67. Aboriginal Use of Restrictive Sierran Environments*

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In spite of the lowly cultural status usually assigned to the Indians of California, the estimated population in prehistoric and early historic times reflects an uncommonly advanced and efficient adaptation to the varied environments offered them. It is understandable of course why the heaviest concentrations of people were in regions which even today are considered the most bountiful in food resources, for example the Great Central Valley, with its network of rivers and creeks, many of them constantly being fed by runoff of rain and melting snow of the Sierra Nevada, resulting in an abundance of plant and animal life over a wide lowland area.

What is not fully appreciated perhaps is that even the apparently less exploitable areas of what are now California and Western Nevada were not deserted or, as we say "unexplored" by the prehistoric inhabitants of adjacent regions. This is amply illustrated by the intimate knowledge of the varied terrains displayed in historic times by peoples whose immediate ancestors traveled in and occupied places which seem at first to offer extremely few resources for living even at a minimum level. In some cases living Indians have been observed at first hand following the patterns of their forebears in these regions, and the archaeological record confirms and even amplifies the testimony of the later inhabitants.

The question may be asked what is meant by the terms "restrictive" or "restricted" if people were able to survive at all in what can be called a hostile environment. First of all, the term applies to regions which do not ordinarily permit year-round living. Death Valley, in California, for example, can hardly be occupied during the hottest months, although it may be visited regularly by surrounding groups at other times of the year (Wallace and Taylor, 1955). Secondly, the term may be descriptive of an area where the physical environment is not the critical factor for encouraging or restricting use of the land. Thus a large apparently barren area may be covered for the gathering of one specific, but minor, food item, one which may simply serve to satisfy a taste preference or to supplement or vary an already complete diet. As an example of this phenomenon, Dixon (1905, p. 189) mentions that the mountain Maidu traded sugar pine-nuts to the Sacramento Valley people for digger pine-nuts.

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The aim of this paper is to set down firmly the concept that in a particular region, which includes the higher ranges of the Sierra Nevada in California and some of its closely out-lying (Basin) ranges, full use was made of the available food resources, no matter what the altitude. The chief inference to be drawn from the data at hand is that the restricted areas and the land traveled over in order to arrive at such areas, in spite of the vast spaces involved, must have been thought of as land at the outer reaches, but nevertheless as owned land, of the people who habitually made use of it.

Connected with this, but not treated here, are problems involving the ultimate cultural affiliations and origin of the people who first used the restricted land. Such problems will be solved only when more excavated archaeological sites in the region reveal a sufficiently large inventory of artifactual material to allow identification, comparison and relating of cultural units both within and beyond the Sierra.

If we follow the primary definition of restrictive, all land above 4000 feet elevation on the western slope of the Sierra Nevada must be considered such. From above this elevation the Nisenan and Miwok, for example, moved in the winter time (Beals, 1933, p. 336; Barrett and Gifford, 1933, p. 129). It is plain, however, that even though the land at and below 4000 feet might be comfortable enough for living in summer time, the higher altitudes were sought by some portion of a given group, at any rate. Reasons for this were probably based on the desire to live in the cooler and more comfortable high mountains and also, more practically, birds, mammals, and certain seeds were then easily available in these mountains, for example the young cones of the sugar pine could be gathered in July and August before the seeds began to harden (Beals, 1933, p. 351). Not to be discounted is simply an esthetic desire on the part of the Indians to live for a brief time surrounded by the tremendously spectacular scenery offered by the Sierra Nevada. Finally, there is some evidence that living on the valley floor was not considered healthy in the summer time (Derby, 1933, p. 42; Powers, 1877, p. 316).

Whatever the reasons for the summer movement to the mountains, the picture is presented of certain segments of the Maidu, Miwok, Yokuts and Mono, on the western slope of the range, all moving seasonally but within a specified territory, to the higher elevations. On the eastern side of the mountains, we see a similar movement by the Washo and the Paiutes, for example by the Owens Valley Paiute, who are reported to have utilized the land west to the crest of the Sierra Nevada and east to the heights of the Inyo and White Mountains (Steward, 1938, p. 52).

The Owens Valley Paiute illustrate a special case of use of high-altitude land. At elevations from 6000 to 9000 feet in their territory are extensive stands of piñon; this area is definitely not restrictive in the second sense defined above, i.e., it contained more than mere supplement to the diet. The pine-nut was the primary, indeed the most important

crop (Steward, 1933, p. 241) of the Paiute, equivalent to the acorn in Central California. When the crop was good, no longer even the primary definition of restrictive applied, since the Owens Valley people were known to winter in the mountains above 6000 feet altitude. It should be noted, however, that the eastern slope of the Sierra is more open, rocky, and sparsely forested than the western slope, hence the critical range of 4000 feet is not applicable here (Sumner and Dixon, 1953, p. 459).

Another special aspect of the pine-nut territory was the relatively rigid concept of ownership known there. The land was limited not only to Paiute, i.e., to one linguistic group, but to district entities among the Owens Valley people themselves. Outsiders were generally excluded though sometimes permission to gather nuts was granted. Muir however reported that white men were killed for felling piñons (Steward, 1933, p. 241).

In contrast to the piñon, the other food products of the high Sierra may be considered secondary--certainly no other single resource could offer such a field for exploitation. Thus the ordinary summer period spent in the mountains by the Indians may be looked upon as a time when quantities of special food were collected and enjoyed. Plant foods include the seeds of the sugar and Jeffrey pines, which extend up to 7000 and 9000 feet altitude, respectively. A great variety of grass seeds, greens, bulbs and berries evidently was collected, few of them, however, beyond the 8000 feet elevation (Beals, 1933, p. 351; Bennyhoff, 1956, p. 19; Dixon, 1905, p. 182; Steward, 1933, p. 242, map 2). None of these was important enough to have a complex of gathering and preparational processes built around it, as for piñon or acorns, though some of the wild grasses called wai by the Owens Valley Paiute were said to be second only in importance to the piñon (Meighan, 1955, p. 7; Steward, 1933).

Evidence pertaining to the use of seeds is present in abundance in the form of bedrock mortars at both ethnographic and archaeological sites. In view of the relatively small importance to the diet of the secondary types of seeds mentioned above, it is astonishing that so many bedrock mortars have been recorded at altitudes above the limit of the acorns and pine-nuts on the western slope of the Sierra. In the records of the University of California Archaeological Survey are literally dozens of bedrock mortar sites situated above the 6000 foot level. Bennyhoff (1956, p. 19) notes that thirteen sites recorded at elevations between 6500 and 7500 feet in Yosemite National Park have from 1 to 52 mortar holes in association. No oaks were noted in the vicinity of any of these sites. It appears that camps were established above the limits of the oaks in upland valleys in order that the Indians might more easily gather the acorns produced on the upper slopes of the adjacent canyons. The acorns, and at this locality possibly yellow pine-nuts, would nevertheless have to be carried some distances to the higher villages.

In Mono County, i.e., east of the crest of the Sierra, portable slab metates are frequently found within the range of the piñon, up to 9000 feet elevation. Steward (1933, p. 246) reports that the Owens Valley Paiute used bedrock mortars for acorns and metates for other seeds. Meighan (1955, p. 12), however, reports bedrock mortars at several sites many miles from the source of acorns, and others (e.g., Elsasser, 1957, p. 7) have noted bedrock mortars at sites at 7300 feet elevation which were not close to sources of either acorns or piñons--these mortars were not well-developed and may be presumed to indicate use with wild grass seeds. However bedrock mortars were used east of the crest of the Sierra, the picture is not nearly so clear as it is on the western slope.

The extreme altitude limitation of plants by no means applied to animal life except perhaps in the case of the kutsavi, or fly larvae, which abounded in Mono Lake at an altitude of 6000 feet, the caterpillars of the pandora moth, which were associated with the Jeffrey pine, and the larvae of ants, bees and other insects. All of these food sources evidently were exploited in much the same way that plants were. Muir (1911, p. 305) states that "wars on account of encroachment on each other's worm [i.e., kutsavi] grounds are of common occurrence among the various tribes and families" which claimed certain portions of the shore of Mono Lake.

In contrast, the hunting of birds and mammals, such as bear, rabbits, mountain sheep and deer might carry the Indians to the higher peaks of the Sierra. Muir (1913, p. 304) speaks, for example, of the hunting of wild sheep in the neighborhood of mountain passes, and of small stone enclosures in Nevada which were near tops of mountains and in which hunters hid while others frightened sheep, knowing they would run to the summit. Although no remains of stone enclosures have so far been found at extremely high altitudes in the Sierra, there is no reason for assuming that this or a similar technique was not also used on Sierran peaks.

There is some evidence that the higher ranges of the Sierra were considered as common hunting ground by the surrounding peoples (Clark, 1904, p. 46) though there would apparently be little reason for an individual to stray far from the land customarily used by his kin-group. Dixon (1905, p. 225) moreover states that among the Maidu an individual could hunt alone over any part of the community's territory but that deer drives could be carried out in certain places only by certain families.

As the bedrock mortars may be said to mark the upper limit of plant exploitation, so the camp sites, which are usually identified by archaeologists as scatterings of obsidian chips on their surfaces, mark the range of hunting groups. In all high Sierran regions which have been intensively investigated to date, such camp sites have been found in some number. In Mono County, for example, of 104 sites over 7000 feet, 19 are over 9000 feet, the maximum range of the piñon. Bennyhoff (1956, p. 16) in Yosemite National Park recorded 15 large camps and 40 small camps in altitudes ranging from 9000 to 10,700 feet. These sites are usually situated near desirable hunting grounds, as at the margin of a mountain meadow where

water is easily available. Usually they can be distinguished from sites primarily associated with mountain passes and trails. For example, some of the sites in the narrow gorge of Bloody Canyon, to the east of Mono Pass, would not be suitable for hunters' camp spots. On the other hand, when trails lead through country where the hunting was good, the distinction becomes blurred. A true anomaly occurs at an elevation of 11,800 feet, at Taboose Pass, where, around the trail leading over the pass, is what appears to be a large quarry-workshop site, with many obsidian and quartzite chips scattered about. The hunting probably was not so good near this site but the abundance of obsidian chippage indicates more than a mere regular overnight camp spot along the trail.

A great mass of evidence leads to the conclusion that, considering all of the several groups which lived on the slopes of the Sierra Nevada as a whole, there was literally not so much as one square mile in the entire range which was unfamiliar to them. Wherever exploitable resources were, no matter what the altitude or other apparently discouraging factor, it seems that either archaeological or ethnographical evidence there points to seasonal occupation by Indians who lived part of the time on the lower slopes of the Sierra.

It appears that linguistic maps of California, such as that of Kroeber (1925), are not necessarily arbitrary even where what has been defined here as restrictive environments are treated. The linguistically discrete ethnographic groups evidently were not only familiar with the region but, in what should be considered their constant, regular use of certain sections of the land, must have developed a proprietary interest in it, and thought it an integral and important part or extension of their home territory. It is this fact of extended territoriality which will possibly lead to solutions of problems involving the early movements and relationships of peoples who used the high Sierra in proto-historic times.

Bibliography

Barrett, S. A. and E. W. Gifford
1933 Miwok Material Culture. Publ. Mus. Of the City of Milwaukee, Bull. 2.

Beals, R. L.
1933 Ethnology of the Nisenan. UC-PAAE Vol. 31, pp. 335-414.

Bennyhoff, J. A.
1956 An Appraisal of the Archaeological Resources of Yosemite National Park UCAS-R 34.

Clark, G.
1904 Indians of the Yosemite Valley and Vicinity. Yosemite Valley, California.

Derby, G. H.
1933 The Topographical Reports of Lieutenant George H. Derby. With Introduction and Notes by Francis P. Farquhar. Reprint from Quarterly of California Historical Society Vol. XI, Nos. 2, 3, and 4, with additional material.

Dixon, R. B.
1905 The Northern Maidu. Amer. Mus. Nat. Hist. Bull. 17, pp. 119-346.

Elsasser, A. B.
1957 A Decorated Stone Implement from Mono County, California. UCAS-R 38, pp. 7-9.

Kroeber, A. L.
1925 Handbook of the Indians of California. Bur. Amer. Ethnol. Bull. 78. Washington.

Meighan, C. W.
1955 Notes on the Archaeology of Mono County, California. UCAS-R 28.

Muir, J.
1911 My First Summer in the Sierra. Houghton Mifflin Company.

1913 The Mountains of California. The Century Company, New York.

Powers, S.
1877 Tribes of Califomia. Cont. North Amer. Ethnol. Vol. 3. Washington.

Steward, J. H.
1933 Ethnography of the Owens Valley Paiute. UC-PAAE Vol. 33, pp. 233-350.

1938 Great Basin Aboriginal Sociopolitical Groups. Bur. Amer. Ethnol. Bull. 120. Washington.

Sumner, L. and J. S. Dixon
1953 Birds and Mammals of the Sierra Nevada. Berkeley and Los Angeles.

Wallace, W. J. and E. S. Taylor
1955 Archaeology of Wildrose Canyon, Death Valley National Monument. American Antiquity Vol. 20, pp. 355-367.