THE SIERRAN FOOTHILLS SOAPSTONE INDUSTRY AND ITS RESEARCH POTENTIAL

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ABSTRACT

Recent excavations in the Dry Creek drainage of the Sierra Foothills in Fresno County have revealed evidence of what may be an extensive soapstone industry. Efforts at dating this manufacturing activity have yielded less than satisfactory results. How the manufacturing activity was carried out has not been addressed nor have the economic implications been explored. This paper will acquaint you with some of the evidence, some of the questions, and some proposed areas of investigation.

THE DATA AND THE QUESTIONS

Steatite artifacts have been the subject of conjecture regarding the archaeology of the San Joaquin Valley - Southern Sierra and cultural connections with the Chumash (Hewes 1941, Gifford and Schenck 1926, Wedel 1941). Gifford and Schenck (1926:54) held the opinion that steatite working was the product of the influx of fugitive Chumash "after the advent of the Caucasians". Wedel later determined that the San Joaquin-Southern Sierran steatite working was "pre-Caucasian" (Wedel 1941). Hewes (1941) suggested the intensity of the steatite industry "may indicate that a Chumash origin for the San Joaquin Valley and Sacramento steatite techniques is not in order" (Hewes 1941:130, emphasis added). Hewes does not elaborate on the specifics of the techniques at issue nor does Wedel (1941) offer a date for the origin of the San Joaquin steatite industry. The archaeological evidence from Catalina Island presented by Wlodarski (1979) indicates limited steatite working from 4000 B.P., evolving into a full blown industry by A.D. 1200. Data from Buchanan Reservoir (Moratto 1972) and Balsam Meadow (Goldberg and Moratto 1984) suggest a fluorescence of steatite vessels around A.D. 1500 with an initial appearance about 1500 to 2000 years B.P. in the Sierra. Thus, a Chumash origin is not ruled out by known temporal factors.

Steatite disk beads are frequently found at sites on the western slopes in the central and southern Sierra Nevada. Goldberg and Moratto (1984:576) in the Balsam Meadow report noted "The centers of bead manufacture and use

coincide with the territories of the Foothill Yokuts groups -- not a surprising fact given the location of steatite outcrops." Driver (1937:125) reported a Chuinimni account of the manufacture of steatite disc beads employing a thin cylinder of steatite and a Doughnut shaped stone vise.

Steatite artifacts, namely beads and bowls, have been found in a number of sites in Mariposa, Madera, Fresno and Tulare counties. A rough survey of the data from sites tested in those counties provokes questions on the patterns of distribution. Of a total of 73 sites, 72% were noted to contain shards of soapstone, 60% contained beads of soapstone, and about 50% contained both shards and beads. Interestingly, 25% contained only beads and 24% contained only shards. Is this distribution an artifact of sampling bias or does it reflect a pattern of differential distribution of beads and bowls?

Site CA-Fre-64 is located on Highway 168 about 16 miles east of Clovis and is the forth in a series of sites spaced about a mile apart up the Dry Creek drainage. Soapstone is available at or near all four sites. What role has that resource played in the selection of habitation areas?

CA-Fre-64 is a relatively small fragmented site consisting of three areas of midden (areas A, B, and C on figure 1) each with associated bedrock mortars (BRMs). The historic component of the site appears to be confined to the area west of midden area B and east of area C.

The site was tested to determine its subsurface content and to define its boundaries. At the onset it was thought that there was little or no subsurface material because of the uneven topography and the lack of artifacts on the surface, the latter was found to be the result of the work of local relic collectors. Areas to the east and a large flat across the creek looked much more promising but were found to contain no artifacts or features.

The 1mX1m units placed in the vicinity of the BRMs were found to contain cultural materials in a dark gray midden soil that was fairly compact when damp, but when dry and after passing through 3mm mesh, had the texture of portland cement. For those who are unfamiliar with that material: it is a cement made of very fine particles of lime and clay and soft in texture. The artifacts that were recovered included shell beads, debitage, projectile points, fragments of worked soapstone and faunal remains.

At the onset of the excavation we did not know weather soapstone was exotic or local but the discovery of worked pieces in the units prompted a search for outcrops of the material. Cobbles of soapstone were found in a small drainage on the west side of the site and cobbles and small boulders were noted in Dry Creek to the south. The closest soapstone quarry mentioned by Heizer and Treganza (1944:308) is vaguely identified as Fish Creek Mountain in Fresno County and located "along a small creek between the stage road and San Joaquin River, to the right of the road to Auberry." The next closest is near Table Mountain but both areas are several miles west of the site.

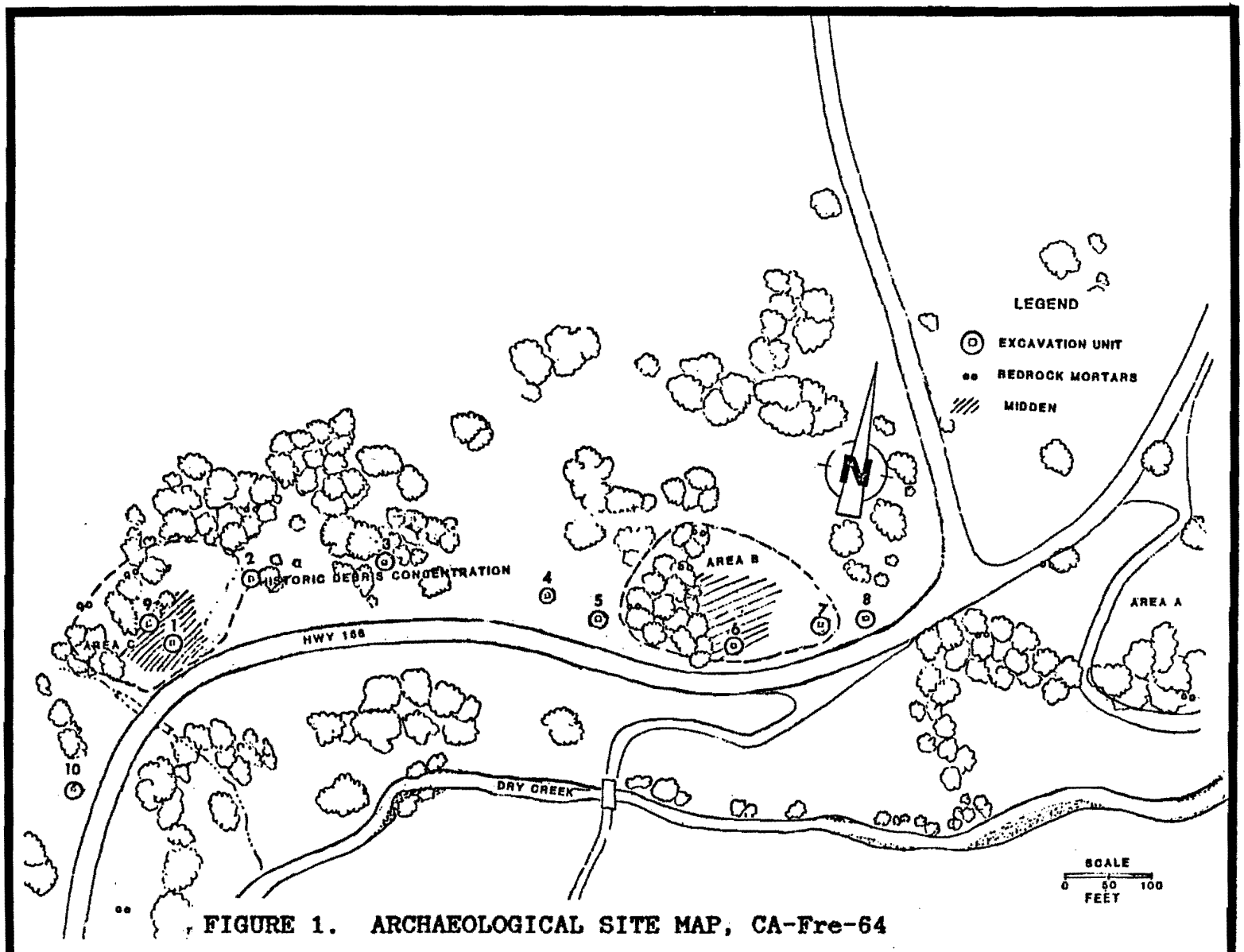

FIGURE 1. ARCHAEOLOGICAL SITE MAP, CA-Fre-64

The bowl fragments found in the units seemed to be in various stages of manufacture from nearly indistinguishable to smoothed and polished on both sides. The configuration of the fragments suggested the finished products were probably 6 to 8 inches in diameter and 2 to 3 inches deep. In contrast, fragments found several hundred yards uphill behind the site appear to have come from much larger bowls. Rounded soapstone cobbles, large enough to serve as raw material for the bowls were not found on the site but were found in the bed of Dry Creek and, therefore, were locally available.

After the analysis of the artifacts and the comparison of the soils of the excavation units it became apparent that many of the worked soapstone fragments were associated with a gray to light brown colored powdery stratum present in units 1,6,7, and 9. Consequently, cobbles of soapstone were selected from the creekbed and attempts were made to shape them using quartzite and metavolcanics. The impromptu experiment indicated that the materials will shape soapstone through tedious pecking and scraping and revealed that one hour of working a piece of soapstone leaves a layer of gray dust about 1/2 inch thick on a living room carpet. The color and texture of the dust affirmed our suspicion that the gray powdery strata at the site may define soapstone working areas.

The excavation failed to identify any specific tool kit attributable to soapstone working but many of the pieces identified as fire affected rock could have been potential tools. Quartzite, a locally abundant material, was reported by Gifford (1932) as having been used by the neighboring Northfork Mono to shape steatite dishes. Various metavolcanic rocks from the area could also have functioned as well. These tools may well have been amorphous and because of the softness of the steatite, little recognizable wear would be noticed.

In an attempt to provide a chronological assessment of the steatite working areas, obsidian samples were selected for sourcing and hydration studies. The samples were selected from levels above and below the levels with the greatest densities of worked soapstone. To provide a reference point, all diagnostic projectile points were also submitted. The results were inconclusive.

The source data for the 33 specimens revealed that 91% were Casa Diablo (N=30), 6% were Mono Glass Mtn/Mono Craters (n=2) and 3% (n=1) Queen. To control for source induced variation only the Casa Diablo hydration data was plotted. The range was 2.7um to 6.4um with 56% of the readings falling between 4.8um and 6.0um and 36% between 3.1um and 3.9um. To put some perspective on these values, we had two Desert Side-notched (DSN) projectile points, one at 3.3um, the other 3.6um, two other pieces, a fragment of a concave base (CCB) came up 5.4um and a Rose Spring Corner Notch (RS) read 2.7 um. The DSN of Queen obsidian had two rim values, 2.2um and 5.2um. For the sake of argument the hydration rim values were converted to uncorrected radiocarbon dates using Hall's (1984) hydration rate for Casa Diablo glass.

The range works out to be 795 B.P. to 3845 B.P. with clusters at 1000 to 1500 B.P. and 2300 to 3400 B.P. This rate would place the DSN's at 1147 and 1345 B.P., the Rose Spring at 795 B.P., and the concave base at 3212 B.P.(if it is a concave base type point fragment). Roughly, these figures correspond to the values in Column A. The values in Column B are derived from the dates for these projectile point types presented in Moratto (1984:317).

	A	B
DSN	AD 803	AD 1500 to AD 1850 Madera Phase
DSN	AD 641	AD 1500 to AD 1850 Madera Phase
RS	AD 1190	AD 550 to AD 1500 Raymond Phase
CCB	1226 BC	800 BC to AD 550 Chowchilla Phase

Other Lines of Evidence

A total of eight beads was recovered from four excavation units with all specimens occurring above the 50cm level. The shell beads all appear to be of Olivella biplicata and include three K1 or K1/E1 cup/thin lipped, one possible burned and split K1 cup or G1 tiny saucer, and two A5c large spire-lopped appliques. The former (K1) represent, at the earliest, an introduction within Phase 1, A.D. 900-1000 (Gibson 1973:44) or (K1/E1) Phase 2a, of the Late Period, and the latter (A5a) are temporal markers of the Protohistoric and Historic Periods (Bennyhoff and Fredrickson 1967; Bennyhoff and Hughes 1981; Moratto 1972). A small, unidentified (possibly magnesite) stone disc bead and an opaque white hexagonal cane glass bead, both from above the 20 cm level, also seem to indicate Protohistoric and Historic affiliation (King 1982; Moratto 1972, 1984). To summarize, the bead data suggest occupation of the site from AD 1 to AD 1860.

The next line of evidence involves the BRMs. Moratto (1984:317) concluded that bedrock milling was introduced during the Raymond Phase and became common place in the Madera Phase. This suggests at least seasonal use of the site anytime after AD 550.

CONCLUSION

In sum, CA-Fre-64 is a site where soapstone vessels are being manufactured or at least being broken in large numbers and in various stages of completion sometime between 1226 B.C. and A.D. 1860. The site has ample artifactual evidence of a late period occupation but the hydration data suggest a fairly intensive earlier occupation. The results of the limited test excavation indicated that the site contains several data sets and may contain stratigraphic relationships and features.

The site will require mitigation. The consultants who propose to mitigate the effects of the highway construction project are being asked to design a research strategy that will: (1) provide a better understanding of the chronology of the soapstone industry, (2) define a tool kit related to

the soapstone industry, (3) define this industry in relation to the coastal and island industry, and (4) try to determine a means of identifying the products of the Sierran sources versus the coastal sources and products. Through these efforts it is hoped that new light can be shed on the Sierran soapstone industry and ultimately to provide a better understanding of prehistoric exchange systems in California.

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