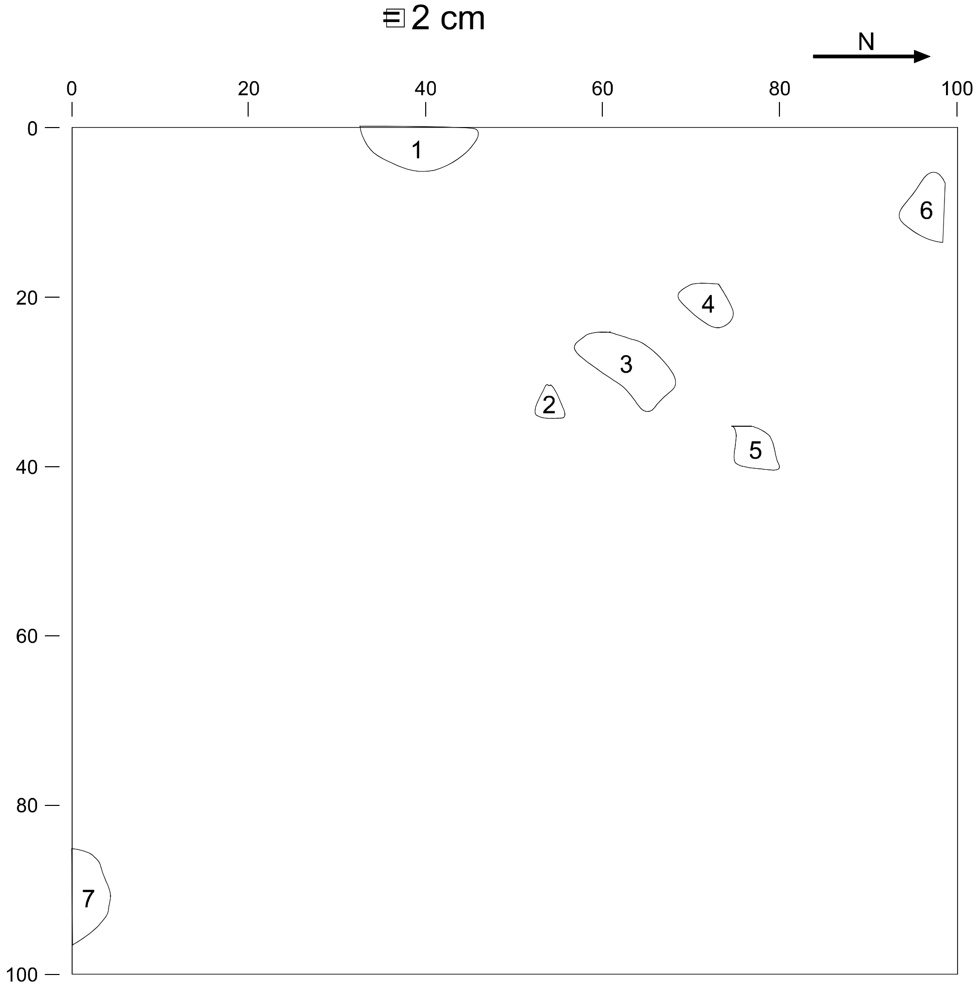


Figure 18. CA-ORA-1449, Test Unit 2, Feature 1, 70-80 cm.

Feature 1 in TU 1 (Figure 19) was uncovered in the 50-60 cm level of the unit. Mapped items included five cobbles, a metate fragment (#125), and a hammerstone (#124). The cobbles were not modified or fire affected; their function is unknown. The two artifacts suggest that hard seeds were being ground at this location (metate) and that the grinding surface needed re-roughening (hammerstone). This would have been a gender-specific work area. Women traditionally carried out grinding tasks.

ORA-1449
Test Unit 1
50-60 cm - Feature 1
2 cm



1. Cobble (Top depth:60 cm; bottom depth: 68 cm)
2. Cobble (Top depth: 61 cm; bottom depth: 65 cm)
3. Metate Fragment (Top depth: 51 cm; bottom depth: 60 cm)
4. Hammerstone (Top depth: 62 cm; bottom depth: 66 cm)
5. Cobble (Top depth: 61 cm; bottom depth: 73 cm)
6. Cobble (Top depth: 60 cm; bottom depth: 66cm)
7. Cobble (Top depth: 59 cm; bottom depth: 63 cm)

Figure 19. CA-ORA-1449, Test Unit 1, Feature 1, 50-60 cm.

PART VI. STRATIGRAPHY

Most of the units in this test phase were too shallow to record stratigraphic levels or none could be detected on the unit walls. Two sites had readable stratigraphy.

<u>CA-ORA-1125</u>

Test Unit 4 (Figure 20) reached 60 cm in depth before becoming culturally sterile. The upper stratum was a compact sandy, silty alluvial deposit, yellow brown on the Munsell chart (10YR 3/4). The middle stratum was a dark reddish brown (5YR 2.5/2) sandy, sillty alluvium that was less compact than the upper stratum, containing more sand. The lower stratum was a brown or pale brown in color (10YR 5.5/3). It was a sterile clay.

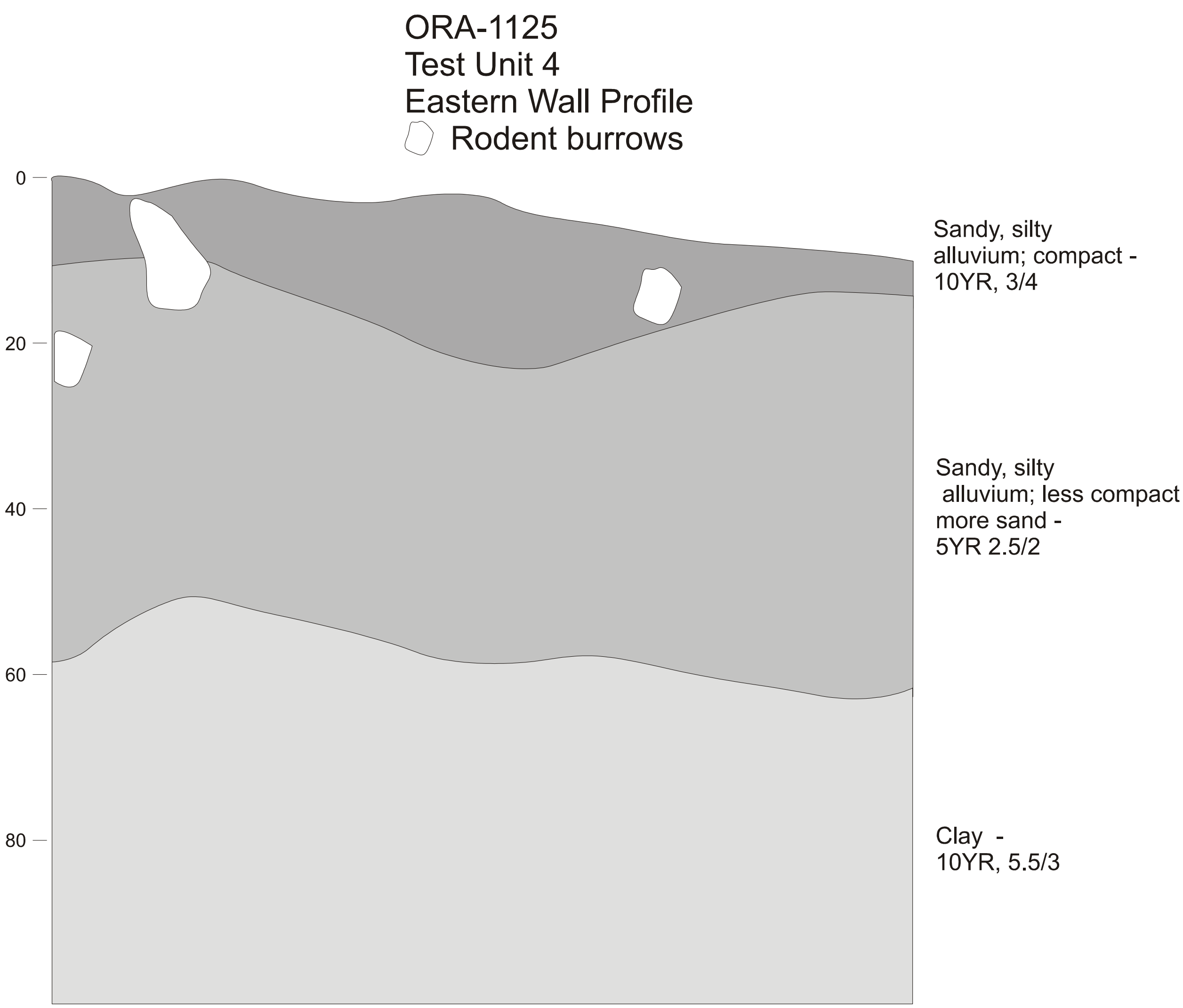


Figure 20. CA-ORA-1125, Test Unit 4, Eastern Wall Profile (0-60 cm).

CA-ORA-1449

Test Unit 1 (Figure 21) reached 80 cm in depth. The upper stratum was a brown/dark brown (10YR 4.5/3) sandy alluvium with silt and gravel. The soil was dry and compact. The lower stratum was a pale brown (10YR 6/3) clay with gravel and occasional cobbles that was culturally sterile.

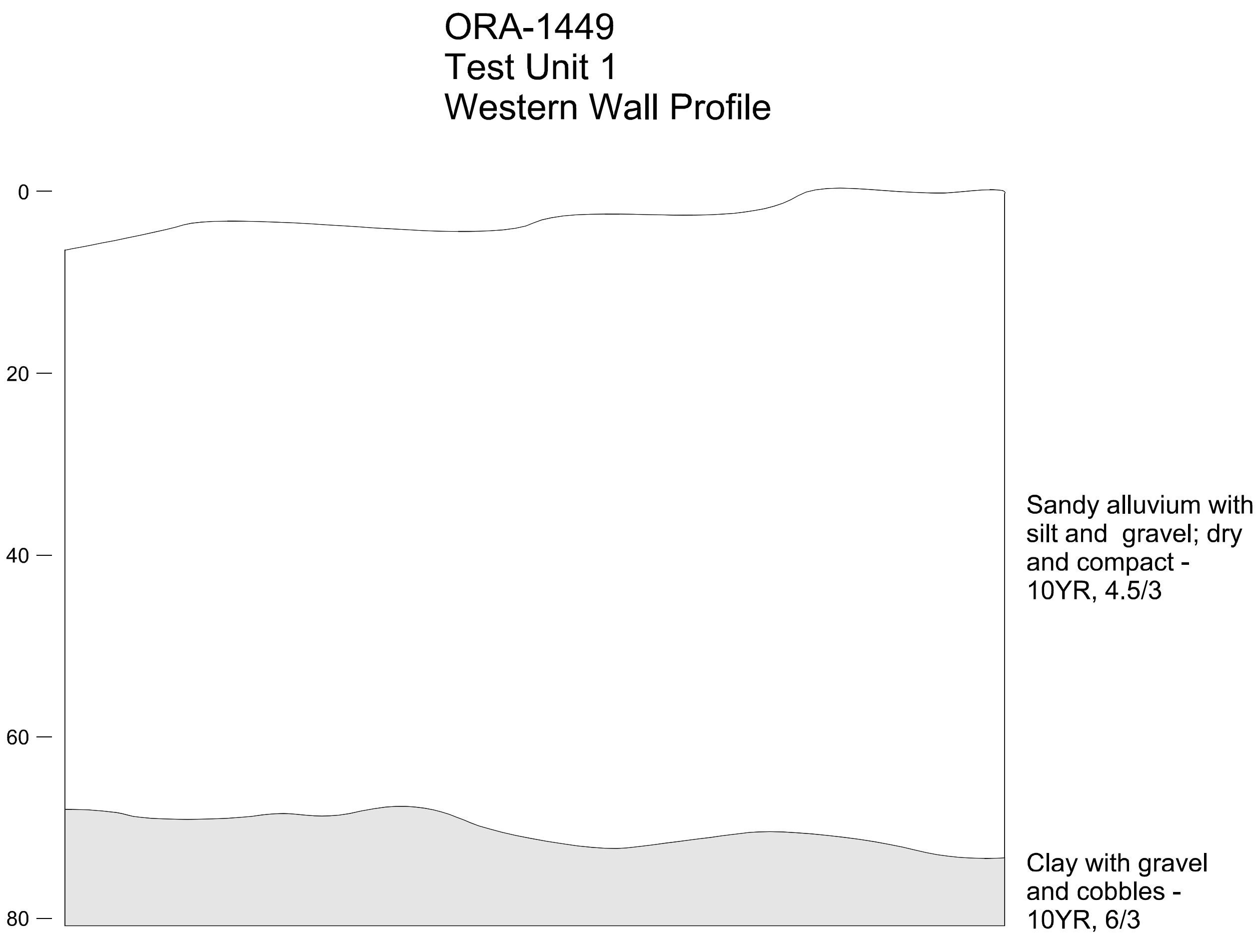


Figure 21. CA-ORA-1449, Test Unit 1, Western Wall Profile (0-80 cm.)

Test Unit 4 (Figure 22) at CA-ORA-1449 reached 60 cm below datum. An overburden of soil scraped from the adjacent dirt road was draped over the unit and was removed without screening the material. The upper stratum, a dark yellowish brown (10YR 4/3) root zone, was the first cultural layer. The middle stratum was a very dark grayish brown (10YR 3/2) clay. The lower stratum was a white (10YR 8/2) deposit (diatomaceous earth) that was culturally sterile.

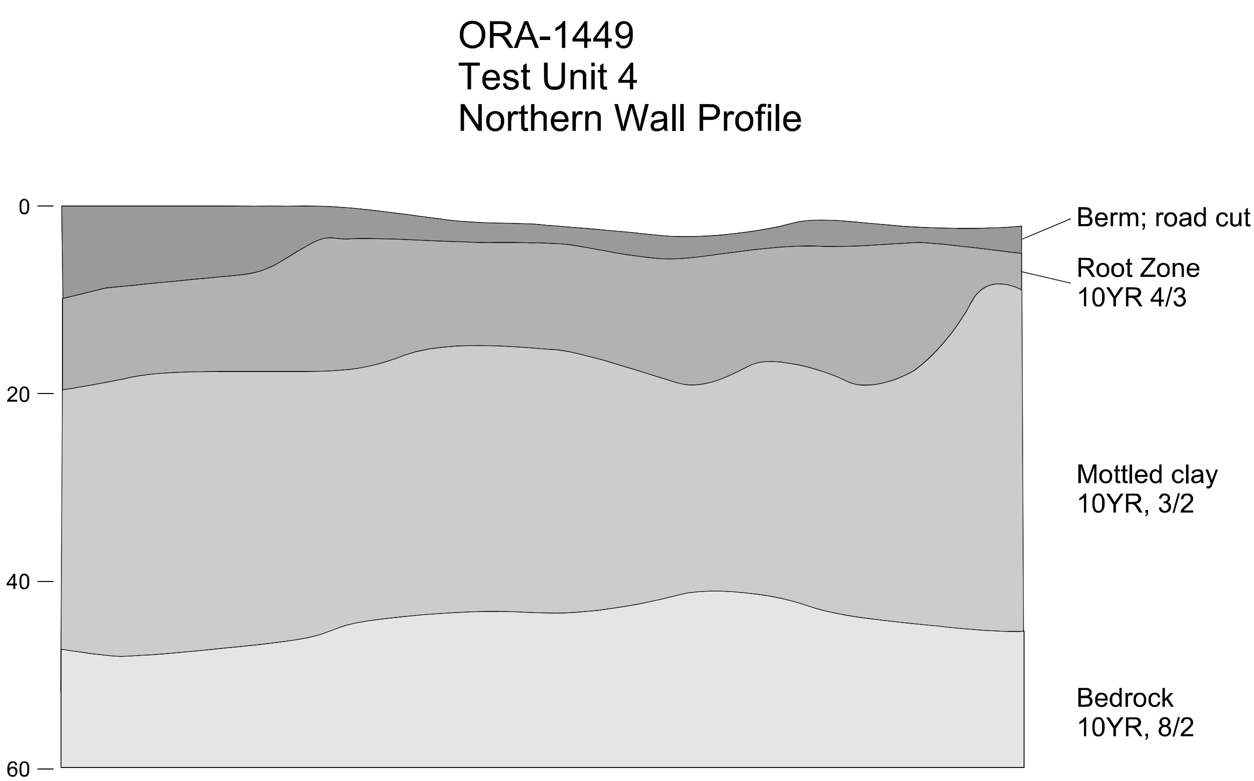


Figure 22. CA-ORA-1449, Test Unit 4, Northern Wall Profile (0-60 cm).

PART VII. SPATIAL ANALYSIS

The study of intra-site patterning can inform on activity areas within sites, or internal living and working arrangements. For this project three sites have sufficient internal differentiation to warrant spatial analysis: CA-ORA-1125, CA-ORA-1449, and CA-ORA-1551.

CA-ORA-1125

This scatter of lithic artifacts had two distinct patterns. The southernmost part of the site featured exclusively chipped stone items, while the north/northwestern portion of the site featured ground stone items. This pattern would appear to be gender based. Women were the ground stone users among local Shoshonean populations in prehistory. The chipped stone items represent largely male tasks (tool making and repairing).

CA-ORA-1449

This site consists of a long, discontinuous scatter of artifacts. On the northwestern edge of the site (Locus A), facing toward Cristianitos Creek, the site displays considerable depth (max. 80 cm) and complexity. Two features with ground stone artifacts were uncovered; these would appear to be gender-specific work areas where women ground hard seeds. Two crude bifaces, two core tools, a slab metate fragment, and flakes are found in the central site area (Locus B), reflecting a mixed working area where grinding, plant and animal processing would have taken place and involving both men and women. The southernmost scatter (Locus C) has an emphasis on scraper planes, accounting for 7/10 of the total, and crude bifaces, accounting for 7/9 of the total recovered. Such tools are useful for a variety of tasks, including the processing of plants into fiber, butchering game, and cutting of bone or wood. These tasks would be largely undertaken by males (butchering, bone or wood cutting, for example), so this locus is male-activity dominated. See Figure 23 for a site map delineating the three loci.

CA-ORA-1551

At this site ground stone items (10/12 total) were concentrated in the southeastern site area. Other tools were also concentrated there, including scraper planes, flake tools, bifaces, and projectile points. Apparently male and female tasks were performed side by side; we lack sufficient data on the time(s) of occupation to determine whether the gender-based tasks did or did not overlap in space and time.

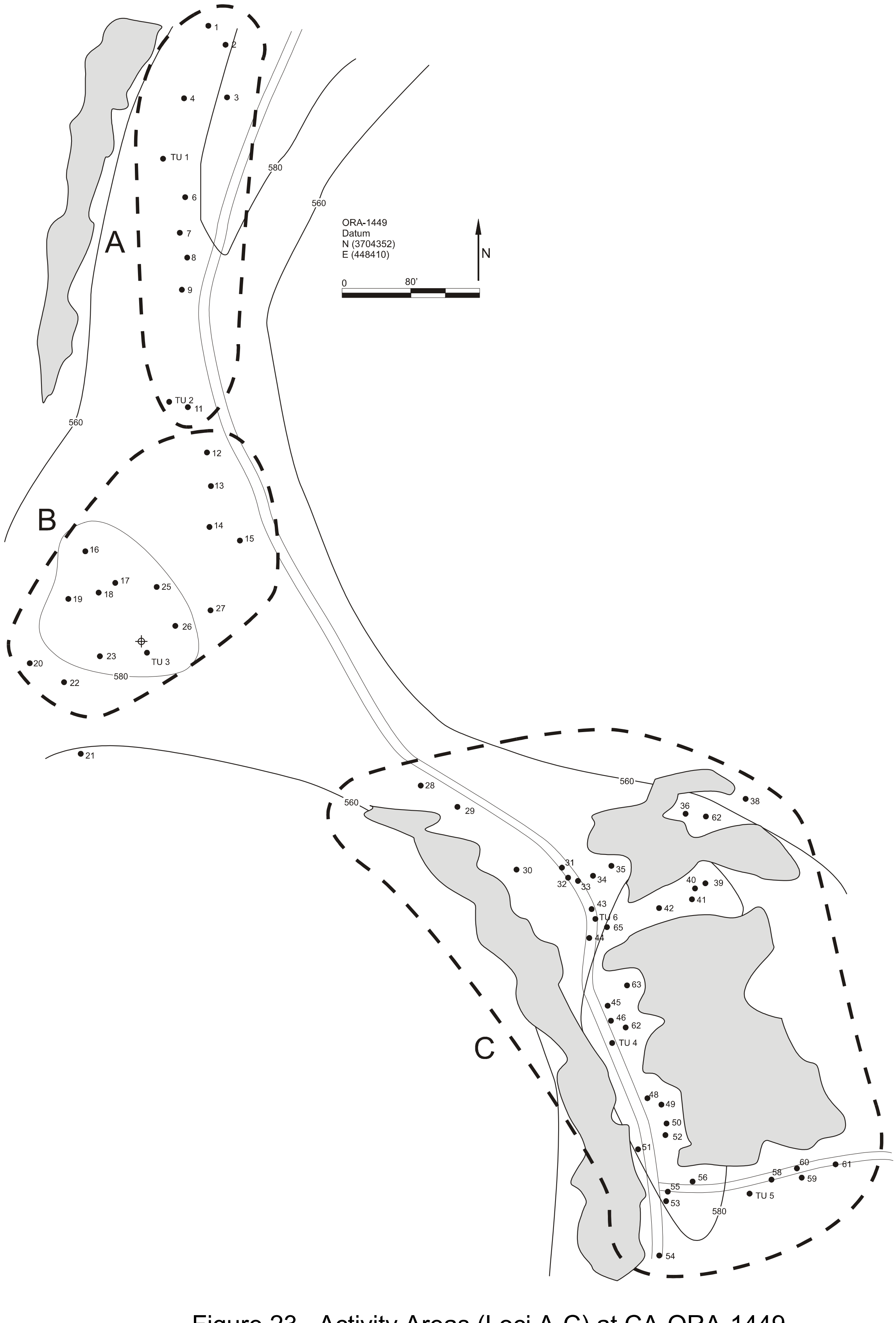


Figure 23. Activity Areas (Loci A-C) at CA-ORA-1449.

PART VIII. INTERPRETATION

CHRONOLOGY

None of the The Ranch Plan, Phase II-B sites contained organic materials (charcoal, shellfish, bone, etc.) that could be used for radiometric dating. Thus no absolute dates are yet available for these sites.

Relative dating is provided by certain diagnostic artifacts and assemblages. CA-ORA-1125 had earlier produced a discoidal (Jones 1991) that is diagnostic of the Milling Stone Horizon. Four sites exhibited flaked tool assemblages, including projectile points, scraper planes, bifaces, and various scrapers, that represent a very early occupation in Orange County. A majority of the flake tools were made of felsite or other volcanics (andesite, basalt, metavolcanic). Felsite is the raw material generally used for San Dieguito artifacts (Koerper et al. 1991:56). The tools from the project sites reveal high percentages (55 - 75% or greater) of patination on their exposed surfaces. "Patination, that is chemical alteration, on certain stone tools, is a result of surface exposure of San Dieguito artifacts, and the degree of alteration can be used as a rough dating technique." according to Malcolm Rogers and paraphrased in Carrico et al. (1991:3-3). See Rogers (1939:19-20) for further discussion on patination. The flaked tool assemblage, material types and their patination are diagnostic of the San Dieguito Tradition (Rogers 1939; Moratto 1984; Koerper et al. 1991; Reddy et al. 2000), a manifestation of the Western Pluvial Lakes Tradition (Moratto 1984:90-103).

CA-ORA-1449

This extensive scatter of primarily flaked stone artifacts (160/165, or 96.9%) is related to the San Dieguito Tradition. The flaked tools include two utilized flakes, neither patinated, but both volcanics. Among the flake tools 2/5 (40%) were patinated, and 4/5 (90%) were volcanics). Out of 12 scraper planes, 7/12 (58.3%) were patinated, while 3/12 (25%) were volcanics). Three core tools were all patinated, and two (67%) were volcanics. A total of 4/7 (57.1%) of the bifaces were patinated, while 5 (71.4%) were made of volcanics. The total number of patinated flake tools was16/29 (55.2%), and volcanic raw materials accounted for 16/29, or 55.2% of the total flaked tools at the site.

This site also had considerable depth, a maximum of 80 cm below datum. The depth itself is evidence of an occupation of long duration or of intensive use over a shorter term. Milling equipment (mano and metate) was recovered from among the deepest levels of TU 1 and TU 2, 70-80 and 50-60 cm respectively. It would appear that grinding of hard seeds was a part of this assemblage from the earliest occupation of the site. Milling stones were originally thought to be absent from San Dieguito Tradition sites (Rogers 1939; Warren 1967) although they are known to occur (True 1958:262; Ezell 1983; Gallegos 1991).

CA-ORA-1551

At CA-ORA-1551 a flaked stone assemblage included three dart point fragments. Two were performs (#92, patinated felsite; #132, metavolcanic), and one (#185) was a finished specimen made of andesite. Unfortunately it is a mid-section only. The piece is complete enough to determine that it is foliate in form, relatively thin (0.1 cm), and lenticular in cross-section. It has been percussion flaked in a somewhat random pattern. It surface is highly patinated. It resembles the foliate points or knives from the San Dieguito component at the C.W. Harris site (SDI-149) and foliate points “A” and “D” from Lake Mojave (Moratto 1984:94, 98). All appear to be percussion flaked only and have random flaking patterns. The Western Pluvial Lakes Tradition, to which these two assemblages are assigned, is estimated to have begun circa 10,000 years B.P. (before present) and to have terminated circa 7,000 years B.P. (Moratto 1984:103).

The assemblage at CA-ORA-1551 was dominated by flaked stone items, such as scraper planes, scrapers, etc., accounting for 93.8% of the total. Flaked tools included 36 scraper planes 32 (88.8%) of which were patinated. Felsite or other volcanics accounted for 19/36 (52.7%) of the scraper planes. Both stemmed tools were patinated. A total of 20/33 (60.6%) of the utilized flakes and flake tools were patinated; 18/33 (54.5%) were made of felsite or other volcanics. A total of 3/4 (75%) of the bifaces were patinated and made of felsite or other volcanics. Overall 59/78 (75.6%) of the flaked tools at CA-ORA-1551 were patinated, and 43/78 (55.1%) were made of volcanics.. Not only is the patination evidence of considerable age, but the material types and the assemblage itself are diagnostic of the San Dieguito Tradition (Moratto 1984; Rogers 1939; Reddy et al. 2000; Carrico et al. 1991; Gallegos 1991).

CA-ORA-1553

The assemblage at CA-ORA-1553 was dominated by flaked stone items, such as scraper planes, scrapers, etc., accounting for 46/64 (71.8%) of the total. Flaked tools included 36 scraper planes, 32 (88.8%) of which were patinated. Felsite or other volcanics accounted for 19/36 (52.7%) of the scraper planes. Both stemmed tools were patinated. A total of 20/33 (60.6%) of the utilized flakes and flake tools were patinated; 18/33 (54.5%) were made of felsite or other volcanics. A total of 3/4 (75%) of the bifaces were patinated and made of felsite or other volcanics. Overall 59/78 (75.6%) of the flaked tools at CA-ORA-1551 were patinated, and 43/78 (55.1%) were made of volcanics.. Not only is the patination evidence of considerable age, but the material types and the assemblage itself are diagnostic of the San Dieguito Tradition (Moratto 1984; Rogers 1939; Reddy et al. 2000; Carrico et al. 1991; Gallegos 1991).

CA-ORA-1557

A single metavolcanic dart point tip (#82) was recovered from the surface of the site. It is a tip and partial mid-section of a foliate point, and like the CA-ORA-1551 dart point fragment, it is percussion flaked, relatively thin (0.1 cm), and lenticular in cross-section. This point fragment also resembles the Lake Mojave points and points/knives from the C.W. Harris site (Moratto 1984:94, 98). The flaking is roughly transverse parallel but nearly random. This point may also date to the Western Pluvial Lakes Tradition circa 10,000 – 7,000 B.P.

The assemblage at CA-ORA-1557 was dominated by flaked stone items, such as scraper planes, scrapers, etc., accounting for 96% of the total. Flaked tools included 10 scraper planes, all of which were patinated, and 9/10 (90%) were volcanics. Of the utilized flakes and flake tools all were patinated, and 8/14 (57.1%) were made of volcanics. Not only is the patination evidence of considerable age, but the raw materials and assemblage are diagnostic of the San Dieguito Tradition (Moratto 1984; Rogers 1939; Reddy et al. 2000; Carrico et al. 1991; Gallegos 1991).

SUBSISTENCE AND SETTLEMENT PATTERNS

The data from the test phase established that the inhabitants of the project sites were hunter-gatherers with varying degrees of sedentism. Some of the sites served as residential bases (hamlets or villages) where generalized subsistence and maintenance activities took place. Others were temporary camps where limited or specialized activities were carried out. Because only relative dating is available and the sites do not have good stratigraphic controls, any attempt to establish contemporaneity of the sites should be viewed as hypothetical in nature and amenable to further research. The sites will be treated as groups by canyon.

Upper Gabino Canyon

CA-ORA-1551 is a large scatter (10,500 m^2) is the southernmost of the project sites in upper Gabino Canyon. Based upon the artifacts and their use wear, this site experienced a wide range of activities: hunting with atlatl (dart point); hard seed processing (metate); chipped stone tool manufacture (flakes, cores, hammerstone) including biface production and/or rejuvenation; light and heavy cutting, bone and wood working (utilized flakes, flake and core tools); and yucca pulping and fiber processing, wood and bone working, hide processing (plano-convex tools), and leather working (perforators as reamers). The cultural deposit reached at least 80 cm (max. excavated) suggesting a long-term occupation. The site most likely served as a residential base camp. Whether it was occupied year-round cannot be determined from the current data. Hunting equipment implies fall-winter occupation generally. Grinding equipment may imply spring-summer occupation. No ecofacts were recovered for more fine-gained seasonality studies to be undertaken.

CA-ORA-1557 is a medium-sized (2,100 $m^{2)}$ to the north of CA-ORA-1551. It also experienced a wide range of activities, based on the artifacts recovered and the use wear they demonstrated: hunting with atlatl (dart point); hard seed processing (metate); chipped stone tool manufacture (flakes and cores) including biface production and/or rejuvenation; light and heavy cutting, bone and wood working (utilized flakes, flake and core tools); and yucca pulping and fiber processing, wood and bone working, hide processing (plano-convex tools). The cultural deposit was shallow (max. 30 cm). The slight accumulation of cultural deposit, coupled with the relatively small number of artifacts at the site, suggests that this site functioned as a temporary camp, perhaps a satellite camp of CA-ORA-1551. The site may have served as a seasonal camp that was utilized in the fall-winter periods to hunt game and exploit late-maturing plant resources. Stone tool making and repairing may have been carried out at other times during the year.

CA-ORA-1553 is the northernmost of the project sites in Gabino Canyon. This medium-sized (1,500 m^2) scatter of artifacts, although principally flaked stone, included the greatest percentage of ground stone items (18/64, or 28.1%) of any of the project sites. This site appears to have been used extensively for hard seed processing when compared with the other sites in the canyon. Other subsistence and maintenance site activities implied by the flaked stone assemblage were stone tool making and repairing (flakes, cores, hammerstones); biface production or re-sharpening (biface reduction flakes); fine and heavy cutting (flake tools); leather working (perforators as reamers); and possibly hand to hand combat (stemmed tool resembling a dagger). In addition, a quartz crystal fragment hints at ceremonial activities. Quartz crystals were artifacts of magico-religious significance among Shoshonean peoples in southern California prehistory.

CA-ORA-1135 was a small scatter (400 m^2) of a few flaked stone items (scraper planes, core, and biface), a mano and a partial deep basin metate, ritually “killed”, or destroyed at the time of the user’s death. The site was so minimal that it must have been utilized rarely, perhaps only a season. It would be classified as a temporary camp where some hard seed processing took place, along with perhaps some hide processing, wood or bone working. A ceremonial function (“killing” of the metate) was also carried out there; perhaps the site was a particular favorite of the metate user.

<u>Cristianitos/Trampas Canyon</u>

CA-ORA-1573 was the southernmost project site, located in Talega Canyon near the border with Camp Pendleton. This small scatter (300 m^2) of flaked stone artifacts (mostly waste flakes) included evidence of chipped stone tool manufacture (flakes), some light cutting or scraping (flake tool), and perhaps yucca pulping and fiber processing or hide scraping (plano-convex tool). There was minimal midden accumulation (max. 20 cm), so the site was either used intermittently or non-intensively. The range of activities suggests the site served as a temporary camp, perhaps occupied seasonally for stone tool making, as well as animal and plant procurement and processing. It may have been associated with a nearby village, or base camp.

CA-ORA-1449 is a large site (32,300 $m^{2)}$with a diverse set of activities represented by its assemblage: chipped stone tool manufacture and repair (flakes, cores, hammerstone); re-roughening of grinding surfaces (angular hammerstones); seed processing (manos and metates); light and heavy cutting, bone and wood working (utilized flakes, flake and core tools); yucca pulping and fiber processing, wood working, and hide processing (plano-convex tools). This wide range of activities suggests that the site was a residential base, or village. The cultural deposit at the site reached 80 cm. Two features were recorded in TU 1 and TU 2, each having a milling implement recovered at considerable depth. The site also displays spatially discrete work areas for men and women. The site may have been occupied year round, used for procuring fruits, seeds, roots, tubers, and berries through spring and summer. Hunting and harvesting of late-season plant resources could have been carried out into fall and winter.

CA-ORA-1125 was a large site (18,000 m^2) whose deposit consisted of predominantly flaked stone items with a discrete deposit of ground stone items on its northern end, thus revealing gender-specific work areas on site. Activities carried out at the site included flake tool manufacture and repair, biface production and/or rejuvenation (flakes, cores, hammerstones; biface reduction flakes), some light scraping or cutting (flake tool); bone or wood working, hide scraping, fiber processing (plano-convex tools); and hard seed processing (manos and metates). The cultural deposit lay as deep as 60 cm at the site, demonstrating a considerable accumulation of occupational debris. The range of artifacts, the spatial patterning of the site, and the depth of the deposit suggest that CA-ORA-1125 functioned as a base camp where generalized subsistence and maintenance activities took place over many years.

CA-ORA-1111 was a very small scatter of flakes, a flake tool, and a ground stone fragment. A few fragments of weathered small mammal bone were recovered from the 0-10 cm level of TU 1. This must have been a temporary camp where some tool making, grinding of hard seeds, and perhaps some cutting or scraping took place, but for a brief period, perhaps only a day or two.

PART IX. SIGNIFICANCE

The prehistoric sites in the study were tested for significance, or potential eligibility for the National Register of Historic Places (NRHP). The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet at least one of the following criteria:

A) They are associated with events that have made a significant contribution to the broad patterns of our history; or

B) They are associated with the lives of persons significant in our past; or

C) They embody the distinctive characteristics of a type, period or method of construction, or that represents the work of a master, or that possesses high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction; or

D) They have yielded, or are likely to yield, information important in prehistory or history.

Three of the project sites possess a high degree of integrity of location and qualify under Criterion D: CA-ORA-1125, CA-ORA-1449, and CA-ORA-1551. They have yielded or are likely to yield information important in prehistory. Two might otherwise potentially qualify but their research potential was exhausted with the test phase: CA-ORA-1553 and CA-ORA-1557. Three sites are not considered significant: CA-ORA-1111, -1135, and -1573. They are minimal surface sites and lack research potential.

CA-ORA-1125

This is a large site with a cultural deposit reaching 60 cm. The site has experienced some disturbance over time due to agricultural use (grazing) and the cutting of a ranch road, now paved, through its western edge. In addition a water pipeline was installed east of the roadbed but outside the barbed-wire fence that bounds the site on the west. The site is largely intact; the main deposit (maximum depth) of the site was not affected by the road and pipeline.

The range of subsistence and maintenance tools and tasks implied by those tools suggest that this site functioned as a residential base, or habitation site. Although the assemblage is predominantly flaked stone, a few grinding stones have been recovered. During the recent testing, the ground stone items were recovered in a discrete location on site, suggesting a gender-specific work area on the northern end.

The discoidal recovered from pipeline monitoring at CA-ORA-1125 suggests that the site also served a ceremonial function. Discoidals are believed to have been used in a game whereby two players threw poles at one of the stone discs rolling down a course and attempted to induce the stone to come to rest in the fork of one of the poles (Moriarty and Broms 1971). All games played in prehistoric North America were primarily ceremonial. Culin (1907), after lengthy research into the games of these early peoples, concluded that behind the games and ceremonies there existed some widespread myth that served as the impulse for both. He maintained that the "…games appear to be being played ceremonially, as pleasing to the gods, with the object of securing fertility, causing rain, giving and prolonging life, expelling demons, or curing sickness ." (Culin 1907:34). Discoidals are diagnostic of the Milling Stone Horizon (La Jolla Tradition) in Orange County.

The degree of integrity, depth of the deposit, presence of a diagnostic artifact, and the range of activities and tasks indicated by the assemblage argue for this site's potential NRHP eligibility. It possesses data (artifacts and depth) to answer important research questions in prehistory (chronology, subsistence and settlement patterns, intra-site patterning, relationship with the older assemblages in Cristianitos Canyon and Gabino Canyon). Its position astride the Portolá route (El Camino Real) provides the possibility of finding Mission Period artifacts at this site as well.

<u>CA-ORA-1449</u>

This is a large and complex site with a cultural deposit reaching 80 cm. The site has experienced minimal disturbance over time. A dirt ranch road runs across the ridgeline of the site, and cows graze there. Otherwise it is intact.

The range of tools and tasks implied by those tools suggest that this site functioned as a residential base, or habitation site. Although the assemblage is predominantly flaked stone, a few grinding stones were recovered in a discrete location on site (Locus A). Features involving grinding stones were also uncovered on Locus A. A gender-specific activity area was thus defined for the site. Similarly a male-task oriented area was defined in Locus C.

The overall assemblage with its strong emphasis on flaked stone is diagnostic of the San Dieguito Tradition (Western Pluvial Lakes Tradition) dating to circa 10,000 – 7,000 years B.P. The majority of the flake tools from the site was patinated (55%) and made of locally quarried volcanics (chiefly felsite) and metavolcanics (55%). The raw materials and their patination are themselves diagnostic of the San Dieguito Tradition.

This Early Holocene assemblage is also found at CA-ORA-1551, -1553, and -1557 and is a unique one for interior Orange County, at least to ARMC personnel's knowledge. It is not reported for nearby Camp Pendleton (Reddy et al. 2000). Orange County coastal site CA-ORA-64 reportedly was occupied in this time frame, circa 9500 – 7500 B.P. (Macko et al. 1998), but the assemblage is quite different (large stone balls, ceremonial biface cache, etc.) and has none of the diagnostic flaked stone tools that characterize the San Dieguito Tradition.

The depth of the deposit, its features, diverse tools, internal patterning, uniqueness of assemblage, and the integrity of the site potentially qualify CA-ORA-1449 for the National Register of Historic Places. The site has yielded and can be expected to yield information important in regional prehistory (chronology, intra-site patterning, settlement patterns, flake and core tool production and use, as well as biface production and rejuvenation, etc.). The site may have been occupied during the early Mission Period when the Portolá party traveled up the canyon northward from La Cristianita where the first baptisms took place. Other villages in Talega Canyon and Cristianitos Canyon were visited by the padres and their entourage. There exists the possibility of encountering Mission Period artifacts on this site.

CA-ORA-1551

This large and diverse site has revealed a unique character from its recording in 2000 to the present. ARMC field personnel christened it the “mega-tool site”. The artifacts looked as if they had arrived from an Old World Paleolithic site. The majority of the flaked artifacts on the surface were either large, heavy flakes and cores or large, heavy flake and core tools. Scraper planes were especially common. Mixed in were a few grinding tools, namely manos and metates.

The concentration of artifacts within the southeastern portion of the site was unusually dense. Once the first surface collection was complete, even a casual walk across the site revealed additional flakes and tools, so a second collection was needed because the density of artifacts was so great. Additional surface collections could have been taken at the site, but time did not permit an exhaustive recovery of surface items.

The excavated depth of the site was slight at first, a mere 30 cm below datum. Struggling with the heavy clay in two 1x1-meter test units proved taxing and was complicated by several heavy rains and rain-outs during which the clay became even stickier. The excavation difficulties prompted the excavation of a fresh pit, a 75-cm diameter STP which still had cultural items at 80 cm but had to be abandoned since it was not practical to continue to excavate in the circular pit. Thus the actual depth of the cultural deposit is unknown. It may be a meter or more. Such a deep deposit is rare in the vicinity of the site; CA-ORA-1135, -1553 and -1557 were shallow deposits (max. depths 20, 20, and 30 cm respectively).

The flaked tool assemblage is itself unique to the region, occurring only at the other three project sites: CA-ORA-1449, -1553, and -1557. This assemblage can be related to the San Dieguito Tradition (Western Pluvial Lakes Tradition), circa 10,000 – 7,000 B.P. Unfortunately no absolute dates are available for the project sites. Subsequent recovery at CA-ORA-1551 might provide either datable organics or midden soil to provide an absolute date for the deposit. The typical raw materials of the San Dieguito Tradition (felsite and other volcanics) are local materials in Gabino Canyon and are amenable to measurement of their patinas, as suggested by Rogers (1939:19). A dating technique akin to the obsidian rind measurement may be possible for these early artifacts.

CA-ORA-1551 has good integrity, has yielded and is likely to yield information important in regional prehistory, and is potentially eligible for the National Register of Historic Places under Criterion D. The site has the data to answer research questions regarding chronology, settlement patterns, subsistence patterns, relationship to other early cultures such as Milling Stone (transitional to MS?), resource procurement (lithics, etc.), intra-site patterning, early stone tool manufacture and repair, biface production, hunting behavior, etc. Because of its antiquity, the site provides a unique opportunity to look at the flaking technology that native peoples may have brought with them to the New World.

PART X. REFERENCES

Ahler, S.A.

1979 Functional Analysis of Nonobsidian Chipped Stone Artifacts: Terms, Variables, and Quantification. In *Lithic Use-Wear Analysis*, edited by B. Hayden, pp. 301-328. Academic Press, San Diego.

Bean, L.J., and F.C. Shipek

1978 Luiseño. In *Handbook of North American Indians*, *Vol. 8, California*, edited by R.F. Heizer, pp. 550-563. Smithsonian Institution, Washington.

Carrico, R.L., T.G. Cooley, J.M. Clevenger, A. Pigniolo, D. Huey, L. Santoro, and P. Mitchell

1991 Archaeological Excavation at the Harris Site Complex. Copy on file, South Coastal Information Center, Social Sciences Research Laboratory, 5500 Campanile Drive, San Diego State University, San Diego, CA 92182-0436.

Castetter, E.F., W.H. Bell, and A.R. Grove

1938 The Early Utilization and the Distribution of Agave in the American Southwest. *University of New Mexico Bulletin, Biological Series 5(4).*

Culin, S.

1907 Games of the North American Indians. *Bureau of American Ethnology, 24th Annual Report,* pp. 3-809. Washington, DC.

Davis, J.T.

1961 Trade Routes and Economic Exchange among the Indians of California. *Reports of University of California Archaeological Survey, No. 54*. University of California Press, Berkeley.

Demcak, C.R

1999 *Red Beads in Southern California*. Paper presented to Society for California California Annual Meeting, Sacramento.

Demcak, C.R., K.C. Del Chario, and P. Martz

1989 Test Level Investigations at the San Juan Creek Sites, CA-ORA-1125, CA-0RA-656, CA-ORA-1123, CA-ORA-1121, CA-ORA-1048, and CA-ORA-1043, Santa Margarita Water District South County Pipeline Project, Orange County, CA. Copy on file, South Central Coastal Information Center (SCCIC), California State University, Fullerton.

Dixon, K.A.

1988 Indian Communities in History. In *A Hundred Years of Yesterdays: A Centennial History of the People of Orange County and Their Communities,* edited by E.R. Cramer, K.A. Dixon, D. Marsh, P. Brigandi, and C.A. Blamer, pp. 11-18. The Orange County Centennial, Inc., Santa Ana.

Earle, T.K.
1982 Prehistoric Economies and the Economics of Exchange. In *Contexts for Prehistoric Exchange*, edited by J.Ericson and T.K. Earle, pp. 1-11. Academic Press, New York.

Earle, T.K., and J.E. Ericson
1977 *Exchange Systems in Prehistory*. Academic Press, New York.

Emmons, S.
1974 O'Neil Ranch Empire. *Los Angeles Times*, January 13, 1974.

Ezell, P.H.
1983 A New Look at the San Dieguito Culture. *Casual Papers* 1(3):103-109. Cultural Resource Management Center, San Diego State University, San Diego.

Fenenga, F.
1953 The Weights of Chipped Stone Points: A Clue to Their Functions. *Southwestern Journal of Anthropology* 9(3):309-323. Albuquerque.

Gallegos, D.R.
1991 Antiquity and Adaptation at Agua Hedionda, Carlsbad, California. In Hunter-Gatherers of Early Holocene Coastal California, eds. J.M. Erlandson and R.H. Colten, pp. 19-41. *Perspectives in California Archaeology, Vol. 1,* series ed. J.E. Arnold. Institute of Archaeology, University of California, Los Angeles.

Friis, L.
1965 *Orange County Through Four Centuries*. Santa Ana.

Hall, L.
1993 A Mission Fulfilled: After 140 Years, Juaneno Tribe Is Officially Recognized by the State. *Los Angeles Times, South Bay Edition*, December 1, 1993.

Hallan-Gibson, P.
1986 *The Golden Promise: An Illustrated History of Orange County*. Windsor Publications, Northridge.

Hester, T.R., and R.F. Heizer
1972 Problems in the Functional Interpretation of Artifacts: Scraper Planes from Mitla and Yagul, Oaxaca. *Contributions to the University of California Archaeological Research Facility, No. 14*, pp. 107-123. Berkeley.

Hornbeck, D.
1983 *California Patterns: A Geographical and Historical Atlas*. Mayfield Publishing, Palo Alto, CA.

Hudson, D.T.
1971 Proto-Gabrielino Patterns of Territorial Organization in Southern Coastal California. *Pacific Coast Archaeological Society Quarterly*, 7(2):51-71. Costa Mesa.

Jones, C.S.
1991 Archaeological Monitoring of Contract 1486, South County Pipeline Project, South Orange County, California. Copy on file, SCCIC.

Koerper, H.C., and C.E. Drover
1983 Chronology Building for Coastal Orange County: The Case from CA-ORA-119A. *Pacific Coast Archaeological Society Quarterly* 19(2):1-34. Costa Mesa.

Koerper, H.C., P.E. Langenwalter II., and A. Schroth
1991 Early Holocene Adaptations and the Transition Phase Problem: Evidence from the Allan O. Kelly Site, Agua Hediodonda Lagoon. In Hunter-Gatherers of Early Holocene Coastal California, eds. J.M. Erlandson and R.H. Colten, pp. 43-62. *Perspectives in California Archaeology, Vol. 1,* series ed. J.E. Arnold. Institute of Archaeology, University of California, Los Angeles.

Kowta, M.
1969 *The Sayles Complex: A Late Milling Stone Assemblage from Cajon Pass and the Ecological Implications of its Scraper Planes*. University of California Press, Berkeley and Los Angeles.

Kroeber, A.L.
1925 Handbook of the Indians of California. *Bureau of American Ethnology, Bulletin 78*. Smithsonian Institution, Washington, D.C.

Macko, M.E., J.S. Couch, O.K. Davis, H.C. Koerper, P.E. Langenwalter II, and G.S. Russell
1998 Neolithic Newport Executive Summary: Results of Implementing Mitigation Measures Specified in the Operation Plan and Research Design for the Proposed Newporter North Residential Development at ORA-64. Copy on file, SCCIC.

Moratto, M.J.
1984 *California Archaeology*. Academic Press, San Diego.

Moriarty, J.R. and R.S. Broms
1971 The Antiquity and Inferred Use of Stone Discoidals in the Southwest. *Anthropological Journal of Canada* 9(1):16-36.

Morton, P. and R. Miller
1981 *Geological Map of Orange County, California, Bulletin 204, Plate* 1. California Division of Mines and Geology, Sacramento.

Muñoz, J.
1980 Historic Resources of Talega Parcel. Prepared for Rancho Mission Viejo. Ms. on file, ARMC.

Munz, P.A., and D.D. Keck
1959 *A California Flora*. University of California Press, Berkeley.

Norris, R.N., and R.W. Webb
1976 Peninsular Ranges. In *Geology of California*. Wiley and Sons, New York.

Orange County Planning Department
1971 *The Physical Environment of Orange County. A General Planning Program Report.* County of Orange, Santa Ana.

Reddy, S., Beta Analytic, L.S. Cummings, C. Dillians, D. Hamman, K. Hedges, D. Huntley, S. Shackley, T., and M. Waters
2000 *Settling the Highlands: Late Holocene Adaptations on Camp Pendleton, San Diego County, Southern California*. Army Corps of Engineers, Los Angeles District, Los Angeles.

Semenov, S.A.
1964 *Prehistoric Technology*. Barnes and Noble, Totowa, NJ.

Smith, H.
1965 The Portolá Camps Revisited. *Pacific Coast Archaeological Society Quarterly* 1(4):28-32. Costa Mesa.

Toren, A.G., J. Schmidt, J. Schmidt, and P. Fulton
1997 Extended Phase I Investigations at Sites CA-ORA-26 (Loci B and C), -779, -780, and –781 Located Along the BX Alignment, and Sites CA-ORA-362, -363, -1106, -1125, and –1126 and Isolated Finds FTC-IF-3, -4, -6, and –9 Located Along the CP Alignment for the Proposed Foothill Transportation Corridor-South, Orange County, California. Prepared by Greenwood and Associates for the Environmental Planning Branch, District 12, State of California, Department of Transportation and for the Transportation Corridor Agencies.

Treganza, A.E. and A. Bierman
1958 The Topanga Culture: Final Report on Excavations, 1948. *Anthropological Records* 20(2):45-86. University of California Press, Berkeley.

Treganza, A.E. and C.G. Malamud
1950 The Topanga Culture. The First Season's Excavations, 1947. University. *Anthropological Records* 12(4):129-169. University of California Press, Berkeley.

Tringham, R.E., G. Cooper, G. Odell, B. Voyteck, and A. Whitman
1974 Experimentation in the Formation of Edge Damage: A New Approach. *Journal of Field Archaeology* 1:171-196.

Van Wormer, S.R.
2002 La Casa de la Misión Vieja: CA-ORA-29, The Ranch Plan, Phase II-A Test Investigations, South Orange County, California. Report on file, SCCIC.

Wallace, W.J.
1955 A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology*, 11: 214-30. Albuquerque.

Warren, C.N.
1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. In Archaic Prehistory of the Western United States, C. Irwin-Williams, ed. *Eastern New Mexico Contributions in Anthropology*. Vol. 1(3), pp. 1-14. Portales.

1967 The San Dieguito Complex: A Review and Hypothesis. *American Antiquity* 32:168-185.

White, R.C.
1963 *Luiseño Social Organization*. University of California Press, Berkeley.

Wilmsen, E.N.
1974 Lithic Analysis in Paleoanthropology. In *Contemporary Archaeology*, M. Leone, ed., pp. 195-205. Southern Illinois University Press, Carbondale.

REPORT OF ARCHAEOLOGICAL TESTING FOR THE RANCH PLAN, PHASE II-B, RANCHO MISSION VIEJO, SOUTH ORANGE COUNTY, CALIFORNIA

SECTION B. HISTORIC SITES

PART I. MILITARY BUNKERS

Two concrete military bunkers are located on the ridges on the north side of the Talega Creek drainage. The two buildings are significant historic resources that are eligible for listing on the National and California registers of historic places. Originally this area was part of Marine Corps Base, Camp Pendleton. Built during World War II as firing range observation bunkers, the buildings contain penciled signatures of military personnel who trained at the base during both World War II and the conflicts of the Cold War. The feeling and association of the use of these buildings during the significant periods of international conflict that occurred between 1942 and 1970 is brought to an intimate and personal level by the penciled records written by the Marines who served during these years, used the facilities for training, and left a record of their passing on the concrete walls.

HISTORICAL BACKGROUND

Camp Pendleton has served as one of the military's most important training centers for over fifty years. In March 1942, just 4 months after the Japanese attack on Pearl Harbor that brought the United States into World War II, the Navy began condemnation against owners of the Santa Margarita Ranch, and President Franklin D. Roosevelt dedicated the area Camp Joseph H. Pendleton. In July, a federal court granted immediate possession of the property to the government while financial compensation was settled in court. Early in 1943 the former property owners were paid over four million dollars for the land (US Army Corps of Engineers 1998a:4-1 - 4-5).

During World War II Camp Pendleton trained elements of the Third Marine Division, the entire Fourth and Fifth Marine Divisions, and thousands of individual replacements for battle in the Pacific Theater. The camp also witnessed the training of the first female Marines (eventually numbering 1000) and several black Marine units. At its wartime peak in 1944, the population of Marines, sailors, and civilians at Camp Pendleton topped 86,000 (US Army Corps of Engineers 1998a:4-1 - 4-5).

Three tent camps housing 5,000 men each were established at Camp Pendleton. Known as Pulgas, San Onofre, and Christianitos, Marines lived in these camps under field conditions. Each camp was placed near a set of firing ranges so the troops could receive rifle, machine gun, and mortar training. In addition to the three tent camp areas, known as Combat Areas 1-3, Combat Areas 4-7, an Amphibious Tank Area, Case Springs Combat Area, and other training areas were also established. The Marine Corps used Camp Pendleton for large-scale, tactical training for entire units prior to their overseas deployment. After costly invasions of some Pacific Islands in 1943, priorities shifted and amphibious assault training became a priority in 1944 (US Army Corps of Engineers 1998a:4-1 - 4-5).

Camp Pendleton has continued to play a vital role in marine training during the Cold War era conflict and into the present. During the Korean War (1950 – 55) 200,000 Marines received training before going into combat on the Korean Peninsula. During the 1962 Cuban Missile Crisis units from the First Marine Division were sent to Guantanamo Bay, Cuba, and other Caribbean locations. By the mid-1960s the camp was in full-scale war time preparation as conflict escalated in Vietnam. Following collapse of the South Vietnamese government in 1975, 25,000 refugees were temporarily housed in eight camps on the base. In the 1980s training shifted from amphibious to more flexible expeditionary systems that combined infantry, armor, air support, and supply systems. These techniques have been used in Grenada, Panama, and the Persian Gulf (US Army Corps of Engineers 1998a:4-1 - 4-5).

BUNKER DESCRIPTIONS

The concrete bunkers are located on southwesterly trending slopes overlooking the Talega Creek drainage to the south. Although currently private property as part of Rancho Mission Viejo, during World War II and for an undetermined time thereafter, this area was part of the extreme northern section of Camp Pendleton (Collier 2003; Battle Map 1943; Training & Command 1944). Two structures are shown at this approximate location on a 1944 map of Camp Pendleton (Training & Command 1944). They are associated with Musketry Range No. 3. This rifle training range was used to teach firing techniques and rifle marksmanship. Musketry No. 3 was associated with Tent Camp No. 3 and can be identified on a 1942 map entitled "Map of Camp Jos. H. Pendleton," a 1953 "General Area Map" of the base, and a 1944 map of "Training Command Combat Training Areas and Ranges" (US Army Corps of Engineers 1998 b:2-55). The two concrete bunkers overlook the firing area of former Musketry Range No. 3 and appear to be observation bunkers associated with use of that range.

Site 30-176635

This single story, rectangular, poured concrete bunker measures approximately 5 by 15 feet. It has a flat concrete roof and floor. An open doorway and large rectangular open window are located along the north side. Small, narrow, horizontally oriented "slit" openings, that appear to be for observation, are located on the east and west ends. A poured concrete flying buttress was added to the west side of the building sometime after original construction and now blocks the view from the slit on the west end. The view from the slit on the east end overlooks a flat terrace to the southeast of the building which would have been within the firing area of Musket Range No. 3. Observers with telescopes or binoculars could have graded the accuracy of Marines firing at targets on the range from this point. Similar firing range observation bunkers dating from World War II are located on Camp Pendleton. The inside of this building contains a remarkable record of military personnel who have used the building since World War II.

In white paint on the interior of the south wall are the letters 62MU2. On the surface of this paint and covering all four interior walls of the bunker are approximately 100 penciled signatures of Marines. The signatures often include a name, home town address, serial number, and date. Three clusters of dates were noticed consisting of 1943 – 1945, 1951 through 1957, and 1961 through 1963.

<u>Site 30-176634</u>

This rectangular poured concrete bunker measures approximately 8 by 12 feet by 10 feet in height. It has a flat poured concrete roof and earthen floor. Narrow, horizontally oriented observation slit windows are located in the east and west walls approximately 7 feet above the floor. The badly deteriorated remains of a wooden platform to access these windows are still present inside the building. A tall open doorway is located on the east side. The window on the south side overlooks the former firing area of Musketry Range Number 3 and would have allowed observation of training sessions from a protected location. The purpose of the window on the north side is undetermined. Identification numbers in white paint on the interior of the west wall read 62-MU-1. A number of penciled signatures of Marines are written on the interior walls of this building. The signatures often include a name, home town address, serial number, and date. They range in time from 1951 through 1988, although most are from the 1950s.

PART II. SIGNIFICANCE

In order to determine if the buildings are historically significant they were evaluated for their eligibility for listing in the National and California Registers of Historic Places. To qualify for the National or California Registers any potential historic resource must retain sufficient integrity of its historic qualities to convey its importance during the defined period of significance. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet at least one of the following criteria:

A) They are associated with events that have made a significant contribution to the broad patterns of our history; or

B) They are associated with the lives of persons significant in our past; or

C) They embody the distinctive characteristics of a type, period or method of construction, or that represents the work of a master, or that possesses high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction; or

D) They have yielded, or may likely to yield, information important in prehistory or history.

The two former Musketry Range No. 3 observation bunkers are significant cultural resources. They are eligible for nomination to the California and National Register of Historic Places at both a state and national level of significance. The structures qualify under Criterion A, in that they are associated with the training of Marines who participated in numerous important combat missions during World War II and the Cold War. Their period of significance is from 1942 to 1970. What makes these buildings extremely important is their excellent state of preservation and the penciled graffiti on the inside walls that represent a remarkable and intimate record of military personnel who trained at Camp Pendleton during World War II and the Cold War era. These buildings possess integrity of location, design, setting, materials, and workmanship and have a strong association with combat training at Camp Pendleton during World War II and the Cold War. The feeling and association of their use during these periods is brought to an intimate and personal level to the present day observer by the penciled record written by the Marines who served during these conflicts, used these facilities for training, and left a record of their passing on the concrete walls. Although structures similar in design and use still exist on Camp Pendleton, none has this degree of preservation. Regular maintenance, including interior painting, has obliterated all original interior elements (Jonason 2003).

PART III. REFERENCES

Battle Map
1943 Battle Map of Camp Joseph H. Pendleton, US Marine Corps, San Diego County, Oceanside, California, 15 June 1943. On file Training Resources Management Division, Camp Pendleton, CA.

Collier, Mike (Director, Training Resources Management Division, Camp Pendleton,CA)
2003 Personal communication to Stephen R. Van Wormer.

Jonason, Faye (History and Museums Officer, Camp Pendleton, CA)
2003 Personal communication to Stephen R. Van Wormer.

Training & Command
1944 (Map of) Training Command Combat Training Areas and Ranges 1, November 1944. On file Training Resources Management Division, Camp Pendleton, CA.

US Army Corps of Engineers
1998a Archives Search Report Marine Corps Base, Camp Pendleton Oceanside, California. October 1998. US Army Corps of Engineers, St. Louis District.

1998b Range Identification and Preliminary Range Assessment Marine Corps Base, Camp Pendleton Oceanside, California. October 1998. US Army Corps of Engineers, St. Louis District.