CHAPTER 6

PREHISTORIC SETTLEMENT PATTERN: AN ARCHAEOLOGICAL STUDY

INTRODUCTION

People do not usually choose the sites and layouts for their homes, villages, and towns according to momentary, isolated whims. If this were so, every house and city would be entirely different from every other, and the term “settlement pattern” would have no meaning. As it is, both the internal arrangement of individual living areas, camps, or towns, and the geographical arrangement of these units, tend to be highly structured; together they constitute a group’s settlement pattern.

In studying the Lake Sonoma Area’s pattern of settlement, we are dealing with the product of a variety of influences, natural and cultural, that emanated both from within and outside of the local scene. Some of these influences, notably the natural environment and a group’s technology, are more straightforward to document than others. Since these factors—like the settlements themselves—leave material remains that can be interpreted, they have come to be emphasized in settlement pattern analysis. The role of group environmental perception (people’s beliefs about their range of options, addressed in Chapter 3), though nonmaterial, is nonetheless an important influence on behavior. Kinship structure, ideology, politics, and numerous other intangible factors also influence how people settle the land.

Archaeologists must take very different approaches when investigating settlement patterns of the historic period and those of groups who left no written record. In prehistoric archaeology, the many possible intangible influences on settlement pattern must be deduced almost solely from physical remains, while the historical archaeologist relies as much on documents and oral history as on material in the ground. This chapter turns to archaeology for a description of settlement pattern during the 5000-year prehistoric occupation of the Lake Sonoma Area. In the following chapter, historic-period occupation is approached from an interdisciplinary perspective.

Settlement Pattern Perspective

During the 1960s and 1970s, archaeologists shifted from a focus on individual prehistoric sites to studies of relationships between sites and areas. This shift resulted from a new interest in ecology, with inter-connections seen not only among plants, animals, and their environment, but also among parts of a site or clusters of sites. This new approach made all archaeological material within an area important. Earlier, archaeologists had focused on large villages. Now, small summer camps, stone quarries, and hunting spots also became of interest. Larger archaeological surveys were conducted, many—such as that of the Lake Sonoma Area—covering thousands of acres. Often, scores of related sites were discovered, many of which would have gone unrecorded only a few years earlier.

Patterns quickly emerge from the distribution of sites in a well-surveyed area. They reveal the relation of camps and villages to streams, vegetation communities, slope of the land, and to each other. But a major factor in such “patterns” is missing—time. The Lake Sonoma Area survey crew, for example, recorded 61 prehistoric sites within the more than 17,000-acre project area. If we assumed that they all had been occupied at the same time, we would have an erroneous picture of the size of the population and the use of the land. On the surface of some sites are artifacts which were used only for a brief time period, and such time markers can lead to a rough estimate of when a site was used. But even when datable artifacts were found on Lake Sonoma Area sites, it would not have been possible in most cases to know how far back a site was used without a look below the surface. Without excavation, the way in which a site was used is also little understood.

California archaeologists rarely excavate more than a very few related sites. Perhaps construction of an apartment complex will destroy a prehistoric village, or a new road will be cut through a hunting camp. Unless a great deal of survey and excavation have occurred nearby, little can be said about settlement pattern, and the sites must be treated in isolation; yet no site existed in isolation during its use. Archaeologists on the Lake Sonoma project had the opportunity to do test excavation at the 61 prehistoric sites, while large-scale excavation was carried out at 20 of them. From the reams of data and
thousands of artifacts resulting from this work, much has been learned about Lake Sonoma Area settlement patterns (1).

Lake Sonoma Area Time Frame

Evidence of the first human occupation of California has been dated to at least 12,000 years ago in a few isolated locales in the Great Valley and at Clear Lake. By 7000 years ago, the human population had grown, and sites dating to that period are found in increasing numbers. While some use of the Lake Sonoma Area probably occurred earlier, there is no evidence of occupation until about 3000 B.C.

This 5000-year occupation has been divided into three major time periods; each has been given a name to represent distinctive cultural features occurring in the area at that time. Cultural patterns are defined by numerous traits, including often subtle changes in styles of projectile points (spear and dart points and arrowheads) and shell beads. The chronology below describes only the broadest and most significant changes in each period—changes which probably occurred about the same time throughout north-central California.

Skaggs Phase, 3000 B.C.-500 B.C.: Lake Sonoma Area sites dating to the Skaggs Phase yielded heavy handstones and millingstones (also called manos and metates), which were probably used for grinding seeds. Very large projectile points from this period indicate use of the spear and atlatl (or dart thrower), rather than the bow and arrow. By the time of the Skaggs Phase, groups in California had become relatively settled; in the Lake Sonoma Area, a few large sites date to this period.

Dry Creek Phase, 500 B.C.-A.D.1300: The greater number of occupation sites dating to this time period suggests a large population increase. The millstone and handstone were partially replaced by the bowl mortar and pestle, reflecting a shift from seed grinding to acorn processing and indicating that the technique for leaching the tannic acid from these nuts had been discovered. While people of the Skaggs Phase made nearly all their stone tools from locally available chert, points from the Dry Creek Phase are almost all of imported obsidian. This shift represents the beginnings of extensive trade, which must have included exchange of perishable items as well.

Smith Phase, A.D. 1300-early 1800s: The most recent period of prehistoric occupation of the Lake Sonoma area has been named for a prominent local family of Mihilakawna descent (2). Artifacts from the Smith Phase indicate that important aspects of the way of life, which were recorded by ethnographers in the late 1800s, had been established for several hundred years. The first innovation to appear during this period was the bow and arrow, which refined the art of hunting and allowed more accurate, longer-range shooting. Another important introduction was the hopper mortar, which replaced the bowl mortar. A bottomless basket hopper was placed over a flat, stone mortar, and the acorns were pounded within the receptacle—a much more efficient way of processing these nuts. Also first appearing in this period was the clam disc bead, used as a form of currency in north-central California. The presence of these beads indicates that complex, wide-ranging trade networks had become fully established. With material remains so closely resembling those of the early 19th-century contact period, archaeologists assume that many nonmaterial aspects of Smith Phase culture, such as its sociopolitical organization and ceremonial activities, would also have been similar in prehistoric times.

Ethnographic Analogy

Very little of what is known of ancient prehistoric cultures has been discovered by direct observation. The people who made up these societies were long dead before the first ethnographer appeared on the scene. Aspects of their manufacture and use of tools and buildings, as well as intangibles such as their food-gathering practices and social structure, have to be reconstructed indirectly by archaeologists. Reconstruction is done either on the basis of physical remains or from information collected about more recent groups who live, or have lived, under similar conditions.

This latter procedure, known as ethnographic analogy, is based on the observation that groups living in environmentally similar regions, and using similar technology, resemble each other in a variety of other ways. The method can be put to work in order to interpret, for example, how prehistoric artifacts were used. Although the archaeologist would have no direct evidence that what is classified as a “scraper” was actually made or used to prepare the insides of animal hides, knowledge of the use of tools of that shape among living groups would justify such a conclusion. In the same way, archaeologists assume that the way people settled the land, at least during the past few
centuries, resembled the pattern reported for the Lake Sonoma Area in more recent times.

In order to determine the function of the prehistoric sites, project-area archaeologists compared them with the early settlement pattern recorded by ethnographers. According to ethnographic accounts, local Indian groups such as the Makahmo of Cloverdale and the Mihilakawna of Dry Creek had three basic types of living sites: permanent winter towns, summer towns, and summer campsites. The principal town was the center of politics, ceremony, and trade, often housing several hundred people. Radiating from the main town were hamlets, often called satellite villages, each of which would be home to a large extended family, or kin group. Lacking the amenities of the major town, the residents of these hamlets would have gone to their tribelet seat for community events or spiritual or political advice.

In addition to its large size, the winter town was distinguished by its substantial, semisubterranean assembly house, which functioned as the group’s ceremonial center for dances and other ritual performances. The circular assembly house (also called a roundhouse or dancehouse) was by far the largest structure in the town, being as much as 60 feet in diameter and 6 feet deep. The excavation was accomplished by loosening the soil with sharpened digging sticks and shoveling it out to the sides with flat, open-weave baskets. When this was completed, a massive center post some 14 to 16 feet high by 1-1/2 feet thick was erected in the center to support the roof poles, which radiated from the peak. The rafters were covered with layers of twigs and grass matting, and the entire outer surface was spread with earth. The entrance tunnel was east-facing, long, and narrow. Inside, the only permanent fixtures were a firepit, the smoke from which escaped through a strategically
placed hole in the roof, and a partially sunken foot drum situated opposite the entrance way.

In some cases, it appears that the assembly house also functioned as a sweathouse, although smaller, separate buildings were often constructed for this purpose. The sweathouse served social functions as a kind of men’s “clubhouse,” as well as being the locus of prehunting rituals and curing the sick. It was a simple, wood-framed structure, covered with grass and brush. Unlike the assembly house, which was essentially a public building, access to the sweathouse was generally limited to men.

Individual family dwellings were circular or oval in shape and constructed of a light willow-branch framework, lashed together with plant fibers and thatched with grass. These houses were often home to more than one nuclear family unit, and although each had its own fire and entrance way, the living area was not internally partitioned. While on an excursion along the Russian River Valley in 1833, Baron von Wrangell came upon a Pomoan village which he described in this way:

We found the Indian village on sandy ground, entrenched behind shrubbery and dry ditches. It was inhabited by five or six families related to one another. The women had set up temporary dwellings, made of pliable sand-willow branches, which easily had been stuck in the ground. They were set up in such extreme good taste that the sight startled me in a most pleasant way. The motley hues and different sizes of willow leaves (this tree abounds here in the greatest variety) gave to the huts, open at the top, a quite special, rather rustic appearance. The opening at the side, which serves as a door, is very carefully decorated with leafy branches. Several huts stand connected with each other by means of openings constructed inside (3).

Living sites were used at different times throughout the year, as people carried out the seasonal round. During the rainy season, the population concentrated in the winter towns, where stores of acorns collected the previous fall were kept. Fresh small game, as well as dried and fresh fish and venison, provided a supply of meat during the winter. With the onset of dry weather in the spring, groups moved to summer towns: small hamlets occupied by a
few families. After the long winter diet of stored foods, people welcomed the arrival of clover, other edible greens, and early ripening berries. This period, from March to June, was known as “Clover Time,” according to ethnographers. As summer approached, Indian potatoes were harvested, and grains were collected from the ripening grasses. People referred to this period as “Pineole Time.”

Some plant harvests and hunting activities were communal events. In addition, family collecting trips dispersed people over wide areas for varying distances and durations. Here they stayed in the small summer camps that constituted the most frequently found type of archaeological site. Men would leave the camps for a few hours to a few days to hunt, stopping occasionally to retouch their stone tools. The remains of this activity, from a few stone flakes to deposits several inches deep, archaeologists call “flake scatters.”

Over the centuries, people moved in and out of the area, bringing new ideas and materials and new lifeways. All that remains is nonperishable evidence of these changes, but perishable and intangible elements must have changed with them. Thus, ethnographic analogy can be both one of archaeology’s most useful and most misleading tools; caution is necessary as one goes further back in time. The people of the Skaggs Phase certainly did not live like the Mihilakawna and Makahmo Pomo thousands of years later, and the sites they left behind must have held different meanings for them.

**Lake Sonoma Area Settlement Pattern**

Settlement pattern studies focus on several aspects of the distribution of people on the land. Lake Sonoma project archaeologists first studied individual sites, seeking the relationships of features within each site, and between the site and its setting. They also looked at relationships among sites, questioning what they might reveal about economic, social, political, and religious organization. Finally, all of the sites were studied as a whole to learn how people had used their tribelet territory.

**Territory**

In the southern North Coast Ranges, where Lake Sonoma is located, a tribelet territory commonly encompassed an entire drainage basin, with divisions
along ridgetops between drainages, not along creeks or arbitrarily through valleys. In areas that were particularly rich and large, such as the Russian River Valley, no tribelet could have held the entire area; here, boundaries often cut across the valley floor. The Dry Creek drainage basin was also too large for a single group, beginning near Yorkville and terminating at the Russian River, a distance of about 25 miles. In some parts of California, ethnographers have gathered detailed information on tribelet territories, but the Lake Sonoma Area was disrupted so early that only scanty, often conflicting, information remains. (See map in Chapter 9.)

The area may have contained the territory of two tribelets: the Mihilakawna in the middle of the drainage, and the Shahkowwe in the north. In each case, we have only half the story: Shahkowwe territory would have extended outside the project area—upstream toward Yorkville, taking in an equally valuable area just north of the Dry Creek uplands; the Mihilakawna tribelet center was probably further downstream from the present dam site, in the fertile valley of lower Dry Creek. Sites on Warm Springs Creek and at its confluence with Dry Creek would therefore have been peripheral to that tribelet’s center. Project-area archaeologists drew the line between these groups at Pritchett Peaks, an area of dark precipitous cliffs that easily impresses the observer as a “no man’s land.” This is what archaeologists contended the central area was—a sort of buffer zone between the two territories.

Archaeological reconstruction is the only source of information on the size of the group using the upper territory. Based on the extent of midden (habitation) sites believed to have been occupied at the same time, archaeologists propose that the population of the upper Dry Creek tribelet was between about 500 to less than 700 persons. Using data from archaeological, ethnographic, and documentary sources, the population of the Mihilakawna living below Pritchett Peaks has been estimated to have been between 300 and 500.

Site Placement

Where did people place their sites within this territory? What principles might have guided them? Anthropologist Alfred Kroeber was the first to note that there was a decided preference for certain locations in Pomoan territory: “the majority of the principal villages of the Pomo, in fact of all their settlements, lie on the north or east side of streams,” because “a southern or western exposure was the pleasanter” (4). This pattern generally held true throughout the Lake Sonoma Area drainages, where most living sites were on the north and east sides of watercourses, usually on terraces well removed from the flood plain. In winter, Dry Creek became a turbulent river; if permanent living sites had been on both sides of the creek, contact between them would have been lost for months. Some minor sites occurred on the western and southern sides of streams in the Dry Creek uplands, but these were probably only used for short periods during the summer.

Confluences of streams were also preferred site locations. In the Lake Sonoma Area, virtually every junction of a tributary stream with a major creek had a site, even when the tributaries were small, unnamed channels. When a confluence was without a site, the topography was usually too rugged for human use. What attractions did confluences hold? Springfed tributaries would have served as a source of water, but many of these creeks dried up in summer, and some only flowed during rains. One value of such streams is the alternative route of travel their terraces offer; even the narrow ledges adjoining some small creeks would have made acceptable foot paths. In addition, creeks form vegetation ecotones—a meeting of more than one plant community—which provide a diversity of food for both humans and their prey. Some archaeologists recognize another feature of confluences: they offer a sense of place. Human interest in “a sense of place” can be seen in people’s daily habits. On a hike, for example, most people rarely stop to eat lunch in the middle of a large open field. Instead, they seek out a large rock, a pond, a slope with a view, or a distinctive tree to sit by.

Another pattern in site placement is a preference for certain soils. Some soils are so rocky and thin that little grows there, resulting in a place too barren for habitation, lacking shade and sources of firewood. Other soils drain poorly; they become sodden and wet, ponding on flats and slumping on slopes. To the archaeologist, soils are also excellent indicators of precontact environment, of considerable importance in areas that have undergone radical change. Hundreds of years after a marsh has been drained, for example, the soil in the area indicates former conditions. An archaeologist finding a site at the edge of this soil type can understand why it was placed there, seemingly “in the middle of nowhere.”
Four major soil types were identified in the Lake Sonoma Area, each corresponding to a different type of vegetation zone (see Chapter 2 for descriptions). While the woodland-grassland environment was found to contain the greatest number of living sites, most important village sites in the Dry Creek uplands were in an oak-evergreen zone. From this, the archaeologists concluded that the immediate environment may have been of less importance in locating principal towns than were other factors, such as central location or the topography.

Archaeologist Adrian Praetzellis studied the relationship of soil-vegetation zones and Lake Sonoma Area site placement. Although he found that there were a few more woodland-grassland sites than might have been predicted from that zone’s stream frontage alone, in general the sites appear to have been placed in order to take advantage of good locations along major creeks, not according to soil-vegetation zone. In fact, one living site was placed in a chaparral zone, occupying only a sliver of the stream frontage, suggesting that major watercourses were important enough to offset this zone’s disadvantages (5).

Site Types in the Lake Sonoma Area

Looking only at the number of sites in relation to the amount of usable land, the northern and southern areas of the Lake Sonoma project area might appear similar. The differences between the two areas—a tribelet focal area in the north, a peripheral area in the south—are reflected instead in the kinds of sites found in each. Site type, then, is as important to settlement pattern studies as it is to individual site analysis.

The function of some Lake Sonoma Area sites was fairly obvious. At chert quarries, for example, archaeologists could see the scars where the material had been extracted from the rock outcrop and the heaps of discarded stone nearby. Since there was no evidence of other activities, they assumed that the site was used mainly, or solely, to quarry chert. Flake scatters, which consist primarily of the stone debris left over from making or repairing tools, were also easily recognized. Petroglyphs, a major site type in the area, were less easily understood. The simplest of these could be mistaken for natural phenomena, but often the pits and grooves numbered into the scores or hundreds, and identification was certain. Far less certain is how they were used in the past; although ethnographers reported that these features served as
fertility rocks for Pomoan groups, it is likely that their use changed over the years. Researchers have offered numerous proposals, ranging from the mundane (territory boundary or trail markers) and the magical (weather rocks, like those of the north coast) to the esoteric (astronomical sitting devices). Project area archaeologist Martin Baumhoff contended that petroglyphs were once central to a “classic” Pomoan religion, serving a far broader function than they did in more recent times.

Prehistoric habitation sites in the project area were recognized primarily by one indicator: the darkened soil called “midden.” Midden develops when people have lived and prepared food, eaten, and consciously or inadvertently disposed waste in the same area over a long period of time. The resulting soil is soft, friable, and slightly greasy to the touch, ranging from medium brown to a rich black. Dispersed through the soil are firecracked rocks, used either in the stone-boiling cooking process or to form a ring around a fire. Where preservation is good, there are usually also bits of shell and bone. It takes many years of occupation for midden to develop. Several Lake Sonoma Area midden sites were more than two meters (more than six feet) deep, indicating long and intensive occupation.

Habitation sites were also recognized by the presence of housepits: saucer-shaped depressions in the soil which were all that remained of the semisubterranean housefloors of dwellings and assembly houses. In many areas of the world, people built their homes of stone or clay bricks, leaving the outlines of their structures as evidence of where they cooked, slept, stored their food, and worshipped. In central California, where structures were built of branches and brush, the only nonorganic elements were the earthen floors themselves, and these have frequently been obliterated by later use. Only rarely does enough remain to allow scientists to make detailed observations of the internal structure of a site. One site on Dry Creek was a welcome exception. Here, archaeologists found 21 well-defined housepits, with such details as evidence of entrance doors and connecting passages between houses clearly intact (see description of CA-Son-598 in Chapter 7).

Housepits not only signal living sites and indicate how people lived within them, they also reflect population size. If housepits are no longer discernible, an estimate can be made of the number of houses that would likely have been there, given the size of the site. Project archaeologists used a formula developed by demographer Sherburne Cook and archaeologist Robert Heizer, both of U.C. Berkeley, after an extensive study of ethnographic house sizes and numbers of inhabitants. Archaeologists used this method—figuring one house per 158 square meters and six persons per house—to determine the number of people living at project-area sites.

**Dating Lake Sonoma Area Sites**

Once site function was determined, project archaeologists had to determine the sites’ time of use. Often time periods had to be treated broadly: sites were sometimes said to have been occupied at the same time if they shared the same distinctive time markers, such as a particular tool style, but a site was not necessarily occupied throughout a cultural period. For example, a habitation site with a millstone, a Skaggs Phase time marker, could have been occupied as much as 2500 years later than another with the same tool.

From ethnographies, we know that historic-period Indian groups changed residence often.

Often a settlement split: a petty quarrel, a shortening supply of some food in the vicinity, a death, or mere indifferent instability would lead to a living apart without any sense of a division having taken place. Thus settlements of a few houses sprang up, decreased, or were totally abandoned; and then, after the passage of a few years or a generation or two, when the memory of the omen or disaster or feud that had caused their desertion had weakened, might come to be reoccupied (6).

The results of climatic change could have caused people to abandon a site: the water source a village depended on may have dried up, or a once open terrace became choked with shrubs. Sudden natural events also caused changes in residence. A landslide, for example, could divert a creek, thus isolating a site for hundreds of years until the creek finally cut through and resumed its old course. Sometimes abandonment and reoccupation of a site left its record in the soil: layers of sterile soil (soil without evidence of human use) were present between midden layers at several Lake Sonoma Area sites. Other sites in the project area may also have been abandoned and then reoccupied, but if little soil was deposited in the interim, there was no apparent division between separate occupations. Archaeological excavators are
careful to observe the slightest soil changes as they dig; a thin layer of clay might represent several years of flooding, during which the site could not have been used.

Dating archaeological sites, fortunately, is not dependent on finding artifacts characteristic of a particular time. Time-diagnostic artifacts from project-area sites were relatively rare, usually no more than two or three per unit (one-meter-square excavation pits). Stone flakes left over from toolmaking, however, were abundant in most units, and these were used to solve the problem. Chert was the first tool-making material to be used in the project area. As population grew, trade and travel expanded and the superior qualities of obsidian were recognized. Obsidian began to dominate as the preferred material, and finally it virtually replaced the local chert. If a site was found to contain only obsidian, then, it was likely to have been occupied during the Smith Phase, beginning about A.D. 1300. A site with only chert could mark the Skaggs Phase, and a mixture of materials might signal the intermediate Dry Creek Phase. Archaeologists soon recognized another variable: in the Lake Sonoma Area, people occupying sites adjacent to the two chert quarries on Warm Springs and Yorty creeks overwhelmingly preferred chert, even up to the historic period.

Another method used to date the Lake Sonoma Area sites was a process called “seriation,” based on the observation that styles and shapes of artifacts changed, one type being slowly replaced by another, which was then replaced by a third. Once the sequence of styles had been established, archaeological sites in the area could be dated relative to one another, using the sites’ artifacts as a guide. Placing the stylistic sequence in time required that physical tests be performed to provide specific dates for the most distinctive artifact types.

The most commonly used and least expensive physical dating method was obsidian hydration
analysis. Obsidian absorbs water at a constant rate, leaving a fine rim of discolored material at the outer edge of the piece, which can be seen and measured using a microscope: old pieces have wide rims, while very recent pieces may show no rims at all. A great deal can be said with a large sample of obsidian, even when absolute dates cannot be determined. Since project-area crew members kept precise information on the location and depth at which each sample was found, the results of the analysis read like a calendar recording the time that each level of soil was deposited at a site.

Radiocarbon dating is a more precise method, giving a fairly narrow range, such as 3098 years old, plus or minus 90 years. Several radiocarbon dates were determined for Lake Sonoma Area sites, but the process was an expensive one (more than 10 times the cost of obsidian hydration analysis), and intact samples of sufficient size were rare. Instead, the burden of dating the sites fell on seriation, ratios of obsidian to chert, and obsidian hydration readings.

Even when sites could be dated to a particular cultural period, another kind of dating was necessary. If we were able to map only those sites that were occupied during the same year, the apparent population would still be too high because of the seasonal movements among Pomoan groups. Permanent towns were occupied throughout the year, but by a much reduced population in summer and fall; perhaps only old people and young children remained behind, while the rest of the residents moved to summer camps. In addition, these camps were rarely inhabited all season; more frequently, families moved through a number of summer camps during the season to take advantage of ripening foods. Lake Sonoma project archaeologists recognized a number of clues that indicated season of occupation. The location of the site—within a flood plain that would be submerged in winter or within a dry drainage with no water in the summer—often suggested season of use. In some regions, studies of animal remains at a site can give more precise clues; the bones recovered may be from migrating water fowl that are only in the area for a few weeks or months of certain seasons, or bone of young fawn may be used to fix the site’s occupation in the spring. In the acid soils of the North Coast Ranges, however, few identifiable bones survive to be found by archaeologists.
Warm Springs Sites Categorized by
Area, Depth, and Richness of Midden

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Lake Sonoma Area Sites

Northern Section

Before Lake Sonoma inundated the area, Dry Creek flowed through an open valley north of Pritchett Peaks. Some of the area’s largest sites occurred just north of the peaks, where stream terraces formed wide meadows and the creek was broad and slow. Towards the west, the valley became narrow, slopes dropped off steeply to the creek, and the water flowed more briskly. The only available spots for habitation in this area were narrow terraces above flood level. Despite their restricted locations, the sites in this area were once of major importance. At the eastern end of the project area, Yorty and Cherry creeks flowed toward Dry Creek through narrow wooded canyons; here living space was also restricted, but, unlike the western section, the camps and hamlets in the east were only sparsely used.

Several major resources attracted people to the northern section. First, there was the open terrain, which offered ample living space and made travel and communication relatively easy. Plant life in the area was diverse, with both an abundance and a variety of economically important oaks. The northern section also offered some of the best fishing in the area, and hunting here and further west toward the Gualala divide was considered outstanding during the 19th century.

Archaeologists grouped the sites in the northern section according to size, depth, and richness (based on the quantity of archaeological materials within a 10-centimeter excavation level). As can be seen in the above table, most of the sites fit our understanding of ethnographic site types. Large sites are defined as having 20 or more housepits, giving an estimated population of at least 120 people each. It is not surprising to find at the large end of the scale that these sites were also deep and rich. These two sites (CA-Son-582 and -593/H), occupied at different time periods, are candidates for the principal town of this tribelet, the focal point for the cluster of sites. Small living sites had room for only one or two houses; the majority of these, which proved to be either shallow or surface sites, were likely to have been seasonal camps visited occasionally for a few days every few years for hunting, fishing, or gathering other foods or resources. Between these two groups are the medium-sized sites, most of them showing long-term, medium-intensity occupation. Again, these fit well into the ethnographic site types: one might call them the hamlets, or satellite villages, occupied by four or five families who formed a kin group. The display of these sites also meets another expectation: from ethnographic analogy, one would expect only one or two large towns at any one time and numerous small surface camps.

But some interesting questions are raised elsewhere on the table. One large site, CA-Son-579,
had very few artifacts or toolmaking waste and no midden indicating habitation. Why was such a large area used so sparsely? So little information came from this site that the question remains unanswered. Far more curious are the sites that are small, yet deep and rich; there is nothing in the ethnographic literature to explain their use.

Perched on nearly inaccessible, boulder-strewn slopes, the two small, deep sites—Poolside (CA-Son-571) and Banded Rock Pool (CA-Son-572)—are essentially twins. One-quarter mile apart in the rugged western section, their high, narrow terraces overlook deep, still pools in the creek. Next to each pool, on a lower terrace, abundant food-grinding tools indicate family use for centuries. Just downstream are two petroglyphs of unusual proportions; over 25 feet long and 12 feet high, one of these petroglyphs is covered with hundreds of cupules. The two small sites and the two major towns downstream are the focal points of the following settlement history proposed by archaeologist Baumhoff.

Beginning in the early Skaggs Phase about 3000 B.C., the Cherry site (CA-Son-582) was the major town. It lay on a promontory several miles downstream from the twin pool sites, in the topographically gentler area just north of Pritchett Peaks. At this time, occupation of Banded Rock Pool (CA-Son-572) had begun. Later in Skaggs Phase times, people also began living at Poolside (CA-Son-571), and even the early occupation of this site shows an extreme specialization in toolmaking, with obsidian appearing here long before it was introduced elsewhere in the Lake Sonoma Area.

Towards the end of the Skaggs Phase, around 500 B.C., and on into the Dry Creek Phase, activity at these twin sites began to flower. The intensity of toolmaking suggests a degree of specialization at these sites rarely seen in California. In fact, during the Dry Creek Phase alone, Poolside produced one-quarter of all the obsidian waste flakes found in the entire project area for all three periods. More people moved near this cluster during the time of the Dry Creek Phase; two new hamlets developed downstream, one at the elaborate petroglyph mentioned above. The population of this little enclave had grown from about a dozen people to over 75, but no more than one or two families were living at each of the pool sites. As the archaeologists put it, “tremendous things were happening at the 571-572 complex” during the Dry Creek Phase.

While the Poolside complex was experiencing its florescence, the major town downstream had been abandoned, and the bulk of the population had moved to the broad open terrace at CA-Son-593/H. Petroglyphs were also present at this site, but they formed quite a different pattern from the large, fairly isolated boulders upstream. Here they were found on 36 small, flat boulders scattered at the edge of the terrace, fully accessible to everyone walking from the town to the creek. Although the population during the Dry Creek Period was high, the midden at the site suggests less intensive, wider-ranging activities.

From the population shifts and activities represented by the material remains, Baumhoff proposed that the Poolside complex was an enclave for specialists including 1) the traders, since the obsidian was brought there from many miles away; 2) the craftsmen, because of the large number of obsidian chips and specialized tools; and 3) the shamans, because of the petroglyphs. He concluded that the tribelet leaders lived at the Poolside complex, while the common people lived at CA-Son-593/H. Such specialization has been known to occur in egalitarian societies, but when it takes place along with segregation of residence, then it is likely that class distinctions are present.

Indications of social stratification have been found elsewhere in the California archaeological record. It is not uncommon to find prehistoric cemeteries in which some burials have abundant wealth items and others have none. Generally, these burials reflect a gradual increase in wealth consciousness and status over time, with the basic pattern remaining primarily egalitarian. A pair of sites on the Tiburon Peninsula in Marin County offers a rare parallel to the Dry Creek pattern (8). From a study of burials at these sites, archaeologist Tom King proposed that the large shellmound site was occupied primarily by people of low status, while a small site overlooking it had been the home of the upper class. Before this find, archaeologists generally equated large sites with social importance, while small sites were considered peripheral to the society. The Tiburon sites date to the same time span as the period of the Dry Creek Phase, when the Poolside complex was in flower. At Dry Creek, the case is more pronounced, with several sites supporting the hypothesis.
A major change occurred in the northern section during the Smith Phase. Poolside was abandoned, and Banded Rock Pool became an undistinguished site. The hamlets adjoining them were still occupied, but they no longer gave evidence of specialization. CA-Son-593/H remained the major town, but artifacts became abundant, suggesting that specialists may have lived with the rest of the community. To archaeologist Baumhoff, this shift indicated a change from an hypothesized earlier Pomo religion which encouraged rigid social stratification, to the more egalitarian Kuksu cult, which was practiced into the historic period. The Kuksu was brought to the Central Valley of California by Penutian groups: peoples who began migrating into California from their homeland in Oregon several thousand years ago, settling portions of the North Bay around 500 B.C. Penutians may never have ventured near Dry Creek; some of their technological innovations and their religion, however, gradually spread throughout central California. Project archaeologists suggested that the Dry Creek Phase represented the height of Pomoan culture, with the beginning of the Smith Phase, around A.D. 1300, marking the end of Pomoan distinctiveness. By the time of historic contact, cultural differences between Pomoan and Penutian groups had become minimal.

Some archaeologists see this history of Dry Creek as too elaborate for the available evidence; in fact, Baumhoff proposed it with caution. What is of greatest interest here are the kinds of ideas about economics, sociopolitical structure, and the role of religion that can be generated from looking at site groups rather than isolated sites. Future settlement pattern studies may clarify some of these ideas.

Southern Section

Warm Springs Creek flowed through a more restricted canyon than Dry Creek, and fewer areas were suited for habitation. But where open flats were present in the lower part of the drainage, some large important villages were found. While no large villages were present further upstream, some small, deep sites attest to long use.
Several important resources may have attracted people to the Warm Springs drainage. A major trail to the coast, to become the Stewart’s Point-Skaggs Springs Road in the late 19th century, followed the creek. The trip to Stewart’s Point required one or two overnight stops, and some of the archaeological remains in this area may have been left by outsiders who did not control the area—people from the Russian River Valley and Clear Lake who made annual trips to the coast. The drainage was also rich in plants: numerous major sedge beds were found here, and it was one of the few places locally where the important medicinal and ceremonial plant Angelica could still be found late in the 20th century. The drainage also held abundant tracts of tan oaks, especially prized for their large, rich acorns. The major mineral resources were present: a large, heavily used chert quarry, and Kahowani, the hot springs later to become the Skaggs Springs resort.

No petroglyphs were found by archaeologists in this section, an absence that is especially curious given the sacred importance of the area ethnographically. For the Kashaya (Southwestern Pomo) people of Stewart’s Point, the area is imbued with spiritual significance, and travel through the drainage requires special ritual observances. Petroglyphs may have been more often associated with the core of a tribelet, as we saw in the northern section; if so, they would be expected in the lower Dry Creek Valley and not in this peripheral area.

There were two site clusters in the southern section, totaling 14 living sites. Eight of these, most of which could not be dated, were probably temporary camps for small groups. It is possible that Kahowani (CA-Son-594) was once a focal point for the area. Anthropologist S.A. Barrett reported that numerous mortars, pestles, other large stone implements, and arrowheads had been noted by the Skaggs Springs proprietor around the beginning of the 20th century, but by the time the location was acquired by the Corps of Engineers, little remained of the site. Since there were as many as 300 daily guests during the resort’s heyday, it seems likely that most Indian “curios” would have been picked up, while the extensive land modification, for resort construction, mining operations, and later Corps of Engineers activities might well have obliterated all midden or other evidence of occupation.

Descendants of the Makahmo and Mihilakawna do not recall hearing of these springs, but Kashaya elders know of intensive use of the area by their people. According to the elders, the hot springs were used to treat the sick. Several doctors stayed at the springs, each owning a separate pool at which curing ceremonies were performed. The springs were considered sacred, and people approached them only
after praying and performing special rituals (9). Hot springs were also sacred sites in other areas of California, and mundane activities such as food-processing were carried out elsewhere. The presence of food-grinding equipment and arrowheads at CA-Son-594 suggests a different, perhaps earlier, use of these springs.

The most striking feature of the living sites on Warm Springs Creek was the large number of hamlets present. Several of these were probably temporary camps, suggesting an unusually large number of people together in the summer, during a season when populations are believed to have been more dispersed. Four of the hamlet-sized sites were deep, rich middens, indicating longer, year-round use. Two sites date from the beginning of the Skaggs Phase through the Smith, and perhaps into historic times. The important trail in the area may account for some of the sparser hamlets. With the presumed principal town of this territory about 10 miles downstream in the middle of Dry Creek Valley, the more heavily occupied Warm Springs hamlets do not fit the ethnographic pattern, in which satellite villages were within an easy walk of the tribelet center.

One of these major hamlets, called Oregon Oak Place (CA-Son-556/H), was an especially deep midden, more than three meters, or approximately 10 feet, deep. The site was rich in artifacts, toolmaking debris, firecracked rock, and animal bone. In addition, obsidian artifacts appeared early at this site, and they consistently—sometimes greatly—outnumbered chert tools. It is tempting to propose that the site was the home of specialists, like those on upper Dry Creek, but surrounding sites give little support for this idea. There was a complete absence of the very small, rich sites found in the northern area; if specialists were living at Oregon Oak Place, they followed a different pattern.

The two other deep sites were first occupied during Dry Creek Phase times, suggesting that population had grown by this point. One was CA-Son-553, called “Double Black Dirt Delta” by the survey crew, found at the only opening in the narrow canyon for over a mile in either direction. Shell was relatively abundant at this site, suggesting frequent visits to the coast. Unusual finds were some rounded clamshell bead blanks, some with holes and some without, suggesting that the making of shell money occurred at
this site. In the narrow canyon about one-quarter mile downstream from the site, a waterfall poured into deep pools filled with trout—one of the more important fishing spots in the drainage. At the westernmost end of the southern section, Serene Flat (CA-Son-544/H) was another rich midden site, also occupied from the Dry Creek Period up to the time of contact. Among the abundant artifacts found at this site was the only complete clam disc bead found in the project area, assigning the site’s later phase to post A.D. 1500.

Rancheria Creek was the major tributary of Warm Springs; it flowed year-round through a small valley containing a cluster of related sites just upstream from its confluence with Warm Springs Creek. A focal point of this cluster was the Broken Bridge site (CA-Son-547/H) on a small terrace one-half mile upstream from the confluence, near a series of shallow bedrock pools. The terrace was first occupied at the beginning of the Skaggs Phase, and occupation continued through the Dry Creek Phase. By the Smith Phase, the site was too small to accommodate all the inhabitants, and a nearby terrace (CA-Son-546/H) may have housed the overflow of the population. Three other midden sites were nearby, all assigned to the Smith Phase, indicating a continued growth of population and a need to expand. Despite the small size of these sites, they appear to have comprised a year-round population center.

Several questions arise from a look at the sites in this area. The intensive use of many of the sites suggests more than a peripheral hunting-collcting area, and further research may reveal that the people in this area were organized quite differently than ethnographic information indicates.

Central Section

The central section—the buffer zone between the two tribelets according to Lake Sonoma project archaeologists—was bounded by Pritchett Peaks on the northwest and the mouth of Warm Springs Creek on the southeast. Upstream, the canyon was steep sided. Terraces were narrow, rocky, and densely wooded, and travel along the creek was difficult. Towards Dry Creek’s confluence with Warm Springs Creek, near the present-day damsite, the area opened to broad flat terraces, ideal for native living sites. In addition to good fishing in the central section, major sedge beds were found near the confluence, and useful willow stands were abundant.

In the westernmost two miles of the central section, only one archaeological site was present. This site had one housepit but no midden; excavating in the area revealed only one flake. Much of the soil in this stretch has been identified as “Rock Land” in the Sonoma County soil survey, not an inviting medium for habitation (10). Further downstream, a weakly developed midden appeared, but few artifacts were found and none could be used to date the site.

One site toward the eastern end of this canyon is of great interest, although investigation of the site yielded little information. On a wooded flat on the south side of the creek, CA-Son-598 is the only large habitation site that does not conform to the pattern of living on the sunnier slopes of drainages. There were 21 well-defined housepits on the terrace, indicating a population size of around 120 people. One of the depressions was sufficiently large to have been a dancehouse. At the edge of the creek, a single petroglyph was found—the only one outside the northern section. What made this site unusual was not just its shady, inaccessible location, but the fact that there was no midden and only a few cultural materials were present in a site that clearly housed a large population. Interviews carried out with a descendant of the Dry Creek people gave insight into its history (11), which is described in Chapter 7.

Remains of the two sites (CA-Son-542 and -600) on the open terraces near the Warm Springs/Dry Creek confluence were so damaged through historic use that they left little archaeological information. From the low cultural remains, it is clear that these superior locations were among the first to be occupied in early prehistoric times. During the historic period, they were again the first areas known to have been occupied, this time by Euroamerican farmers who seasonally plowed the soil. This annual churning of the sites’ contents, and the curio collecting that was common among early settlers, stripped the sites of almost all evidence of their prehistoric occupation.

The study of the Lake Sonoma Area sites and their interrelationships yielded massive amounts of information regarding settlement pattern, which required equally massive efforts to interpret. Analysis of some sites and their settings took months, even years. The complete study of 61 sites could be a lifetime’s work, and many questions still remain unanswered. Archaeologists interested in settlement pattern will no doubt be studying these data for many decades after the creation of Lake Sonoma.
Artifacts collected over the years from near the present damsite, photographed at a Lake Sonoma Area home, 1974
University of California Anthropologist S.A. Barrett at door of Pomoan summer dwelling
(photo by S.A. Barrett, courtesy of the Lowie Museum, University of California, Berkeley)