# SIGHTS, SITES, AND CITATIONS: RECENT ARCHAEOLOGICAL INVESTIGATIONS BY THE YOSEMITE RESEARCH CENTER

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## ABSTRACT

In addition to being scenic focal points, Yosemite and Sequoia-Kings Canyon National Parks are also areas in which the Park Service balances its construction programs with its preservation values. Over a period of several years, millions of dollars are being funneled into construction efforts in the parks. Since 1984, such construction has mandated 12 major archaeological surveys, 11 excavation projects, and three large scale construction monitoring efforts, as well as numerous data updates and smaller cultural resources management compliance surveys. With site avoidance the most implemented option, the archaeological work still includes the full gamut of treatments -- from initial discovery and recording, to testing, mitigative excavation, and construction impact monitoring. As an introduction to other papers from Yosemite, the major observations and findings of recent archaeological work are reviewed with an emphasis on informational highlights. Plans for future synthetic studies and other projects planned by the Yosemite Research Center are also discussed.

## INTRODUCTION[1]

There are several papers from the Yosemite Research Center in this volume. This paper will be somewhat introductory to the others, and will discuss some of the projects undertaken by the Research Center in recent years. The Center is located in El Portal, in the Merced River canyon, at the western edge of Yosemite National Park. The archaeology staff shares the Yosemite Research Center with the Park's natural science staff, who are currently involved in the development of a computerized geographic information system for Yosemite, a fire dynamics study, and radio tracking of the recently reintroduced Bighorn sheep herd.

Both functions also jointly manage a visiting researcher program, under which students and professionals who wish to conduct independent research in the Park receive temporary housing and assistance. A paper on an ethnobotanical study of the Southern Sierra Miwok by one such researcher, M. Kat Anderson (1987), is such an example. Other independent research includes ethnohistoric studies involving the Native American community, obsidian studies of previously located biface caches, a regional palynological study of the Sierra Nevada covering the area

from Yosemite to Sequoia-Kings Canyon National Parks, the researching and retracing of the Walker Party's route (the first Euro-Americans to enter the Yosemite area in 1833), glacial and plutonic research, and a study of the endangered Great Gray Owl.

The archaeology staff at the Yosemite Research Center is charged with all the cultural resource management and research in Yosemite and Sequoia-Kings Canyon National Parks, as well as Devils Postpile National Monument. Two of the Park Service's major goals are to preserve the cultural resources in the parks and provide adequate facilities for visitors and employees. When these two goals conflict, the archaeology staff becomes involved. Annual visitation of Yosemite has been estimated at approximately two million eight hundred thousand visitors per year. Over a period of 10 years, about 60 million dollars will be spent on facility upgrading in the parks covered by the Research Center -- including improvements to water, electric, and sewer systems; campgrounds; roads; and employee housing.

Several phases of archaeological investigations have followed Moratto's research design for Yosemite (Moratto 1981), beginning in 1981 and later in 1983 when three projects were completed in Wawona and El Portal. This work has been reported in National Park Service publications (Baumler and Carpenter 1982; Ervin 1984; and Riley 1986) and at previous Society for California Archaeology meetings. Since 1984, major archaeological projects undertaken by the Yosemite Research Center include 12 large-scale surveys, 11 excavation projects, and three construction impact monitoring projects. Almost all of this archaeological work has had a development orientation, however, a great deal of research information has also been provided. This paper will necessarily focus on the highlights of the past three years. Two specific areas have received the full gamut of archaeological treatment from survey to subsurface testing, mitigative or data recovery excavation, and construction impact monitoring -- Yosemite Valley and Wawona.

## ARCHAEOLOGICAL SURVEYS

The larger survey projects were conducted in development areas and road corridors. Those surveys completed in 1984 provided somewhat of a north/south sampling of Yosemite, involving 65 sites. For those sites, 27 variables including site attributes and environmental information have been entered into a computerized database using the R-base 4000 program. Such characteristics as vegetation, slope, landform, and aspect have been analyzed with respect to site location. Site distribution was compared with acreage surveyed with regard to vegetation communities. Results indicate a low site occurrence in red fir forest, and a preponderance of sites in yellow pine

forest and at lodgepole pine/alpine meadow ecotones. Data regarding numerous site characteristics, site location analysis, and obsidian hydration values for surface artifacts are discussed in the report of the surveys (Hull and Mundy 1985). The cultural deposits at one of these sites appear to have been churned up by pocket gophers and 94 artifacts, 55 of which were temporally diagnostic, were found in a small area on the site's surface. The majority of these are Desert Side-notched points; however, an Eastgate Expanding Stem point fragment made from clear quartz was also recovered.

Surveys completed in 1985 and 1986, when combined with the 1984 work, have provided a continuous, non-random, 300-meter wide, east/west transect of the Park along Tioga Road, from 6,000 to almost 10,000 feet in elevation. This represents a corridor approximately 45 miles in length through four major vegetation communities, with data from 120 sites and 175 surface artifacts. Although analysis is still pending, the 1985 and 1986 surveys have provided a large sample of upper elevation lodgepole forest as well as Tuolumne and Dana meadows at 8,500 and 9,500 feet elevation, respectively. Several large sites close to Mono Pass may represent trans-Sierra trading camps and extensive lithic workshops occupied during the summer (Mundy 1985d; Hull 1986b).

Although the Yosemite Valley floor has been previously surveyed in the 1950s and 1970s, new sites, particularly small less visible debitage scatters and sites with small milling features, are still being discovered. This is due to poor ground visibility and judgmental survey techniques used by previous surveyors (Mundy 1985e). Over 100 sites have now been recorded in the Valley, and some previously recorded site information has been updated for entry into our computerized database system.

In Sequoia-Kings Canyon National Parks the survey of the Generals Highway corridor has resulted in the recording of 11 sites (Mundy 1985b). One mortar feature was discovered directly overhanging a roadcut on the highway. Several polychromatic pictograph panels, some of which were newly discovered, were illustrated as well. A backcountry survey of the trail in Tehipite Valley, below Tehipite Dome, also led to the recording of pictographs there. As suggested previously by Elsasser (1962), pictograph motifs appear to represent both the Foothill and Great Basin styles, indicating that what is now Sequoia National Park was probably an area of prehistoric cultural intermingling.

## ARCHAEOLOGICAL EXCAVATIONS

The majority of excavation projects involve the subsurface testing of sites recorded during the survey phase that are potentially imperiled by development plans. A total of 38 sites have been tested in Yosemite during the past three years. Every effort is made through consulta-

tion with designers and engineers to avoid significant cultural resource areas during construction, and such efforts have been very successful. Several of the excavated sites are of particular interest.

It should first be noted that over 99 percent of the prehistoric flaked stone recovered in Yosemite is obsidian, and unless stated otherwise, all the obsidian hydration rim readings discussed represent the Casa Diablo source. The majority of artifacts from testing in Yosemite Valley were from Casa Diablo. Therefore, a specific attempt was made to select debitage for hydration analysis from the Casa Diablo source on the basis of visual characteristics. The selected sample, which included both surface and excavated artifacts, was tested using x-ray fluorescence techniques. Results indicate that in the Yosemite area Casa Diablo obsidian can be visually selected with an accuracy rate of 96 percent (Mundy and Hull 1987; Hull 1987).

Testing in Yosemite Valley, which was the first major multi-site excavation project ever undertaken there, included a large open debitage scatter which apparently represents an early occupation site in the same area reported to be the large ethnographic village of Ah-wah-ne (Merriam 1976:49-50). Artifacts recovered include a steatite ring fragment and six Elko series projectile points or point fragments. The hydration rim values for these Elko points include readings of 2.6 for an Elko Eared point (Casa Diablo), and ranges of 5.5 to 5.7 microns (Casa Diablo) and 3.7 to 5.2 microns (Bodie Hills) for Elko Corner-notched and Side-notched varieties (Mundy and Hull 1987). For the most part, these Elko points appear to represent the Crane Flat cultural complex originally defined by Bennyhoff (1956).

As a whole, hydration values for this Valley site fall between 0.9 and 8.6 microns, however over 80 percent cluster between 4.2 and 6.6 microns. The hydration values greater than 6.0 microns may indicate a pre-Elko, pre-Crane Flat Complex, occupation. A "Pinto?" phase in the Yosemite area has been alluded to by Moratto (1981:29). To date, four provenienced Pinto style points have been recovered in the Park, but hydration data are not yet available for them.

This Yosemite Valley site also exhibits a very low tool and tool fragment to debitage ratio. Hydration rim readings on debitage column samples indicate extreme vertical mixing of all debitage sizes throughout the hydration range. It is possible that soil turbation, mostly attributable to rodents, may have led to the surface collection and reuse of earlier (Crane Flat) artifacts and debitage by later inhabitants. It is also likely that the presence of the older debitage scatter may have served as a locational factor for the more recent ethnographic village (see Moratto 1987).

Two rockshelters in the Valley, both containing ash features, yielded four radiocarbon dates of approximately

A.D. 500 to 1460. These ash features were associated with Sierra Concave Base and Rose Spring points with hydration values of 2.6 microns (Casa Diablo) and 2.3 microns (Mt. Hicks), respectively. Debitage from these units generally produced hydration values between 2.2 and 3.5 microns (Mundy and Hull 1987). These data appear to indicate a Tamarack Complex occupation also originally proposed by Bennyhoff (1956).

The second rockshelter contains a monochrome red pictograph, which is extremely faded. The excavation collection yielded some hydration values as thin as one micron. Ornamental objects such as a notched limpet shell ring, a Haliotis shell bead, a burned steatite bead, and a glass trade bead were also recovered. Obsidian hydration results, debitage analysis, and visual sourcing techniques for this and other Yosemite projects are discussed by Hull (1987) in this volume.

Beside providing much more extensive archaeological samples for three sites in Yosemite Valley, larger scale mitigative excavations in 1986 recovered a cache of five handstones (Mundy 1986). Additional research for this project involved the coring of a cutoff meander of the Merced River, which is now a seasonal pond, for palynological analysis. This study was undertaken by R. Scott Anderson of the Department of Geosciences, University of Arizona, Tucson. The cores were taken adjacent to the second rockshelter described earlier (with the pictograph). The coring results appear to indicate an onset of the use of fire as an aboriginal land management tool around A.D. 400, effectively altering the vegetation of Yosemite Valley from dense pine to oak woodland (Anderson 1986). This may establish purposefully set fires as a cultural innovation of Yosemite's Mariposa Complex.

Also in 1986, three large occupation sites above 6,000 feet elevation, two near Glacier Point Road, and one near the Mariposa Grove of Giant Sequoia, were tested. One site, at 7,000 feet, includes a red monochrome pictograph panel on a large boulder. The majority of projectile points from these sites are of the Desert Side-notched type, indicating the predominance of Mariposa Complex deposits. However, Rose Spring, Elko, and Concave Base style points, as well as a steatite ring fragment were also recovered. These sites had debitage counts up to 3,000 pieces per 0.1 cubic meter (using three-millimeter mesh), which is the highest density yet encountered in Yosemite. One site had a distinct layer of fire-fractured rock at 60 centimeters depth, which appeared to extend throughout much of the main site area. Several large charcoal samples were also collected, but have yet to be analyzed (Hull 1985a, 1985b, 1986a).

Testing in Sequoia-Kings Canyon National Parks involved several upper elevation sites including a double rockshelter on either side of a large erratic boulder (Mundy 1985c). Application of visual sourcing techniques

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