THE IDENTIFICATION OF ACTIVITY AREAS WITHIN LATE PREHISTORIC SITES: A CASE STUDY OF THE RIMBACH SITE, SAN DIEGO, CALIFORNIA

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ABSTRACT

Large, complex sites containing a variety of artifacts are commonly associated with the Late Prehistoric period of San Diego County prehistory. Identifying the activities that occurred within these sites requires the development of special ways to analyze cultural materials. This paper will explain methods utilized recently at a Late Prehistoric site, known as the Rimbach site, located in the city of San Diego. The goal of the analysis was to examine the functions of different areas within the site. Comparisons will be made with other Late Prehistoric sites within the region.

INTRODUCTION

Late Prehistoric village sites are excellent case studies for intrasite activity area analyses. This is because they are temporally controlled, are artifactually distinctive, and contain a large amount of cultural material. The Late Prehistoric period has been identified as the period between A.D. 1000 and A.D. 1769, more or less. Late Prehistoric deposits are easily identifiable because of the presence of ceramics, which were not produced by earlier groups (Rogers 1945). In addition, the large, readily identifiable village sites contain an abundance of flakes, ceramics, ground stone, flaked stone tools, and ornamental or aesthetic items. The goal of the activity area analysis is to use these factors to identify specialized areas within the site and to assign functions to these areas.

A basic model, or assumption, for this study was that a sedentary village, supported by a year-round supply of resources, was occupied by a group of people conducting a variety of activities focused on resource exploitation, ritual obligations, and social contacts (trade) within spatially identifiable areas. There are 3 components of this model that can be examined: use of space (activity areas), exploitation of resources, and trade. This paper will concentrate on the issue of spatially distinct activities.

RESEARCH DESIGN

Aboriginal use of space is represented by patterned or nonpatterned activity areas. To examine use of space, the activities must be identified and described. Then, the spatial

distribution of specified activities is statistically investigated by dividing the area of interest into sampling loci.

Investigations into intrasite spatial use were vitalized with Hill's (1968) work at a pueblo site in Arizona. The goal of his study was to differentiate occupation from nonoccupation rooms within the pueblos. Hill used features such as hearths, ceramic design elements, and tool types to distinguish the two types of spatial use.

Expanding on Hill's work, Schiffer (1976) examined "spatial transformations" at the Joint site, also in Arizona. His special interest was refuse patterns associated with activities, and he identified single and multiple activity sets (Schiffer 1976: 67-69). Schiffer presented a complex discussion of the types of activity patterns possible but essentially assumes a correspondence between action and discard, although this pattern may be obscured by secondary uses and multiple refuse deposits.

Schiffer (1976:183-185) used factor analysis to search for meaningful associations between types of stone tools and flakes. By assigning functional tasks to the tools and flakes, Schiffer suggested that certain activities, such as cutting and scraping, occurred in particular parts of the site. He found artifact type sets that were associated with rooftop work areas and other sets that he felt were representative of tool production.

Schiffer's (1976) concentration on flaked stone artifacts to examine activities was a forecast of future studies; most subsequent work with activity areas has concentrated on flaked stone tools and their attributes. Investigators moved beyond intrasite spatial use to examine entire settlement systems. Relationships between base camps and their associated special-activity sites were investigated by Jochim (1976) in a German valley. Concisely describing special-activity sites as "one attempt to widen the catchment of a location" (Jochim 1976:61), he conducted an economic study of the cost of such remote specialized areas. His discussion of resource "pulls" and the "hierarchical evaluation of resources" (Jochim 1976:53) are relevant to hunter-gatherer studies, although his data base is weak. In support of his propositions, only elementary functional tool analyses were accomplished.

Butzer (1982:231) established a list of expectations for special-use sites, seasonal camps, and base camps based on a survey of current data. Although simple, the list supplies and makes explicit certain basic assumptions about relationships between sites within an occupation network that are useful archaeologically.

In addition to archaeological studies concerning artifact variability in different parts of the site, investigators have utilized ethnoarchaeology to provide information on artifact use and discard. Steward's (1970) study of Great Basin groups provides a basis for the evaluation of occupation units and what remains they might be expected to leave behind. Shoshone families operated as complete, self-reliant entities and only grouped together in village-like agglomerations during ceremonies, for rabbit drives, or for other specific exploitation purposes (Steward 1970:251-253). The associations of families may differ

with the goal of the gathering. When together, each family remained independent, and clustered groups spread over a large area (Steward 1970:230, 232). In such an encampment, each clustered family group would probably duplicate subsistence activities in their own area. Activities such as tool production and maintenance, butchering, and cooking occurred within each group, since no system of inter-family cooperation had been established culturally.

In comparison, the Owens Valley Paiute occupied large villages throughout the year (Steward 1970:233-234). The occupants cooperated in hunting and other activities. At such a site, separate activity areas utilized by the entire group might be expected.

Attempts to reconcile ethnographic observations with archaeological assemblages were made by Yellen (1977) and Gould (1980) with different results. Yellen examined the !Kung foragers' activities and resultant artifact refuse to see if any patterning existed. He observed patterns of occupation and activities within a site, including a communal area, nuclear areas (foci of many activities), and special-activity areas (Yellen 1977:126). Like the foraging Shoshone, Yellen found that !Kung families and individuals functioned independently. However, he concluded that the remains left by such patterned activities were mixed (Yellen 1977:134). He felt that this was because within each activity area, factors other than the types of activities and associated artifacts structured the remains. He identified these as social organization, messiness of the activity, amount of space required, and time of day.

Gould (1980) sought to identify spatial activity patterns among the Western Desert Aborigines, although he concurred with Yellen that multiple-use areas were poor places to look for activity specialization because of the Principle of Interference:

> . . . the wider the range of different general activities performed at a particular site, the greater the likelihood is that the by-products of each task performed in relation to each of these activities has become detached from the locus where each task was carried out [Gould 1980:197].

Gould stated that sites were organized by age and activity groups, even within sites; however, subsequent tasks may obscure this evidence at the base camp.

Binford published three related articles dealing with the problems and potentials of archaeological examination of human use of site space. In his first article (Binford 1978), he refutes many of Yellen's (1977) findings, asserting that there are spatial associations of artifacts and activities at the Mask site. Binford (1978:357) observed functional differences between special-activity and base camps rather than the "continuum of variability" seen by Yellen. He also concluded that there were differences between activities observable even in "generalized work areas" and that the associated refuse can be identified as to task.

In the next article, Binford (1980) expands on the idea of activity areas by dividing hunter-gatherers into either foragers

or collectors. Collectors are oriented towards the formation of task-specific groups, who move predictably and seasonally from occupation sites to special-activity sites (Binford 1980:10). However, the archaeological remains of this settlement pattern may prove to be "confusing" archaeologically (Binford 1980:19).

In a more recent paper, Binford (1982) concentrated on a critique of assemblage-oriented analyses such as those responsible for the generation of culture types. For example, groups of artifacts may represent seasonal or special-activity sets rather than different cultures. Although Binford (1982) recognized the complexity of the issue of reuse of residential sites as specialized sites at other times, he concluded that there is an identifiable association between artifacts and activities.

Recent studies of activity areas have taken advantage of the Australian aboriginal life-styles still in practice to examine spatial patterning and tool sets. These studies, like those of Binford, use ethnographic information and material remains to identify specific activities. Spurling and Hayden (1984) used data from small camps to examine associations between discards and known activities. Although the authors felt that some degree of confidence could be placed in tool association, they point out the problems with temporal versus spatial distinctions: it is still not possible to screen out multiple uses of a single area over time. O'Connell (1987), in another study based in Australia, supports increased use of ethnoarchaeology to find out why activities occur where they do. Ethnoarchaeology, at least in Australia, permits comparisons between activities and remains.

Once archaeologists observed and investigated archaeological patterning within and between sites, they began to explore statistical tests and techniques to look for associations between locations and artifacts. Besides those tests that search data sets for associations such as cluster and factor analysis, the basis for most of the statistical analyses are tests for non-randomness. Hill (1968) used the calculation of the chi-square statistic to see if artifacts and locations were associated or just random occurrences. Whallon (1973, 1974) evaluated nearest-neighbor analyses and analysis of variance to examine relationships between tools in the hope of constructing tool kits. Nearest-neighbor analysis requires point coordinates for artifacts, while analysis of variance can be used with data collected from a grid system. Whallon (1984) recently reevaluated these statistical methods and offered alternatives to discovering spatial patterns.

Hodder and Orton (1976) present a general summary of tests for intrasite variability, including chi-square and analysis of variance, the two types of descriptive statistic used in this study. Since nearest-neighbor analysis requires point provenience, it is less commonly used in prehistoric archaeology, where artifact location is usually relative due to subsequent disturbances. The major limitation to all statistical analyses of artifact associations is the strength of the arguments used to interpret the results. It is more desirable to use simpler statistics and logical arguments than to confuse and confound the

interpretation of the data with complex statistics whose applications have not been well thought out by the archaeologist.

Three local archaeological investigations served as case studies for the development of the statistical approach used in this paper to identify activity areas representing spatial use of sites. Kaldenberg and Bull (1975) used the chi-square statistic to examine the associations between artifact types and stone material. They found no correspondence between artifact type or morphology and stone material type (Kaldenberg and Bull 1975:111-119).

A second study similar to the present one was Carrillo and Bull's (1979) attempt to identify activity areas at an early site in Oceanside, California. They did not find significant correlations between artifacts and unit locations, but this study was hampered by 3 factors: (1) the sampling strategy included off-site or empty units selected by random sampling, thus biasing the statistics; (2) the site did not have the artifactual complexity or density ideal for such a study; and (3) at least one third of the site was greatly disturbed. However, this effort was important because it provided insight into practical problems with implementing a study of activity areas.

The initial study using the methodology outlined in this paper was an excavation at a village site near Jamul, in southern San Diego County (Hector 1984). Two types of descriptive statistics were selected for use in the pilot study to identify associations between artifacts and locations: the chi-square statistic and analysis of variance. The analysis of variance is used to compare means of groups, while the chi-square statistic compares the observed outcome of an event or tabulation with the expected random event. Both evaluate associations, and both have a null hypothesis of no association. For analysis of variance, a large sample is desirable to obtain a nonbiased mean; ideal artifact classes for this technique are flakes and shell. For the chi-square test, smaller samples to generate smaller chi-square statistics are more accurate. Since only 8 units were excavated for this project, producing a relatively small assemblage, the chi-square test provided the best examination of association. An analysis of variance was calculated for selected flake attributes because of the great number of flakes recovered.

In consideration of the above paragraphs, statistical tests and qualitative analyses were performed on a variety of cultural materials. To subdue the effects predicted by Yellen (1977), Gould (1980), and others, only generalized activity areas were sought; no attempt was made to locate precise limits of task areas. Besides the possible obscuring effects of subsequent or even concurrent contrasting activities within an area, disturbance through flooding and ground rodents also supports the concentration of the effort on more generalized work zones.

In consideration of the above discussion, certain assumptions were made about the general nature of prehistoric use of space:

1. Discard, while it may have been redistributed by concurrent or subsequent uses, will remain in the general area of use.

2. Tool types will be limited and focused toward obtaining and processing a specific resource.
3. Features present will indicate the types of activities performed; e.g., quarried outcrops may be present at stone tools production areas, and roasting pits and hearths indicate plant food processing.
4. In contrast to a lithic production area, a plant and animal processing area will not contain evidence for all of the steps required to produce stone tools.
5. Specialized areas were used by subsets of the village population. For example, not all members of the village will utilize milling features for the processing of acorns; only certain women and their children would be present.
6. The Late Prehistoric occupants of San Diego fall into the category of collectors and operated as a consolidated group within a territory. A single village location may have been used as a base camp throughout the year.

Given these assumptions, a list of expectations to be evaluated with the data collected from the site was made. Specific tests for these expectations were generated for the appropriate artifact analyses.

1. Faunal analysis of animal bone and shellfish should indicate a concentration of these remains in distinct areas of the site where food was processed.
2. Evidence for areas where animals were processed should include splintered and burned bone, indicating cooking for storage and immediate consumption.
3. Artifacts, such as ceramics used for cooking and storage, related to daily subsistence activities should be found in a specific area.
4. Areas where stone tools were produced should contain flakes and debitage representing the initial stages of stone tool production and should include cores, hammerstones, and shatter. The final stages and completed tools may not be present.
5. Areas where stone tools were used rather than made should contain sharpening and finishing flakes and completed tools.
6. Artifacts representing social activities such as trading and ceremonies may be found in habitation areas and not in stone tool production areas.

The results of the application of this method to the site near Jamul were positive enough to warrant further studies. Attribute analysis was used to compare two areas of the site, referred to as Locus 1 and Locus 2. Locus 1 was proposed to be an area where stone tool production occurred, and Locus 2 was proposed to be an occupation and food preparation area. Key attributes were selected on the artifacts to compare between the two areas. Stage analysis was used on the flakes collected from the site. Attributes from 1 to 3 edges on flaked stone tools were compared. One major limitation on the analysis was that

only 8 units were excavated, 4 in each locus. However, important conclusions were made:

1. All stages of flaked stone tool manufacturing occurred at the site.
2. Tool production activities took place in all areas of the site; they were not concentrated.
3. Other activities, however, were concentrated in certain areas. Shellfish, animal bone, and ceramics were mainly in Locus 2.

The conclusion of the Jamul study was that the site was occupied year-round by at least an element of a group. These people were making and using multifunctional tools in all areas of the site (unlike earlier groups, the Late Prehistoric occupants modified one or more edges in several ways to create tools that could be used for more than one purpose; there is no Late Prehistoric "tool kit"). Food production activities, however, were concentrated in a particular part of the site.

A larger sample from the site would have permitted more precise identification of both activities and activity areas. Luckily, soon after the excavations at the site near Jamul, the opportunity presented itself for studies at a very large, complex Late Prehistoric site, known as the Rimbach site after the former owner. Through RECON, two different parts of this site were excavated. In addition, other parts of the site had been excavated in the past by a variety of archaeologists. The challenge, then, was to compare the results of these excavations to see if intrasite activity areas could be identified.

The issue of comparability of data proved to be a major one. While the two RECON projects involved the use of the same type of attribute analysis, most of the other projects used conventional functional analyses and described the number of "scrapers," "choppers," and "knives" found in the site. However, the most recent excavations at the site, by Caltrans, utilized the same attribute analysis as RECON. This basic comparability hopefully has compensated for some of the earlier, more descriptive studies.

The Rimbach site is by no means a typical Late Prehistoric village. It is not similar to the site near Jamul. A multitude of unusual artifacts, reminiscent of the Chumash culture area, were recovered from the site. In contrast to the comparatively shallow (less than 1 m) deposits at most sites in the region, the deposit at the Rimbach site can be a deep midden, up to 2.5 m in depth. This deposit is punctuated in some areas by sand layers, cobble lenses, and other evidence for erosion and mud slides. Soil instability is a major limitation to development in this area.

The unusual characteristics of the site were not a factor in the activity area analysis. The goal was not to find a "type site" and use it as a pattern for all villages; rather, each village can be characterized as a separate, unique entity. The villages represent small groups of independent hunter-gatherers with unique identities and cultural traits. These sites are important for their cultural variability, not their similarities.

Figure 1 shows the location of previous studies at the site, as well as known deposits. It should be observed that sections of the site have been studied by parcel or lot; no tests of the site as a whole have been done or are possible, since several areas have been destroyed by development following the completion of mitigation programs. The site has three State numbers: SDi-4513, SDi-4609, and SDi-5443. Sites SDi-4609 and SDi-4513 are separated from each other by the creek and railroad tracks. The eastern portion of the site is spread over a prominent ridgeline and spills into the creek. Limited testing has been accomplished at this portion of the site (Eidsness et al. 1979; Carrico 1975; Hector and Wade 1986). The western portion of the site is confined to alluvial terraces adjacent to the creek. RECON conducted limited tests at the Bailey and Sonico portions of the site, although major excavations were conducted in later years (Smith and Moriarty 1983; Carrico and Taylor 1983; Hector 1985). Site SDi-5443 is essentially part of SDi-4513 and was excavated during a mitigation project (Carrico and Day 1981; Carrico and Taylor n.d.).

Although earlier studies provided a framework for the division of the site into activity areas, four particular studies were used to examine intrasite functions. These are the 1985 RECON project at SDi-4609, known as the Sonico property (Hector 1985); the 1983 WESTEC excavations at SDi-4609, known as the Bailey property (Carrico and Taylor 1983); the 1986 RECON program at SDi-4513, Locus A (Hector and Wade 1986); and the 1986 Caltrans excavations at a small part of SDi-4513, Locus D (Rosen 1987). The data contained in the reports from these projects are more or less comparable.

DATA ANALYSES

Flaked Stone Artifacts

Comparing stone artifacts between the four projects included assessing flakes and debitage and flaked stone tools. The results of the analysis are summarized in this paper.

The WESTEC excavation material from SDi-4609 could only be used in a general way because the RECON and Caltrans analyses utilized a very specialized attribute analysis. This analysis was developed by Rosenthal (Norwood, Bull, and Rosenthal 1981) to describe 9 types of flakes and shatter. A flow diagram and descriptive routine was generated for the activity area analysis so that the objectively derived stages could be used to assign a flake to 1 of the 9 types. Although the types represent empirically developed characteristics of the flakes, they were used in the RECON and Caltrans analyses as independent attributes to compare areas.

Table 1 shows comparisons in flake types between the two areas of the site excavated by RECON and Caltrans. Both site areas excavated by RECON, SDi-4513 and SDi-4609, had similar proportions of flake types. Types 6 and 9 were the most frequent. A Type 6 flake is the result of trimming and finishing activities, and a Type 9 flake is secondary shatter. These two types were also the most abundant at the part of SDi-4513 excavated by Caltrans, but in different proportions. Although sites SDi-4513 and SDi-4609 contrast in many ways, the one common

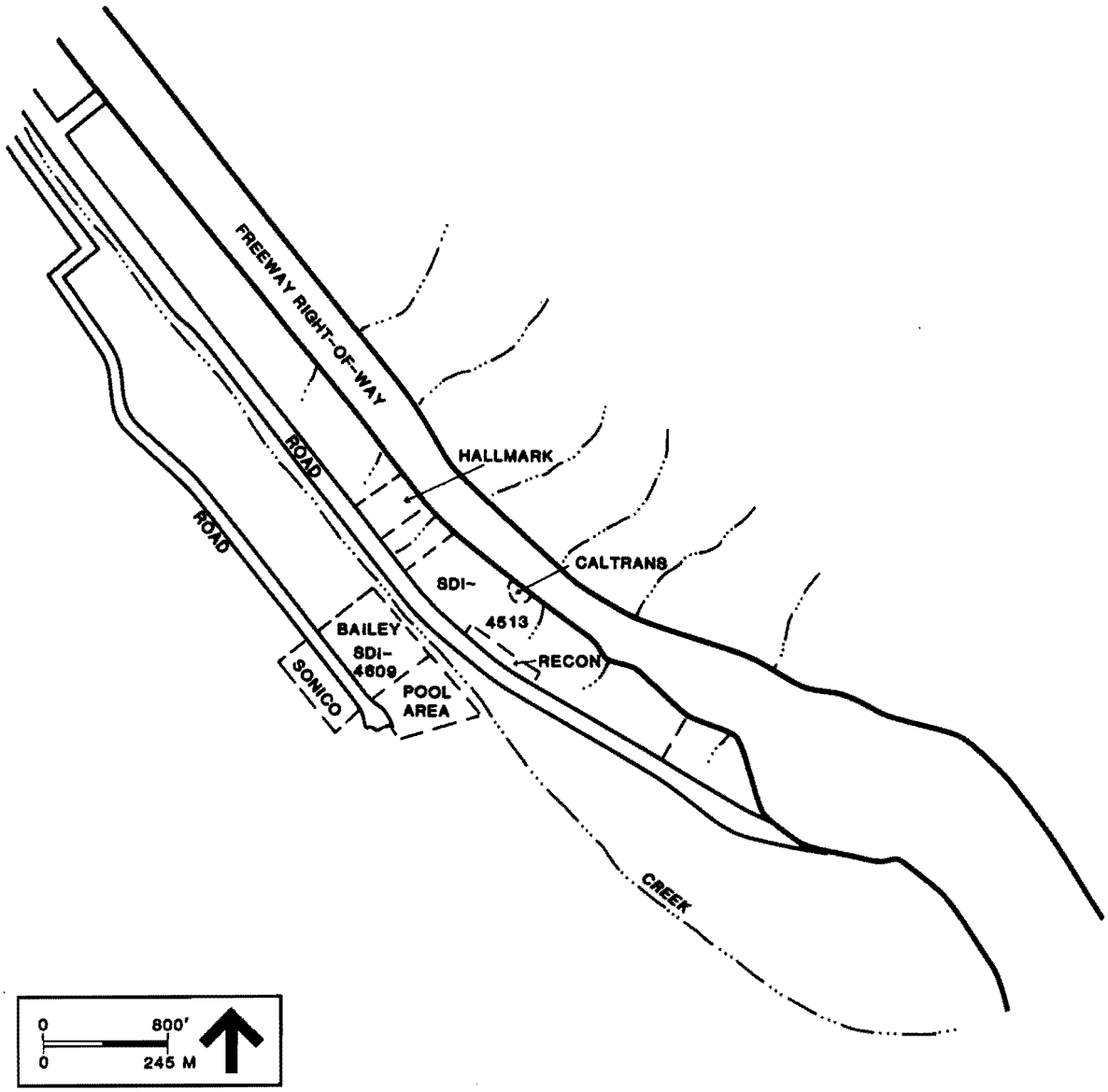

FIGURE 1. IDENTIFIED PORTIONS OF THE RIMBACH SITE (SDi-4513/SDi-4609)

TABLE 1

PERCENTAGES OF FLAKE TYPES AT THE RIMBACH SITE

Project	Flake Types								
	1	2	3	4	5	6	7	8	9
RECON 1985	0	1	1	2	7	56	5	4	26
RECON 1986	0	0	1	1	6	51	9	8	24
Caltrans 1987	0.7	12.2	0	0.8	1.2	20.6	1.3	4.7	58.5

TABLE 2

PERCENTAGES OF FLAKE MATERIAL TYPES
AT THE RIMBACH SITE

Material Type	Projects		
	Caltrans 1987	RECON 1986	RECON 1985
Obsidian	1.5	1	1
Quartz	27.9	6	18
Crypto*	3.6	5	4
Meta Por*	32.1	37	19
Meta F-G*	20.2	39	48
Quartzite	14.7	12	9

*Crypto = cryptocrystalline silicates; Meta Por = metavolcanic porphyry; Meta F-G = metavolcanic fine-grained

factor is the generalized production and use of flaked stone tools. All stages of production were found at the sites. In comparison, the ridge portion of site SDi-4513, which was where the Caltrans excavations were located, appears to be a specialized area of tool production.

Similarly, flake material types provide another good comparison between the site areas. Table 2 compares the stone material types from the Caltrans and two RECON projects. Of particular interest is the high percentage of quartz found at the portion of SDi-4513 excavated by Caltrans and at the Sonico portion of SDi-4609 excavated by RECON. Quartz formed a relatively small percentage of the total from the portion of SDi-4513 excavated by RECON.

In terms of gross amounts of debitage, Rosen (1987) conducted an interesting comparison between the four projects for his Caltrans study. The results of his study are shown in Table 3. Excavations by WESTEC in 1975 at SDi-4513 yielded results similar to those obtained by RECON in this part of the site. A much higher proportion of this assemblage consisted of debitage than any other study to date.

The results of the debitage analysis would seem to indicate that there is a great deal of spatial variability in the site. These data must be combined with other analyses before any conclusions can be made, however.

Relatively few flaked stone tools have been recovered from the site. This is probably due to the multifunctional nature of Late Prehistoric tools; fewer are needed since many types of edge use can occur on one stone. In contrast to the debitage material types, 27 percent of the tools from SDi-4513 were made from quartz. This compares with the Sonico portion of the site, where 12 percent of the tools were made from quartz. Conclusive statements comparing the edge damage on the tools from the site are limited, since only a small sample has been collected. It can be noted, however, that the majority of tools from the Sonico portion of the site were unifacially modified, on 1 or more edges, while the tools from the RECON excavations at SDi-4513 were bifacially flaked and used.

Shellfish Remains

Unusual species in unusual amounts characterize the shellfish collections made at the Rimbach site areas. At the Sonico portion of SDi-4609, lenses of false chama were found in the upper levels at the site. Concentrations of abalone were also encountered. Across the creek, at SDi-4513, RECON excavations also indicated lenses of false chama. This large, heavy shell occurs in extensive colonies and could have been collected in mass quantities. False chama was also found by Caltrans at Locus D. An analysis was accomplished to determine if there was variability between levels at the site in shellfish remains. Although an analysis of the variability between levels was accomplished for stone tools, with the result that no significant variability was noted, the differences in shell species were great. This residual stratigraphy is another unusual feature of the Rimbach site and appears to be a characteristic of all areas within the site.

TABLE 3

AMOUNTS OF DEBITAGE FROM THE RIMBACH SITE
(AFTER ROSEN 1987)

Site	Amount per Cubic Meter
SDi-4609 (RECON)	90
SDi-4609 (WESTEC)	500
SDi-4513 (RECON)	250
SDi-4513 (Caltrans)	1,200

Ceramics

Ceramic analysis indicated that a variety of vessel forms were present in all parts of the site, although the bulk of the pottery came from the SDi-4513 portion of the site. The pottery was Tizon Brownware, although some sherds of Lower Colorado River Buffware were recovered throughout the site areas. A greater proportion of the sherds found on the east side of the creek were burned, indicating cooking vessels; unburned, or storage, vessels dominated the sherds from the west side of the creek.

Animal Bone

The animal bone collected from the site areas provides perhaps the most striking contrast. The portion of the site excavated by Caltrans contained significantly more burned bone and rabbit bone than the other areas. The Sonico portion of SDi-4609 and the WESTEC excavation at this site contained an unusual amount of sea mammal and fish bone, including some of the largest sheephead fish bone seen in the area. Over 43 percent of the bone from the Sonico portion of the site was fish bone, in contrast to SDi-4513, where only 4 percent was from fish. Mammalian bone was a major constituent of the collection from the Sonico portion of the site. Dependence on terrestrial animals versus fish resources appeared to fluctuate at the site. Figure 2 shows the relationship between relative percentages of fish and land mammal bone by level. This distribution is unique to the Sonico (SDi-4609) portion of the site.

In contrast, animal bone from the RECON excavations at SDi-4513 was much more in line with expected types and frequencies, although a greater variety of animals were represented.

Another important element of the animal bone analysis was a study of burned versus unburned bone. Sixty-eight percent of the bone from the Sonico portion of the site was burned, contrasted with 19 percent from SDi-4513.

Ornamental and Aesthetic Artifacts

Ornamental and aesthetic artifacts were found in all areas of the site. Shell beads were relatively abundant; most were barrel and spire-lopped types typical of the late period in the Chumash culture area. Unusual items such as incised and ground abalone shell ornaments, stone beads, ceramic pipes, and other artifacts were found at the Sonico portion and at SDi-4513. A turtle-shell rattle fragment and glass trade beads were found at SDi-4513.

ANALYSIS AND CONCLUSIONS

It is clear that although the remains found in the site areas are associated, they differ in important ways.

Stone tool and flake attributes are the most similar between the site areas. This is to be expected, since tool production should be a culturally identifiable activity. People from the same group should produce tools and other artifacts in similar ways. Each village possessed a unique set of cultural traits, forming an identity represented archaeologically by similarities in certain artifact attributes between units and levels. The quantities of tools and flakes differ between the site areas, however. A relatively greater amount of tool production activity and use was found in the area excavated by Caltrans. It could be

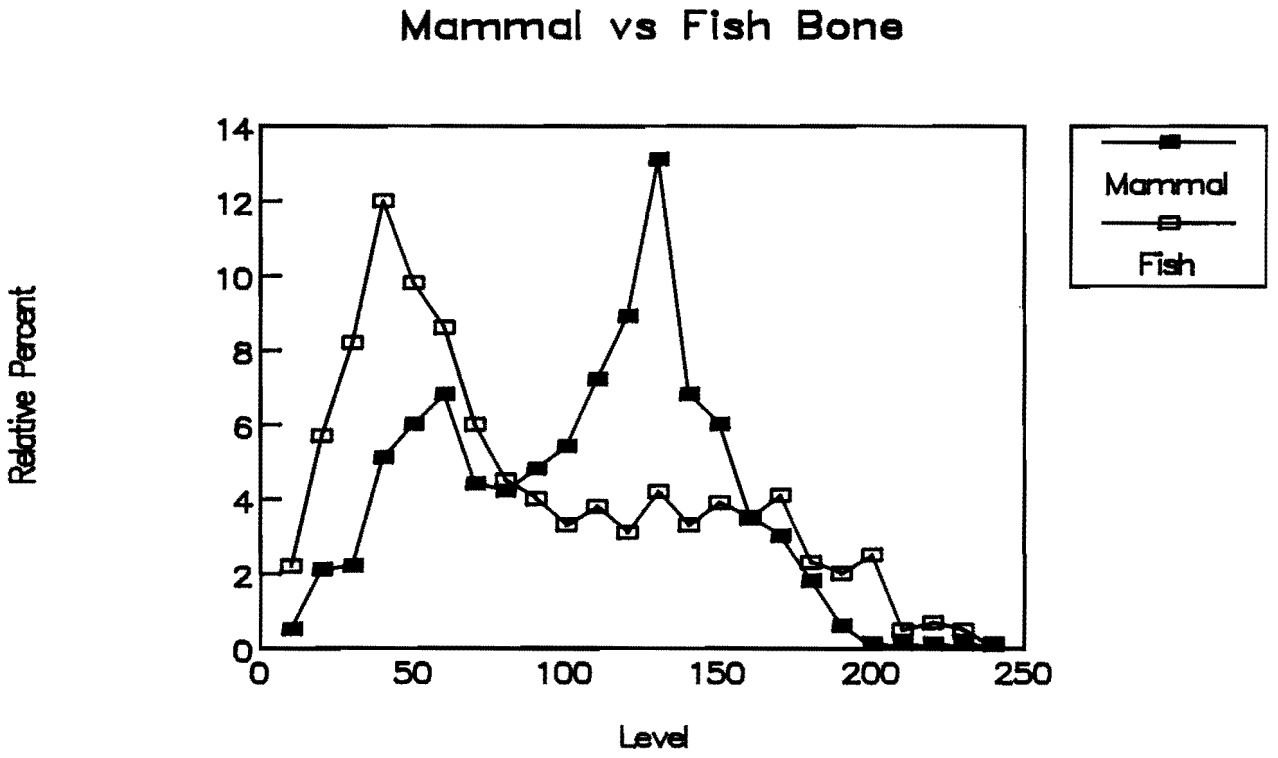

FIGURE 2. RELATIVE FREQUENCIES OF FISH AND MAMMAL BONE

predicted that similar frequencies will be found outside their right-of-way area, between the freeway and the portion of the site excavated by RECON.

Differences in shell remains between site areas are in terms of quantity as well. The 30-cm-thick lenses of false chama occur east and west of the creek and may represent a period of intense collection of this species. Half the assemblage on one side of the creek was mussel, while 35 percent of the assemblage on the other side of the creek was mussel. These differences may also represent single, extended events similar to those collection forays documented in northern Australia (Meehan 1982).

Animal bone variability between site areas is also significant. A great amount of bone, particularly fish bone, was found west of the creek. Although many species were represented east of the creek, the quantities were smaller. Variability in the species represented by animal bone can be related to the results of the ceramics analysis, which proposed that cooking activities were more frequent on the east side of the creek. However, most of the burned bone was on the west side of the creek.

An important component of this activity area analysis was the heavy dependence on data from flakes and shell remains. Both occur in great abundance in San Diego sites; often, they are all that is found. Local archaeologists must, therefore, make the most of these classes of cultural remains.

Attribute analysis of flakes by the flow diagram technique did not require excessive amounts of time, and the objective, comparable data were extremely important to the analyses. Too often these seemingly insignificant artifacts are poorly analyzed. Studies in San Diego comparing Luiseño and Southern Diegueño sites have demonstrated the great utility of flake attribute analysis (Hector and Rosen 1985). Shellfish is mistreated in a similar way (Hector 1983). This abundant cultural material represents human exploitation of the environment, and comparisons of relative quantities and species can be useful in looking at site function. A subsampling technique can eliminate the need for repetitive analyses.

Figure 3 represents the conclusions about activity areas at the site to date. It is proposed that the site can be grossly divided at the creek, with the food processing activities concentrated on the west side. Cooking activities are present on both sides of the creek, although cooking and storage probably was concentrated on the east side. The east side represents an area of complex activities, including ritual activities and food consumption activities near the creek. The upper areas of the site are characterized as tool production areas, although all stages and types of tools were found throughout the site in all areas. Early excavations by WESTEC (Carrico 1975) on the ridgetops provided data to support this contention.

Given the sporadic, varying excavations conducted at this site, these conclusions appear to have much validity. Although, as stated above, this site is quite different from the Jamul site, similarities are present. The production and use of all types of stone tools throughout the site is a common element. Specialized activities are overlaid on top of this background.

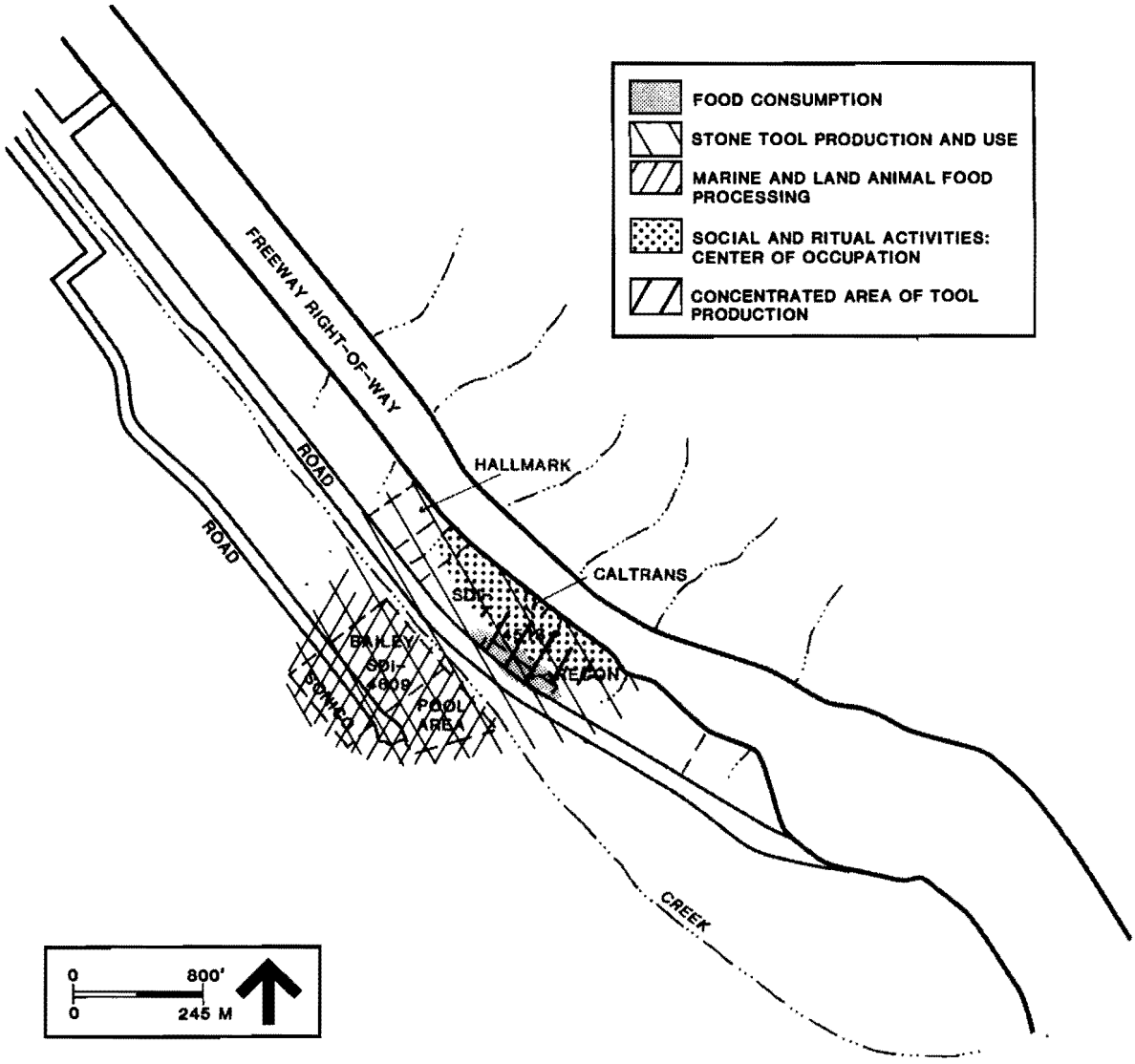

FIGURE 3. ACTIVITY AREAS OF THE RIMBACH SITE (SDi-4513/SDi-4609)

Again, the multifunctional nature of Late Prehistoric tools is probably to blame for this inability to filter out stone tool production and use activities.

The identification of intrasite activity areas does not eliminate the possibilities for external special-activity sites which are affiliated with a major site. Such satellites were identified at the Jamul site used for the pilot study (Hector 1984) and several have been proposed for the Rimbach site area (Wade and Hector 1985).

The conclusion of this study is that generalized intrasite activity areas are present at Late Prehistoric sites. Identification of these areas requires a precise, testable research design with the characteristics of the areas clearly stated as testable hypotheses. Since the excavations at the Rimbach site, the method has been refined at other late sites (e.g., Hector and Van Wormer 1986). The same limitations usually occur: only a portion of a site can be excavated because most extends outside the impact area. This is one of the given limitations of CRM. However, by building on other studies, such as has been done at the Rimbach site, an assessment of site functions is possible.

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