

PREHISTORIC SETTLEMENT PATTERNS IN LOS PEÑASQUITOS CANYON

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ABSTRACT

The prehistoric sites located within Los Peñasquitos Canyon provide a relatively intact sample to study Late Prehistoric organizational behavior. Hunter-gatherer subsistence-settlement strategies are reflected by intersite variability in the archaeological record. The organizational variation of hunter-gatherer societies is a result of differing environmental constraints. Binford (1980) provides a forager-collector continuum model for explaining subsistence-settlement strategies. This study explains the Peñasquitos subsistence-settlement strategies using Binford's (1980) model with site record forms and survey-level data.

INTRODUCTION

Extensive research has been made in the prehistory of Los Peñasquitos Canyon (cf. Noah 1982; Fink and Corum 1983; Hector 1984; Schaefer and Elling 1987; Laylander 1989). Over 100 reports and site records are on file at the South Coastal Information Center at San Diego State University. In most studies, sites in the canyon have been treated as distinct and segregated units. This is sufficient for describing site function, lithic and ceramic technology, or other intra-site systems. However, inter-site analysis can provide information on site location, seasonal migration, or settlement and subsistence strategies. This study uses survey-level data to examine settlement patterns within a portion of the canyon.

Preferably, a regional resurvey would maintain consistent criteria for determining individual site function. The available site reports generally contribute substantial information for this type of study. Since these reports have been made by numerous authors over many years, the criteria are expectedly inconsistent. In an effort to maintain consistency Schaefer and Elling (1987) will be used as a basic reference since this paper covers the entire canyon.

NATURAL AND CULTURAL SETTING

Los Peñasquitos Canyon is located in the middle-western section of San Diego County, approximately 10 miles north of the city of San Diego. The canyon is 11 miles long--stretching from Sorrento Valley to the city of Poway. The canyon's average width is 3/4 mile. Perennial Los Peñasquitos Creek is fed by a spring at SDI-8125 and by drainage from the hills at the eastern end of the canyon. This study includes that portion of the canyon located within Los Peñasquitos Canyon.

Los Peñasquitos Canyon has been occupied by La Jollan, Late Prehistoric, and Historic cultures. 112 sites (not including Historic sites) have been located within this study area. The La Jollan culture exploited coastal and inland resources as early as 7,500 years ago. They subsisted primarily on shellfish and seeds, and secondarily on small mammals. Large shell mounds, inhumated burials, milling tools, and percussion-flaked lithic tools define the La Jollan complex.

The Late Prehistoric groups subsisted primarily on acorns and mammals, and secondarily on other vegetation. Pottery,

cremations, milling tools, and smaller projectile points define the Late Prehistoric complex (Fink and Corum 1983:41-42). The Historic (post-1769) period is excluded from this study.

THEORETICAL DESIGN

Hunter-gatherer settlement systems require access to diverse resources, reflected by distinct site types. Binford (1980) used theoretical constructs to interpret settlement systems to produce a collector-forager continuum model. Application of Binford's model requires several assumptions: (1) archaeological sites represent particular behaviors and activities, (2) prehistoric behaviors can be observed through site transformation processes, and (3) Late Prehistoric hunter-gatherer subsistence behavior is similar to that of the Nunamiut and San. An examination of the prehistoric sites is necessary for determining subsistence strategies.

Binford (1980) produced a hunter-gatherer model for a forager-collector continuum--from simple to complex. Whereas foragers exploit resources with changes in location and group size, collectors store their food--at least part of the year--and organize specific task groups. Thus foragers are either fully- or semi-nomadic, while collectors are either fully- or semi-sedentary. The archaeological record reflects the differences between the two hunter-gatherer strategies. Binford called attention to the difficulties of applying such a model to the archaeological record; time shows little kindness to the archaeological record.

The forager site types are the residential base and the location, while the collector site types (in addition to the residential base and the location) are the field camp, the station, and the cache. A site can consist of 2 or more of these types; it can be a station, a location, and a cache. Summarizing Binford (1980:9-12), the 5 site types for a logistically organized system are as follows:

1. A residential base is the center of subsistence activities, where foraging parties originate and where most processing,

manufacturing, and maintenance activities take place. The cultural material associated with the Late Prehistoric residential base includes many different types of artifacts and features; e.g., groundstone, milling features, ceramics, middens, lithic tools, and lithic scatters.

2. A location is where exclusively extractive tasks are carried out. These locations are resource (i.e., clay, stone, faunal, and/or floral) areas where limited quantities are procured during any single episode. Location sites include lithic quarries and lithic scatters.

3. A field camp is the temporary operational center for a task group while away from the residential base; here, the task group eats, sleeps, and otherwise maintains itself. The field camp is difficult--if not impossible--to differentiate from the residential camp. The artifact types are the same, and a temporary site may be used many times. Non-portable milling features (e.g., slicks, basins) can be used intermittently. Ceramics can be stored away for future use. Site size and culture material density were the determining criteria for differentiating between the field camp and the residential base. Since most sites were excavated with an emphasis in determining site significance, rather than in assessing settlement type, the researcher needs to assess the other two collector-exclusive site types to distinguish forager and collector patterns.

4. A station is where a special group gathers information, an important aspect of resource procurement strategy. Stations (e.g., observation points) are often unrecognizable, since they tend to preserve poorly. Only one station (SDI-6898, a rock enclosure) has been located in the study area, and the site record suggests that the rock enclosure might be historic. According to the site record, the station was apparently used to observe game.

5. A cache is a temporary resource storage facility. Caches are difficult to find, since most storage in San Diego County involved ollas. This ceramic container could hold water and other valuable resources; unfortunately it is also a primary target of

pothunters. No cache sites have been located in the study area.

ANALYSIS

Using the survey-level literature the sites in the Los Peñasquitos Canyon were processed through the Binford (1980) model. The results are as follows:

Of the 107 sites within the study area (Table 1), 6 have a La Jollan component, 37 have a Late Prehistoric component, 6 have a historic component, 55 are not chronologically defined, and 5 have no cultural material information.

No San Dieguito sites were identified in the study area. This presents a serious dilemma for site identification; a lithic source (Santiago Peak Volcanics) for San Dieguito tools is located within this study area. Since the lithic typological sequences for San Diego County are insufficient for determining culture association from debitage and unretouched flakes alone, lithic scatters may be temporally misclassified.

The La Jollan people did not occupy the region as densely as the Late Prehistoric people. In relation to the La Jollan people, the Late Prehistoric people were either (1) a different ethnic group, or (2) the same people, but with a different subsistence pattern. The 6 La Jollan sites (1) are residential bases/field camps--which suggests that they followed foraging rather than collecting strategies, and (2) are located within 2 miles of Sorrento Valley Road, which is located at the west terminus of the canyon--which suggests that the La Jollan people did not settle far from the coast.

The Late Prehistoric culture occupied 37 sites in Los Peñasquitos Canyon. Sites included 2 locations, 4 isolates, 8 exclusively field camps, and 24 residential base/field camp sites. Once again it is important to stress the difficulty in differentiating between the residential base and the field camp. Further research may establish guidelines for distinguishing between these two site types. The 4 isolates provide no information concerning the forager/collector

status of these people. The 2 locations (lithic quarries: SDI-5221 and W-414) suggest that the Late Prehistoric people were collectors.

The undetermined sites present a serious problem. When examining the site records, the inadequacies are impossible to ignore. Of the 60 undetermined sites, there are 20 isolates, 28 locations (mostly lithic scatters), 1 station, 2 exclusively field camps, and 9 residential base/field camp sites.

A major consideration is where the undetermined station, locations, and field camps are located. The station (SDI-6898) is located 6 miles east of the closest La Jollan site (SDI-5202). The 2 field camps (SDI-10674 and SDI-11481) are located 4 and 9 miles respectively from the closest La Jollan site (SDI-5202). Even though these 3 sites are several miles away from the nearest La Jollan site, they may still be associated with the La Jollan Complex.

CONCLUSIONS

Because of the lack of field camps, stations, and caches, the La Jollan people occupying Los Peñasquitos Canyon appear to have operated as foragers (users of a simple subsistence-settlement system), and are characterized by: (1) daily food procurement rather than food storage, (2) fluctuating group size according to season and food availability, and (3) variability in annual residential moves (Binford 1980:5). Because of difficulties in preserving shellfish, the La Jollan people would be unable to store the major portion of their diet. However, not all researchers agree with this potential storage difficulty (Gross 1992, personal communication).

Although no caches and stations are positively identifiable as Late Prehistoric, the presence of many field camps with this period suggests that the Late Prehistoric people appear to have been collectors (a complex subsistence-settlement system), and are characterized by: (1) food storage for part of the year, and (2) logistically organized food-procurement parties (Binford 1980:10). Applying Binford's concepts, a greater range of

Table 1. The Cultural and Functional Association of the Prehistoric Sites in the Los Peñasquitos Canyon

Site Type	La Jollan	Late Prehistoric	Unknown
Residential Base*	S-1087 S-5202 S-5383 S-6087 S-8116	S-12 S-592 S-1010 S-4512 S-4633 S-5178 S-5179 S-5181 S-5219 S-5220 S-5378 S-5380 S-5381 S-5382 S-5383 S-6669 S-6866 S-8125 S-8245 S-9291 W-230 W-392 W-414 W-415	S-5031 S-5032 S-6046 S-8119 S-10154 S-10239 S-10675 S-10681 W-2481
Field Camp**		S-5028 S-8102 S-8103 S-8104 S-8105 S-8106 S-8107 S-8113	S-10674 S-11481
Location	S-1087	S-5221 W-414	S-1106 S-5030 S-5034 S-5385 S-5515 S-5516 S-5517 S-6040 S-6042 S-6043 S-6044 S-6045 S-6665 S-6837 S-8098 S-8109 S-8112 S-8114 S-9869 S-9908 S-10116 S-10151 S-10216 S-10549 S-10676 S-10677 S-10678 S-10679
Station			S-6898
Isolate		S-7231 S-8021 S-8111 W-391	S-5029 S-5033 S-5305 S-6041 S-8108 S-8110 S-10152 S-10680 S-10860 S-10909 S-11162 S-11482 I-57 I-58 I-59 I-152 I-166 I-167 I-169 W-1442B

* Each residential base may alternatively have been a field camp

** These sites are classified only as field camps

Key: S = SDI (SCIC, SDSU), I = Isolate (SCIC, SDSU), W = Museum of Man

intersite variability would be expected in the Late Prehistoric Period than in the La Jollan Period due to increases in the logistical components of the subsistence-settlement system (Binford 1980:12). Binford (1980:15) applies several important principles:

1. Foragers move consumers to goods with frequent residential moves, while collectors move goods to consumers with generally fewer moves,
2. The greater the seasonal variability in temperature, the greater the expected role of logistical mobility in the settlement or "positioning" strategy, and
3. Storage can be expected to vary with decreases in the length of the growing season.

Forager and collector subsistence strategies have substantially different mobility and environmental implications (Thomas 1983). Since collectors are less responsive to seasonal and sudden environmental changes, they are required to improve storage facilities (e.g., ollas). Foragers depend on residential mobility to maintain a consistent flow of resources. Since the criteria for differentiating between the field camp and the residential base is difficult for the La Jollan and Late Prehistoric cultures, future research may provide better results.

The importance of other research requires discussion. Verification of the precise subsistence-settlement system requires (1) that criteria must be developed to distinguish between the field camp and the residential base, and (2) that the study area must be resurveyed and subsurface-tested to determine site type and cultural association. After these two research goals have been completed, explanations (not just descriptions) should be made for the strategies that drive the subsistence pattern, and their implications on social organization, migration patterns, etc. The classification of cultures into forager or collector groups has little more than typological value unless the strategies that drive the subsistence pattern are examined, rather than just explaining the subsistence pattern as an empirical observation (Thomas 1983).

Although environmental determinism remains a significant theme in hunter-gatherer research (Jochim 1981; Bettinger 1991), environmental possibilism or ecological anthropology has largely replaced environmental determinism since it recognizes that although the natural environment does have certain limiting features, it does not solely determine human behavior (Jochim 1981:4). Ethnographic literature has established that cultures, such as 3 of Africa's East Cushitic societies having identical environments employ a wide variety of settlement-subsistence systems (Hallpike 1988). Although resource availability may limit population density, it does not determine the type of social organization or subsistence-settlement pattern.

However, Late Prehistoric and La Jollan peoples inhabited different environments, which is reflected in subsistence and settlement systems (Christenson 1992, personal communication). Ideological (e.g., burial customs)--rather than techno-economic--indicators are suitable for differentiating between ethnic groups. Further research is necessary for confirming the subsistence-settlement systems and their implications for the social organization of prehistoric peoples in Los Peñasquitos Canyon.

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