

Appendix E: Natural, Cultural, and Scenic Resources Planning and Analysis Reports



Fremont Older Open Space Preserve

Sue Copeland



Appendix E-1:

Cultural Resources Existing Conditions Report

for the Midpeninsula Regional Open Space District
Vision Plan

Prepared for:

Midpeninsula Regional Open Space District
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1.0 INTRODUCTION

1.1 Introduction

The Midpeninsula Regional Open Space District (District) is conducting a District wide vision planning process called *Imagine the Future of Open Space*. *Imagine the Future of Open Space* will integrate technical scientific studies and public input to guide the District's work for at least the next 15 to 20 years. The District is a regional greenbelt system in the San Francisco Bay Area that includes San Mateo, Santa Clara, and a small portion of Santa Cruz counties. The District lands (herein District Lands) consist of property owned by the District- including 26 Open Space Preserves (OSPs) and lands managed by the District but owned by Land Trust and private landowners. The District includes 60,000 acres, which serves over 700,000 residents. *Imagine the Future of Open Space* is focused on the District's mission of preserving open space with a balanced approach to restoring the natural environment and increasing public access and education (Midpeninsula Regional Open Space District 2013).

Jodi McGraw Consulting contracted with Pacific Legacy and Mark Hylkema of Past Lifeways Archaeological Studies (Past Lifeways) to conduct cultural resource investigations for *Imagine the Future of Open Space*. Pacific Legacy and Past Lifeways were tasked with identifying known cultural resources within the Districts Lands (Figure 1-1), placing these lands and resources in a regional archaeological and historical context, and providing guidance on stewardship, protection, preservation, and interpretation of these resources.

The District maintains stewardship responsibilities over a mosaic of natural and cultural resources within their many land holdings (Figure 1-1). The diversity of ecological zones within the various OSP's is similarly expressed in the complex culture history of the region. The lands within OSPs are known to have supported several different Native American tribes for many millennia and continued to be used by them during the early historic period, and then by other peoples of various cultural backgrounds. The presence and actions of these various episodes of land use are evident as archaeological sites, cultural landscapes, historic structures, features, historic records, and individual artifacts. All of these aspects

of cultural resources are present both within and adjacent to District Lands and in archives containing important data relevant to the District's landholdings.

Physical aspects of human prehistory and history are manifest on landscapes in the form of past land management practices, archaeological sites, structures, features and artifacts that are collectively referred to as "Cultural Resources." Public Resources Code 5024 requires that public landholding agencies maintain an inventory of cultural resources and evaluate their potential eligibility for listing on the National Register of Historic Places (NRHP) or the California Register of Historic Places (CRHR). Furthermore, such agencies, like MROSD must actively preserve and protect these resources from impacts resulting from project development, public access, looting or other forces that would otherwise diminish the their integrity.

Planning for stewardship of cultural resources in the District requires a grounded understanding of their existing condition, their nature, and the associated historic contexts. To this end, this report details the research on cultural resources conducted for the Vision Plan and forms the foundation for the Stewardship Guide (Ballard and Hylkema 2013). The following report includes a discussion of the regional prehistoric and historic background; community consultation; a Baseline Cultural Resources Inventory for the District; an analysis of the representative resources within the District by environmental zone and historic period land use themes; and a discussion of preservation, protection and interpretation opportunities on District Lands.

The highlighted resources are not intended to offer a specific order or direction for work to be completed, rather to provide an enhanced understanding of the cultural resources located within the District. This information is intended to be used in conjunction with the Stewardship Guide to provide aid the District in achieving their cultural resource goals identified through the *Imagine the Future of Open Space* vision planning process.

1.2 Goals of this Study

This existing conditions study will provide a summary of the known distribution of prehistoric

and historic period cultural resources within MROSD lands and discuss aspects of the human experience from prehistory through the historic period. This discussion focuses on native lifeways, through time up to the advent of early European colonization, and historic period land use themes. The goal is to provide a context to understand the relationship of the cultural resource to the people and the activities that created them.

As a descriptive tool for the Vision Plan, the District has subdivided the landscape into eight general “Environmental Zones” (see Figure 1-2). However, in regards to prehistoric archaeology and Native American geographic relationships to the land, we can aggregate these eight zones into two culturally relevant zones: 1) the Peninsular Coast and Santa Cruz Mountains, which includes the Coast, Coastal Mountains and Skyline zones; and 2) the southern San Francisco Bay and valley foothills, which includes the Baylands, Peninsula Cities, Foothills, South Bay Cities and Summit zones.

Another fundamental goal of this study is to provide useful information about the human cultures and histories within OSPs that managers and interpreters can reference for planning and public outreach purposes. Of course, it should be emphasized that sensitive cultural resources and most site locations must not be disclosed to the public in order to protect them from looting, vandalism or other types of damaging activities. With this in mind, this document will propose areas of interpretive opportunity suitable for the public.

In presenting this study, it must also be noted that the baseline cultural resources data base under-represents the number of resources within District OSPs. The number of formally recorded and known resources is likely significantly fewer than those present in the OSPs because much of the District has not been subject to systematic cultural resource survey, and many of the District Lands have been,

until recently, private properties. Therefore, much remains to be discovered and a document like this will need to be updated from time to time as new finds are made.

1.3 Project Area

While the vision plan study area as a whole encompasses the entire District, the cultural resources study area was restricted to lands District Lands (Figure 1-1). This cultural resource project area encompasses over 60,000 acres in San Mateo, Santa Cruz and Santa Clara County and includes areas along the San Francisco Bay, the San Francisco Peninsula, the San Mateo Coastline, Santa Cruz Mountain and The Santa Clara Valley.

1.4 Cultural Resource Team

The Vision Plan technical team for cultural resources investigation included archaeologists from Pacific Legacy and Past Lifeways. The following personnel contributed to this investigation:

Hannah Ballard, M.A., Project Supervisor and Senior Archaeologist (Pacific Legacy), 18 years experience in California Archaeology;

Mark Hylkema, Senior Archaeologist (Past Lifeways), M.A., 33 years experience in California Archaeology.

Elena Reese, M.A., Senior Historian and Historical Archaeologist (Pacific Legacy), 20 years experience in California Archaeology;

Starla Lane, M.A., Archaeologist and GIS specialist (Pacific Legacy), 13 years experience in California Archaeology;

Katherine Chao, Archaeologist (Pacific Legacy), 6 years experience in California Archaeology;

Sandra Ledebuhr, B.A., Archaeologist, 4 years experience in California Archaeology.



Figure 1-1: Midpeninsula Regional Open Space District Lands.

Source: Midpeninsula Regional Open Space District, www.openspace.org



Figure 1-2: Generalized Geographic Divisions within the MROSD District
 (Courtesy of MROSD).

2.0 REGIONAL PREHISTORIC AND HISTORIC BACKGROUND

This background section presents an overview of the history of human occupation in the region through ethnographic, historical, and archaeological information. Section 2.1, Native American Prehistory and History, focuses on native lifeways, through time up to the advent of early European colonization. A subsequent section, Historical Overview, presents the history of the region from the Spanish through the American Periods and is organized by general land use themes such as agriculture/ranching, settlement, and mining. This background section provides a context for understanding the relationship of the District's cultural resources to the people and the activities that created them. It is also intended to provide a source of interpretive information for the District's educational programs.

2.1 Native American Prehistory and History

2.1.1 Conceptualizing the Native American Cultural Landscape

In order to understand the culture history of the region and the nature of archaeological sites, it is first necessary to understand something of the native view of their surroundings. The Native American Cultural Landscape was both secular and spiritual; being composed of sacred places, hunting grounds, plant gathering places, stone tool material quarries, fishing spots, travel routes, residential sites, campsites, trade centers, ancestral burial grounds, and much more.

At the time of first European contact in the 1770s, there were at least 12 politically discrete tribal polities whose territory or resource catchment areas reached into any one of the many MROSD landholdings. The distribution of these tribes and their archaeological genesis will be described in more detail below; however, the key point is to realize that a large number of native people surrounded the study area and could do so because of their ability to manipulate the productivity of their natural environment (Cuthrell et al. 2011; Lightfoot et al. 2013). In effect, they created anthropogenic landscapes through their hunting, gathering and gardening techniques (Anderson 2005).

Further in the uplands, burning the oak woodlands had the added benefit of clearing the ground of pests and making fallen acorns easier to find during fall harvest time. It also reduced excessive dead wood that could otherwise fuel overly hot fires, and kept the understory uncluttered. Game animals like deer, pronghorn and Tule elk prospered on fresh shoots and grasses that sprouted in previously burned areas. Studies of burned grasslands have shown that greater numbers of pigeons, doves and quails become attracted to the improved seed yield (Lewis 1973).

Women tilled the meadows with stout wooden digging rods as they sought out edible bulbs like soap root, iris and blue dicks. Aerating the soil in the process and carefully replacing the disturbed immature bulbs, allowed for reliable crop yields each year. Also, systematic pruning and coppicing of useful shrubs and other vegetation resulted in improved cordage and basketry materials derived from them (Anderson 2005).

We can also presume that the landscape was an integral part of the ideological world of the societies living within them. For tribes that used the study area as home and resource procurement lands, the ridges, valleys, streams and other features played crucial roles in establishing boundaries between communities, and were also features of the mind. Landforms and the flora and fauna fit within the context of native views of creation and the forces of the spiritual world. Thus, even though a given area may have served routine functional uses, it still could be seen as a special place where its attributes might trigger recollections of traditional lore and be read like a book. The landscape was text, and through oral traditions including songs, stories and legends-or inheritance of gathering or hunting rights, it could be read symbolically by the various communities interfacing within it. Some Ohlone stories have been documented, and they often involve spirit beings in a specific landscape setting (Yamane 1998). Thus, the silhouette of a ridge or placement of rock outcrops, or springs can take on significance through such associations.

Symbolism in landscapes is a common feature among many California tribes, particularly within context of stories about their first creation. Many tribes believe that it occurred in the distant past, and took place on a mountain top. One such location of significance to

the Amah Mutsun and Muwekma Ohlone Tribes- and support for the concept of cognitive landscapes, is Mount Umunhum, located within the Sierra Azul OSP. The mountains name, Umunhum is of native origin and contains the name for hummingbird- a creature that is a component of a creation story recorded at Mission San Carlos in Monterey and at Santa Cruz. An abridged version of the Monterey story was published by anthropologist C. Hart Merriam and G. W. Block:

When this world was finished (by creator), the Eagle, Hummingbird, and Coyote were standing on top of a high mountain in Monterey county. The world was being flooded and when the water rose to their feet Eagle carried Hummingbird and Coyote and flew away to a still higher mountain. There the three stood until the water went down. Then Eagle sent Coyote down the mountain to see if the world was dry. Coyote came back and said: "The whole world is dry." Eagle said, "Go and look in the river. See what there is there." Coyote did so and came back saying, "There is a beautiful girl." Eagle then said, "She will be your wife, in order that people may be raised again." Eagle gave Coyote a trowel of abalone shell and a stick to dig with. Coyote married the girl. Coyote's children went out over the world and became the forefathers of the different tribes. (Merriam and Block 1990:100-102)

Other versions come from the Mount Diablo area to the north (see Heizer 1974:71-75; Kroeber 1904: 200-202). All three of the principal animal beings in the story form the basis of many other tales throughout central California, and it is the character of the creatures as "spirit people" that is considered in the interpretations of the folklore.

The Native American Cultural Landscape also includes places of spiritual power, accessible only to specialists within the community (Shamans, priests and sorcerers). Places of power are sometimes ascribed to rock outcrops, springs or caves. In the study area, cupule rock features, like those found at Monte Bello Ridge OSP and petroglyphs near Chitactac County Park reflect shamanic activities.

Studies of altered states of consciousness, shamanism, and the link to rock art and other concepts of sacred places all revolve around epicenters in the landscape where spiritual contacts are made. Ethnographic research on the subject, on a global scale, has shown that shamans and vision questing was a fundamental part of most peoples' lives in the past. This was particularly true for Native Americans in California, and has implications in our analysis of the study area. As has been noted by archaeologist David Lewis-Williams:

Vision quests were not one-off affairs. Shamans usually repeated vision quests throughout their lives. They believed that their power could be increased in this way. When a shaman had received a vision in a dream, he awoke and concentrated on it so that he would not forget it. At dawn he went into the hill to experience more dreams. When he had received sufficient revelations, he entered his '*shaman's cache*' to converse with his spirit helper. (Lewis-Williams 2002:169)

The term shaman's cache was coined by Anna Gayton to denote Yokuts rock art sites. The Yokuts were (and in some areas still are) the aggregated tribes of the San Joaquin Valley, and they intermarried and exchanged resources with the neighboring Ohlonean people. Consequently, they shared many beliefs. Other California groups used the terms 'doctors cave,' 'spirit helpers cave,' and 'shaman's medicine house.' These caches were located in rock shelters or, where there were no shelters, on low ridges (Gayton 1930: 361-420). The word 'cache' was suggested by the presence at these places of a shamans ritual paraphernalia- like his costumes, talisman bundles, feathers and other accoutrements. In California, it seems that cache sites were individually owned and could be passed down from generation to generation. The actual cache was believed to be *inside* the rock, which would open to admit the shaman. Yokuts people said that the openings were invisible to non-shamans, no matter how carefully you searched for them (Gayton 1930: 361-420).

Whitely (1992: 89-113) has observed that the phrase "Entering a cave" or rock was a metaphor for a shamans altered state of consciousness; therefore,

caves (and rocks more generally) were considered entrances or portals to the supernatural world.

In 1860, during an interview with Lorenzo Asisara at Mission Santa Cruz, A.S. Taylor was told that the villagers of Mission Santa Cruz would occasionally evade the mission padres and gather secretly in the woods and:

“...in the midst of them they erect a high pole, crowned with a wreath of tobacco leaves, or branches of some tree or plants; at the foot of same they set their eatables, and even their beads; they prepare for the dance, painting their faces and limbs, and when all is ready, the old one whom they respect as their master or divine, goes out to hear and receive orders of the spirits... (in Heizer 1974:55).”

In summary then, the Native American Cultural Landscape encompassed the entirety of the study area, but today we can only recognize archaeological deposits which serve as markers of places where people once interacted with the landscape. It is from the archaeological deposits that we gain some insight into cultural phases within the long span of time of human presence in the region, and the next section addresses the theme of cultural taxonomy as created by archaeologists.

2.1.2 Cultural Prehistory

Archaeologists have worked for many decades to organize archaeological assemblages of artifacts and other data into a temporal order to separate periods of time into cultural phases that reflect changes in technology, group mobility, diet, and social complexity. The central California coast and especially the San Francisco Bay area gave rise to very complex early chiefdom level societies and its archaeological prehistory can be difficult to unravel given the propensity of archaeologists to create a bewildering array of cultural traditions (Milliken et al. 2007). But several general diachronic trends can be defined for this study, with a sequence that begins at the end of the Great Ice Age, the upper Pleistocene epipaleolithic period (see Table 2-1).

Although there is very little archaeological data about Early Archaic societies of the San Francisco Bay area, subsequent phases reflect responses to changing environments, and increased social circumscription. We know that by the time of first European contact in the 1770s, the area was one of the more densely populated regions of North America. Furthermore, a mosaic of independently governed tribal polities emerged to control defined territories, and ultimately two general economic spheres of influence developed: that of the coastal tribes who ranged from the ocean shore up into the crest of the Santa Cruz Mountains, and the valley/bay shore tribes who interacted with the coastal people (Hylkema 2002).

Geologic Period	Early Holocene						Middle Holocene			Late Holocene										
Economic Period	Paleo		Lower Archaic				Middle Archaic			Upper Archaic			Emergent							
Shell Bead Period (Scheme D)	Early Holocene						Early Period			Middle Period			Late Period							
Time Line B.P.	11,000	10,000	9,000	8,000	7,000	6,000	5,000	4,000	3,000	2,000	1,000	500	EMT	M1	M2	M3	M4	MLT	L1	L2
South Bay Patterns	Unknown		Millingstone Pattern				Hunting Pattern/Lower Berkeley Pattern			Hunting/Upper Berkeley Pattern			Augustine							
S. Clara Valley			Metcalf Creek Aspect				Sandhill Bluff Aspect			Early Bay Complex		Ellis Landing	Mega nos	(Needs study)						
S. Mateo Coast			Metcalf Creek Aspect				Sandhill Bluff Aspect			(Needs study)			Ano Nuevo Aspect			Bonny Doon				
Time Line B.P.	11,000	10,000	9,000	8,000	7,000	6,000	5,000	4,000	3,000	2,000	1,000	500								

Table 2-1. Culture Chronology of the Southern San Francisco Bay Region

(Modified after Milliken et al. 2007:104).

Pleistocene to Early Holocene Beginnings

The prehistory of the region overlays a larger fabric of dynamic cultural transformations that began sometime over 12,000 years ago, during the late Pleistocene (the end of the Great Ice Age). Episodes of dramatic (even cataclysmic) environmental changes have led to the recognition of four major climatic shifts that have transpired during the time of human occupation. These changes define the Late Pleistocene, Early, Middle and Late Holocene epochs (we are presently in the Late Holocene).

People have been active agents of change to the landscape ever since their first arrivals. The early presence of humans is evidenced through the antiquity of the multiple prehistoric archaeological sites that have been found distributed throughout the region as well as across the rest of western North America. It is known that the Americas were populated through more than one migration event by people coming across Beringia (the formerly dry land mass that once connected Siberia to Alaska) from Asia by following the migratory habits of the game animals they hunted (Haynes 2002).

At least one early migration event occurred along the coasts, which lead to the rapid arrival of people into the southernmost tip of South America. Genetic studies have discovered that sometimes populations migrated back into Siberia from Beringia. Clearly substantial cultural diversity existed even in the distant past. Although evidence of Pleistocene archaeological sites are as yet lacking in our study area, this can be attributed to the massive changes to the landscape that transpired at the end of the Pleistocene, continuing until rising sea level reached relative equilibrium some 6,000 years ago (Masters and Aiello 2007:35-51).

Geologic interpretation of sediment profiles from deep borings in the south Bay indicate that between 17,000 and 7,000 years ago, post Pleistocene warming trends in the global environment caused a rapid rise in sea level as glacial ice melted (Atwater, Helley and Hedel 1977; Atwater et al. 1979). Sometime around 10,000 years ago, during the Early Holocene period (which spanned the years between 8000 and 4650 BC), the progressively rising sea began to encroach up through the deeper stream channels that meandered through the wide oak woodland and grassland valley plains of what was to become San

Francisco Bay. The level coastal terrace terrain that once extended considerably farther offshore facilitated submerging of the landscape until sea level reached its present height by Middle Holocene times, some 6,000 years ago (Bickel 1978; Brown 1978).

With the stabilization of sea level, marine and terrestrial plants and animals developed distinctive behaviors and territorial distributions that allowed for predictable, patterned resources important to human societies. Cyclical patterns of seasonal food availability, and repetitive use of these resources by the early people has resulted in the distribution of extensive archaeological deposits at locations where residential and or task specific activities became established.

Archaeological sites become more visible from Middle Holocene times forward, possibly in response to population increase and more optimal environmental conditions. A general discussion of key transition phases for the Southern San Francisco Bay region, based on radiocarbon dates and artifact assemblages, follows below.

Middle Holocene Trends (circa 6650 to 3350 Radiocarbon Years before Present [RYBP])

During the Middle Holocene, stone mortars and pestles appear in the archaeological record of the San Francisco peninsula and coast, which indicates that acorns had increased in importance as a dietary staple. This addition augmented an earlier, archaic reliance on hard seeds (tarweeds, clarkia seeds, fescues, and others) that were milled through the use of hand stones and milling slabs.

With the increasing reliance on acorns as a food staple that took place during the Middle Holocene, access to productive oak woodlands necessarily became a crucial factor in the subsistence economy. Evidence of an earlier milling stone tradition and the transition to an acorn dependent economy has been noted at sites along the peninsula coast and within the Santa Clara Valley (Fitzgerald 1993; Hildebrandt 1983; Hylkema 2002).

Within the valley, greater numbers of milling tools relative to projectile points suggest that during this time there was a greater reliance on vegetal resources than on hunting. In contrast, coeval coastal sites contain a greater frequency and diversity of large

side-notched, square-stemmed and contracting-stemmed chert projectile points and knives that are morphologically identical to early period south coast forms (Hildebrandt and Mikkelsen 1991; Hylkema 1993:99-119; Hylkema 2002; Jones 1993; Jones and Hylkema 1988; Olson and Payen 1969). These robust point forms suggest that there was an emphasis on hunting large game, most probably Tule elk. Similar point forms from coastal sites of the Monterey Bay and Big Sur region are also attributed to a hunting focus on large game (Jones 1993:44-46). In both regions, these points co-occur with mixed milling tool assemblages that included hand stones, milling slabs, mortars and pestles.

On the peninsular coast of Santa Cruz County, the Sand Hill Bluff shell mound, CA-SCR-7 is one of the larger archaeological deposits dating to this period (key archaeological sites mentioned in this study are depicted in Figure 2-1). Several researchers have sampled portions of the site and derived multiple radiocarbon dates which range in age from 5970 ± 120 to 3790 ± 90 RYBP (Hylkema and Cuthrell 2013). Cobble choppers, bi-pitted stones, hand stones, and large points of various forms have been observed at this site. Hylkema (1991:123-140) examined a collection from CA-SCR-7 that included 108 projectile points and found an unusually high number of corner and side notched points ($n=65$). Of these, 33 percent were made from Franciscan chert, which is not native to the vicinity of the site. Multicolored Franciscan chert is abundant throughout Santa Clara Valley East of the San Andreas Fault line (Hylkema 1991:123-140).

On the other side of the mountains, at CA-SCL-65 in Saratoga, which is coeval with CA-SCR-7, a parallel pattern of lithics is seen (Fitzgerald 1993). This suggests that there was a greater range of population movement between these two areas than occurred later. During the ensuing Late Holocene, chipped stone tools made from Franciscan chert are nearly absent at open coastal peninsula sites of Santa Cruz and San Mateo Counties but continue to be used in the Santa Clara Valley and South Bay. Also, notched points like those from CA-SCR-7 became less common, having been superseded by other point types. This in turn implies a change in projectile point technology and less population movement with a greater emphasis on localized resources.

For the coastal people, the availability of marine mammals expanded the range of prey species. Stone sinkers and weights for fishing, pitted stones for tenderizing shellfish, and fishhooks made from shell and bone add to the picture of subsistence diversification on the south/central coast of California (Gobalet and Jones 1995:813-823; Jones 1993).

On the other side of the Santa Cruz Mountains, along the bay shore/valley zone of the peninsula, three finds stand out as intriguing clues to a Middle Holocene presence. The first find, from the City of Sunnyvale, consisted of the skeletal remains of a woman dated to 4460 ± 95 BP (Bickel 1978). The second and third finds consist of two burials from CA-SCL-33 recovered from the banks of San Francisquito Creek in the City of Palo Alto (Garaventa and Anastasio 1983). These burials are popularly known as Stanford Man II and I. The Stanford Man II burial, dated to 4400 ± 270 and 4350 ± 125 BP (Gerow 1974a: 241), had in association three large side-notched points with distinctive apiculate tips and diamond-shaped bases; all were made from Monterey chert. These point forms probably represent the earlier Sand Hill Bluff Phase manifest in coastal sites (see discussion below).

At the closure of the Middle Holocene a new age of relative environmental stability had been achieved throughout much of northern San Francisco Bay. The tidal marshlands of the southern San Francisco Bay developed later into a distinctive delta habitat around 2000 RYBP after accumulations of sediment transported by drainages of the Santa Clara Valley lost velocity before mingling with the waters of the south Bay (Atwater et al. 1979:349). Multiple site locations became established along the Bay Shore, many of which would develop into large shell mounds after long years of repetitive use during the Late Holocene. The percentage of shell mounds that began to form during the Middle Holocene is not yet known, but existing data suggest a correlation between tidal marsh development and increasing reliance on this habitat (Lightfoot 1997).

By the end of the Middle Holocene the overall artifact assemblage along with a combined dietary focus on ocean mussels, sea mammals and terrestrial ungulates (deer, pronghorn and elk), became the precursors to a consistent reliance on coastal

resources that persisted on through most of the Late Holocene.

Trends in Late Holocene Prehistory

The landscape of Central California achieved relative environmental equilibrium shortly after the advent of the Late Holocene some 3,200 years before present,

although evidence of several serious environmental perturbations within this age has been documented. Nonetheless, relative environmental stability promoted dramatic cultural developments among the ancestral Ohlone people; however, after AD 700, a trend toward more complex social organization can be attributed to cultural rather than environmental factors (Hylkema 2002).

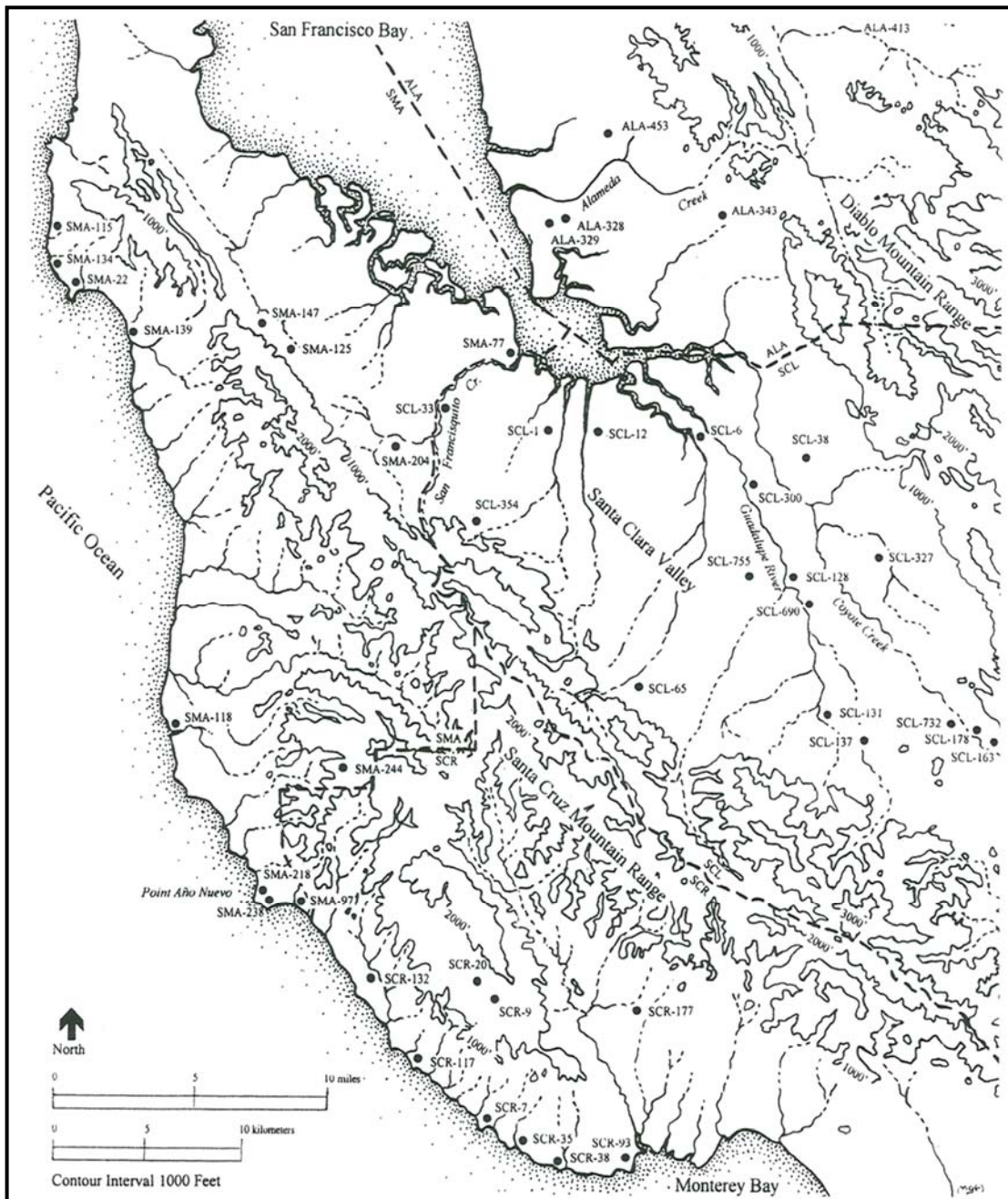


Figure 2-1. Distribution of selected archaeological sites
(Hylkema 2002)

The latter date heralds a period of cultural transition that involved the replacement of earlier artifact assemblages with new types, many of which served as markers of wealth and specialized societal membership. Archaeological findings from throughout the larger San Francisco peninsula indicate that after AD 1100 a cultural florescence transpired among the ancestral Ohlone people when interior and coastal people merged into a highly integrated socioeconomic interaction system (Hylkema 2002:233-262).

The ancestral Ohlone Indian people lived in a landscape of great ecological diversity. Their environment brought them in close proximity to marine, sandy beach, rocky shore, tidal and freshwater marsh, grassland prairie, oak grassland savanna, riparian, chaparral, mixed hardwood, and evergreen forest habitats. These habitats frequently converged in geographically narrow areas, and the mosaic distribution of productive biological communities gave a significant advantage to the ancestral Ohlone by enabling them to formulate alternative subsistence strategies such as co-harvesting, long term storage, and exchange systems. Enhancing vegetal productivity through the application of fire, along with institutionalized leadership roles and kinship/alliance systems, served to ameliorate episodes of scarcity and the effects of resource over-exploitation (as described by Basgall 1987:21-52; Bean and Lawton 1973:v-xlvi; Bean and King 1974; Blackburn and Anderson 1993; Chagnon 1970; Fages 1937; Lewis 1973; Milliken 1983; Simons 1992:73-103).

Archaeological evidence from sites in the area shows that productive ecological zones for the coastal communities, in terms of native subsistence needs, involved littoral and grassland habitats concentrated along the narrow coastal terraces and upland meadows in the Santa Cruz Mountains. A survey of nearly 200 sites on the peninsula between Montara Point and the San Lorenzo River (42 at Año Nuevo State Reserve) west of the crest of the Santa Cruz Mountain range, found that 70 percent occur within the terrace zone, 20 percent have been found in the adjacent mountain uplands, and the remaining 10 percent are spread along riparian corridors that cut into the mountains (Hylkema 1991:23). In contrast, the Santa Clara Valley supported much larger

populations of people, who focused on the storage of nut crops and other resources, with residential sites along the valley floor and Bay Shore (Hylkema 2002).

Peninsular Coast

Very narrow, moderately level sections of coastal terrace parallel the length of the peninsula coast. Intermittent extensions of flat terrace penetrate inland between the coniferous forest slopes of the Santa Cruz Mountains at places such as the plain of Half Moon Bay, Point Año Nuevo, San Gregorio and Pescadero valleys, and the mouth of the San Lorenzo River in Santa Cruz. Grasses and shrubs dominate the terrace habitat (Kuchler 1977), and this community supported a range of terrestrial mammals that were trapped, snared or felled by projectiles

(Harrington 1942). A variety of sea birds, migratory ducks and geese were available and historic accounts state that large numbers of waterfowl would congregate in seasonal wetland basins on the coastal terrace (Stanger and Brown 1969). The mountains rise directly above the terrace and are dominated by unproductive evergreen forest with sporadic patches of economically important grassy meadows and oak trees dispersed within mixed hardwood forest.

Archaeological deposits within the upland meadows interspersed along Butano and Ben Lomond ridges do not reveal any reliance on interior San Francisco Bay resources, but do indicate a close dependence on coastal resources. Two large residential sites near Bonny Doon (Hylkema 1991; Roop 1976) yielded substantial volumes of deer and elk bone, dense shell lenses (predominantly Ocean mussel [*Mytilus californianus*]) together with artifacts, and human burials in deeply stratified deposits. Evidently upland meadow habitats were important to the coastal subsistence economy throughout the Middle and Late periods. It is likely that the meadows concentrated terrestrial game into narrow resource patches and repetitive seasonal use of the uplands accounts for the substantial midden depths of these sites.

Throughout the Early, Middle, and Late periods of the Late Holocene, coastal milling tool assemblages include mixed milling tool sets of hand stones and milling slabs along with mortars and pestles. Evidently the rugged terrain and dispersal of oak forest within the coastal zone effectively constrained

access to acorns (Hylkema 1991:40-46). Sporadic distributions of bedrock mortar milling stations along the upper ridgelines and slopes of the interior Santa Cruz Mountains, including El Corte de Madera Creek, La Honda Creek, Russian Ridge, Montebello Ridge, Skyline Ridge, Long Ridge, and Saratoga Gap OSPs suggest that coastal people underwent a great deal of labor to add acorns to their diet.

Although the ancestral Ohlone did not develop a maritime tradition, offshore marine resources were actively pursued. Most open coastal sites tested with State Parks lands contain the remains of mollusks, fish, a variety of sea mammals and ocean going sea birds such as cormorant, pelican, tufted puffin, marbled murrelet, and others (Hylkema 1991; Hylkema with Hall 1985).

Identification of marine fish remains has been noted at some sites along the coast, but most collections have not had the bone identified to species. Ocean species have also been reported at inland sites around southern San Francisco Bay, indicating that they were an item of exchange (Gobalet 1992:72-84). Combinations of at least eighteen different species of marine fishes have been reported for coastal sites CA-SMA-139 at Half Moon Bay, CA-SCR-38/123 at Wilder Ranch State Park (Gobalet and Jones 1995:813-823), and CA-SCR-117 near Davenport (Fitzgerald and Ruby 1997:41). The most frequently noted fish families included herring (*Clupeidae*), silversides (*Atherinidae*), rockfishes (*Sebastes spp.*), and surfperches (*Embiotocidae*).

Shellfish were obtained from both sandy beach and rocky shore habitats. Of principal interest to the native diet were abalone (*Haliotis rufescens* and *cracherodii*), ocean mussel (*Mytilus californianus*), turban snails (*Tegula funebris*), urchins (*Strongylocentrotus purpuratus*), barnacles (*Balanus sp.*), gumboot chiton (*Crptochiton stelleri*), limpets (*Collisella sp.* and *Notoacmea sp.*), turban snails (*Tegula sp.*), and clams (*Protothaca staminea*, *Macoma nasuta*, *Saxidomus nuttalli* and *Tresus nuttalli*). Olive snail shells (*Olivella biplicata*) and abalone shells were important to Native cultures throughout central California, and beyond, where they served as the raw material from which beads and ornaments were made (see Bennyhoff and Hughes 1987). Coastal sites frequently yield fragments of abalone pry bars made from polished split whale ribs with fire hardened, pointed tips. Divers swimming

down to submerged rocks may have used them to obtain larger mollusks. Examples of auditory exostosis or diver's ear have been confirmed from burials at CA-SCR-35 along Majors Creek and also at CA-SCR-7 the Sand Hill Bluff site (Gifford and Marshall 1984). Both sets of remains were adult females.

In tandem with temporal changes in late Holocene artifact types, peninsular coastal hunting patterns likewise reflect changes, particularly in regards to species acquisition. Volumetrically controlled faunal assemblages from several sites along the peninsula coast reveal a generalized hunting focus that included both terrestrial and marine mammals. However, a significant decrease in the contribution of terrestrial game transpired during the years after AD 1100, although the number of marine mammal remains in the sites is roughly the same.

The littoral zone supported large rookeries of marine mammals, which were hunted with clubs, harpoons, spears and darts. A large volume of northern fur seal remains (*Calorhinus ursinus*) was recovered from CA-SMA-218, a site at Año Nuevo dating to circa 900 BC (Hylkema 1991), and at CA-SMA-18, which dated to AD 300-600 (Hildebrandt et al. 2006). These bones are of particular interest given their limited seasonal presence during winter months and their pelagic nature (Hylkema 1991:291-292). During their migrations, the females and pups remain ten to fifty miles off the central California coast (Ingles 1979: 401); therefore, either the ancestral Ohlone had a more sophisticated maritime technology to facilitate hunting them at sea or it is possible that human predation affected northern fur seal behavior such that they no longer haul out as they might have done in the past. Traditionally, the northern fur seal gives birth and breeds on islands within the Bering Sea of Alaska. During fall and winter, females and juveniles are known to migrate as far south as central California, but stay out at sea for the duration of their trip. Analyses of prehistoric archaeological collections from the central and northern California coast, however, indicate that these behavioral patterns have not remained constant (Hildebrandt 1981, 1984a, 1984b; Hildebrandt and Jones 1992). Their populations are strong until around AD 500-1000 when they disappear (including at Año Nuevo), and the reasons for their demise have sparked a great

deal of debate among archaeologists and marine biologists (Hildebrandt et al., 2007).

In addition to fur seals, Stellar sea lions and California Sea lions were abundant. However, Elephant seals (*Mirounga angustirostris*), currently breeding at Point Año Nuevo and present in southern California middens, are *totally absent* from prehistoric sites along the Monterey Bay and San Francisco Peninsula region (Hylkema 2002). This species has established itself at Año Nuevo in recent times.

Sea otter remains at late Holocene coastal sites increase in frequency, and at site CA-SMA-115 at Montara State Beach, sea otters dominated the faunal assemblage. The range of bone elements indicated relative skeletal completeness, which implies that they were hunted more for their furs than their meat (Hylkema with Hall 1985). At nearby Fitzgerald Marine Reserve site CA-SMA-134, sea otter constituted 38 percent of the identified bone elements and 30 percent of the weight excluding *cetacea*). It is likely that they were harpooned among the kelp beds from Tule rush boats. Although this watercraft was unsuitable for open sea, at least one historic account mentions that they were used offshore below the sheltered reach of Point Año Nuevo (Fages 1937:70).

During the Late Holocene, the vast majority of chipped stone artifacts at open coastal sites of the San Francisco Peninsula- nearly to the exclusion of all other materials were made from Monterey chert coming from the Año Nuevo source. Site CA-SMA-218, located just a few hundred yards from a partially submerged Monterey chert outcrop at Año Nuevo State Reserve, produced numerous examples of staged core reduction sequences. These sequences ranged from cobble acquisition, application of heat to facilitate reduction (Parsons 1987) to the manufacturing of points and knives (principally the Año Nuevo Long-stemmed type [Jones and Hylkema 1988]). The abundant volume of chipping waste and broken tools that failed during their reduction characterizes many of the coastal edge sites (Hylkema 1991).

Increasing Social Complexity

Many cultural attributes that characterized the local coastal economy remained constant between the

years of 1000 BC and AD 1100. But shortly after that date the coastal lifeway began to change. This change coincides with greater interior demand for coastal products such as *Olivella* and *Haliotis* (abalone) shells that were used as markers of wealth and status among interior people. The increasing frequency of these non-dietary shells at coastal sites corresponds to their greatly increased presence in mortuary contexts at interior sites throughout central California after AD 700.

Prior to AD 1100, relatively small, mobile communities perpetuated an older generalized subsistence economy along the coast that emphasized a meat diet supplemented with processed hard seeds, acorns, fish and mollusks. Storage of food resources was not a critical aspect of the coastal lifeway, and a foraging economy was the optimal strategy (Hylkema 1991). However, after a period of prolonged drought between the years of AD 800 to 1100 (Jones and Kennett 1999), a transformation in the regional sociopolitical structure occurred and hierarchically ranked societies emerged. Logistically organized labor groups radiated out from residential bases and returned with resources that were frequently stored for longer periods of time, forming what has come to be known as a collector economy. An elaboration in the use of ideological artifacts and an increasing emphasis on wealth resulted in greater demand for *Haliotis* and *Olivella* shells. These materials were used as markers of wealth and status by people throughout the interior of central California, and this put the coastal people in a unique position as providers (Hylkema 2002).

Between the years of AD 1100 to the 1770s an elaborate social hierarchy had emerged, consistent with the ethnographic record. In addition to social changes, other new and significant cultural attributes begin to show up among the ancestral Ohlone shortly after AD 1100. Beautifully sculpted, tubular-shaped stone tobacco pipes appear, and the native tobacco smoked in them was deliberately cultivated for ceremonial functions. Also at this time, the introduction of the bow and arrow occurred. The archaeological evidence of this breakthrough is seen through the presence of two different types of small, distinctively shaped chipped stone points. One is known as the Stockton serrated type (named after its first identification at sites near the City of Stockton)

and the other is called the Desert Side-notched type. This latter type has a wide distribution throughout the Great Basin, Southern and Central California. The former is always made from obsidian from the Napa Valley/Clear Lake sources, and is common throughout the San Francisco Bay and Delta region as well as the Coast Ranges above the bay. The bow and arrow changed the way hunting groups organized themselves and allowed for more distant and accurate shots. Hunters wore deer skin cover and antlers to blend in with the animals, and selected their targets. Making a bow involved several months of labor and not everyone had equal access to bow woods (like wild plum, juniper and yew). Many Ohlone bows were reinforced with deer sinew that was adhered to their backs, which made them quite powerful (Bates 1978; Harrington 1942).

South San Francisco Bay and Santa Clara Valley

The landscape of the south Bay and northern Santa Clara Valley region supported large populations that established residential communities among three principal environmental zones that separated with increasing distance from the Bay Shore. These zones included tidal marshland along the perimeter of San Francisco Bay, with grassland prairie, and oak woodland savannah habitats ranging upwards to the foothills of the Santa Cruz Mountains. Riparian corridors meandered through these various ecological communities and enhanced what was an exceptionally productive environment.

The protected waters of the San Francisco Bay estuary provided habitat for a variety of fish, birds and sea mammals and the ancestral Ohlone procured them through the use of tule balsa boats (Harrington 1942; Heizer and Massey 1953:285-312; Santa Maria [1775] 1971; Vancouver 1798:Vol. 2:23; and others). An extensive network of sloughs and tidal mudflats characterized the southern San Francisco Bay where it intruded into the northern Santa Clara Valley.

Freshwater from a multitude of rivers, streams, and rivulets met with saltwater creating a vast, brackish water tidal marshland. The marshland provided resources such as salt, waterfowl, eggs, meats, and tule reeds. Elk waded among the vast thickets of reeds that ringed the marshlands and interior fresh water marshes, while the reeds themselves were used for building structures, boats, rope, duck decoys,

basketry, clothing, and matting (Harrington 1942). Pollen and roots from tule reeds were converted into food (Bocek 1984:240-245). The Ohlone instructed the priests at Mission San Jose how to gather salt from the south Bay marshlands (Sandoval 1988:4-5). Shore birds including gulls, pelicans, cormorants, rails, egrets, great blue herons, and many others populated the Bay marshlands along with great numbers of migratory ducks and geese (Beechey 1941:36; Schoenherr 1992). Waterfowl were obtained through the use of decoys and nets (Crespi in Brown 1994:15).

At low tide the mud flats were teeming with shorebirds dining on snails, crabs, and other invertebrates. Within the sloughs, leopard sharks (*Triakis semifasciata*), Pacific herring (*Clupea harengus*), Pacific sardine (*Sardinops sagax*), sturgeon (*Acipenser sp.*) bat rays (*Myliobatus californica*), and a host of other estuarine fish formed a productive biological zone. Sea otters, sea lions, and harbor seals subsisted on the abundant fish and in turn became prey to the ancestral Ohlone. The California horn snail (*Cerithidea californica*) was particularly abundant and its presence along with bay mussel (*Mytilus edulis*), oyster (*Ostra lurida*), and clams (*Macoma nasuta* and *Tivela stultorum*) at local prehistoric sites attests to the importance of this habitat for food (Cartier, Bass and Ortman 1993:168-171; Gerow 1968).

Numerous archaeological sites cluster along the south Bay tidal marsh. Residential use over time has resulted in great accumulations of soil and dietary shell, which created topographic high points, or mounds. One of the earlier dated south bay tidal marsh sites, CA-SMA-77 (University Village), contained mortars and pestles in addition to handstones, which shows that an acorn economy was established on the southern Bay shore by 3000 BP (Gerow 1968). Site CA-SMA-77 did not develop into a structured mound like other nearby sites such as the Hiller Mound, CA-SMA-160 (near the Ravenswood OSP), Tarlton Mound, CA-SMA-248, or the Castro Mound, CA-SCL-1.

Mounded sites in the South Bay appear to have developed after the transitional phase between the Early/Middle periods to Phase 2 of the Late Period. At the Inigo Mound, CA-SCL-12 (near the Steven's Creek OSP), temporally diagnostic artifacts, radiocarbon dates, and obsidian hydration results

indicate that it was intermittently occupied over a period of 2,000 years (Samuelson and Self 1995). Similarly, the very large Patterson Mound, CA-ALA-328, situated on the east side of the South Bay opposite CA-SCL-1, dated from the Middle Period and shared an overlapping Middle/Late transition period and Late Period Phase 1 temporal component with the nearby Ryan Mound, CA-ALA-329 (Bickel 1981; Coberly 1973; Leventhal 1993; Wilson 1993). The latter site was intensively used during the Late Period, and both of these mounds contained vast artifact assemblages in association with several hundred human burials.

Grassland prairie formerly surrounded the perimeter of the Bay marshland. A range of plant species within this zone provided food for the local inhabitants and browse for the game that they hunted. Large earthen mounds, both natural and anthropogenic (see Leventhal 1993; Lightfoot 1997:129-141; Meighan 1987:28-36), provided dry ground during the winter when high tides, stream overflow, and ground saturation created a network of mires and vernal pools (Bolton 1933:353; Roop, Gerike and Flynn 1981). Dense thickets of willows grew along the margin between the tidal marsh and grasslands where fresh water streams became lost in a maze of sloughs (Brown, 1994:35; Mayfield 1978:32).

Spanish explorers frequently commented on the seasonal wetlands of Santa Clara Valley and the difficulty they had crossing them (Bolton 1926:3:263; Bolton 1933:353-355; Stanger and Brown 1969:106). The soil was black in color, and grasses were burned in late summer to increase seed productivity (Fages 1937; Mayfield 1978:84-94). Lewis (1973) has noted that aboriginal landscape management techniques utilizing fire enhanced grass seed harvests and improved the browse available for elk, deer, and pronghorn. Large herds of elk and pronghorn once existed on the Santa Clara Valley plains (Dane 1935:103-104; Fages 1937) and wolves and coyotes were also present (Mayfield 1978:66; Pinart 1952).

The elevation of the grassland prairie zone rises progressively at greater distances from the Bay and vegetation communities graded into a wooded savanna setting that consisted of widely spaced, tall broad-leafed deciduous oak, laurel, and madrone trees, with an understory of bunch grasses, forbs and shrubs (Kuchler 1977). This community gave way to

an extensive thicket of mixed hardwood, greasewood, toyon, chemise, and coyote brush that formed a belt along the lower foothills of Santa Clara Valley (Bolton 1926:3:263; 1930:1:410).

The valley oak woodland zone was particularly suitable for the development of an acorn dependent economy and the majority of sites recorded in the south Bay region occur here. The use of acorns as a dietary staple and various archaeological implications has been extensively described in the ethnographic literature (Basgall 1987:21-52; Gifford in Heizer and Whipple, 1971:301-305). The valley oak savanna was burned annually after the acorn harvest to prevent the accumulation of excessive wood fuel that would otherwise burn too hot and destroy the acorn producing oaks. Burning had the added benefit of removing the lower shoots from the oaks thereby encouraging the tree to produce more acorns and reducing insect pests (Anderson 2005; Lewis 1973:19). European visitors commented on the "park like" appearance of the Santa Clara Valley and the presence of many extraordinarily large oak trees (Bolton 1926:423; Vancouver in Mayfield 1978:132).

In the south Bay, numerous creeks and rivers cross through various ecological zones and have developed distinctive corridors of riparian habitat. Silt deposits from episodic stream overflow along the banks of the meandering streams of Santa Clara Valley created topographic high points that were attractive to prehistoric settlement (Roop, Gerike and Flynn 1981). Schoenherr (1992:153) has summarized the biological qualities of riparian corridors and noted that they create an ecotonal edge effect in which the density and diversity of species are greater than in any other community in California. The characteristics of a given ecotonal edge changed as drainages cut across various environmental zones.

Larger creeks and rivers supported populations of Pacific pond turtles (*Clemmys marmorata*), brackish water crabs (*Rhithropanopeus harrisi*), fresh water clams and mussels (*Anodonta nuttalliana* and *Margaritifera margaritifera*) and, during the first seasonal rains, spawning runs of anadromous steelhead, or rainbow trout (*Salmo gairdneri*) (Baumhoff 1978; Bolton 1933:355). The remains of steelhead and other freshwater fish such as Sacramento sucker (*Catostomus occidentalis*), splittail, hitch, thicketail chub and other carps and minnows (*Cyprinidae*) have been identified

in archaeological contexts, along with marine fishes from the saltwater estuaries at the Bay Shore end of riparian corridors (Gobalet 1992:72-84).

A cursory examination of site distributions in Santa Clara Valley reveals a pattern of dense clusters along the lengths of major drainages, particularly the Guadalupe River, Coyote Creek, Stevens Creek and San Francisquito Creek. Bocek (1987) has reviewed site distributions and contents along the San Francisquito Creek drainage, which flows from the east slope of the Santa Cruz Mountains across the peninsular plain and into the south Bay estuary. Bocek identified 58 sites along this drainage, ranging in age from the Early, Middle and Late periods, and found that the majority occurred in the oak woodland zone. Others clustered at the mouth of San Francisquito Creek, and just a few were found along creek forks within the foothills.

A decreasing frequency of hand stones and milling slabs used to process hard seeds during the Early, Middle and Late periods suggest that an earlier, archaic reliance on hard seeds eventually gave way to an increased use of acorns after the Middle period (Hildebrandt 1983). Nonetheless, Milliken (1991:132-134) noted that at the time of early Spanish colonization the "meadow lands" between Coyote Creek and the Guadalupe River was an area from which the valley people collected herbs and grass seeds. During the colonization of Santa Clara Valley in the 1770s Spanish explorers frequently noted that they had been provided with gifts of "black-colored tamales" made from grass seeds (Stanger and Brown 1969).

Acorns were an abundant resource within the oak woodland habitats of the south Bay, but their seasonal cycles of availability and capacity for storage constrained group mobility during winter months. Basgall (1987) has described the nutritional value of acorns and their relationship to aboriginal societies, and observed that: "Accordingly, once established, such an adaptation would have had important effects on demographic patterns, on mobility strategies, and on the organization of intra-group relations" (1987:41). In locations like the Santa Clara Valley, where oak groves were well established, acorns were readily gathered during the fall season and stored in granaries (Harrington 1942). Communal acorn storage and redistribution probably involved the

organization of social institutions with ranked membership and the delineation of leadership roles (Bean and Lawton 1973:v-xlvii; Bean and Blackburn 1976). The presence of numerous mortars and pestles in Middle and Late period Bay shore/valley sites, often in association with burials, attests to the value of acorns to the people of this region.

Bulbs like soaproot (*Chlorogalum pomeridianum*) were dietary staples requiring roasting in an earth oven for over thirty-six hours to render them edible (Barrett and Gifford 1933:139; Bolton 1926:423; Harrington 1942; Heizer 1941:43-44). Such ovens used large numbers of fist-sized cobbles to distribute heat within them. Extensive layers of burned rocks have been reported for many Bay area sites, including CA-SCL-178, CA-SCL-690 and CA-SCL-732, and are often in close proximity to cemeteries (Cambra et al. 1996; Hall, Hylkema and Leach-Palm 1988:45-47).

Residential sites along the south Bay Shore are characterized by their accumulations of large volumes of shell. Typically, single mollusk species dominated over others in temporally stratified contexts at variable locations around the bay. However, the dominant species differs from one site to the next, or within the strata of an individual site. This has been the subject of considerable academic debate since the early 1900s (Cartier 1993; Bickel 1981; Gifford 1916; Greengo 1975; Nelson 1909; Ringer 1972, and others). Gerow (1968:29-32) reviewed the data from a number of shell mounds and summarized observations made about variations in dietary contributions of individual species, concluding that variability was either the result of changing sea level or over exploitation of target species.

Gifford (1916:24) studied the relationship of shell species in bay shore mounds and identified the horn snail, oyster, and bay mussel as the principal dietary shellfish found at south Bay sites of Santa Clara County. Sites along the west Bay shore of San Mateo County and east Bay shore of Alameda County record a greater emphasis on bay mussels, oyster and mud clams (*Macoma nasuta*, *Tivela stultorum*). Several of the large shell mounds from both the west and east bay shore margins reveal temporally related changes in target species within the same site (Gerow 1968; Gifford 1916; Greengo 1951, 1975; Nelson 1909; Schenk 1926; Uhle 1907; and others).

East Bay sites with stratified components ranging from the Middle period to Middle/Late transitional period typically contain a deeper deposit of oysters that are overlain by layers of clams. In contrast, Early and Middle period sites along the west bay shore contain deeper deposits with oysters which are replaced in upper levels dating from the Middle/Late transition to Late period by horn snails (*Cerithidea californica*). Greengo (1975:68) noted that within three shell mounds along the east Bay (CA-ALA-307 West Berkeley, CA-CCO-295 Ellis Landing, and CA-ALA-309 Emeryville) variations of the molluscan fauna "seem to reflect a shift from gravel-bottom species to a mud clam during the accumulation of refuse." Greengo attributes this to progressive silting of the bay shore margin.

Strictly from a presence/absence point of view, Cartier, Bass and Ortman (1993:168-171) reviewed the range of shellfish species and volumes from seven south Bay sites (CA-SCL-6W, -6E/447, -68, -128, -137, -300/302, and -690). They found that sites predating the Middle/Late transition period contained greater volumes of bay and ocean mussel. Shortly thereafter, the focus was on horn snails. This is consistent with observations made about the Middle period presence of bay mussel at other regional sites such as CA-SCL-732, a little further south. Sites within the Gilroy area dating from Early to Middle period times are reported to have contained mussel shells, and these shells are also absent in Late period contexts (Hildebrandt 1983:123-131). Despite problems with comparable quantification methods, Cartier, Bass and Ortman (1993) suggested that the distribution of estuarine and marine shells at interior sites of the southern Santa Clara Valley implied a greater reliance on exchange rather than direct procurement. However, the occurrence of mussels at sites distant from their primary habitats may have also been a result of greater group mobility during the Early and Middle periods.

Horn snails do not exhibit the same distribution pattern as mussels. They are not present at sites farther south than the Santa Teresa Hills but have been reported in upland sites of the easterly Diablo Range (Edwards and Simpson-Smith, 1988). On the other hand, horn snails are not present at upland sites

of the Santa Cruz Mountains, where ocean mussels points to an affinity with open coastal shellfish assemblages throughout the Middle and Late periods. Variation in horn snail distributions within Santa Clara Valley may be related to seasonal factors that affected shellfish availability (Schoenherr 1992:678). Horn snails are at their optimum availability during summer months when mussels are not safe to eat.

Simons (1992:73-103) has demonstrated that during the Early and Middle periods, faunal assemblages from Bay shore sites contain a high frequency of *canid* bones (dog, wolf and coyote), elk and deer, mixed with lesser numbers of marine mammal remains (principally harbor seal and sea otter). Conversely, during the Late Period, there is a substantial decline in *canid* and elk bones at bay shore sites, which were replaced by a major increase in sea otter bones.

The contribution of deer relative to elk is high during the Early period, declining during the Middle period and rising again during the Late period. This suggested to Simons (1992:88) that shifting of target species was likely caused by "interannual unpredictability due to short-term climatic events, and resource depression was resulting from over hunting of other marine (i.e. pinnipeds) and terrestrial (i.e. artiodactyls) mammal game species." He further proposed that increased human population pressure during the Late Period may account for a greater focus on estuarine habitats around the Bay that necessitated a co-harvesting strategy emphasizing predation of sea otters and deer along with waterfowl and fish. Simons concluded that deer served as a secondary "backup" alternative to sea otters when the latter species became less available during brief episodes of depletion. However, examinations of the faunal assemblage from Late period site CA-SCL-38 show that elk and deer continued to dominate the assemblage (see Table 2-2). Perhaps the bay shore communities succumbed to population pressure and suppression of *artiodactyl* availability, which accords with Simon's conclusions, while residents of Santa Clara Valley did not. A comparative summary of selected species contributions from sites CA-ALA-328, CA-ALA-329, CA-SCL-690, and CA-SCL-38 is presented in Table 2-3.

Table 2-2. Key Game Species

An example of key game species as seen from the faunal assemblage from CA-SCL-38 (number of identified specimens, percentage and weight

[Bellifemine 1997]).

Common name	Taxon	NISP	%	Weight
Grizzly bear*	<i>Ursus arctos</i>	4	0.5	222.0
Black bear	<i>Ursus americanus</i>	2	0.5	45.4
Tule elk*	<i>Cervus nanoides</i>	105	20.5	3735.7
Black-tailed deer	<i>Odocoileus hemionus</i>	62	12.0	1941.3
Pronghorn	<i>Antilocapra americana</i>	7	1.0	201.1
Large herbivore	<i>Artiodactyla</i>	105	20.5	1781.3
Mountain Lion	<i>Felis concolor</i>	1	0.5	2.1
Raccoon	<i>Procyon lotor</i>	2	0.5	9.6
Gray Fox	<i>Urocyon cinereoargenteus</i>	2	0.5	10.1
Coyote	<i>Canis latrans</i>	6	1.0	42.7
Dog/wolf/coyote	<i>Canis sp</i>	18	3.5	108.6
Rabbit	<i>Sylvilagus sp.</i>	6	1.0	7.2
Jackrabbit	<i>Lepus californicus</i>	37	7.0	79.2
Bobcat	<i>Lynx rufus</i>	1	0.5	11.3
Skunk	<i>Mephitis</i>	2	0.5	7.6
California sea lion	<i>Zalophus californianus</i>	1	0.5	7.5
Sea otter	<i>Enhydra lutris</i>	40	7.5	571.2
Goose	<i>Chen sp.</i>	50	9.5	112.0
Duck	<i>Anas sp.</i>	9	1.5	19.5
Geese/Ducks	<i>Anseriformes</i>	1	0.5	5.0
Crane	<i>Grus sp.</i>	20	4.0	272.4
Hawk	<i>Buteo sp.</i>	23	4.5	63.0
Eagle	<i>Aquila sp.</i>	1	0.5	2.2
Loon	<i>Gavia sp.</i>	3	0.5	5.0
Pelican	<i>Pelicanus sp.</i>	2	0.5	4.8
Western Grebe	<i>Aechmorphus occidentalis</i>	1	0.5	0.1
Cormorant	<i>Phalacrocorax</i>	1	0.5	2.2
Total		512	100.0	9,222.8

* Other elements from articulated grizzly bear and elk burial features were not included in this summary to avoid bias of the comparative effort. (Bellifemine 1997)

Table 2-3. Economically Significant Species

Comparative percentages of economically significant species from several south bay/valley sites:

Site and Temporal Affiliation:		CA- ALA- 328	CA- ALA- 328	CA-SCL- 690	CA- ALA- 329	CA-SCL- 38
Common Name	Taxon	Middle	Late	Middle/ Late	Late	Late
Dog/Wolf/Coyote	Canis sp.	31.6	11.8	4.2	7.8	4.6
Elk	Cervus canadensis	19.8	4.9	3.1	3.0	20.5
Deer	Odocoileus hemionus	19.8	10.6	19.5	24.7	12.1
Pronghorn	Antilocapra americana	1.8	0.7	5.5	2.5	1.3
Rabbits	Lagomorphs			43.0		7.0
Sea Otter	Enhydra lutris	16.7	58.8		50.1	7.8
Harbor Seal	Phoca vitulina	3.7	5.6		3.0	
Misc. other		6.6	7.6	24.7	17.9	46.7*
Total		100.0	100.0	100.0	100.0	100.0

* Includes 21.6% avian and 19.9% unidentified "large herbivore" remains. (Bellifemine 1997; Simons 1992; Hylkema 2007).

2.1.3 Outline of Tribal Lifeways at European Contact

Before the arrival of European colonists Central California tribal cultures had become engaged in wide ranging economic networks that transported coastal products to the interior and brought exotic materials to the coast. Despite linguistic variations and localized customs there was a shared ideological framework and wealth system which grew exponentially up until historic developments heralded by the abrupt arrival of Spanish explorers in the Fall of 1769 disrupted the tribal world. Much of what we know about the indigenous people of coastal California comes from notations about their early contacts with the colonists.

At the time of first contact, populations were organized into extended families, or clans that formed villages. Within the villages, clan members ascribed to different clubs or societies. Membership usually involved initiation where novices learned the customs of the organization, and used shell beads to pay dues. Different membership driven organizations sponsored ceremonial events, each having their own distinctive costumes and regalia. Abalone (*Haliotis*) shell pendants were frequently used as badges of membership and rank. Together

the various organizations formed the fabric of society and directed the storage and redistribution of surplus food resources, construction of village buildings, planned hunting strategies and followed the seasonal cycles of nature that would determine where and when they should relocate themselves.

Both men and women could be members of various societies and among the Muwekma Ohlone an elite group of women, called *Mayen* (Collier and Thalman 1996), directed the construction of large circular dance houses that were excavated several feet below the surrounding ground level. The *Mayen* selected the most virtuous individuals to represent various spiritual forces that were personified in dances and ceremonies. Among the many dances and ceremonials was the *Kuksu* tradition (referred to as a cult among anthropologists). *Kuksu* involved a ceremonial cycle and initiation of exclusive members. The key figure was the *Kuksu* personification, and this dancer wore a headdress of bundled feathers with many willow rods radiating away from his head, tipped with white goose down feathers. He resembled a dandelion in silhouette. Other male dancers wore woven feather bandoleers made from flicker feather quills placed edge to edge draped over their foreheads and down their shoulders. Dancers

usually stomped on the ground in regular intervals timed to the beat of a man on a hollow log drum who thumped on it with a long stave, and in time with a lead singer. Young children were initiated into the various societies and were taught proper manners and customs acceptable to their community by their elders. Once membership was invoked, they earned status and rank over the term of their lives.

Women had elaborate geometric lines and patterns tattooed over their chins, neck and shoulders to identify their clan affiliation, and to prevent improper attention from a suitor who otherwise might not be aware of her social standing. Men wore their hair long, and often had long beards and moustaches. Both men and women used sharpened and polished deer bone pins to hold their hair into various fashionable styles. Both occasionally adorned themselves with polished circular stone disks that were inserted in their ear lobes or nasal septum. Most had their ears pierced and wore decorations of brightly colored feathers and bird bone tubes. Finely woven fibers of milkweed were used to make hairnets that sometimes were covered with feathers or shell beads.

Men typically governed the political structure of the village and did the hunting while women handled the gathering and processing of vegetal foods. Each village had a “head man” and the many villages throughout the Santa Cruz Mountains and coast each had its head man. Capitancillos Creek below the Sierra Azul OSP derived its name from the many sub chiefs (little Captains) who were said to be spread among the villagers of New Almaden Valley. Feuds and violence between members of some villages was not uncommon, but relatives typically sought to avoid conflicts through payments made in shell beads. Men wore little or no clothing, a trait common among hunting people living in close proximity to the animals they depended on where they must avoid retaining the human scent in order to better blend in with their natural surroundings. Women wore a braided Tule reed skirt with a rear apron made from finely tanned deerskin.

Houses called *rūk* and/or *tac* were constructed of Tule reeds that were tightly thatched and woven over a framework of willow poles. Every house had an indoor and outdoor hearth and underground oven. Many fist-sized river cobbles were used to distribute

heat in the ovens where plant bulbs, shellfish and animal meats could be roasted. Long poles with painted rings of black, red and white and brightly colored feathers attached were erected in the cemeteries adjacent to the villages. Each village also had a partially underground, roofed sweathouse where interior fires steamed the occupants like a sauna. This was where the men spent a lot of their time telling stories and repairing their hunting tools. Bows were kept in the sweathouse where the smoke kept the human scent off them. When women had just given birth, both she and the newborn spent their first few days together resting on a bed of herbs within a special sweathouse, where they could keep warm together.

With the advent of Spanish colonial expansion and the coming of the historic period, the subjugation of the native coastal people resulted in dramatic environmental changes, while poor nutrition and repeated exposure to introduced diseases decimated their population. Nonetheless many survived and their descendants continue to live in the region (Cambra et al. 2007; Milliken et al 1993).

Ethnographers such as J. P Harrington (1942) interviewed many post Mission Period descendants in the Monterey, Gilroy and Morgan Hill areas, and his notes are still providing insights into the lifeways of the people who are today called the Amah Mutsun and Muwekma Tribes (Bocek 1983; Cambra et al. 2007; Yamane 1994; 1998; Ortiz 1994).

Tribelet Territories within the MROSD OSPs

Kinship data derived from Spanish Mission records show that coastal communities intermarried with the valley/Bay shore people to establish kinship and alliance networks (King 1994:203-228; Milliken 1983; 1991; 1993; 1995). However, tribal territories were highly circumscribed. Ethnohistoric observations noted that several different tribal communities (referred to as tribelets by contemporary anthropologists) controlled territory throughout the region (see Figure 2-2). The populations composing these polities seasonally relocated within their territories, each controlling sufficient areas to meet their hunting and gathering needs, and manipulated the land to increase productivity (Cuthrell et al. 2012; Palou, Vol. 3 in Bolton 1926:3:293-303; Crespi in Stanger and Brown 1969:88).

In regards to the Vision Plan study area, the largest and most powerful of the regional tribes were the *Quiroste* of Año Nuevo and Pescadero. Their reach extended from the coast up into Mindego Hill and Skyline Ridge where they interacted with another little known clan called the *Olpen*. The *Olpen* ranged around the uplands of Skyline Ridge, Montebello Ridge and Kings Mountain down into the upper hills of Woodside. Although the *Olpen* are depicted as a tribelet in Milliken's analysis (1991), they are hardly mentioned in the Spanish records and did not contribute many neophytes to the missions. These folks were probably a clan rather than a tribe.

To the north of the *Quiroste* were the *Oljon* villagers who controlled the coast, marsh and upper drainage of San Gregorio Creek. The *Oljon* ranged up to La Honda Creek OSP, Mindego Hill and up to Skyline Ridge. In turn, the northern neighbors of the *Oljon*, the *Cotegen*, were a small community centered along Tunitas Creek. Their northern neighbors, the *Chiguan* controlled the area of Half Moon Bay and Pilarcitos Creek drainage.

To the south of the *Quiroste* were the *Cotoni*, and their territory included the coast between Davenport and the Scott Creek drainage, on over Ben Lomond Ridge and down into the mid San Lorenzo River Drainage. Their neighbors to the south were the *Uypi* of Wilder Ranch and they also controlled lower Ben Lomond Ridge, on over to the plains of Santa Cruz. Further up the drainage of the San Lorenzo River, near Felton and Scotts Valley were the *Sayant* Tribe, and today's Zayante Road derives its name from them. Even more vaguely located was the village of *Achistaca*, described as being up the headwaters of the San Lorenzo River, perhaps towards the junction of Skyline Ridge and Highway 9. This group was probably a clan, much like the *Olpen* to the north along Skyline Ridge.

The *Chalotaca* controlled the area from Nisene Marks up to the lower slopes of the southwestern flank of Mount Umunhum. This group may also have controlled the Lexington Reservoir area, and Bear Creek Redwoods OSP. On the eastern side of Mount Umunhum, ranging along the upper drainages in the foothills from Los Gatos to Steven's Creek were the *Partacsi*.

The Santa Clara Valley floor and estuary was where the large multi-village populations of *Tamien* dwelled.

Collectively, this area included the lower Coyote Creek and Guadalupe River lands and adjacent valley floor from San Jose to Mountain View. In Mountain View, the *Puichon* held the peninsula bay shore and valley from Steven's Creek to San Francisquito Creek, and they controlled the San Antonio Ranch OSP foothills. This zone supported very large populations of villages. The northern neighbors of the *Puichon* also managed bay shore and valley floor habitats and were known as the Lamchin. The Lamchin ranged up to Edgewood County Park and Redwood City.

Historic Period Developments

The protohistoric period for the study area begins in the year 1542 with the first sea explorations conducted by imperial Spain; however, the Historic Period did not truly begin until the Spanish Government sponsored the colonization of the area. This did not occur until as late as 1769 when the first overland expedition reached Upper California and inadvertently encountered San Francisco Bay. With the establishment of military Presidios in both Monterey (1770) and San Francisco (1776), several Franciscan Missions were regionally distributed to subjugate the Native populations (Milliken 1995).

Spanish Explorations and Encounters with Ohlone Tribes

With the Spanish conquest of Mexico during the 1520s, and a new awareness of the Pacific Ocean, the empire began to build ships at its port of Acapulco in order to explore the surrounding seas. Eventually they learned how to circumnavigate the Pacific and return from voyages to distant China. During the 1540s, Portuguese explorer Juan Rodriguez Cabrillo, acting on behalf of the Spanish Crown led the first naval expedition to explore the coast of California, and claim the land for Spain. Cabrillo was in fact searching for a hypothetical passage between the Atlantic and Pacific, referred to as the Strait of Anian. His command consisted of two ships (or three depending upon the source), and 250 men. Only a few years earlier, California was thought to be an island, illustrating how limited the knowledge of this area was.

Cabrillo reached the Santa Barbara Channel, but after disembarking to visit with the Chumash Indians he

broke his arm (or leg) on San Miguel Island and the wound never completely healed.

The flotilla continued its explorations of the California coast, ranging as far north as the Russian River, but bad weather forced them back to the well-known safety of the Santa Barbara Channel. The broken arm (or leg), however, eventually got the better of him, and Cabrillo died as a result of the unhealed injury in January 1543 (Schoenherr et al. 1999:266).

Cabrillo's expedition failed to find the riches that had characterized discoveries in Mexico, and interest in California soon waned; however, mariners continued to pass by the coast, particularly the huge treasure ships that sailed annually from the Philippines after the 1560s. By the time these extremely valuable vessels passed the California coast on their return from long trans-oceanic voyages they were frequently in need of fresh water, firewood and vegetables. In consequence of this, the Spanish government desired to find a port somewhere suitable to meet this need.

In 1602, Captain Sebastian Vizcaino was sent to explore the coast of California in the hope of locating a good harbor to protect Spain's highly prized Philippine shipping routes. In November 1602, his fleet of three ships departed Acapulco, and by December, the party reached the Santa Barbara

Channel. Pressing northwards, the fleet eventually came to Monterey Bay. Vizcaino was the first to anchor and set foot in Ohlone territory, and soon interacted with the people who he described as well-mannered and curious about the new visitors (one wonders if the people of the peninsula found the Spaniards to be equally well mannered). Vizcaino described the harbor as being big enough to hold the Imperial fleet and named it for the Viceroy of Mexico. Despite his positive accounts, no other recorded Spanish explorations of Upper California took place for over a century and a half.

After a long hiatus, renewed interest in upper California began again when the Spanish crown learned of Russian interests in the Alaska fur trade and their intent to settle somewhere on the coast. The Russian American Fur Company needed an outpost where they could grow vegetables to support their fur hunters in the far north. In response, the Spanish government organized an expedition with express orders to locate the harbor of Monterey and establish a base at Point Reyes, which they called "San Francisco." This expedition, under the command of Don Gaspar de Portola set out in the summer of 1769 from the Royal Presidio of Loreto in Baja California and was the first inland exploration to encounter the many indigenous cultures of coastal California.

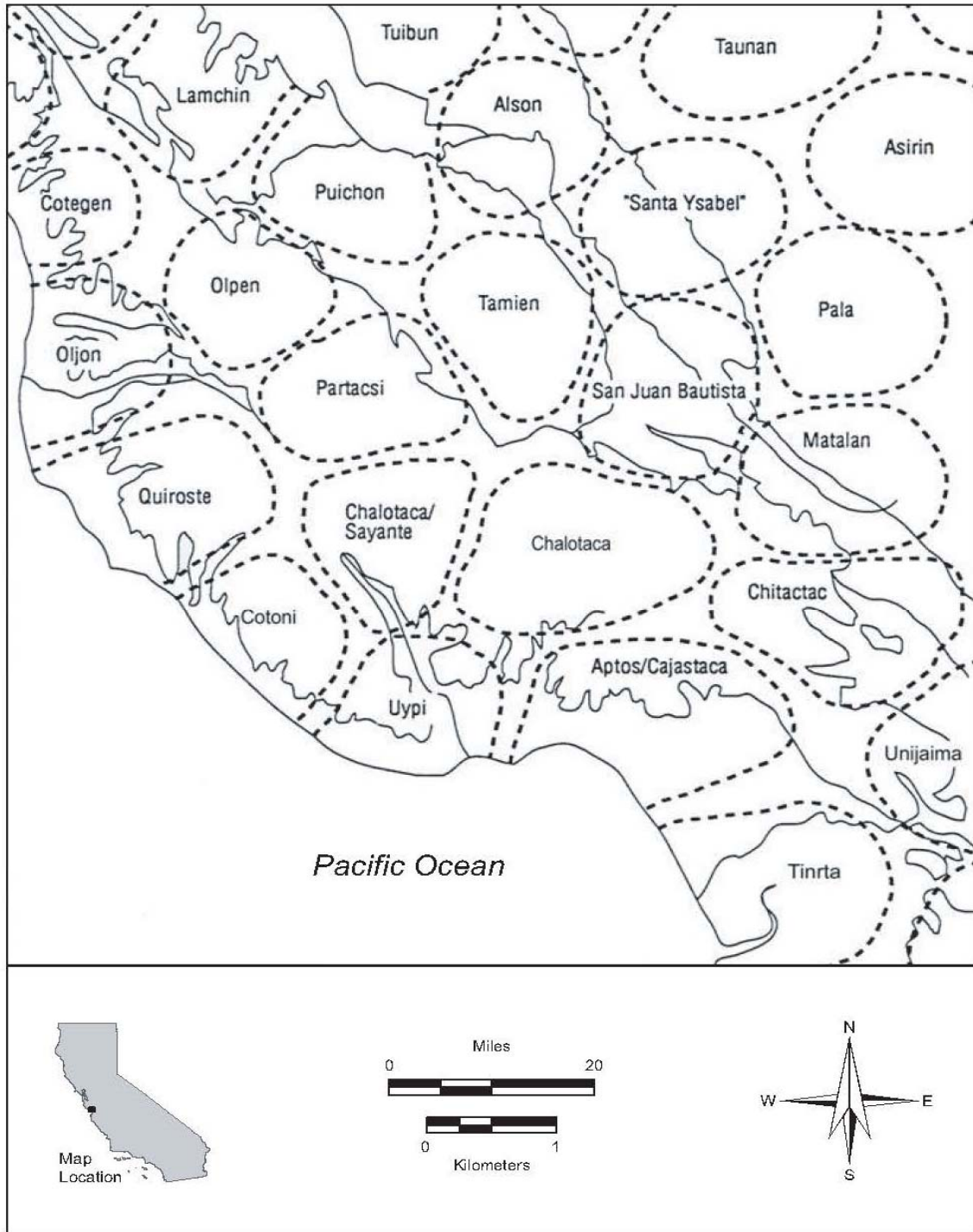


Figure 2-2: Distribution of Tribes at the time of European contact
(After Milliken 1995).

Spanish colonization followed immediately after the Portola expedition reached Monterey Bay and also inadvertently found San Francisco Bay. The diaries and accounts of Portola, engineer Miguel Costanso and Padre Juan Crespi provide a rich description of the landscape and various aspects of indigenous lifeways- albeit through the lens of missionaries and soldiers. Along the way they were nearly continuously involved with tribal people and they were acutely aware of the large numbers of villages and diversity of dialects, customs and even different physical appearances of the people they encountered. Aspects of their coastal explorations within the region are highlighted below and their route has been illustrated in Figures 2-3 and 2-4.

Spanish encounters with coastal tribes demonstrated that they were well organized polities that actively manipulated the landscape to increase biotic resource productivity. Extensive burned grasslands were frequently mentioned by the members of the Portola expedition in the fall of 1769; Father Juan Crespi pointedly observed that the Indians burned the meadows “for a better yield of the grass seeds that they eat (Brown 2001:565).” On the journey, Crespi also observed frequent stands of California hazel (*Corylus cornuta* var. *californica*), including burnt hazel south of Santa Cruz (Cuthrell 2013; Stanger and Brown 1969:79).

While traveling along the coast near Año Nuevo in October 1769, members of the Portola expedition were guided to a Quiroste village that is today site CA-SMA-113 along Whitehouse Creek, where they were hosted and made several insightful observations. Crespi wrote:

Here we stopped close to a large village of very well-behaved good heathens, who greeted us with loud cheers and rejoiced greatly at our coming. At this village there was a very large grass-roofed house, round like a half-orange, which, by what we saw of it inside, could hold everyone in the whole village. Around the big house they had many little houses of split sticks set upright... These heathens presented us with a great many large black and white-colored tamales: the white tamales were made of acorns, and they said that the black-colored

ones were very good too. They brought two or three bags of the wild tobacco they use, and our people took all they wanted of it. One old heathen man came up smoking upon a very large and well-carven Indian pipe made of hard stone. The Indians almost all carry tall red-colored staffs, some with feathers; they presented four of these staffs to Sergeant Don Francisco Ortega. (Stanger and Brown 1969:88)

The ceremonial use of tobacco in the region was also noted by Father Palou in 1774. Near San Bruno, he presented the native people with glass beads and tobacco and wrote:

...upon seeing [the tobacco] they named it with the same term as at Monterey, sauans; they set to smoking, and I noticed used the same ceremony of blowing the smoke upwards, saying some words with each puff: I could understand only one of them, which was Esmen, meaning Sun. I saw they had the same custom of the headman’s smoking first and then giving the pipe to another, when it goes around among all of them. (Stanger and Brown 1969:141-142)

At Casa Grande, Portola noted that the village was composed of some 200 people (Companys 1983: 384). Although the Quiroste clearly held a numerical advantage over the small group of explorers, they displayed great hospitality, as noted by engineer Miguel Costanso:

The Indians, advised by the scouts of our coming to their lands, received us with great affability and kindness, and, furthermore, presented us with seeds kneaded into thick pats. They also offered us some cakes of a certain sweet paste, which some of our men said was the honey of wasps; they brought it carefully wrapped in the leaves of the Carrizo cane, and its taste was not all bad. In the middle of the village there was a large house, spherical in form and very roomy; the other small houses, built in the form of a pyramid, had very little room, and were built of split pine wood. Because the large house so surpassed the others, the village was named after it. (Browning 1992:107)

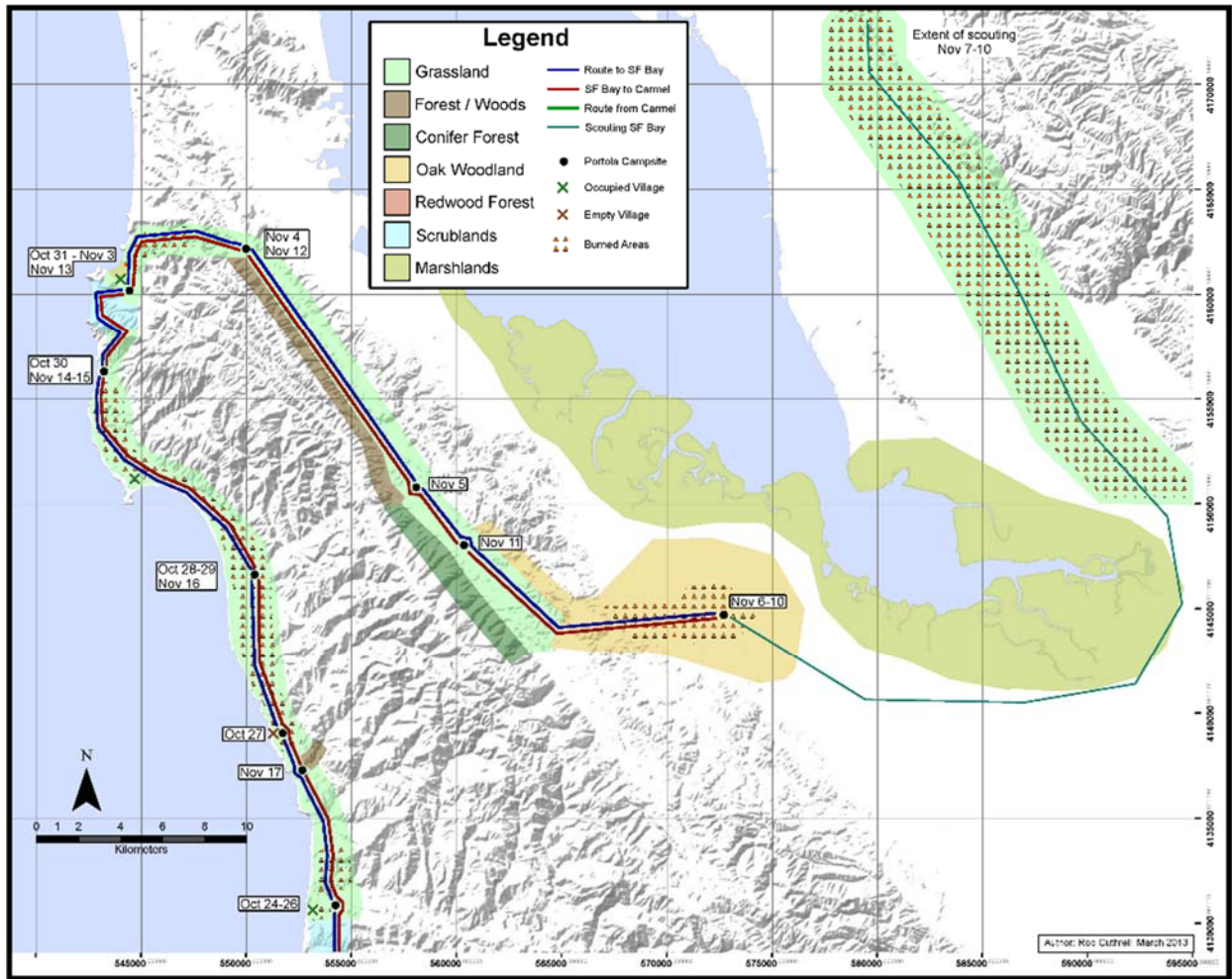


Figure 2-3: Route of the Portola expedition of 1769 (North)

(Courtesy of R. Cuthrell)

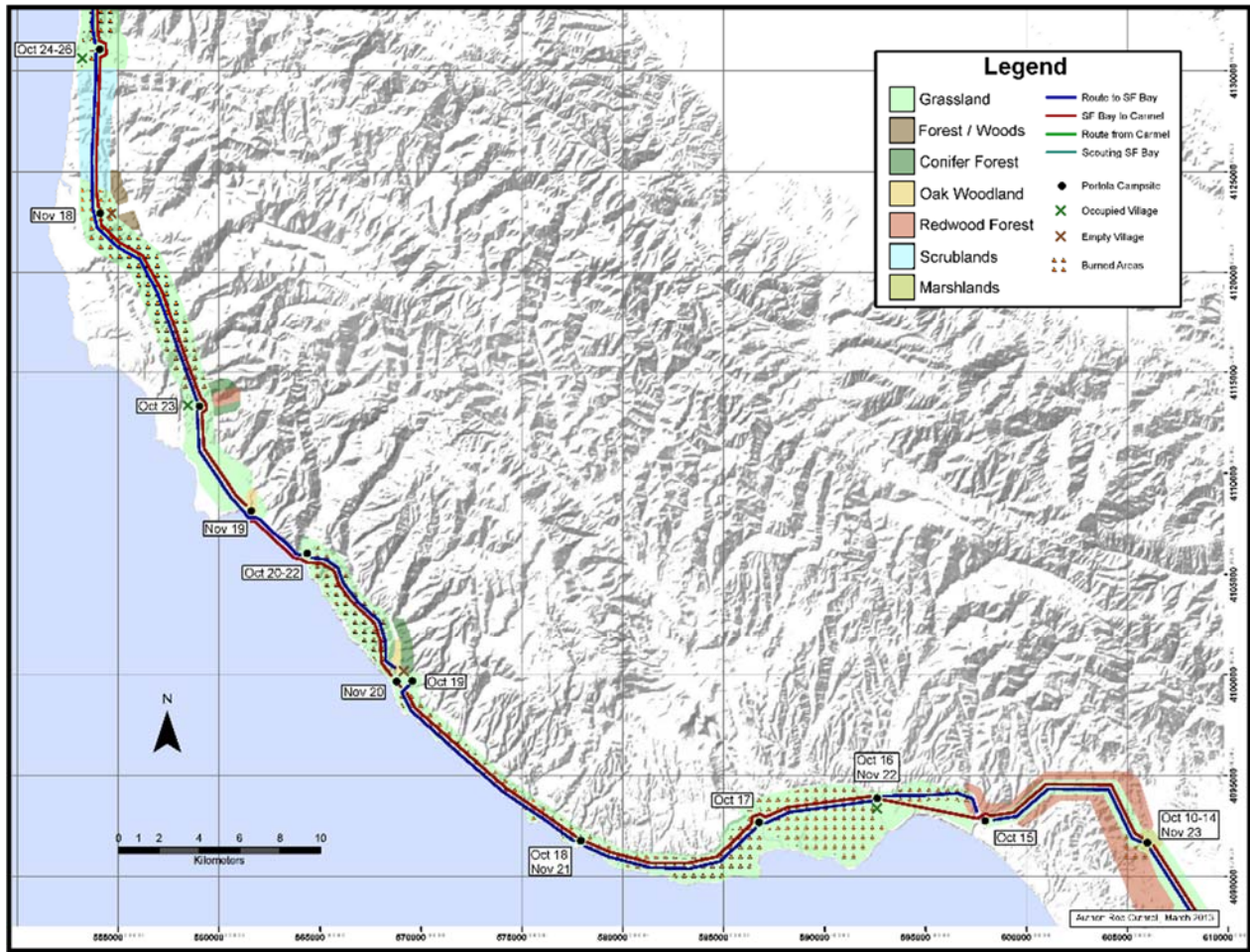


Figure 2-4: Route of the Portola expedition of 1769 (South)

(Courtesy of R. Cuthrell)

Costanso also wrote that they were furnished with four guides from the village of Casa Grande who showed them the way to Pescadero after they left Whitehouse Creek. He gives a positive impression of the landscape and mentioned that they met several Indians along the way who were actively engaged in harvesting seeds from the meadowlands: “To us, the land seemed rich and of good quality; the watering places were frequent; and the natives the best disposition and temper that we had yet seen” (Browning 1992:109).

Later expeditions sought out the Quiroste at the village that came to be called the Rancheria de la Casa Grande. In December 1774, Father Francisco Palou observed that near the big house was a cemetery, “in which was planted a high pole, this being the monument used by the heathen for the sepulchers of the chief men of the village (Bolton 1926:295).”

While camped along San Francisquito Creek in the City of Palo Alto, Father Juan Crespí described the terrain as being somewhat flat with very rich black soil: “...though most of the tall grasses had been burned; and the whole grown over with a great many white and live oaks” (Stanger and Brown 1969). While the expedition was awaiting the return of eight scouts under the direction of Sergeant Ortega, who had set out to explore the other side of the estuary (*el contra costa*), Crespí further wrote:

This is the furthest point reached by this expedition in search of the harbor of Monte Rey, having got almost to the end of the large estuary here, which all of us hold to be that of the San Francisco harbor; a grand place this for a very large and plenteous mission, with great amounts of good soil, and trees of the sorts mentioned, and great numbers of heathens, the finest and best-mannered that have been met in the whole journey; and this, one of the most excellent places for a large mission. At once upon our reaching here, several very well behaved heathens, most of them well bearded, came to the camp, giving us to understand they were from three different villages, and I do not doubt there must be many of these,

from the many smokes seen in different directions. Very large bears have been seen, and here where the camp was set up I saw two fresh droppings of these beasts, full of acorns; they must eat plentifully of the great quantities of large ones yielded by the white-oak trees here. (Stanger and Brown, 1969:104-105)

Crespí’s description of acorn abundance is significant because availability allowed the ancestral Ohlone to develop large, semi-sedentary village communities where surplus acorns could be stored and distributed. Acorn bread and mush are highly nutritious foods when properly prepared, and the explorers frequently mentioned that they were invited by the villagers to dine on them. Indeed, once the explorers had depleted their food rations they became dependent on such gifts from the Indians. In regards to the burned grasslands mentioned in the explorer’s journals, this was a result of vegetation management procedures developed by the Indians to enhance both grass seed and acorn production. The application of fire had the additional benefit of improving vegetation attractive to browsing and seed eating game animals like antelope, deer, elk, rabbits, doves, quail and many more species (Lewis 1973). Crespí noted that the Palo Alto region had so many acorns around the trees that the ground was nearly covered.

Portolá retreated back to San Diego after it was found that they could not reach their destination of Point Reyes. But having successfully rendezvoused with a supply ship, they decided to once again return to Monterey. Soon thereafter Portola established the royal presidio of Monterey and Mission San Carlos de Borromeo (June 3, 1770). Within a short time several expeditions were sent from Monterey to sort out the confusion about the bays, ports and estuaries to the north.

In November, 1770, a route to the head of the San Francisco peninsula via the Santa Clara Valley was found by Captain Commander Don Pedro Fages. Fages succeeded Portola as governor in Monterey and in 1772 he again traveled through the Santa Clara Valley, along with the experienced Father Juan Crespí. His diary of this expedition describes many encounters with the native people as the group

explored the east Bay hills. Two and a half years later, another expedition was organized with the intent of selecting suitable locations for a mission and presidio at the end of the peninsula, which by then gradually came to be known as San Francisco (Treutlein 1968). This expedition was commanded by Don Fernando Rivera y Moncada. Father Francisco Palóu's diary of the journey described how they followed the route that Fages and Crespi took in 1772; however, this time they turned westward to head up the peninsula, traversing through the region of Mountain View and Palo Alto. On November 27, 1774, Palóu described the vicinity as follows:

We followed the spacious plain west by northwest, and we found that the valley continues with good pastures and well grown with oaks. In a little grove of these trees, about one in the afternoon, we came to three heathen with bows and arrows. Apparently they had been hunting, for we did not see in all that vicinity either villages or smokes, although on the plain we came across many well beaten paths. When they saw us they made no attempt to run away or hide themselves. We passed not far from them and I called to them, but they did not wish to come near, even though I showed them some beads, but they made signs that I should throw them, which I did, but not even then did they approach. Seeing this, the commander alighted, took the beads, and gave them to them; we then went on our way, leaving them at their work. (Bolton 1926:262).

The expedition met several village communities and they were invited to visit. Palóu remarks on their friendliness, but Rivera mentions that the Indians that followed them along the way remained cautious of the Spaniards:

So natural in men is the desire to have the advantage, that, as I have just now been observing of these savages accompanying us, they keep us always on their left-hand, or bow side. (Rivera y Moncada 1969:138)

After the successful development of Missions San Diego and San Carlos and their attendant presidios, the Spanish government in Mexico ordered the construction of five more missions in Alta California.

These were in addition to San Buenaventura which had already been proposed. Earlier, in 1771, the president of the Franciscan Missionary College, Junipero Serra, arrived in Monterey with ten missionary priests for the new missions. The five proposed missions included San Gabriel, San Luis Obispo, San Antonio, San Francisco and Santa Clara (Bancroft 1886:1:175-176).

With the arrival of Colonel Juan Bautista de Anza at Monterey in 1775, an expedition was organized with the intent of founding the presidio and mission at San Francisco. Anza was an accomplished explorer and had previously conducted expeditions through the American Southwest. In the spring of 1776, he and Father Pedro Font, along with a group of soldiers, set out from Monterey following the now well-known inland route. This was the fifth expedition to travel through the Santa Clara Valley, which was referred to as the *llano de los robles*, or way of the trees. This name was given because of the extensive oak grassland savannah that began south of San Jose and continued along the western side of the valley and up through the San Francisco peninsula. The trees gave way to open grassland flood plains the closer one got to the bay shore tidal marshlands. Font's diary provides detailed accounts of the terrain and people near the future site of Mission Santa Clara.

Along the way many Indians came out to us. On seeing us they shouted amongst the oaks and then came out naked like fawns, running and shouting and making many gestures, as if they wished to stop us, and signaling to us that we must not go forward. Although they came armed with bows and arrows, they committed no hostility toward us. They did not seem so lean and miserable as those of yesterday. I saw some with beards, one or two with long mustaches, and several with medium mustaches and long beards. Many had their hair tied, wearing a branch tied around their head, perhaps to fasten it with, and others had their hair cut short. They had their ears pierced like those of the channel and wore little reeds in them. I think that I must have seen today more than a hundred Indians. About thirty of them came out to us, and seeing that we paid no

attention to them and continued on our way, or perhaps because of the novelty, they followed us for a good distance. Their method was to run, one behind the other in single file, until they got ahead of us, and then, halting, they began to shout and even to shriek, making many gestures and signs as if they were angry and did not wish us to go forward. Then seeing that we continued on our way, without paying any attention to them, they again started to run to get ahead of us. Then they went through the same performance of shouting and talking very loud and fast, although we understood nothing of what they said. (Bolton 1933:323-324)

Font's account is interesting in that the Santa Clara people had taken a more defiant stance about having strangers freely traveling through their lands. Milliken (1991:98) suggests that the villagers were annoyed by the increasingly frequent contacts with the Spaniards who never stopped long enough to acknowledge them. Ethnographic literature on Native Californians document the detailed procedures many tribal communities developed for receiving company and also the very refined boundaries of land holding political units. The Spanish explorers, of course, were unaware of the etiquette observed by the indigenous people.

The Anza expedition went on to reconnoiter the rest of the San Francisco peninsula, then returned to the Santa Clara Valley on their way around the southern extent of the Bay to the east side. This time they followed the bay shore along the grassland plains. Father Pedro Font's diary provides an interesting account of meeting the Santa Clara Valley people at a village near Mountain View. As the expedition approached the village they surprised the residents and encountered a woman who may have been a shaman:

On beginning to go around the head of the estuary we found another village whose Indians showed great fear as soon as they saw us, but it was greatly lessened by giving them glass beads. One of the women, from the time when she first saw us until we departed, stood at the door of her hut making gestures like crosses and drawing

lines on the ground, at the same time talking to herself as though praying, and during her prayer she was immobile, paying no attention to the glass beads which the commander offered her. (Bolton 1933:354).

Spanish Colonial Period

With the establishment of the Royal Presidio at Monterey in 1770 and Upper California's first Mission, *San Carlos de Borromeo*, Imperial Spain began its efforts to take control of coastal California. Soon a number of other missions were to follow, and the Royal Presidio of San Francisco was founded in 1776, along with Mission Dolores, soon to be succeeded by Mission Santa Clara and California's first civilian town, *el pueblo de San Jose de Guadalupe*, in 1777.

The success of Spanish colonial settlement depended on centering its institutions in areas with large populations of native people. Spain had conquered and subjugated the native populations of Central America and the Southwest of North America through a tripartite economic system composed of three primary institutions: the presidio, the pueblo and the mission. Spanish settlers were at a premium as incentives to attract them to colonize unknown territories were few. Therefore, the philosophic objective was to reorganize the indigenous people along the coast into religious-based agricultural communities, bestow Spanish citizenship on the educated/Christianized neophytes, and use them to colonize the interior of California. The missions were to hold land in trust for the Indians, train them to perform various skills, and to become "*gente de razon*" or "men of reason," thus revealing the true tenor of the relationship.

The type of mission developed for California was called the *reducción* or *congregación*. Its purpose was to induce the Indians to volunteer for conversion; however, once in the mission program they could not leave, and frequently severe punishments were imposed in accordance with European standards of discipline of the time to discourage desertion. The neophytes were to be trained in 10 years as prescribed by law, after which the missions were to be transferred to the secular clergy, and the missionaries transferred to another frontier to continue the expansion (Hornbeck 1983).

The presidio was the military and legal authority responsible for defending the coast, subduing hostile Indians, and maintaining peace with allied and subjugated tribes. The presidio was a defensive fortification manned by infantry and cavalry, with detachments of soldiers assigned to the missions to protect the priests and enforce mission rules. Pueblos were civil communities established for the purpose of supplying the military with food. This reduced the cost of maintaining the presidios by sea. Pueblo citizens were also to function as a reserve militia in times of emergency. The presidio-mission-pueblo system was Spain's method of settling California. Therefore the selection of strategic sites was of primary importance.

Adverse changes to the native landscape began soon after the establishment of the regional missions, presidios and pueblos. Timber harvesting activities began almost immediately upon colonization. As early as 1777, with the establishment of Mission Santa Clara Father Tomas de la Pena wrote that, "...four leagues to the west there is much red wood, so-called, from which we have already obtained some boards" (Spearman 1963:15). By 1787, soldiers from the San Francisco Presidio were also harvesting redwood within the Santa Cruz Mountains, specifically around today's town of Woodside and up over Russian Ridge. Mission records note that a village called *Oromstac* (which translates to something like "Grizzly Bear House") was located "at the *Corte de Madera* (wood cutting place)" and local villagers were evidently tasked to assist with the work (Brown 1966).

Colonization and the introduction of the Hispanic mission system in Santa Clara Valley resulted in catastrophic mortality rates among the native people. Mission Santa Clara, established in 1777 brought in most of the native Ohlone people of the Valley by 1805. Mission Santa Cruz, established in 1791 brought in the remaining villages from the San Lorenzo River drainage and Watsonville areas. Unfortunately, poor nutrition, violence and repeated exposure to introduced European diseases decimated the Ohlone.

From the 1770s through the end of the first decade of the 1800s forty-five tiny independent tribal groups left their homelands surrounding the San Francisco

Bay on the west coast of North America and moved to the Christian missions of San Francisco, San Jose, and Santa Clara. The combined population of these groups dropped from approximately twelve thousand to three thousand over that forty year period, reduced by stress and disease related impacts on mortality. Tribal identity eroded at the missions, where people shared the experience of "Mission Indians," the lowest caste in the stratified society of the Spanish empire. The death rates at the missions were so high, the hierarchical control of work schedules and sexual practices so contrary to native values, that people today often conclude that the tribal people must have been taken forcibly to the missions by Spanish military expeditions. (Milliken 1991:1)

But some tribes resisted colonization, and one of the most dramatic examples of this can be seen among the Quiroste, a powerful tribe that controlled Año Nuevo, Pescadero, and the uplands up to Russian Ridge OSP. The Quiroste people are credited with leading the first active resistance to Spanish colonialism in the bay area. In 1791, a 60 year old Quiroste headman named Charquin was baptized at the Mission San Francisco outstation in San Pedro Valley. He left eight days later, possibly disenchanted that a neighboring chief, Lachi of the Oljon tribe of San Gregorio Creek, was given special status by the Spanish authorities (Milliken 1991:186). Milliken noted that at the time of his baptism Charquin did not have any relatives at Mission San Francisco, but Lachi did:

[Lachi] was part of a family already intermarried with one of the most important Christian families of Mission San Francisco, that of Pruristac captain Luciano Tiburcio Mossues. The Quiroste had been the largest, most powerful group on the Pacific Coast between the Golden Gate and Monterey Bay. Yet in 1791 they found themselves outsiders in the mission network of status and power. (Milliken 1991:186)

In 1793, missionaries visiting the Quiroste villages learned they were providing sanctuary to several fugitive neophytes. By late April or May 1793,

Spanish soldiers sought out and captured Charquin and he was sent as a prisoner to the Santa Barbara Presidio. In retaliation, on December 14, 1793, several Quiroste under the leadership of a man named Ochole, attacked and burned buildings at Mission Santa Cruz. Meanwhile, Charquin had escaped from the Presidio and returned to the Santa Cruz Mountains. Spanish soldiers were immediately transferred to Mission Santa Cruz as reinforcements and scouts were sent into the mountains to capture the Quiroste ringleaders. In February 1794, it was reported that Indians in the Santa Cruz Mountains were making arrows, presumably to carry out a second attack on the mission (Milliken 1991:189-190; 1995:120). In April 1796, both Charquin and Ochole were captured, and they later died in prison at the Presidio of San Diego. Soon after the Quiroste were defeated by Spanish soldiers, a large group of adults joined Mission Santa Clara, “more than in all the previous sixteen years combined” (Milliken 1995:5).

And yet a local Native American presence in Quiroste territory continued. Following the displacement of the Quiroste tribe, the Santa Cruz Mountains continued to be a stronghold for Mission Indian refugees and bandits, such as the legendary Pomponio.

Pomponio was born about 1799 at Mission Dolores, baptized in 1803 and was a member of the *Guailem* tribe, who were from the Marin County coast above San Francisco Bay. By 1820, Pomponio had become a renegade- as noted by a San Francisco missionary who wrote about depredations committed by Pomponio and his gang. In 1823, an Indian girl who had been abducted by Pomponio’s gang escaped and informed the San Francisco Presidio soldiers of his hiding place. Corporal Jose Reyes Berryesa and the Indian girl followed the old Spanish trail up to Skyline and over to the reputed hiding place where they set up an ambush. The getaway was situated about two miles south of Alpine Road where a small hollow with a stream plunges down into Devil’s Canyon. Evidently there were two caves near the falls, but Pomponio evaded capture until he was later apprehended in Marin County in 1824, and summarily executed at Mission San Carlos in Carmel.

Another intriguing clue regarding Native American presence in the uplands of the Santa Cruz Mountains occurred in 1857 when Alex Garvey, a San Mateo

County surveyor working near Skyline, came across “Indian huts” on a shelf in the side of a canyon within what is now the Russian Ridge OSP. Historian Alan Brown noted, “[t]hese people-remnants of who-knows-what groups (perhaps the Mission Indian village in Redwood City) - seem to have gone to work for the local Basque sheep rancher, Juan Mendicoa, when he settled nearby at the Laguna del Corazón in 1859” (Brown 1973:18), which is today’s Mindego Ranch Area of Russian Ridge OSP.

2.2 Historical Overview

Euroamerican settlement from the eighteenth century to the present has resulted in increasingly dense occupation and resource uses. The following overview of the history of the mid-peninsula region provides a general history of the predominant land uses during Spanish, Mexican and American Periods. Unlike the previous discussion of the historical developments during the early historical period as they relate to the Native American inhabitants of the area, the following overview focuses on land uses that involved many ethnic groups including but not limited to Euroamericans, Native Americans, Chinese, or Basque. The predominant land use themes for the area are agriculture, ranching, logging, mining, and settlement growth.

2.2.1 Spanish Period (1776–1821)

As previously discussed, during the late sixteenth century, the native inhabitants of coastal California made occasional contact with the crews of European vessels. The landings of Sir Francis Drake and Sebastian Cermeño in what is today Marin County are two well-known examples. Such interactions were isolated occurrences (Lightfoot and Simmons 1998; Schneider 2009) and large scale, land-based exploration and settlement did not occur until the second half of the eighteenth century.

Spanish interest in Alta California began in earnest in the 1760s with rumors that Russia was planning to expand their colonial sphere southward from Alaska into California. In response, the Spanish government sent Father Junípero Serra and Spanish settlers northward from Mexico. In 1769, Mission San Diego and the first presidio were established. The success of Mission San Diego was followed by a

string of settlements and missions that reached northward ending with Mission San Francisco Solano in Sonoma County, which was 1823 (Hoover et al. 1990).

The missions are perhaps the best known institution of Spanish colonial California, but presidios (military garrisons) and pueblos (secular towns) were also important parts of the colonial strategy that were perfected during the previous centuries of Spanish conquest in the Americas. In California, the Spanish established four presidios. These presidios served as administrative centers, offered protection from hostile Indians, and discouraged encroachment from other colonial powers. Three pueblos were also established to supply the presidios with grain, meat and other foodstuffs (Panich et al. 2010:67).

In Spanish era California, supplies were either home produced on mission lands or were officially distributed once a year by the Spanish Manila galleon trade system based at San Blas, Mexico. Coughlin cited a mission letter describing the daily rations as consisting of a cup of corn, some flour and a little milk when one of the shipments was late (Coughlin 1967:101). During the onset of the Mexican War of Independence in the 1810s, California became isolated. Supply ships ceased to sail up the Pacific Coast from San Blas, and the Spanish outposts of central California were forced to engage in illicit trade with American and British vessels as well as the fledgling Russian colony at Fort Ross in Sonoma County (Lightfoot 2005:58-59; Voss 2008:54-66).

The earliest documented exploration of the San Francisco Bay region occurred in 1769 when Gaspar de Portolá led an expedition through the area. On November 4th of that year, members of the party climbed Sweeney Ridge and became the first Europeans to set eyes upon San Francisco Bay. That night they camped in an area now inundated by San Andreas Reservoir, and Portolá later led his expedition southeast through the valley into the area of the modern Crystal Springs Reservoirs (Hoover et al. 1990:369). This exploration was followed in later years by the Pedro Fages expeditions of 1770 and 1772, the Fernando Javier de Rivera expedition of 1774, and Juan Bautista de Anza's 1776 expedition (Hoover et al. 1990:285, 330-331).

Mission San Francisco de Asís (also known as Mission San Francisco Dolores) and the Presidio of

San Francisco were founded in 1776 on the northern tip of the peninsula overlooking the entry to San Francisco Bay. From this strategic location, a successful frontier community was created. The grazing lands for livestock herds extended south through San Mateo County and west to the coast (Beck and Haase 1980:30). Yerba Buena Cove was established as an anchorage for Mission San Francisco shipping by the 1790s (Hoover et al. 1990:334).

In 1777, Spanish missionaries founded Mission Santa Clara de Asís on the banks of the Guadalupe River at the south end of the San Francisco peninsula. Later that same year the Spanish governor of Alta California, Felipe Neve, founded the Pueblo San José de Guadalupe near the mission (Hall 1871:14). The Mission Santa Clara lands totaled approximately 240 square miles which extended from the Guadalupe River to the east to the Santa Cruz Mountains to the southwest and north to San Francisquito Creek (Bocek and Reese 1992:47).

Some private land grants were also issued under the Spanish colonial authority. One such grant was Rancho de las Pulgas, which is located on the San Francisco peninsula between the two mission districts. The District includes portions of both the Mission San Francisco Dolores and Mission Santa Clara de Asís mission lands, and Rancho de las Pulgas.

Settlement

During the Spanish Period, non-Native settlement on the San Francisco peninsula was primarily at the two missions (Mission San Francisco Dolores and Mission Santa Clara de Asís), the San Francisco Presidio, and the Pueblo de San José. These settlements are to the north and southeast of the District boundaries. Rancho de las Pulgas is the only Spanish period private rancho located within the District. In 1795, the Pulgas rancho was granted to Don José Darío Argüello, who later served as interim governor of California. The boundaries of the Pulgas Rancho stretched from San Mateo Creek in the north to San Francisquito Creek in the south, and from the San Francisco Bay in the east to “the sierra or range of mountains” in the west. The exact location of the original ranch house is unknown, but is probably within the boundaries of modern day San Carlos

(Hoover et al. 1990: 381-382; Menlo Park Historical Association 1985). The District OSPs do not appear to have been settled during the Spanish Period.

Agriculture

When Spanish colonists expanded north into Alta California during the late eighteenth to early nineteenth century, they found a Mediterranean climate similar to Spain and northern Mexico. They used their traditional farming techniques and built irrigation systems at their missions and associated pueblos. These techniques included dry farming, run-off irrigation, flood water farming, and irrigation systems that used dams, aqueducts and ditches (JPR and Caltrans 2000:8). The missions produced grains and legumes (wheat, barley, corn, beans, lentils, and peas) in volume, and established small scale orchards, vineyards, and garden crops as well.

Initially, the missions were not self-supporting and the Spanish government sent annual shipments of food and other supplies from Mexico. By the end of the Spanish period, the missions were producing sufficient food to survive on their own and were able to export hides and tallow from their ranching activities (Bocek and Reese 1992:46). Based on mission census records, Mission San Francisco produced a total of 30,529 bushels of wheat, 15,872 bushels of barley, and smaller amounts of corn (4,517 bushels), beans (5,168 bushels), and other legumes (5,081) between 1783 and 1831. During the same period, Mission Santa Clara produced 42,206 bushels of wheat, 5,749 bushels of barley, and 11,512 bushels of corn (Bocek and Reese 1992:47). The acreage needed for farming was a small percentage of the available mission lands. The primary use for mission lands was ranching.

Ranching

The Spanish missionaries brought livestock with them when they moved north into Alta California to establish their missions. These were primarily Spanish cattle, churro and merino sheep, goats, swine, horses, and mules. Starting in 1769, Captain Fernando Rivera arrived in San Diego with 200 head of cattle to provide meat for the mission (Burcham 1982:118). By 1770, on his second expedition from Mexico, Rivera introduced the first flock of sheep at Mission San Diego (Burcham 1982:146).

The mild Mediterranean climate, abundant grasslands, and numerous creeks and rivers provided excellent conditions for ranching. As a result, livestock and the hide and tallow trade became the backbone of the California economy under the Spanish and Mexican administrations. On the San Francisco peninsula, cattle were pastured in valley lowlands and the around the Bayshore during the winter and spring. In the summer, the herds were driven up into the coastal foothills, where water was still available during the dry season. Rangelands were not fenced, thus herd ownership was distinguished by annual branding (Bocek and Reese 1992:48).

The Mission San Francisco Delores and Mission Santa Clara de Asís maintained enormous herds of cattle and sheep during their tenure on the San Francisco peninsula. In 1776, Mission San Francisco started with 13 horned cattle, 8 horses, and 4 mules. At its peak, around 1808, Mission San Francisco controlled approximately 11,000 cattle, 10,000 sheep, and 1,000 horses (Griffin n.d.a). To the south, Mission Santa Clara started with 117 head of cattle, 16 horses, and 18 mules in 1777. By 1808, Mission Santa Clara reported 6,900 cattle, 9,000 sheep, and 2,000 horses. At its peak, it controlled up to 7,000 cattle and 12,000 sheep at various times (Griffin n.d.b).

Ranchos in the region raised cattle for the local Missions. Rancho San Pedro, which is represented by the Sanchez Adobe in modern day Pacifica, provided cattle for Mission San Francisco Delores. Rancho San Pedro was founded by Father Palou in 1784, in an effort to move farming operations to a fertile valley on the ocean. It was located in a place called Cañada de las Almejas in honor of the shellfish feast that was held there by the Portola expedition in 1769 (Hoover et al. 1990:371-372). More than half of Mission San Francisco Delores 800 neophytes were moved here to work at the rancho (Hoover et al. 1990: 372). Cattle for Mission Santa Cruz were pastured at Point Año Nuevo (State of California 2013).

There were several herdsman ranch outposts within the District boundaries. A mission rancho was near Pillar Point, known as El Pilar, that provided grazing lands for mission horse and oxen as early as the 1790s (Beck and Haase 1980:30; Hoover et al. 1990:372). A. K. Brown identified a Mission Santa

Clara ranch at San Francisquito Creek established about 1800 for sheep herders (Stanger 1963:21). Just to the north of the district, a third ranching outpost at San Mateo Creek was established in 1793 (Postel 1994:9).

Logging

Logging redwoods in the Santa Cruz Mountains along the San Francisco peninsula started in the late 1770s with the establishment of the Spanish missions. The Anza expedition in 1776 explored the foothills near San Francisquito Creek (present day Woodside) and determined that the forest there was extensive enough to supply the San Francisco Presidio and Mission San Francisco Delores with redwood, pine, live oak, cottonwood and willow (Bolton 1930: Vol. 3, 131). Since San Francisquito Creek was the boundary between the Mission San Francisco and Mission Santa Clara districts, both missions and their associated settlements would be able to conduct logging the area. By 1788, the San Francisquito Creek area had become known as El Corte de Madera, or “wood-cuttings” place (Bocek and Reese 1992:30). Logging was done with axes, lumber was hand cut using axes and adzes, and shingles were handmade (Stanger 1967:3).

Although there is no record of when El Corte Madera was first logged, Mission Santa Clara used redwood logs to build its first church in 1778. Based on the 1841 reminiscences of Tomás Pacheco, the Pueblo de San José also used the San Francisquito lumber source to build town structures beginning in 1777 (Brown 1966:3). The Mission established two draying roads between the southern edge of the forest area and Santa Clara for hauling logs. One followed modern Sandhill Road and the other followed the route of modern Arastradero Road in Palo Alto (Bocek and Reese 1992:31).

The Mission San Francisco and its Presidio also started using the San Francisquito source during the 1770s for the initial settlement structures. By the 1790s, Mission San Francisco records show increased use of the timber source. In 1797, the Yerba Buena battery required fifty one trips to cut timbers which were hauled downstream by numerous teams of oxen. The Mission supplied the ox teams and Native American wood cutters, and the Presidio sent along an escort of soldiers and a supervisor (Brown

1966:2). By the 1820s, Mission San Francisco and the Presidio started using a timber source to the north in Marin County and their use of the San Mateo County source declined. Mission Santa Clara continued to use the San Francisquito source throughout the Spanish period (Brown 1966:3-4).

Mining

In California, cinnabar, from which quicksilver is produced, was first discovered in 1824 by the brothers Secundo and Teodoro Robles in Santa Clara County (Hoover et al. 1990:406). They named their discovery the *La Mina Santa Clara*, (now known as the New Almaden Mine). The Robles brothers and their partner Antonio Suñol started mining the La Mina Santa Clara with hopes of finding gold and silver (Hoover et al. 1990:411). The mine was located here because of the cinnabar rich red earth in the area which was used by the Native Americans as pigment. The name Mt. Umunhum may be a reference to the cinnabar deposits in the area. Umunhum refers to the Ohlone word for hummingbirds. There may be a connection between the red color of the cinnabar deposits and that of ruby throated hummingbird (Hylkema 2011). The La Mina Santa Clara mining effort is located in today’s Sierra Azul OSP.

2.2.2 Mexican Republic Period (1821–1848)

In 1821, Mexico gained independence from Spain, and the following year California was declared a territory of the Mexican republic. Apart from sending in new governors and a small number of soldiers, Mexican intervention was minimal over the next several years. The secularization of the missions occurred in 1834; the Mexican governor of California downgraded the missions to the status of parish churches and divided their vast holdings into individual land grants (*ranchos*). Secularization brought an influx of Mexican settlers to California and allowed for the emergence of a new class of wealthy land owners known as *los rancheros*. This led to an emphasis on ranching and agricultural activities in California.

During the Mexican era, trade opened to American, European, and other foreign trade interests. The coastal sea otter population was notably depleted by the Mexican period and that fur trade was replaced by the hide and tallow trade as cattle ranching

became the basis of the economy (Coughlin 1967:116). Hides for shoes, tallow for candles, and cow horns for shoe buttons were shipped to New England for the shoe industry and finished goods of all sorts were brought to California (Rolle 1956:26). To maintain some control of the foreign trade and bring some levied duties to the colonial coffers, all trading vessels were required to register their cargos at the Custom House at Monterey (Hoover et al. 1990:217). American and European immigrants began to trickle into California by way of the Russian-American Company operated at Fort Ross to the north, Sutter's Fort and Colony in the Sacramento area, and maritime trade at Monterey.

In the 1840s, relations between Mexico and the United States became strained as the U.S. expanded its sphere of influence westward to the Pacific Ocean. These tensions erupted in war (1846-1848). At the close of the Mexican-American War, the Treaty of Guadalupe Hidalgo was signed and Alta California became part of the United States.

In San Mateo and Santa Clara counties, over seventy ranchos were granted by the Mexican governors to prominent families and deserving individuals (Beck and Haase 1980: Map 30). There were twenty-two local ranchos within or bordering the District, which are summarized in Table 2-4.

Table 2-4. Summary of Mexican Land Grants

Within the Midpeninsula Regional Open Space District

County	Grant Name	Mexican Patentee	Date Granted	U. S. Patentee, Date	Acres
San Mateo	Cañada de Raymundo	John Coppinger	1840	Greer & Coppinger, 1859	12,545.10
	Rancho de las Pulgas	José Darío Argüello	(Sp.) 1795	Argüello, 1857	35,240.47
	Cañada del Corte Madera	Domingo Peralta and Máximo Martínez	1833	Thurn & Carpentier, 1882	3,565.91
	El Corte de Madera	-	-	Martinez, 1858	13,316.05
	Corral de Tierra (Palomares)	Francisco Guerrero Palomares	1839	Palomares, 1866	7,766.35
	Corral de Tierra (Vasquez)	Tiburcio Vásquez	1839	Vasquez, 1873	4,436.18
	Miramontes	Candelario Miramontes	1841	Miramontes, 1882	4,424.12
	San Pedro	Francisco Sánchez	1839	Sánchez, 1870	8,926.46
	Cañada Verde y Arroyo de la Purísima	José Antonio Alviso	1838	Alviso, 1865	8,905.58
	Butano	Ramona Sanchez	1838	Rodriguez, 1866	4,439.67
	Punta de Año Nuevo	Simeón Castro	1842	Castro, 1857	17,753.15
	San Antonio or Pescadero	Juan José Gonzalez	1833	Gonzalez, 1866	3,282.32
	San Gregorio	Antonio Buelna	1839	A: Rodriguez, 1861 B: Castro, 1891	13,344.15 4,439.31
Santa Clara	Pastoria de las Borregas	Francisco Estrada	1842	A: Murphy, 1865 B: Castro, 1881	4,894.35 4,172.13
	Posolmi	Lope Íñigo	1844	Íñigo, 1881	1,695.90
	Rincon de San Francisquito	José Peña	1841	Robles, 1868	8,418.21

County	Grant Name	Mexican Patentee	Date Granted	U. S. Patentee, Date	Acres
	Rinconada del Arroyo de San Francisquito	María Antonia Mesa	1841	Mesa, 1872	2,229.34
	San Francisquito	Antonio Buelna	1839	Rodriguez, 1868	1,471
	La Purisima Concepción	José Gorgonio	1840	Briones, 1871	4,438.94
	San Antonio	Juan Prado Mesa	1839	A: Mesa, 1866 B: Dana, 1857	898.41 3,541.89
	Quito	José Noriega and José Zenon Fernández	1841	Alviso and Fernández heirs, 1866	13,309.85
	Rinconada de los Gatos	Sebastián Peralta	1840	Hernandez and Peralta, 1860	6,631.44

Eleven of these ranchos either include portions of or are adjacent to the District OSPs. In San Mateo County, these include Canada de Raymundo, Canada Verde y Arroyo de la Purisima, Rancho de las Pulgas, and Canada del Corte de Madera, El Corte de Madera, and San Gregorio (Rodriguez and Castro portions). In Santa Clara County, these include La Purisima Concepción, Posolmi, Rancho San Antonio, Quito, and Rinconada de los Gatos.

Settlement

During the Mexican period, the population settlement became more dispersed as rancho land grants were issued and land owners built adobe houses on their lands. The denser population areas were in the Pueblo de San José, the Presidio of San Francisco. The village of Yerba Buena (future San Francisco) was established in 1835 by Captain William Richardson (Hoover et al. 1990:334). The Mexican land grants on the San Francisco mid Peninsula were primarily along the coast and on either side of the ridgeline running along the Peninsula (Beck and Haase 1980:30). The adobe households within the rancho properties were generally near creeks or rivers where water was accessible. For example, the Argüello family is thought to have settled near Pulgas Creek in Rancho de las Pulgas and the Buelna family settled along San Francisquito Creek in Rancho San Francisquito (Hoover et al. 1990:380).

Agriculture

When Mexico became independent in 1822, the new economy focused on livestock ranching rather than irrigated farming. When the missions were

secularized, the Mexican settlers received large land grants and appropriated existing mission irrigated fields, livestock, fences, corrals, irrigation ditches, outbuildings, and other improvements (Bocek and Reese 1992:49). Instead of large scale farming, they tended to plant smaller fields near their adobe homes for subsistence fruits and vegetables. Along with the standard crops of wheat, corn, and beans, some *Californios* planted fruits such as melons or fruit trees, such as peach trees (Brown n.d.; Gullard and Lund 1989:36). Larger scale water system features were neglected, which resulted in a decline in irrigated farming after the missions were secularized (JRP and Caltrans 2000:11). Agricultural methods continued to rely on Native American labor for shallow plowing, sowing, and harvesting the crops grown (Bocek and Reese 1992:49). Other than being smaller in scale, there was not substantial change in agriculture practice during the Mexican period.

Ranching

During the Mexican Period, the mission lands were secularized and divided up into ranchos, which were granted by the Alta California governors to deserving citizens. Property boundaries were generally defined by describing square leagues of property extending from a drainage or other topographic feature. Livestock were branded to determine ownership and allowed to range freely, which precluded the need for extensive fences or specific rancho boundaries. Fences and ditches were used primarily to keep livestock out of mission and rancho vegetable gardens, orchards, and grain fields. Fence types

included prickly pear cactus hedges, stone, and adobe walls (Tremaine and Lopez 1998:6).

Owners of livestock were required to brand their livestock and hold at least one annual rodeo with neighboring ranchos to sort out ownership issues, brand calves, and decide which animals to cull for slaughter. Many ranchers held two rodeos annually: one in the late summer for branding and counting young stock, and a second one in the spring for when animals were chosen for slaughter for their hides and tallow (Burcham 1981:122-123).

The size of livestock operations varied from rancho to rancho. At Rancho de las Pulgas, there were 4,000 head of cattle and 2,000 horses present by 1838 (Postel 1994:15). Rafael Soto received the grant to Rancho Rinconada del Arroyo San Francisquito in 1835 which was confirmed to his widow in 1841 (Gullard and Lund 1989:47). His 1839 will listed 50 cattle, 15 horses, two yokes of oxen, and one mule (Gullard and Lund 1989:50). In 1835, the San Mateo outpost near San Mateo Creek still ran 2,125 head of sheep (Postel 1994:15).

Logging

Commercial logging of redwood forests began in the Mexican period during the mid 1830s. Due to the increasing population and the need for lumber, hand-cutting techniques for making boards and beams were replaced by *aserrados*, or whipsaw and sawpits (Bocek and Reese 1992:33). Whipsawed boards were produced by placing a squared log over a sawpit and using two men to saw the boards from above and below the log (Stanger 1967:3). A two-man team could produce lumber from a hundred feet of logs per day (Brown 1966:11-12). Although there was one early water-powered sawmill established in Santa Cruz County in 1841, sawmills did not become common until the American Period (Bocek and Reese 1992:33).

Other logging-related industries included making redwood shingles and producing oak firewood and charcoal. By the 1840s, redwood shingles were being produced on the mid Peninsula. According to an 1842 document, two medium-sized redwoods could yield 40,000 shingles (Brown 1966).

By 1836, there were several sawpits located in the Rancho Pulgas forest that were systematically cutting

lumber (Brown 1966:7). These sawpit operations employed local *Californios*, Native Americans and foreigners, who were often runaway sailors (Brown 1966:11-12). In 1840, an *embarcadero*, or port was created at the mouth of San Francisquito Creek which suggests substantial logging was occurring there by that time. The port was an alternative to the earlier Sandhill and Arastradero draying roads (Bocek and Reese 1992:34).

Mining

Mining in the region during the Mexican Period was dominated by the activities at La Mina Santa Clara. Though initial efforts at the mine were geared towards extraction of gold and silver, by 1845, Captain Andres Castellero, who had an education in geology and metallurgy realized the mine contained quicksilver ore (Tays 1996). Castellero started a mining partnership with the Robles brothers and General Castro for the Mina Santa Clara (Johnson 1963:20). On December 30, 1945, Castellero was granted “three thousand varas of land in all directions” (Garcia 1997) around the Mina Santa Clara claim. This became the first legal mining claim in California. The Mexican-American War drew Castellero back into the Army and Alexander Forbes was placed in charge of the mining activities at Mina Santa Clara (Hylkema 2011:14).

In 1848, with the discovery of gold in California, the demand for quicksilver with which to process it rose quickly (Hoover et al. 1990:412; Johnson 1963).

2.2.3 American Period (1848–Present)

At the close of the Mexican-American War (1846-1848), the United States Army took control of the Presidio of San Francisco and declared authority over Alta California. The 1848 Treaty of Guadalupe Hidalgo formally tied Alta California to the United States. In that same year, James Marshall discovered gold on the American River while surveying a prospective sawmill site and announced the find at Sutter’s Fort. The discovery of gold brought tens of thousands of gold-seekers from around the world to California. The wealth and expanding population in California short-circuited the usual territory phase and California became a state in 1850 (Hoover et al. 1990).

In 1850, Santa Clara became one of the original 27 counties of California with the town of San Jose as

the county seat. At that time, San Mateo County was part of San Francisco County, although soon after it organized into a separate county in 1856 (Hoover et al. 1990:367). The border between San Mateo and Santa Clara Counties was always San Francisquito Creek. The western boundary, however, between San Mateo and Santa Cruz Counties did not become fully established until 1868 when Pescadero, originally part of Santa Cruz County, was annexed to San Mateo County (Hoover et al. 1990:421).

During and after the Gold Rush, many of the Mexican ranchos had been overrun by land-hungry squatters who believed that all territory ceded by Mexico was in the public domain and disputed the Mexican land claims. In response, the Mexican land grants were reviewed by the U.S. Court Land Commission. The land review process was based on the Land Act of 1851, which placed the burden of proof of ownership on the grantees. The ownership of many of the rancho properties became legally tangled as Mexican families used promises of land to pay for services and goods, and squatters settled on the ranchos (Richards 1973:34). As a result, many *Californio* families and the few Native Americans who had received grants lost the titles to their land. As seen in Table 2-4 above, nearly half of the ranchos in the study area changed owners by the time they received U.S. land patents from the Land Commission.

Starting in the late 1840s, the population of the San Francisco Bay Area grew as the Gold Rush brought prospectors west. The influx of population created booming markets for food and lumber. To meet these needs, saw mills, farms, dairies, and ranches were established near the preserves in the 1850s. Those who did not find their fortune in gold country settled as farmers or ranchers in rural areas of California. The need for agricultural products encouraged settlement of the less mountainous portions of the countryside in what became Alameda, Santa Clara, and San Mateo Counties. Squatters and settlers began cultivating areas initially deemed marginal for agricultural, particularly if they were near a permanent source of water. Others took up ranching, particularly in the more mountainous areas of the San Francisco Peninsula and the east Bay, as well as in the interior valleys of the Peninsula. By the 1850s and 1860s, the opening of county and toll

roads, along with daily stage coaches, eased the movement of goods and people through these more remote and often difficult to transverse areas (Panich et al. 2010:69).

Settlement

The Gold Rush brought thousands of people to California between 1848 and 1850. San Francisco was the main port through which the vast majority of these prospectors passed on their way to the northern and southern mines. Although most did not make their fortune, many stayed on and settled in California.

During the Gold Rush, the village of Yerba Buena became the tent city of San Francisco surrounding the Yerba Buena Cove which acted as anchorage and port. Other early ports along the San Francisco Bay shore were established at the mouths of the major creeks; often to support the logging industry.

Redwood City

Redwood City was located at the end of the Embarcadero de las Pulgas at the mouth of Redwood Creek and became a logging port settlement in the 1850s, as squatters settled on the Rancho de las Pulgas lands. When San Mateo County was organized in 1856, Redwood City soon became the county seat.

Ravenswood

Ravenswood was first called the Steinberger Tract for John Beal Steinberger who settled on the southeast corner of the Rancho de las Pulgas in 1851. In 1853, the Steinberger Tract was bought by I.C. Woods, R. Rowe, D.H. Haskell, J.K. Hackett, and C.D. Judah who built a shipping wharf at the point presently known as Cooley Landing and laid out a plan for the town of Ravenswood (Hoover et al. 1990:381). The developers hoped the terminus of the Central Pacific Railroad would be located at Ravenswood, but with the decline of the lumber industry in the late 1850s, the railroad was relocated and the town eventually abandoned (Moore and Depue 1878:29).

In the 1870s, development of the town of Ravenswood was renewed when Lester P. Cooley purchased property adjacent to the Ravenswood wharf. Cooley constructed his home and ranch nearby. In addition to the Cooley Ranch, Hunter,

Shackelford and Company constructed a brick factory in 1874 (Moore and Depue 1878:29), bricks were shipped from Cooley Landing. In the 1930s the county used it as a dump (Simmons 2010). From the 1960s to the 1990s, Carl Schoof operated the landing as the Palo Alto Boat Works (Simmons 2010). Today, the Ravenswood OSP includes Cooley Landing.

Circa 1910-1920, Runnymede Poultry Farms, a cooperative farming venture was promoted and established by Charles Weeks. Weeks sold subdivisions including the 130-acre subdivision known as Ravenswood. The Depression of the 1930s and later urbanization caused the eventual decline of Weeks' farms (Barbour 1999).

San Mateo

San Mateo was originally a mission livestock outpost which continued through the Mexican period. During the Early American Period, it became a stagecoach stop settlement at San Mateo Creek along the San Francisco to San Jose stage line from 1849-1865 (Postel 1994:19).

The logging industry also supported a string of early American settlements along the Santa Cruz Mountains on the mid-Peninsula. These settlements developed in conjunction with mills, toll roads, and general stores which provided loggers with access, jobs, supplies, and often mail service.

West Union

West Union grew to support nearby mills on West Union Creek in the early to mid-1850s. Now vanished, the town hosted a schoolhouse, saloon, store and graveyard, along with three mills on West Union Creek and several more about a mile to the north (Richards 1973:54). The town stood in the general area of Cañada Road and Edgewood Road near Pulgas Ridge Preserve.

Woodside

Woodside developed as a logging settlement in the 1840s, as late Mexican Period sawpits and then American sawmills were erected in the surrounding forest lands. The community centered on the Parkhurst and Tripp store, which was established in 1851 (Hoover et al. 1990:376). By 1859, in addition to the store, Woodside boasted a school, library,

church, and several saloons (Richards 1973:60). Woodside is down slope of Teague Hill OSP.

La Honda

La Honda was established near Arroyo Honda in the 1870s when the Searsville and La Honda Turnpike was constructed by local land owners. The settlement was centered on the John Sears store, which was erected in 1878 (Hoover et al. 1990:385). The La Honda OSP is adjacent to the current town.

Searsville

Searsville was established in the early 1850s along the Sandhill Road draying road. The settlement grew around a hotel, Sears House. From 1853-1862, the Sears House was a stopping place for oxen teams hauling lumber from La Honda ridge mills down to the Redwood City port (Hoover et al. 1990:377). In 1858, August Eikerenkotter established a post office in Searsville. Eikerenkotter remained in Searsville until 1892, when Spring Valley Water Company built a dam and flooded portions of the town (Richards 1973:59). Searsville is down slope from Thornewood OSP.

Saratoga

Saratoga was originally named McCartyville. McCartyville developed in the early 1850s near several sawmills at the end of Martin McCarty's toll road on Campbell Creek (now Saratoga Creek). By 1855, the town had a post office and in 1865, it was renamed Saratoga (Hoover et al. 1990:416). Saratoga is down slope of Fremont Older OSP.

Los Gatos

Los Gatos developed along the 1857 toll road from San Jose to Santa Cruz near an 1855 stone flour mill that was built on the Arroyo de los Gatos. Several sawmills operated above the present town and the settlement was a stagecoach station (Hoover et al. 1990:415). Los Gatos is adjacent to portions of the Sierra Azul OSP.

Lexington

Lexington was a settlement above Los Gatos on Los Gatos Creek. Lexington formed in the late 1850s and early 1860s to support eight sawmills. It boasted several lumber dealers, a redwood pipe factory, a wheelwright, grocers, blacksmiths, and acted as a

stagecoach stop (Hoover 1990:415). Lexington was located west of the Sierra Azul OSP in what is now Lexington Reservoir.

Menlo Park

Menlo Park was established in 1864 as a railroad station. In 1863, a railroad was constructed from San Francisco to San Jose, which provided easy access between these towns and the Peninsula countryside. As a result, from the late 1860s onward wealthy San Franciscans settled their country estates on the Peninsula away from the city fog. Menlo Park became a service community to the large estates including Stanford, Atherton, Flood, Doyle, Felton, and Latham among others. Menlo Park incorporated in 1874.

Palo Alto

In 1891, Leland, Sr. and Jane Stanford opened the Leland Stanford Junior University on their estate land in memory of their son, Leland, Jr. The Town of Palo Alto developed to support the university, professors, and staff (Mirrieles 1959:26, 47).

During World War II, the Peninsula population expanded to fill jobs at Bay Area shipyards and other war-related industries. Among these were the Bethlehem Shipyard at the Hunter's Point Naval Shipyard and Drydocks, and four Kaiser shipyards along the East Bay region that employed up to 100,000 workers (Wagner et al. 1007:200; Wikipedia 2013).

Agriculture

The discovery of gold in 1848 and the ensuing Gold Rush shaped the course of California's agricultural landscape. Not only did the Gold Rush almost instantly create a demand for a wide variety of agricultural foodstuffs, but it also set in motion a wave of settlement aimed at producing commercial food products.

In the 1850s, agricultural settlement occurred in California at a fevered pace. During the Gold Rush period, intensive settlement occurred first in San Francisco and Sacramento and extended into the hinterlands as miners flocked to the gold fields. Many of California's first settlers turned to agriculture, not simply as a way to subsist, but as a way to profit from the high demand for fresh food.

Beyond the production of goods, land ownership itself often led to the creation of wealth, self-sufficiency, political power, and independence.

These attitudes about agriculture were in sharp contrast to those of the Mexican Period ranchers. A December 24, 1852 letter from a census taker, O. P. Sutton, to F. A. Nesbitt, the census agent for San Francisco County illustrates the agricultural transition from Mexican to American land use.

The agricultural resources of this county are as yet almost entirely under-developed, but the experiance [sic] of those who have tested the quality of the soil is that most of the cultivable lands within this county are unusually rich and productive. Hitherto most of these lands have been in the possession of those who used them only for grazing purposes, but latterly a portion of this soil has passed into the hands of another class of men, and wherever the foot of the Anglo Saxon has been planted, the land has been made to yield an abundant harvest (Sutton 1852:3).

During the late nineteenth century, several of the most important forces that spurred agricultural development in California were the spread of irrigation, improved transportation, the availability of agricultural labor, and increased mechanization. With the completion of the Transcontinental Railroad in 1869, farmers were able to ship fresh produce to markets in the East, which encouraged a shift toward irrigated crops in the 1870s. The transformation in the late nineteenth century from expansive grain fields and grazing lands to irrigated crops occurred relatively quickly and had profound consequences on the state's agriculture. The crusade to irrigate much of California played an important role in the expansion of mechanized farming and in the establishment of small farming communities.

Agriculture along the Peninsula occurred on a smaller scale than in the Central Valley and other parts of California. Irrigated crops emerged earlier here due to the numerous creeks and tributaries. By the 1850s, agricultural activities, dominated by grains such as barley, wheat, and oats, were established on the coast, in the interior valleys, and bay shore lowlands of the Peninsula. Dairies and smaller ranches were scattered within the interior of the

Peninsula and along the coast. Initially, the continuation of cattle ranching and the growth in popularity of wheat farming, which required little water, kept irrigation to a minimum. In the 1860s, an unusual cycle of droughts and flooding struck the region, creating poor soil quality and an unstable wheat market. With the completion of the local rail line from San Francisco to San Jose in 1864 and the Transcontinental Railroad in 1869, farmers were able to ship fresh produce to markets in both local cities and to the East. As a result, farmers began to turn to other crops, which by the 1870s created a need for irrigation systems (Panich et al. 2010:69-70). Wheat production continued to decline through the 1890s as the prevalence of irrigated crops expanded. In the Santa Cruz Mountains and foothills, commercial fruit orchards, particularly plum, apricot, and cherry orchards, and vineyards became prevalent during the 1870s (Bocek and Reese 1992:54). Farmers who were unable to irrigate their land turned primarily to ranching.

Coastal agriculture was initially focused on grain and potato production, but became more diversified over time. In the twentieth century, artichokes and brussels sprouts became the primary coastal crops. Ranching and agriculture were critical for early settlement and economic development in the coastal region, and conversely, the coastline ecosystem and topography provided open lands and creek water needed to support these industries.

Many early settlers along the San Mateo coast found rich soils and sufficient water for farming and dairy ranching. Consequently, this part of the coast had a thriving grain and dairy industry in the mid to late nineteenth century (Hoover et al. 1990:374-375). During the 1880s, in the Pescadero township on coastal San Mateo County, potatoes were cultivated and creeks were commercially fished for trout and steelhead (Steele 1883:214). In the early twentieth century, Italian immigrants started farming artichokes and brussels sprouts on the San Mateo Coast. The Half Moon Bay Artichoke Association was formed during the 1910s and by 1920 included 60 ranches and over 3,000 acres of bearing artichokes (Hodges 1920).

Ranching

Throughout California, cattle ranching boomed during the 1850-1860 era in response to the Gold Rush population influx. Unlike the Spanish and Mexican periods when livestock had been raised for hides, tallow, and wool, the new livestock demand was for meat for the miners and city dwellers (Burcham 1981:128). The 1860-1870 decade saw a severe drop off in livestock raising in California due to cycles of drought and flooding in the early 1860s. State wide estimates for cattle loss from starvation ranged from 200,000 to 1,000,000 head (Burcham 1981:140). Although the cattle industry survived and saw better conditions later in the nineteenth century, there were fewer ranches and cattle speculators. Ranchers began diversifying by growing alfalfa and improving cattle breeds to better tolerate drought (Burcham 1981:140-142).

Initially, ranches remained unfenced as they had during the Mexican Period and ranching strategy was “open range.” The 1850 Trespass Act required farmers to enclose their fields and exclude livestock. The act was meant to help determine liability involving livestock damage legal cases. The Trespass Act dictated that enclosures could be made of stone, hedge or wood rail (Tremaine and Lopez 1998:8). As the Gold Rush prospects waned, many miners turned to farming. As the number of farmers increased and farms grew in size, there were complaints that the Trespass Act was unfair to farmers. The passage of the No Fence Act in 1866 shifted the burden of constructing fences to the ranchers by requiring them to keep livestock out of gardens by enclosing pastures (Tremaine and Lopez 1998:6, 8-9). By the early 1870s, fence construction became a statewide requirement and ranch lands became enclosed (Tremaine and Lopez 1989:8-9). Also in the 1870s, the invention of barbed wire (ca. 1874) encouraged fence construction and (Caltrans 2006:145; Tremaine and Lopez 1998:6).

On the Peninsula, a number of dairy farms were established starting in the late 1850s to supply San Franciscans with milk. The first dairy farm in San Mateo County was established in 1858 by I. G. Knowles near Colma (Alley 1883:245). Most of the dairies were located on the north Peninsula in the San Bruno and Millbrae area near San Francisco or

on the San Mateo coast near Pescadero and San Gregorio (Alley 1883).

Logging

During 1850s and 1860s, some fifty saw mills operated in Peninsula forests, mainly near the logging town of Woodside. Woodside was strategically located at the base of the Santa Cruz Mountains where the logging roads converged on the way to the lumber yards in Redwood City and San Jose (Babal 1990:21). Though the lumber industry in redwood forests of the Peninsula was established in the late 1770s, it accelerated during the Gold Rush. At this time, dozens of small water or steam powered sawmills were operating along Peninsula creeks. Logs were pulled out of the mountainous forest by ox teams to mills via skid roads—cleared paths sometimes with half-buried logs placed crosswise and notched to keep the trains centered (Richards 1973:51). From the mills, logs were transported by roads or floated on creeks to the port in Redwood City. Mills often moved to a new location after about five years, and by the 1860s, many of the mills that started on the east slopes had moved westward toward the coast (Stanger 1938:90).

As early as 1852, the results of the logging boom were being foreseen. In his December 24, 1852 letter to the San Francisco County census agent, O. P. Sutton (1852:3) described his findings for the Corte de Madera area:

On the eastern slope of this range [Coastal Range] and near the southern boundary of the County [San Francisquito Creek] is a forest of redwood, from which is obtained the material for the manufacture of a considerable quantity of excellent lumber. This timber however, is rapidly disappearing and probably within four or five years will be entirely cut off.

By 1880, redwood logging was almost entirely limited to the western side of the Santa Cruz Mountains (Bocek and Reese 1992:38).

One of the logging neighborhoods on the Peninsula was the Purisima Creek watershed, which is located in the Purisima Creek Redwoods OSP. George R. Borden partnered with Rufus Hatch in the 1860s and logged near the mouth of Purisima Creek. From

1871 to 1900, they ran a successful steam mill a mile upstream supplying the Spring Valley Water Company with lumber. When George died in 1899, his son, Charles Borden, took over the family interests. Charles dissolved the Hatch partnership, moved the mill upstream to the confluence with Grabtown Gulch, and formed a new partnership with G. P. Hartley. The Charles Borden Mill, which operated from 1900 to ca. 1906, consisted of both a sawmill and a shingle mill. When both sides of the canyon were logged out, Charles Borden moved operations back downstream to the mouth of Purisima Creek (Stanger 1967:52-59). The archaeological remains of the Charles Borden Mill at Grabtown Gulch are still present within the Purisima Creek Redwoods OSP.

Besides logging redwood for lumber, shingle making continued to be a substantial industry. Shingles were hand-split from sawed blocks of redwood until the 1850s. During the 1850s and 1860s, several shingle mill machines were patented and shingle-making became mechanized (Stanger 1967:139-141). In 1856, John G. Moore started one of the first shingle mills on the Peninsula at Tripp Gulch. A year later, Daniel Jagers followed Moore's lead by establishing a shingle mill in the earlier Whipple's Lower Mill building on West Union Creek (Stanger 1967:51). Another early 1850s hand-split shingle operation near Woodside was described in a series of letters by Orrin S. Payne to his brother in 1856-1858:

...they would come back to the Redwoods and go to making [sic] shingles this winter...so we bought a lot of provisions and built a cabbin [sic] and have got moved into it and have got almost enough timber cut down to last us the winter, and when we get to work I think we can earn from 2 dollars to 2 dollars and 25 cents a day when it does not rain... (Payne 1856)

By January 1858, Payne was still making shingles and could produce five bunches, two hundred to a bunch, in a day (Payne 1858).

Military

American Period military presence in the region includes Camp Fremont, Moffett Field and the Almaden Air Force Facility. Of these only the Almaden Air Force Facility is within the District

Lands, located on top of Mt. Umunhum in the Sierra Azul OSP.

During World War I (1917-1919), Camp Fremont was installed as a military training camp in the village of Menlo Park and on 62,000 acres of Stanford lands and other foothill properties. This camp brought 10-15,000 young men to the area for field training, which included basic military drills, fire arms practice, artillery and mortar practice, pontoon bridge building on Felt Lake, and trench excavation on current Stanford Linear Accelerator lands (Bocek and Reese 1992:84). Part of the field training included marching and camping in the foothills and as far north as Redwood City. Most of the activities occurred between El Camino Real and modern Highway 280, however, the marches, tunnel excavation, and the artillery range were closer to and up into the foothills.

Moffett Field was originally created as the West Coast naval air station port for U.S. Navy airships, or dirigibles, during the 1930s. In 1931, the U.S. Navy began construction on Naval Air Station Sunnyvale along the bay shore in Mountain View near Stevens Creek Shoreline Nature Study Area. In 1933, the air station was commissioned as the home port for the USS Macon. After the USS Macon crashed in 1935 and the dirigible program was curtailed, the Navy transferred the air field to the U.S. Army. From 1935 to 1942, the U.S. Army Air Corps operated the air field for various squadrons and as a flight training center. During World War II, Moffett Field returned to Navy control as the Naval Airship Training Command, in charge of training pilots for Naval Lighter than Air ship (or blimp) squadrons. During the post war era, the navy operated the air field for standard air squadrons until the air field was decommissioned in 1994. In 1940, the National Advisory Committee for Aeronautics (NACA) established the Ames aeronautic laboratory at Moffett Field. In 1958, NACA became the National Aeronautics and Space Administration (NASA) and Ames Research Center now covers 439 acres of Moffett Field (NASA 2013).

The United States Air Force Almaden Station was occupied between 1957 and 1962. During the Cold War era, the Almaden Station functioned as an “early warning” radar facility to detect enemy aircraft capable of delivering a nuclear weapon. The station was located on the top of Mt. Umunhum and

adjacent Mt. Thayer. The tops of these mountains were graded flat to accommodate both the necessary military hardware and residential facilities for the servicemen and their families (Hylkema 2011:47). This facility is situated within the Sierra Azul OSP.

Mining

The Gold Rush in California (1848 to ca. 1860) brought large numbers of Euroamericans and immigrants from Europe and Asia to California. The influx of newcomers had a significant impact on the state’s natural and cultural environment (Paul 1965:95-97; Hoover et al. 1990:503). Miners in the Gold Rush (1848-ca. to 1860) employed simple methods that had been known and used for centuries in Europe and that had been employed with success in the southeastern United States (Brereton 1976). Many of these methods involved low-cost technologies such as the pan, cradle (rocker), long tom, and sluice box (Costello et al. 2007:9).

The post Gold Rush era was marked by the increased industrialization of mining, which required capital investment, hired labor, and technological innovation that made it feasible to mine previously inaccessible minerals. Industrial enterprises exploited both placer and lode deposits, using mining techniques that often caused a substantial impact on the environment (Costello et al. 2007). During the post Gold Rush era there were a succession of booms and busts that resulted in a flow of miners into and out of the mines as changing economic and technological developments made mining more or less profitable.

Although gold was not discovered in the San Francisco Bay Area, other minerals such as quicksilver and limestone have been mined within the South Bay and Peninsula areas.

Quicksilver Mining

Quicksilver, or mercury, was used to amalgamate with gold or silver to separate it from other minerals and was highly sought after during peak periods of gold and silver mining production. Quicksilver is found “only in areas of recent volcanic action” and therefore is relatively rare (Pelanconi 1969:1). Eighty-eight percent of mercury produced in the United States has come from California sources (Davis 1957:341). The three principle mercury producing districts in California were the New

Almaden in Santa Clara County, the Mayacmas in Sonoma and Lake Counties, and New Idria in San Benito County (Davis 1957:341).

Following the Mexican-American War, there were numerous disputes over California land titles and where exactly the boundaries of the Mexican properties lay. The New Almaden Mine land title soon came under dispute, and four separate cases involving the mine were eventually settled in 1863 by the United States Supreme Court (Johnson 1963:72). This litigation involved Barron & Forbes company of Mexico (the owners of Mina Santa Clara) as well as Quicksilver Mining Company of Pennsylvania and New York (Hylkema 2011:14). Although the New Almaden Mine was closed by injunction between 1858 and 1861, the mine still produced 35,333,586 pounds of mercury between 1850 and 1867 (Johnson 1963:92).

In the early to mid-1870s, the quality and quantity of New Almaden cinnabar ore dropped, though the mine continued to prosper under the management and innovation of J. B. Randol (Johnson 1963:94). At the same time, the last boom of the Comstock Silver Rush increased demand, which caused the price of quicksilver to rise. These factors precipitated a quicksilver rush in the Mayacmas District to the north. By 1875, the price of quicksilver began to drop again, and most of the Mayacmas mines were closed by the early 1880s (Pelanconi 1969).

According to F. Davis, the New Idria Mine was the main source of mercury in California from 1895 to 1932. In 1932, the Depression and dropping ore quantity stopped production at the New Idria Mine (Davis 1957:348). With the departure of Randol, in 1889, profitability at the New Almaden mine declined until the Quicksilver Mining Company went bankrupt in 1912 (Johnson 1963:104).

After another profitability hiatus, quicksilver mining picked up again during World War I and continued through the end of World War II. During the 1930s, safer methods of working with mercury-bearing ore were developed, thus increasing production (Bailey 1946:204). The New Almaden Mine was bought by G. H. Sexton and, after installing more modern equipment, returned to production from World War I through 1926. During the 1930s Depression years, residential areas of the New Almaden Mine were razed for a Civilian Conservation Corps camp

(Johnson 1963:104). In 1940, the New Almaden Corporation was formed and the New Almaden Mine was worked until 1946 (Johnson 1963:105).

According to F. Davis, from about 1944 to 1950, quicksilver production declined notably. He posited that this was due to foreign competition following the end of World War II. With the beginning of the Korean War in 1950, demand for mercury rose again. A government program designed to encourage quicksilver mine exploration and development was also initiated (Davis 1957:341). Quicksilver production continued into the 1960s when environmental laws (such as the Water Quality Control Act) put more restrictions on mine waste and possible environmental contamination (California Division of Mines and Geology 1969).

The Guadalupe Mine, adjacent to the Sierra Azul OSP, is a quicksilver mine in the New Almaden Mining District with a long history of operation. The mine was discovered in the 1850s and was first mined by the Guadalupe Mining Association of Baltimore, Maryland from 1856 until 1875. From 1875 to 1886, the Guadalupe Mining Company of California operated the mine and produced 55,910 flasks of quicksilver. The mine was idle until 1900, when the Century Mining Company was organized by Hugh C. Davey. This company remodeled the reduction plant with two 20-ton coarse ore furnaces and two 40-ton fine-ore furnaces (Aubury 1903:173-174). By 1918, the Century Company had renamed itself the New Guadalupe Company and held 2500 acres of property. The physical plant had expanded to include a rotary drier that fed directly into the four furnaces. A concentration plant was built in 1917 to reprocess material from older waste piles. Between 1903 and 1917, the mine produced 49,862 flasks of quicksilver. In 1918, there were 75 employees at the mine (Bradley 1918:157-160). The Century/New Guadalupe Company operated until 1922 when it closed due to litigation. Small scale mining operations continued intermittently during the 1930s, 1940s, and early 1950s. From 1955 to 1961, the Palo Alto Mining Corporation operated the mine using bulldozer stripping and open-cut mining techniques (Bureau of Mines Staff 1965:131-132).

Lime Quarrying

The production of lime from burning limestone has been practiced for thousands of years. Both the Mayan and Roman empires used lime mortar for building. In California, lime making came with Euroamerican settlement and became a substantial business during the Gold Rush (Perry et al. 2007:1). As the population expanded, increasing need for lime for building towns and cities prompted growth in the lime industry. Lime production peaked in 1904; however, limestone was also used for making Portland cement which superseded lime mortar as a building supply in the twentieth century (Perry et al. 2007:2).

Henry J. Kaiser became a renowned industrialist in twentieth century America. He is best known for putting thousands of men to work in his West Coast Kaiser Shipyards during World War II and building ships with great efficiency (Kaiser Permanente 2008). In 1939, Kaiser leased an existing limestone quarry on Permanente Creek along the slopes of the Santa Cruz Mountains in Cupertino and founded a cement company (Kaiser Permanente 2013). The Kaiser Permanente Quarry was used in building Shasta Dam among other projects. In 1987, Hanson, British holding company, bought the quarry and named it Hanson Permanente Cement (Jurich and Grady 2007). The name Kaiser Permanente also became associated with the health care system Kaiser and Dr. Sidney Garfield built during the 1940s to maintain worker health within the Kaiser industry workforce (Kaiser Permanente 2008).

3.0 COMMUNITY CONSULTATION

Community consultation efforts for the *Imagine the Future of Open Space* vision planning process are ongoing. Consultation for the cultural resources portion of the vision plan included contacting and discussing the *Imagine the Future of Open Space* planning process and the cultural resources part of it with the Native American Heritage Commission (NAHC), descendants of the Native Americans who lived in the region and local historical societies. The documentation for the community consultation is included in Appendix A, including letter and email correspondence and telephone records.

Pacific Legacy requested a search of the Sacred Lands Inventory maintained by the NAHC on February 12, 2013. A response from the NAHC was received on April 16, 2013, stating that no Native American Sacred Lands were identified in the

immediate Project area (see attached correspondence, Appendix A). A list of Native American individuals/organizations that may have knowledge of unreported resources or areas of concern was provided. These individuals/organizations were contacted by certified letter on April 25, 2013. They were given a two week period in which to respond to the letter of inquiry. Follow-up calls and emails were made to the individuals on the list. Contacts were asked if they would like to review the draft Stewardship Guide. Three of the individuals agreed to review the Stewardship Guide. The list of individuals and tribal representatives contacted and the results of the consultation are included in Table 3-1.

Letters were also sent to local historical societies requesting input from these groups. The list of groups contacted is included as Attachment 1. No responses were received from these groups.

Table 3-1. Record of Native American Contact

Contact	Affiliation	PL Staff	Date	Mode of Contact	Summary
Cambra, Rosemary	Muwekma Ohlone Indian Tribe of the SF Bay Area	Ballard	5/31/13	Letter, Phone, Email	Attempted to contact by phone, voicemail mailbox was full so unable to leave message. Sent follow-up email. No response received
Cerda, Tony	Coastanoan Rusmen Carmel Tribe	Ballard	5/31/13	Letter, Email	Sent follow-up email No response received
Erolinda Perez, Katherine	Ohlone/ Costanoan, Northern Valley Yokuts, Bay Miwok	Ballard	5/31/13	Letter, Phone	Called and left message. No response received.
Feyling, Jean-Marie	Amah/Mutsun Tribal Band	Ballard	5/31/13	Letter, Phone, Email	Attempted to contact by phone, no answer or voicemail, thus unable to leave message. Sent follow-up email. No response received
Galvan, Andy	The Ohlone Indian Tribe	Ballard	5/31/13	Letter, Phone	During follow-up phone call, provided an overview of the vision plan project and the documents Pacific Legacy is producing for the District. He asked me if we had done a record search, I said we had and gave a brief review of the results of the record search indicating the number of sites identified and that we are also incorporating site location data from the District of unrecorded sites. He asked how he could help and I asked if he would like to review the stewardship guide and provide input. He said he would an asked that it be emailed it to him.
Garibay, Ramona	Trina Marine Ruano Family	Ballard	5/31/13	Letter, Phone	5/31/13 called and left message. No response received.
Kehl, Jakki	Ohlone/ Costanoan	Ballard	5/31/13	Letter, Phone	Certified letter returned unclaimed (5/13/13) 5/31/13 - attempted to call, no answer, unable to leave a message because mailbox is full.

Table 3-1. Record of Native American Contact

Contact	Affiliation	PL Staff	Date	Mode of Contact	Summary
Ketchum, Edward	Amah Mutsun Tribal Band	Ballard	5/31/13	Letter, Email	Sent follow-up email, no phone number available. No response received
Lopez, Valentine	Amah Mutsun Tribal Band	Ballard	5/20/13	Letter, Phone	Had five points he would like MROSD to focus on: 1. Make restoring natural landscape a high priority; 2. Integrate traditional Native American land stewardship practices; 3. Work with appropriate local tribe for each of the preserves regarding identification and protection of culturally sensitive sites; 4. Work proactively with the appropriate local tribe during project planning stage; 5. Work with tribes to develop a model of areas with high probability of Native American sites.
Orozco, Patrick	Costanoan Ohlone Rumsen-Mutsun Tribe	Ballard	5/31/13	Letter, Phone	Attempted follow-up phone call, left a message. No response received
Sayers, Ann Marie		Ballard	5/7/13 5/20/13 5/24/13	Letter, Phone, Message, and email contact	Received voicemail message in response to letter. Ms. Sayers was concerned about which recorded sites would be subject to earth movement. Called back on 5/20/13, left message. 5/24/13 - is interested in providing input. Is concerned about not being compensated for participating in the process. Expressed frustration that other professionals who work on projects “is on company time” but the Native Americans are expected to do it for free. I said that I would relay her concern to the client. I asked her if she was still interested in seeing the stewardship guide even if she was not compensated. She said she was. I offered to send her a copy of the draft when it is completed in late June to Mid-July via US mail and email.
Zimmer, Michelle (Daughter of Irenne Zwielerin)	Amah/Mutsun Tribal Band	Ballard	5/31/13	Letter, Phone	5/31/13 Called cell phone for Irenne Zwielerin and her daughter Michelle Zimmer answered. I described the project. She said the maps were so large scale they could not pinpoint specific areas where there were sites. She is interested in reviewing the Stewardship Guide. Can be sent by email as a PDF.
Zwielerin, Irenne	Amah/Mutsun Tribal Band	Ballard	4/30/13	Letter, Email	In email response to letter, Ms. Zwielerin requested that Mark Hylkema and Leo Barker of National Park Service be contacted regarding areas of concern in the Project Area. She also requested that for projects that have the potential to expose artifacts or burials that all crews be given cultural sensitivity and artifact identification training to enable them to recognize potential cultural materials. If project discovers archaeological materials, she recommends that crews be accompanied by qualified California archaeological and Native American monitors.

4.0 CULTURAL RESOURCES OVERVIEW

4.1 Baseline Cultural Resources Inventory

In order to document the existing conditions of cultural resources with the District Lands, it was necessary to create a baseline inventory of known prehistoric and historic period archaeological and architectural resources. Data on known cultural resource was collected from three separate archives:

- the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS),
- files at the District Administrative Offices, and
- site records and base maps on file with archaeologist Mark Hylkema.

These investigations found that a total of 63 cultural resources have been identified within District Lands. Of these, 45 resources have been formally recorded on State of California site forms (DPR 523) including: 15 prehistoric, 26 historic period and 4 multicomponent cultural resources, defined as those that have both prehistoric/historic period deposits. There also 18 sites that have been identified within the District Lands but not formally recorded on DPR forms. Among these resources are: 15 prehistoric resources, 2 historic period and 1 multicomponent. Little is known about these unrecorded resources aside from their location and a site type.

4.1.1 Record and Information Search Methods

In order to collect data for the baseline inventory, a record and information search was conducted by the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) for Pacific Legacy on March 26, 2013 (NWIC File No. 12-0828). The record search identified known and previously recorded prehistoric and historic period archaeological resources within the District Lands. The record search included a review of:

- the *Historic Properties Directory* (California Office of Historic Preservation 2012);
- the California Inventory of Historic Resources (State of California 1976);

- the NRHP (*Directory of Determinations of Eligibility*, California Office of Historic Preservation, Volumes I and II, 2001, updated 2012 for Santa Clara County);
- the *Santa Clara County Heritage Resource Inventory* (County of Santa Clara Historical Heritage Commission 1999);
- Historic maps, General Land Office, and Rancho plats.

The NWIC record search revealed that a total of 42 cultural resources were previously recorded within the District lands. These 42 resources comprised 12 prehistoric, 26 historical cultural resources and 4 multicomponent (prehistoric/historic). One of the historic period sites, however, was mis-plotted on NWIC maps and is not located within District Lands. Thus the number of sites identified totals 41, with 25 being historic period. These resources are included in Table 4-1.

The results of the NWIC record search were compared against records on file with Mark Hylkema and the District. The Midpeninsula Open Space District staff and archaeologist Mark Hylkema also provided information about 18 unrecorded historical cultural resources and 4 recorded resources whose DPR forms are not yet on file at the NWIC within the study areas. Finally, cultural resources were identified from environmental documents available on the internet and mentioned in DPR forms but not formally recorded.

4.1.2 Baseline Cultural Resources Inventory Results

These investigations found that a total of 63 cultural resources have been identified within District lands. Of these, 45 resources have been formally recorded on State of California site forms (DPR 523) including: 15 prehistoric, 26 historic period and 4 multicomponent cultural resources (including prehistoric/historic period deposits).

Twelve of the previously recorded resources have been evaluated for the NRHP or the CRHR. Of these, two are listed on the NRHP/CRHR, and one has been determined eligible for the NRHP/CRHR, three have been recommended eligible, three have been determined not eligible and two have been recommended not eligible for listing on the

NRHP/CRHR. All of the evaluated resources are historic period structures or building complexes. No archaeological sites within District lands have been evaluated for the NRHP/CRHR.

In addition to formally recorded resources, the District has on their base maps 18 resources that have been reported to or by District staff. These resources have not been formally recorded, they have known locations and limited or non-existent descriptive information. Fifteen of these resource locations are Native American sites and isolate artifacts, one is a multicomponent site consisting of a historic period orchard and prehistoric lithic scatter and two are historic period sites (an orchard and Deer Hollow Farm).

Table 4-1 summarizes the cultural resources included in the Baseline Cultural Resources Inventory, this includes resources by temporal component, resource type, resource description, environmental zone and Midpeninsula Open Space District in which they are located, and NRHP/CRHR status, when known. Much of this information is not available for resources that have not been formally recorded.

Appendix E: Natural, Cultural, and Scenic Resources Planning and Analysis Reports

Table 4-1. Baseline Cultural Resources Inventory: Identified Cultural Resources within District OSPs

This table contains sensitive cultural resource information that cannot be distributed to the general public to ensure protection and preservation of these resources.

5.0 DISCUSSION

5.1 Cultural Resource Distribution within Environmental Zones

Ecologists working with the Vision Plan have defined nine environmental zones for the region encompassed by the District's land holdings. These nine zones were designed on the basis of variations in geography and natural resources relevant to the Districts Lands (see Figure 1-2). These zones are as follows:

- Coast
- Coastal Mountains Foothill Zone
- Foothills
- Skyline
- Summit Area
- South Bay Cities
- Peninsula Cities
- Baylands

Of the environmental zones listed above, the Peninsular Cities and South Bay Cities zones represent dense urban neighborhoods that do not contain any of the OSPs; therefore, these zones are not considered further. However, the majority of recorded cultural resources—particularly prehistoric residential sites with cemeteries—are located within the urban city zone. It is likely that the greater number of recorded sites in these urban zones is a reflection of greater encounter rates with archaeological sites occurring as a result of urban expansion and development. The OSP Units relevant to this study include:

- Bear Creek Redwoods
- Coal Creek
- El Corte de Madera Creek
- El Sereno
- Foothills
- Fremont Older
- La Honda Creek
- Long Ridge
- Los Trancos
- Monte Bello
- Pichetti Ranch
- Pulgas Ridge
- Purisima Creek Redwoods/Miramontes Ridge
- Rancho San Antonio
- Ravenswood

- Russian Ridge
- Saratoga Gap
- Sierra Azul
- Skyline Ridge
- St. Joseph's Hill
- Stevens Creek Shoreline
- Teague Hill
- Thornewood
- Tunitas Creek
- Windy Hill

A variety of prehistoric, historic period and multicomponent archaeological sites are distributed across the various environmental zones within the District Lands. Of the resources in the Baseline Cultural Resources Inventory, one is within the Baylands Zone; 13 are within or bordering the Foothills Area; 16 are within or bordering the Summit Zone; and 33 are within or bordering the Skyline Zone. The largest numbers of sites were identified in the Skyline Area. These numbers, however, are likely skewed by recording biases, such as the location of recent development requiring cultural resources investigations. Thus, there are likely to be additional cultural resources present throughout the environmental zones that have yet to be documented. For example, based on historic period land use, one might expect that in the Summit Area (Sierra Azul OSP), where quicksilver mining took place, there would be additional as yet unidentified mining resources. There is the potential for numerous unrecorded archaeological resources and resource types that have yet to be identified and recorded. An example of this can be seen from a recent survey for a trail alignment near the top of Mount Umunhum where Mark Hylkema identified a high quality Franciscan chert quarry site.

The 35 prehistoric and prehistoric components include the following resources types: bedrock mortars, cupules, lithic scatters, midden, burials, stone circle and isolated artifacts (primarily groundstone). These resources represent the following land use/activity themes: Residential, Seed and Nut Extraction, Ideological, Lithic Processing, Burials, and unknown. The 33 resources that are from the historic period represent a variety of property types within broader historical themes presented in the historic context

section. The primary themes include: Settlement/Residential/Domestic, Agricultural/Ranching, Logging, Mining, Recreation, and Transportation. Other less common themes include: Communication,

Military, Forestry, and Health. Archaeological resource property types within these themes are discussed below. Table 5-1 summarizes the distribution of cultural resources within the environmental zones.

Table 5-1. Summary of Distribution of Cultural Resources in the Environmental Zones

Environmental Zone	Component	Historical Theme/ Resource Theme	Resource Type	Number of Resources
Baylands				
Baylands	Historic Period	Military	Building	1
			Total	1
Foothills				
Foothills	Historic Period	Agriculture/Ranching	Building/Building Complex	2
Foothills	Historic Period	Health	Building Complex	1
Foothills	Historic Period	Recreation	Open Space	1
Foothills	Historic Period	Mining	Mining Complex	1
Foothills	Historic Period	Residential	Building, building complex, refuse scatter	4
Foothills	Prehistoric	Burial	Burial	1
Foothills	Prehistoric	Residential/Burial, Possible Residential	Midden, burials, lithic scatter	3
Foothills	Prehistoric	Seed and Nut Extraction	BRM	1
			Total*	14
Skyline				
Skyline	Historic Period	Agriculture	Orchard	2
Skyline	Historic Period	Forestry	Buildings	1
Skyline	Historic Period	Logging	Road, Machinery	4
Skyline	Historic Period	Transportation	Road, rock wall	4
Skyline	Historic Period	Undetermined	Rock fence	1
Skyline	Historic Period	Utility/Recreation	Utility poles	1
Skyline	Prehistoric	Lithic Processing	Lithic Scatter	5
Skyline	Prehistoric	Residential	Midden, BRMs, lithic scatter	3
Skyline	Prehistoric	Seed and Nut Extraction	BRMs, portable mortar, isolate mortars	11
Skyline	Prehistoric	Seed and Nut Extraction/Ideological	BRMs, cupules	3
			Total*	35
Summit				
Summit	Historic Period	Agriculture/Residential	Building	1
Summit	Historic Period	Communication	Radio Tower	1

Table 5-1. Summary of Distribution of Cultural Resources in the Environmental Zones

Environmental Zone	Component	Historical Theme/ Resource Theme	Resource Type	Number of Resources
	Historic Period	Logging	Complex	1
Summit	Historic Period	Military	Building Complex	1
Summit	Historic Period	Mining	Mining Complex	1
Summit	Historic Period	Recreation	Building Complex	1
Summit	Historic Period	Residential	Building	1
Summit	Historic Period	Residential/ Ranching/Recreation	Building Complex	1
Summit	Historic Period	Transportation	Bridge, road	2
Summit	Prehistoric	Residential	Midden	3
Summit	Prehistoric	Seed and Nut Extraction	BRM	2
Summit	Prehistoric	Unknown	Unknown	3
			Total*	18
Total **				68

*Three resources are located in Foothills and skyline area and are counted as Foothills. Three resources are located in Skyline and Coastal Mountains areas and are counted as Skyline.

**Multicomponent resources are counted twice, once for the historic period deposit/feature and once for the prehistoric deposit.

5.1.2 Prehistoric Resource Types and Distribution

As previously mentioned, the environmental zones were defined on the basis of geography and natural resources; however, the Native American economy and culture is represented by two regions that developed such that coastal polities were dependent on different resource availability than the San Francisco Bay Shore and Valley populations. Although a greater number of people can be associated with the latter of the two regions, both socio-economic spheres interacted through kinship and alliance networks. This section will select key cultural aspects useful for interpretive goals within these two regions, and define them within the context of the eight environmental zones.

Several OSPs cross more than one environmental zone. For example, La Honda Creek OSP includes both the proposed Coastal Mountains Foothill and the Skyline Zones. Thus there are overlapping attributes within a given OSP.

The coastal and coastal mountains/foothills zones have few OSPs, but have the greater density of prehistoric archaeological sites. Conversely, the skyline and summit zones contain their own groupings of archaeological sites but these reflect tasks specific activities and include interaction areas between the coastal and Bay shore/valley foothill zones where there are once again greater densities of archaeological site clusters. The land uses/tasks are listed in Table 5-2 which also includes cultural resource types typically associated with these tasks and land use.

In keeping with the environmental zones and OSPs within the three zone groupings just described, this analysis will simply call out traits and present them in Table 5-3. Tribal affinities within the OSPs are keyed into specific environmental zones.

Table 5-2. Cultural Resource Land Use Categories

Native American Cultural Land Use/Activity Themes	Description	Potential Resource Types	Distribution in Environmental Zones
Residential	Places that served as either long term or seasonal occupation.	artifacts representing a diverse range of uses such as chipped stone tools and manufacturing flakes, milling tools and other cobble artifacts, hearths, dietary debris, human graves and anthropogenic soils.	Coast, Baylands, inland/upland locations
Travel Routes	Routes that that follow ridge systems linking residential locations, Native American tribes in other regions. Used for seasonal residential shifts between the coastal edge and interior uplands and to transport trade goods.	Evidenced by clusters of archaeological sites along ridges.	Skyline and Summit
Fishing Locations	Streams containing anadromous fish, bay and the coastal zone where fishing is documented ethnographically and where there is archaeological evidence of fishing related artifacts.	stone net weights and sinkers, along with fish bones, scales and otoliths	Coast, Baylands
Seed and Nut Extraction Zones	Meadowland and mixed hardwood forests that were sources of nut and seed crops gathered by ancestral Ohlone.	Seed and nut processing tools and locations: bedrock or portable mortars, milling slabs and hand stones, many found in residential archaeological sites	Coast, Coastal Foothills and Ridges, Summit, Skyline, Foothills and Baylands
Lithic Resources	Source locations for lithic materials used for making chipped stone tools, milling stones, hammer stones, fishing weights and other utilitarian items.	Outcrops of chert, opals, quartzites, chalcedony and adjacent lithic debitage indicating a quarry; areas where materials nodules are collected; sandstone and granitic boulders used for milling tools; and quartzitic cobbles were also used as handstones and knapped to make cobble chopper tools	
Ideological Places	Potential and known monuments or sacred places.	Places of power are sometimes ascribed to rock outcrops, springs or caves, cupule rock features and petroglyphs.	Summit and Skyline

Table 5-3. Summary of Distribution of Predicted Native American Cultural Attributes and Resource Types by OSP and Environmental Zones

OSP	Environmental Zone	Tribal Affinity	Cultural Attributes/Material & Subsistence ¹
Ravenswood	Baylands	Lamchin	- Monumental Mounds
Stevens Creek Shoreline	Baylands	Puichon	- Large populations with residential villages and resource storage - Tule balsa boats - Salt harvesting, fish, mollusks, waterfowl, eggs, sea otters, harbor seals, tule elk - Pickleweeds, Tule and cattail reeds, willow
Pulgass Ridge	Foothills	Lamchin	- Residence - Nut and seed harvest, bulbs - Deer, Tule Elk, bears
Purissima Creek Redwoods, Miramontes Ridge	Coast, Coastal Mountains and Foothills	Cotegen	- Bulbs (soaproot, iris, brodiaea, yampa), seeds (grasses, maple, sage), nuts (acorn, buckeye, laurel, hazelnut) - Hunting, deer, bear - Trade and trail routes - Bedrock mortar milling stations
Teague Hill	Foothills	Lamchin	- Bulbs, seeds, nut harvests - Hunting (deer, bear, Mountain lion, bobcat, raccoon, woodrat, etc.) - Trade and trail routes - Bedrock mortar milling stations
El Corte de Madera Creek	Skyline	Cotegen, Olpen	- Bulbs (soaproot, iris, brodiaea, yampa), seeds (grasses, maple, sage), nuts (acorn, buckeye, laurel, hazelnut)
La Honda Creek	Skyline, Foothills	Oljon, Olpen	- Hunting (birds, deer, bear) - Trade and trail routes
Thornewood	Foothills	Lamchin	- Bedrock mortar milling stations
Windy Hill	Skyline	Olpen	- Local lithic materials for chipped stone tools (Cherts, opals, quartzites, chalcedony)
Russian Ridge	Skyline	Oljon, Quiroste, Olpen	
Coal Creek	Skyline	Olpen	
Los Trancos	Skyline	Olpen	
Foothills	Foothills	Puichon	
Skyline Ridge	Skyline	Quiroste, Olpen	
Monte Bello	Skyline	Partacsi	
Rancho San Antonio	Foothills	Puichon	- Residence - Nut and seed harvest, bulbs - Deer, Tule Elk, bears
Long Ridge	Skyline	Achistaca	- Bulbs (soaproot, iris, brodiaea, yampa), seeds (grasses, maple, sage), nuts (acorn, buckeye, laurel, hazelnut)
Saratoga Gap	Skyline	Achistaca	- Hunting (birds, deer, bear) - Trade and trail routes - Bedrock mortar milling stations

Table 5-3. Summary of Distribution of Predicted Native American Cultural Attributes and Resource Types by OSP and Environmental Zones

OSP	Environmental Zone	Tribal Affinity	Cultural Attributes/Material & Subsistence ¹
			- Local lithic materials for chipped stone tools (Cherts, opals, quartzites, chalcedony)
Picchetti Ranch	Foothills	Partacsi	- Travel corridors
Fremont Older	Foothills	Partacsi	- Hunting
El Sereno	Summit Area	Partacsi, Tamien	- Toyon and Manzanita berry harvest - Nut gathering
St. Joseph's Hill	Summit Area	Chalotaca	
Bear Creek Redwoods	Summit Area	Chalotaca	- Berries, fungi, basketry materials
Sierra Azul	Summit Area	Chalotaca, Matalan	- Cosmology (Mt. Umunhum) - Cinnabar (red paint) - Chipped stone source material (quartz and Franciscan chert)

1- This list calls out some basic attributes relative to specific OSPs, and does not represent the entire tribal resource base.

5.1.3 Historic Period Resource Types and Distribution

Given the long history of human occupation within the District as well as the variety of land uses and lack of modern development, one would expect a large number of cultural resources to be present within the District Lands. The number of historic period sites identified in the Baseline Cultural Resources Inventory, however, proved to be quite small. The reason for this is not a lack of cultural resources, but rather an indication that many of the District Lands have not been subject to systematic cultural resource investigations. Consequently, it is highly likely that numerous, unidentified historic period resources exist within the District Lands. While the District is interested in identifying resources that are good examples of cultural resources and worthy of preservation, protection and interpretation, the few known resources combined with the high probability that that many additional resources will be discovered makes it important to understand the range of resources that may be present within the District Lands. For historic period resources, property types have been defined based on the known historic period land uses as defined in Section 2.7. Each of these land uses manifests itself in various cultural resource property types that may survive on the landscape. Knowing the range of possible resource types will help the District effectively

manage their known and unknown resources. The potential property types include: Settlement/Residential/Domestic, Agricultural/Ranching, Logging-related, Mining Resources, Transportation, Recreation, Military and Health and Forestry resources. The following section discusses these property types and their likely distribution in the environmental zones and OSPs.

Settlement/Residential/Domestic

Settlement/Residential/Domestic resources generally are associated with residences which reflect the daily lives and activities of individuals, families, or group residents. Domestic sites frequently are feature complexes which include multiple features and feature systems. Domestic features could include structures (houses, apartment buildings, dormitories, bath houses, cook houses, etc.), foundations, tent platforms, outdoor cooking features such as ovens, fenced yard areas, garden areas, terraces, wells, irrigation systems, infrastructure systems (sewer, water, electrical and telephone), ancillary buildings such as garages, barns or sheds, and outhouses (HARD Work Camps Team 2007:44-47). Residential resources can be found in association with many of the different land uses that took place within the District including settlement, agriculture/ranching, mining, logging, and military as there are often

living quarters or camps or homes associated with these ventures.

Archaeologically, hollow filled features (wells, outhouse pits, cellars, and trash pits among others) frequently contain refuse deposits which provide data potential for dietary, economic, sanitation, ethnicity, gender, and class research domains. Domestic sites can also include surface refuse deposits that reflect individual to municipal-scale and single-event to long-term dumping episodes. If there are multiple surface refuse scatters from different temporal periods present, they may exhibit “horizontal stratigraphy.” Although the deposits are surface deposits with no vertical stratigraphy, together they provide domestic data about different periods of occupancy in a residence (Caltrans 2008:109-110).

The currently recorded Residential/Domestic, and Ranching/Agricultural Residential sites (n=9) within the District are distributed primarily in the foothills (n=5) and summit (n=4) zones. These sites are found associated with various open space properties including Sierra Azul, Bear Creek Redwoods, Purisima Creek Redwoods, Windy Hill, Fremont Older, Picchetti Ranch, USFS Felton Station, and Rancho San Antonio. Although there was only one recorded residential site each identified in Sierra Azul, Purisima Creek Redwoods, Windy Hill, and Rancho San Antonio, there could be other unidentified and unrecorded residential sites or refuse deposits yet to be discovered in these OSPs.

Agricultural/Ranching

Agricultural/Ranching resources are associated with ranching (primarily dairying) and farming activities. The resulting sites include ranch complexes, pastures, fields, orchards, dairying facilities, agricultural facilities, and domestic sites. Resource property types could include residential and activity related buildings (houses, bunkhouses, hay barns, dairy barns, milk houses, poultry sheds, water towers, slaughter houses, blacksmith shops, ice houses, smokehouses, and other outbuildings); associated structures, and features such as livestock chutes, fences, corrals, pens, troughs, refuse dumps, agricultural machinery, water

conveyance/irrigation systems, access roads, and silos (Caltrans 2007:154-155).

Currently recorded Agricultural/Ranch sites (n=4) within the District Lands are distributed primarily in the summit (n=2) and foothills (n=2) zone. The Tripp/Dairy Ranch, Picchetti Ranch/Winery, Deer Hollow Farm, and Tevis Ranch Stables sites are located within the Bear Creek Redwoods, Rancho San Antonio, and Picchetti OSP. Based on archival research, there should be numerous agricultural and dairy ranch complexes within the coast zone which would include domestic/residential and agricultural and/or dairying components. The Tunitas Creek OSP within the coast zone was added to the District after the record search was completed. Initial research identified two property owners: Alex Gordon (ca. 1894) and Serafin Machado (ca. 1927), both of whom were farmers (Bromfield 1894; Kneese 1927; U.S. Census Bureau 1900:2B, 1920:5A). Machado was an immigrant from the Azores who established a cheese production business and dairy by 1911 in the San Gregorio area (State Dairy Bureau 1912:41; U.S. Census Bureau 1920:5A). There could, therefore, be unidentified agricultural or dairy ranching resources within this property and other properties in the coast, foothills, and summit zones.

Logging

Logging-related resources represent logging industry activities such as timber harvest, milling, shingle making, and haul and shipping routes. Archaeological property types which might result from these activities include mill sites along creeks, mill ponds, roads, railroads, wharves, skid roads, residential sites (owner, manager and worker), and work camps.

The currently recorded logging sites (n=5) within District Lands are distributed primarily in the skyline (n=4) zone and one logging complex in the summit zone. These logging sites are found in various OSPs including Bear Creek Redwoods, Purisima Creek Redwoods, and La Honda Creek. Based on archival research, there were dozens of logging, milling, and shingle-making operations throughout the San Mateo Peninsula and Santa Clara and Santa Cruz Mountains regions

(Greenberg and Stevens 1997:28; Stanger 1967, Young 1984:77, 85). Therefore, there may be unidentified logging resources within the properties in the skyline, summit, and possibly foothills and coastal mountains/foothills.

Mining

Mining Sites in the region represent activities primarily relating to lime and quicksilver resource exploitation. Mining industry activities include prospecting, extraction, fuel procurement, processing, hauling, and shipping. Archaeological properties for mining production might include prospecting features (pits, waste rock piles), extraction features (mines, shafts, adits, quarries, and tailing piles), and power procurement features (dams, ponds, water conveyance systems and/or logging features as above and wood lots for fuel). Different minerals required different processing machinery and features. For lime production, processing features would include lime kilns, whereas, for quicksilver processing features would include ore-roasting furnaces and retorts.

Processing sites might also have management structures or other outbuildings. For ore and finished product transportation, there would likely be associated roads, railroads, and /or wharves. There also might be related residential sites for mine owners, managers, and workers with associated buildings, infrastructure (utilities), and refuse deposits.

The currently recorded mining sites (n=2) within District Lands are distributed in the summit (n=1) and foothills (n=1) zones. These mining complex sites are Guadalupe quicksilver mines in the Sierra Azul OSP and the Hanson Permanente Cement Plant/Kaiser Permanente Limestone Quarry adjacent to Rancho San Antonio OSP. Based on archival research, other unidentified quarry/mining sites could be located in the foothills and summit zones. There is at least one historic Stanford-related sandstone quarry in the foothills and there are quarries and mining sites within Santa Teresa County Park to the southeast of the Sierra Azul OSP. In addition, based on the presence of the New Almaden Quicksilver Mine and the Guadalupe Mines in the Sierra Azul region, there are likely to be other unidentified quicksilver mining resources in the vicinity.

Recreation

Recreation resources are related to recreation, leisure, and tourist activities. Recreation resources might include historic period hotels and resort locations, recreational trout and salmon fishing locations along coastal creeks, horse stables, stage coach routes, parks and park facilities, and scout and other camps.

The currently recorded recreation-related resources and sites (n=5) within District Lands are distributed primarily in the summit (n=3) and skyline (n=2) zones. These sites include a radio tower (considered a communication and recreation resource because of its amateur ham-radio operator associations), horse stables, a camp building complex, the Windy Hill OSP, and utility poles that might have supported a lighted sign welcoming visitors to Big Basin State Park. These recreation resources and sites are within various OSPs including Bear Creek Redwoods, the U.S. Forest Service Felton Station, Windy Hill, and the Long Ridge-Saratoga Gap.

Transportation

Transportation resources are the remains of linear systems used to transport people, supplies, and equipment between residential hubs (towns, cities), to and from ports or other transportation hubs to residential hubs, and into and out of a resource exploitation work areas (such as logging roads or oil field roads). Transportation systems include trails, wagon roads, road systems, railroad systems, heliports, and airports. Property types within these systems include road segments, retaining walls, bridges, ditch and culvert systems to prevent roads from washing out, and associated utility systems such as lighting for safe navigation along roads.

The currently recorded transportation sites (n=6) within District Lands are distributed primarily in the skyline (n=4) and summit (n=2) zones. These transportation sites do not include the four logging road sites in the logging resource section above. These transportation related resources include four historic period road segments (the Saratoga Toll Road, Highway 35, and Highway 9); the remains of a historic bridge; and a rock retaining wall for a historic period road segment. These resources are found in Bear Creek Redwoods, Long Ridge, and

Saratoga Gap. The Tunitas Creek OSP on the San Mateo coast is situated two historic roads: Tunitas Creek Road (ca. 1875) and the Redwood City and San Gregorio Turnpike (ca. 1868) (Richards 1973:88-89). Richards (1973:88-89) identified over twenty historic period road segments extant in San Mateo County, which suggests there could be unrecorded road segments throughout the skyline, foothills, coastal mountains/foothills, and coast zones in San Mateo County. Corresponding numbers of historic roads would be expected in Santa Clara and Santa Cruz Counties.

Military

Twentieth century military resources date from the World War I (1917-1919), World War II (1941-1945) and later periods. Military resources may represent military activities such as training activities (fire arms ranges, ditch digging, military games fields) and communication (satellite communication stations); defense building complexes (forts, field camps, batteries, radar stations); supply/equipment storage (warehouses, hangars); residential building complexes (camps, cantonments, presidios), and transportation (air fields, dirigible ports, roads).

The currently recorded military sites (n=2) are located to a baylands zone and in the summit zone on Mt. Umunhum. One of the documented military resources is a 1977 generator building, Building 563, which is part of the Moffat Federal Airfield District inventory. This resource is located adjacent to the Stevens Creek OSP. The Mount Umunhum Radar Station is a Cold War period radar installation. The radar station was documented and evaluated by as a historic district on its architectural merits and recommended it not eligible for the NRHP (Page & Turnbull 2011). In 2010, Hylkema completed an archaeological survey of the complex and reported that there were no archaeological resources within the radar station district Area of Potential Effects. Page & Turnbull deferred to Hylkema's negative results for Criterion D of their evaluation (Page & Turnbull 2011). Finally, during War I, Camp Fremont, which was based in Menlo Park, trained thousands of soldiers in foothill fields behind the town and Stanford University. Though there are no documented cultural resources associated with Camp Fremont,

there may be unrecorded military resources related to the training camp activities in the Foothills or Los Trancos OSPs in the foothills zone.

Communication

Communication resources reflect activities related to various communication media including radio, satellite, telephone, and telegraph systems. The only recorded resource related to communication was a radio tower (considered both under communication and recreation based on its amateur ham-radio operator associations). The radio tower site is in the Bear Creek Redwoods OSP in the summit zone. There could be unrecorded historic period communication utility poles extant along historic road segments and near historic buildings within District Lands.

Health

Health related resources include hospitals, medical clinics, health sanitariums and convalescent homes, ambulance-related artifacts, pharmacies, and medical-related refuse deposits. There was one recorded health-related resource, the Hassler Health Home, a tubercular sanitarium located within the Pulgas Ridge OSP in the foothills zone. Although the Hassler Health Home building complex has been demolished, there could be unrecorded subsurface refuse deposits or other features related to the sanitarium still within the preserve.

Forestry

Forestry-related resources include ranger station complexes, forest fire station complexes, forestry-related machinery and maintenance complexes, and U. S. Forest Service roads. There was one forest fire station building complex, Saratoga Summit Forest Fire Station, recorded in the Skyline Zone in the Long Ridge/ Saratoga Gap OSPs. There could be unrecorded resources associated with forestry activities in the Summit and Skyline Zones.

5.2 Representative Resource Analysis

To assist the District with planning for meeting their cultural resources goals, best examples of known cultural resources were identified for

preservation, protection and interpretation efforts. To this end, cultural resource types that are common to the different land use and activity themes discussed in the historic and prehistoric contexts were identified. Using the information gathered in the Baseline Cultural Resources Inventory we identified cultural resources and landscapes which represent different land uses and aspects of the history and prehistory of the area and that meet criteria for good examples.

The criteria for determining which historic period resources are the best known examples included: the associated historic theme, site condition, and whether the site has been listed or determined eligible for the NRHP/CRHR. Many of the resources identified have a structural element and are already being interpreted to the public in some fashion. The criteria used to identify prehistoric resources or representative locations include accessibility, interpretive potential, and durability of the resource. In many cases for prehistoric resources locations for interpretation are recommended that do not include cultural resources. This has been done in order to protect the confidentiality of the site location, thus prioritizing preservation and protection over interpretation of vulnerable archaeological resources.

Unlike structures, buildings and some cultural landscapes, archaeological sites can be put at risk by direct interpretation and disclosure to the public. Archaeological and other heritage resources can be damaged or destroyed through uncontrolled public disclosure of information regarding their location. Information regarding the location, character or ownership of a historic resource is exempt from public disclosure pursuant to 16 U.S.C. § 470w-3 (National Historic Preservation Act) and 16 U.S.C. § 470hh (Archaeological Resources Protection Act). In addition, access to such information is restricted by state law, pursuant to Section 6254.10 of the California State Government Code.

5.2.1 Prehistoric Cultural Resources

In light of the legal mandate for site protection and confidentiality, it is critical to prioritize cultural resource protection over interpretation. However, it is possible to protect vulnerable archaeological

sites while providing interpretive opportunities for the public to connect with cultural heritage within District Lands. To this end, we offer general locations and site types that provide good interpretive opportunities without exposure of vulnerable archaeological sites to damage or destruction.

Mt. Umunhum is good for interpreting Native American cosmology and tribal distributions. Mt. Umunhum is part of the Ohlone creation story, it is a source of sacred red paint and is a high point from which one can see the many environmental zones and territories occupied by a number of the local tribes.

Baylands Park offers an opportunity to interpret the formerly extant monumental Native American mounds that once lined the San Francisco Bay shore, and discuss estuarine resources used by Native peoples, and the nature of maritime travel along the Bay.

Monte Bello Ridge OSP. Within Monte Bello Ridge there is an unrecorded site that includes cupule rock art and a bedrock mortar (BRM) complex. This site is valuable for interpretation of cultural landscapes, as well as insight into the cosmological and ideological world of the local Native Americans and their uplands dietary pursuits. BRMs and cupules are less vulnerable to damage and loss of integrity from the public because they tend to be more indestructible and may not have associated archaeological deposits.

Russian Ridge. The Silva Site (CA-SMA-396) at the Mindego Gateway Staging Area includes a lithic scatter as well as dense beds of soap root and yampa both of which were plants used by the Ohlone. The presence of this site in the vicinity of the Audrey Rust honor monument (Audrey's Way), provides a good opportunity to interpret Native American travel routes and gardens.

Bedrock Mortar Sites. BRM sites are useful for interpretation. Examples can be seen at Russian Ridge (already has interpretive panels), La Honda, Russian Ridge, and Monte Bello OSPs. The value of these sites for interpretation is that they often do not have associated deposits, and can be close to trails. Moreover, they are less prone to damage when properly interpreted.

Rancho San Antonio consists of oak woodland and is good for interpreting foothill resource extraction and acorn harvest.

Consultation with cultural resources specialists and descendant communities should take place prior to implementing interpretive or educational programs at these locations.

5.2.2 Historic Period Resources

A review of the currently recorded sites by theme and property type identified best known examples of various property type sites. The paucity of recorded sites, however, suggests that there are likely unrecorded historic period resources yet to be discovered and/or formally recorded within District Lands. Some of these best examples, therefore, may be superseded by future discoveries of even better examples of the particular site type. Table 5-4 summarizes the best known examples of historic period cultural resources in the District Lands

Residential/Domestic Resources

Among the documented historic period resources there are two resources that best represent the Residential/Domestic theme within District Lands. These resources include: Woodhills, the Fremont Older Residence (P-43-000403) and the Permanente Historic Trash Scatter (P-43-000403). These resources are all located in the foothills environmental zone, in the Fremont Older and Rancho San Antonio OSPs.

Woodhills, the Fremont Older Residence (P-43-000403) is a good example of an early twentieth century residence with grounds. The house was restored to its original design and is listed on NRHP and CRHR. Woodhills is currently a private residence, though docent led tours periodically available.

There is not a “best example” of a domestic refuse deposit among the recorded sites; however, the Permanente Historic Trash Scatter (P-43-001633), located in the Rancho San Antonio OSP, is in fair condition. The ca. 1920-1950 period deposit is located along a creek bank and may be associated with St. Joseph’s Seminary and/or Maryknoll Seminary. It has some condition issues as the Santa Clara Valley Water District has established an

access ramp through the deposit; however, portions of the deposit appear to be intact. Other more intact domestic refuse deposits identified in the future may supersede this deposit as a best example of this property type.

Table 5-4. Best Examples of Historic Period Resources within District OSPs

Primary Number	Trinomial	Other Identifier	Environmental Zone	Component	Resource Theme	Description	Best Example Comments
No P-number on DPR	No site number on DPR	Mt. Umunhum Radar Station	Summit Area	Historic	Military	Former Almaden Air Force Station District; 52 buildings structures and objects associated with the Former Almaden Air Force Station, ca. 1957-1979.	20th C military resource, radar complex from Cold War period.
P-41-000510	CA-SMA-362H	Historic Logging Road	Skyline Area	Historic	Logging	Two segments of corduroy logging road dating to the early 20th century, for the Charles Borden Mill	Logging resource, corduroy logging road in good condition.
P-43-000088	CA-SCL-71/H	BRM/Cupules	Summit Area	Prehistoric / Historic	Prehistoric: Seed and Nut Extraction/Ideological Historic Period: Logging	Five bedrock outcrops with 58 mortar holes and cupules. Ca. 19th logging related refuse, berms (possible pond), fencing, and road cuts. Logging disturbed prehistoric component, one BRM was moved.	Late 19th C logging complex.
P-43-000403	-	Woodhills; Cora and Fremont Older House; 22800 W Prospect Road.	Foothills Area	Historic	Residential	Building, residence built 1913 combining architectural elements of Bay Area shingle and "Modern Movement" styles. Built by Cora and Fremont Older.	Early 20th C residence with grounds, listed on NRHP/CRHR
P-43-000419	-	Picchetti Bros. Winery	Foothills Area	Historic	Ranching and Agriculture	Building complex (seven buildings built between 1880 and 1920, operated as family vineyard and winery), Currently operating as a winery and tasting room.	19th-20th C agricultural building complex. Listed on the NRHP/CRHR.

Table 5-4. Best Examples of Historic Period Resources within District OSPs

Primary Number	Trinomial	Other Identifier	Environmental Zone	Component	Resource Theme	Description	Best Example Comments
P-43-000980	-	Alma College Bridge over Briggs Creek	Summit Area	Historic	Transportation	Bridge (Steel Pratt deck truss bridge; 1920s)	20 th C transportation resource (bridge). Recommended NRHP eligible.
P-43-000981	-	Tevis Ranch Stables/ Bear Creek Stables	Summit Area	Historic	Residential/Ranching/ Recreation	Historic complex (Main residence, stables, and an employee residence; Inter-war period); early 20 th century.	20 th C recreational stables complex.
P-43-001633	-	Permanente Historic Trash Scatter	Foothills Area	Historic	Domestic Refuse Scatter	Historic trash scatter, ca. 1920 to 1950, potentially associated with St. Joseph's Seminary and/or Maryknoll Seminary	20 th C refuse scatter fair condition
P-43-002400	CA-SCL-891H	Mining District: Guadalupe Mines and town of Guadalupe	Summit Area (adjacent to)	Historic	Mining	Guadalupe Mines and town of Guadalupe (46 mercury mining areas or loci, 10 historic-era or potentially historic -era standing buildings or structures, 20 road sections; early 1850s to early 1960s)	19 th C-20 th C mining complex. Good condition.
P-44-000354	-	Old Saratoga Toll Road	Skyline Area	Historic	Transportation	Old Saratoga Toll Road, ca. 1871, built by J.W. Peery (owner of Silver Lumber Mills and tannery)	19 th C transportation (toll road)

Agricultural/Ranching Theme

The Picchetti Brothers Ranch and Winery (P-43-000419) building complex is the best example of an agricultural resource identified in District Lands. This resource is located on the Picchetti Ranch OSP in the foothills zone. The resource is a late nineteenth/early twentieth century (1880s-1920s) Italian immigrant agricultural/ranch/winery site. It is listed on NRHP and CRHR and was the subject of a 1978 Historic American Building Survey (HABS) study, which documented the complex. The integrity of the site is somewhat compromised by the absence of some of the original outbuildings including one barn, a chicken house, all but one of several aviaries, and fruit drying sheds. In its current configuration, the complex consists of seven buildings including two houses (built in ca. 1882 and 1886), the 1896 winery building, a fermenting and pressing house, a blacksmith shop, a stable, and a garage and wash house. In keeping with its historic use, the Picchetti Ranch is currently privately operated by the privately run Picchetti Winery and the barn serves as a wine tasting room which is open to the public. This resource provides an excellent opportunity for public interpretation of the history of ranching, agriculture in the District and the region using the existing historic structures, an example of the continuity of use, and should be a focus of interpretation, preservation and protection efforts.

Logging Theme

Two cultural resources are documented within District Lands that are good examples of the logging theme. They are located in the skyline and summit environmental zones in the Bear Creek Redwoods and Purisima Creek Redwoods OSPs. These resources consist of corduroy logging road segments (P-41-000510/CA-SMA-362H) and a logging complex (P-43-000088/CA-SCL-71/H). As recorded, neither of these resources is in good condition nor have they evaluated for the NRHP or CRHR. Better, as yet undiscovered, examples of historic period logging may be present on District Lands.

CA-SMA-362H (P-41-000510), a corduroy logging road, is the current best example of a logging resource within District Lands. The site is situated

in skyline zone in the Purisima Creek Redwoods OSP. CA-SMA-362H consists of two segments of corduroy logging road dating to the early 20th century, which appear to be associated with the Charles Borden Mill in the Purisima Creek Preserve. Although it is in poor condition, described in the site record as “depressions, or 'ghost images' of rotten logs,” it is currently the best example of logging road segments of this type. Future discoveries might supersede this logging road as a best example of a logging resource. Though this resource is not currently interpreted to the public; it is located in Purisima Creek Redwoods which the Conservation by Design (2011) has recommended as a location for interpreting logging history to the public as it contains numerous remnant logging areas. CA-SMA-362H may contribute to these efforts.

CA-SCL-71/H (P-43-000088) is currently the only recorded historic period logging complex site. It is part of a multicomponent site near Briggs Creek. The historic component includes two road cut segments, a possible former pond based on two berms surrounding a spring, large redwood stumps, a post and barbed wire fence segment, and a historic period refuse scatter dating from ca. 1880s to the early twentieth century. The refuse scatter included cut nails, a kaolin pipe stem fragment, ca. 1880s medicine bottle shards, undecorated ceramic sherds, and unidentified metal fragments. The integrity of the historic site component is undetermined and the site has not been evaluated. Additional cultural resources investigations at this site may help determine whether it has sufficient data potential to be eligible for the NRHP/CRHR and its potential for interpretation or need for preservation and protection. There may be other unrecorded logging resources that prove to be better examples of logging activity in the area.

Mining Theme

The Guadalupe Mines and townsite (P-43-002400; CA-SCL-891H) is the best example of the Mining theme. This resource is situated adjacent to and within the Sierra Azul OSP in the summit zone and is associated with quicksilver mining from the 1850s to 1960s. The Guadalupe Mines and townsite includes 46 quicksilver mining areas or loci, 10 historic standing buildings or structures,

and 20 road segments. Most of the resource is outside of District Lands, but notes in the site record indicate that unrecorded residential, town and mining related features are present within the Sierra Azul OSP boundaries. The site record suggests the site has good integrity, but has not yet been evaluated for eligibility for the NRHP and CRHR. Additional investigations are required to determine whether intact portions of the resource are present within the OSP boundaries. These investigations may help assess the eligibility of the resource for the NRHP/CRHR and assist the District in identifying protection, preservation and interpretation opportunities of this resource and quicksilver mining in the Sierra Azul OSP.

Recreation Resources

There is not an outstanding example of a recreation related resource among the recorded sites. There is one early twentieth century building complex site, the Tevis Ranch Stables (P-43-000981), which is a ranch complex used for recreation purposes. The Tevis Ranch Stables is in the Bear Creek Redwoods OSP in the summit zone. The Tevis Ranch Stables were built in the 1910s for entertainment of weekend guests. They include a main residence with an enclosed yard area, stables, and an employee residence created from a former tack and storage room. The stables include a main building with several attached outbuildings (hay storage areas, a carriage house, and sheds). The resource has poor integrity due to repeated remodeling of the buildings over time. The Tevis Ranch stable was evaluated and recommended not eligible for the NRHP. Though this site is the current best example of a recreation site type; future discoveries or property purchases may reveal better examples of recreation resources.

Transportation Resources

Two transportation resources stand out as good examples: the Alma College Bridge over Briggs Creek (P-43-00980) and the Old Saratoga Toll road (P-44-00354). These resources are in the summit and skyline zones in the Bear Creek Redwoods and Long Ridge/ Saratoga Gap OSPs.

The best current example of a historic period bridge is the Alma College Bridge over Briggs Creek (P-43-000980) in the Bear Creek Redwoods

Preserve. This is a ca. 1920 steel Pratt deck truss bridge with has good integrity and has been recommended eligible for the NRHP under Criterion C.

The earliest example of a wagon/toll road is the Old Saratoga Toll Road (P-44-000354) in the Long Ridge/ Saratoga Gap Preserves. Old Saratoga Toll Road, ca. 1871, was built by J.W. Peery (owner of Silver Lumber Mills and Tannery). Although its integrity and NRHP status is unknown and the majority of the recorded portion of the resource is outside of District Lands, it is the best known example of a historic road in the area. Currently, the road is used as a riding and hiking trail, which facilitate public interpretation because of easy available access.

Military

The best current example of a military site complex is the Former Almaden Air Force Station District, also known as the Mt. Umunhum Radar Station, in the Sierra Azul OSP in the summit zone. It is comprised of 52 buildings, structures, and objects associated with the Former Almaden Air Force Station, occupied from ca. 1957 to 1979. The resource integrity varies as 34 of 52 resources retained good integrity as of 2010. In 2011, the military district was evaluated and found not eligible for the NRHP. The site still provides an opportunity for public education about Cold War period history in the south Bay region.

Communication, Health, and Forestry

None of the resources in the Baseline Cultural Resources Inventory that are associated with Communication, Health, or Forestry are good examples of these historic themes. Those that have been identified are found in the foothill and summit zones. Forestry resources are likely to be found in the summit and skyline zones, whereas health related resources are likely to be located closer to settled areas. Communication facilities may be present throughout the environmental zones as they connect settled areas. Future cultural resource investigations may identify examples for these types that are appropriate for protection, preservation and/or interpretation efforts.

6.0 SUMMARY AND CONCLUSIONS

This cultural resources investigation was conducted for the *Imagine the Future of Open Space* vision planning process and seeks to provide a baseline inventory of the cultural resources present within the District and a context for understanding the relationship of the cultural resources to the people and the activities that created them. To this end, we provide the technical data to be used by the District in planning for future protection, preservation and interpretation of cultural resources within their control and ultimately to achieve their cultural resource goals. Another fundamental goal of this study was to provide useful information about the human cultures and histories on District Lands that managers and interpreters can reference for planning and public outreach purposes. This existing conditions report is intended to provide the larger context for the Stewardship Guide (Ballard and Hylkema 2013), which offers guidance on the treatment of cultural resources.

The Baseline Cultural Resources Inventory was compiled from multiple sources and includes 63 resources including 45 formally recorded cultural resources and 18 known but as yet unrecorded resources. These resources include 30 prehistoric, 28 historic and 5 multicomponent archaeological sites, buildings, structures representing a wide variety of prehistoric and historic period activities and land uses. These resources are spread throughout the District are clustered in several environmental zones—baylands, foothills, summit and skyline—with the greatest number in the skyline zone.

Among these are good examples of cultural resources and landscapes that are the result of human activity in the District during the prehistoric and the historic period. These representative resources and cultural landscapes should be the

focus for District preservation, protection and interpretive efforts.

Within the largely undeveloped District Lands, there is great depth of human history in the District, thus, one would predict a large number of cultural resources to be present. Significantly, few resources were identified in the District's Lands, only 63 in 60,000 acres. This very low site density—0.0011 site per acre—does not mean there are few resources within the District, rather it indicates that much of the District has not been systematically studied. As the District completes additional cultural resources surveys, the number of resources will surely grow, as will the list good representative sites to be stewarded. Therefore, much remains to be discovered and a document like this will need to be updated from time to time as new finds are made.

The regional overview, creation of the Baseline Cultural Resources Inventory demonstrated several important points. First, the District has been the site of long term human occupation including a wide array of land uses. Many of these prehistoric and historic period land uses manifest themselves as cultural resources that survive to the present. Second, given this long and diverse human history and the relative lack of development in the District, we would expect an abundant and diverse array of cultural resources to be present. However, relatively few resources were identified during the cultural resource data collection indicating that numerous unidentified cultural resources are likely to be present on District Lands. Third, there are good representative resources present on District Lands. However, while this research identified good examples of different types of cultural resources and locations conducive to cultural resource interpretation, future cultural resource investigations of District Lands may identify better examples of prehistoric and historic property types which exemplify different prehistoric and historic land use and be useful for connecting the public to the cultural heritage of the area.

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APPENDIX E-1A: COMMUNITY CONSULTATION DOCUMENTATION



Appendix E-2:

Cultural Resources Stewardship Guide

for the Midpeninsula Regional Open Space
District Vision Plan

Prepared for:

Midpeninsula Regional Open Space District
330 Distel Circle, Los Altos, CA 94022

March 2015

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OVERVIEW OF THE PURPOSE OF THE STEWARDSHIP GUIDE

The purpose of this Stewardship Guide (Guide) is to provide the Midpeninsula Regional Open Space District (District) with goals and actions for protection, preservation, and interpretation of cultural resources within District preserves and identify priority actions for the District. Stewardship involves management, protection and preservation of cultural resources and, when appropriate, the use of cultural resources to communicate the importance of community heritage and enhance historical understanding of the region. This Guide begins by discussing the regulatory context in which much of the cultural resources investigations take place. Next, it identifies the potential threats to cultural resources on District preserves. Awareness of the range of threats to cultural resources is essential to effective stewardship of cultural resources. The Guide proceeds to define cultural resource goals and sub-goals for the District and actions that can help the district achieve these goals. Finally, priority actions are derived from this and presented to help the District implement effective stewardship of cultural resources under their administration.

The Guide was developed in consultation with District staff and Native American community and incorporates baseline data on known cultural resources and the prehistory and history of the region. Prior to the development of this guide, Pacific Legacy, Inc. and archaeologist Mark Hylkema compiled a regional overview of the prehistory and history of the Bay Area and Santa Clara Valley. Cultural resource data was collected from Northwest Information Center, District records, and data on file with Mark Hylkema to create an inventory of known cultural resources. This inventory formed a baseline for understanding the nature of and location of cultural resources within preserves. The Guide is intended to be used in conjunction with other District planning documents including *Resource Management Policies* (MROSD 2011), *Interpretive Guide* (Conservation by Design, Inc 2011), *Basic*

Policy of the Midpeninsula Regional Open Space District (MROSD 1999), and the *Strategic Plan 2012* (MROSD 2012).

REGULATORY CONTEXT

The suite of State and Federal cultural resource laws provide protections and guidelines for identifying significant cultural resources and mitigating the impacts or effects of District actions on significant resources. While this body of law does not mandate the full range of actions that encompass cultural resources stewardship, it provides a framework for mitigating the effects of activities on the resources. Because activities related to current land use on District preserves have the potential to negatively impact cultural resources, the District must comply with cultural resource regulations during its operations.

An overview of the regulatory context for cultural resources management within the District is provided in the *Resource Management Policies*:

The California Environmental Quality Act (CEQA) (Guideline 15064.5, Public Resources Code 21038.2) states that a substantial adverse change to the significance of a historical resource or a unique archaeological resource must be treated as a significant effect on the environment in a project's environmental review. Public Resources Code 5097.9-5097.994 mandates protocols for protecting Native American graves and human remains, and prohibits unauthorized excavation, destruction, or vandalism to Native American archaeological sites on public land.

Section 106 of the National Historic Preservation Act of 1966 requires consideration of impacts to historic resources on federal lands or projects requiring federal permits. Likewise, any project that requires review under the National Environmental Policy Act of 1969 must consider impacts to cultural

resources. The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) mandates the protection of Native American burial sites on federal lands and the repatriation of human remains and funerary objects to descendent Native American groups. Under NAGPRA, institutions with collections of Native American remains and funerary items must create an inventory and notify lineal descendents as part of the repatriation process.

In compliance with the statutes listed above, the District has included protocols for unexpected discoveries of archaeological sites and human remains as mitigation measures in District projects. An example of a District project specifically identifying protocols for cultural resource protection is the Service Plan and accompanying Environmental Impact Report for expansion of the District’s boundaries to include coastal San Mateo County completed in 2003. The Service Plan recognized the unique value of cultural resources in the San Mateo County coastal area and established Cultural Resource Policies to preserve cultural resources in the Coastal Annexation Area. The Policies and

Implementation Measures established in this Cultural RMPs are consistent with the Cultural Resource Policies in the Service Plan. (MROSD 2011:38-39).

THREATS TO CULTURAL RESOURCES

Cultural resources within the District preserves may be altered or destroyed by a number of activities. Cultural resources include prehistoric and historical archaeological sites, structures, and cultural landscapes. For archaeological sites, activities that involve ground disturbance have the greatest potential to impact sites. Architectural resources and cultural landscapes can be impacted by the removal of features, flora, remodeling or maintenance activities, and fire. Many of the potential threats to cultural resources may be the direct result of District activities; others may be indirect or related to natural phenomenon. Table 1 presents a list of activities that are potential threats to cultural resources. This list is as complete as possible though cannot be considered comprehensive as we do not know the full range of activities that may take place in the preserves in the future.

Table 1. Potential Threats to Cultural Resources in District Preserves

Resource Type	Potential Threats to Resources	Nature of Effects on Cultural Resources
Archaeological	Includes prehistoric sites and features, historic period sites and structures. Usually has artifacts or features on or beneath the ground surface.	Most effects to archaeological sites are the result of ground disturbing activities that impact the integrity of the site.
	Agricultural (ploughing, ripping , field preparation)	Loss of site integrity or site destruction due to ground disturbance.
	Small Scale Development (construction, utility installation)	Loss of site integrity or site destruction due to ground disturbance.
	Erosion	Loss of site integrity due to ground disturbance, redeposition of cultural materials.
	Facility construction and maintenance (campgrounds, trails, parking lots, signage, visitor and administrative buildings, utilities)	Loss of site integrity or site destruction due to ground disturbance. Increased public access to site area may result in pothunting, defacement, ground disturbance, trampling, etc.

Resource Type	Potential Threats to Resources	Nature of Effects on Cultural Resources
	Ranching (erosion from grazing, water conveyance and storage, fencing)	Loss of site integrity or site destruction due to ground disturbance.
	Habitat Management	Loss of site integrity or site destruction due to ground disturbance.
	Recreation Activities (hiking, biking, equestrian, dogs, rock climbing, camping, geocaching) and public access	Loss of site integrity or site destruction due to ground disturbance, pothunting, Increased public access to site area may result in pothunting, defacement, ground disturbance, trampling, etc.
	Road building and maintenance	Loss of site integrity or site destruction due to ground disturbance, increased vulnerability of site to pothunting or other disturbances because of increased public access to resource locations.
	Vegetation clearance (forest management, landscaping, grubbing)	Loss of site integrity or site destruction due to ground disturbance from mechanical and hand clearance, access road construction.
	Prescribed Burns/Wildfire	Loss of site integrity or site destruction due to ground disturbance from firefighting activities (fire breaks, access roads, fire equipment), negative effects of fire to surface and near surface sites (burning of wooden site element, impacts on obsidian hydration, etc.).
Architectural	Includes structures, buildings, objects, linear features (walls, fences)	
	Changes to setting (development, changes in vegetation, viewshed, relocation)	Changes to setting may significantly alter the nature of the landscape and make the resource not eligible for the NRHP or the CRHR
	Development	Loss of site integrity or destruction due to ground disturbance, changes in setting and viewshed.
	Public Access	Increased public access to site area may result in pothunting, defacement, graffiti, etc.
	Modification and renovation	Modifications to architectural resources that are either eligible for the CRHR or the NRHP or potentially eligible for the CRHR/NRHP may significantly affect the resource's integrity and make it not eligible for the NRHP or the CRHR.
	Prescribed Burns / Wildfire	Loss of resource integrity or site destruction due to burning, ground disturbance from firefighting activities (fire breaks, access roads, fire equipment).
Cultural Landscapes	Can include natural features, archaeological sites, structures, buildings, linear features (walls, fences, roads), formal or informal landscaping, native and non-native plant species.	

Resource Type	Potential Threats to Resources	Nature of Effects on Cultural Resources
	Changes to setting (development, changes in vegetation, viewshed, relocation)	Changes to setting may significantly alter the nature of the landscape and make the landscape not eligible for the NRHP or the CRHR.
	Habitat Management	Impacts to integrity or destruction of components of landscape including archaeological sites due to ground disturbance, changes to plants within the landscape due to removal of existing floral and planting native species (might impact historic landscapes that include non-native plant species).
	Modification and renovation	Landscapes can include built environment, thus modifications to architectural resources that are either eligible for the CRHR or the NRHP or potentially eligible for the CRHR/NRHP may significantly affect a cultural landscape's integrity as well as and make it not eligible for the NRHP or the CRHR.
	Development	Loss of integrity or destruction due to ground disturbance, changes in setting and viewshed, removal of landscape elements.
	Road building and maintenance	Loss of landscape integrity or destruction due to ground disturbance, changes in setting, and other disturbances because of better public access to resource locations.
	Prescribed Burns / Wildfire	Loss of resource integrity or site destruction due to burning, ground disturbance from firefighting activities (fire breaks, access roads, fire equipment).

CULTURAL RESOURCE GOALS AND STEWARDSHIP ACTIONS

Goals

Overarching goals for the District have been developed as part of the Vision Plan process. The goals addressing cultural resources are subsumed under the Community Heritage theme. Two goals were defined for this theme:

- Community heritage and past ways of life are remembered and honored through preservation and interpretation.
- Known cultural and historical resources are identified, protected and preserved, and yet-unknown resources are protected for future discovery (through preservation of open space) for the benefit of all.

Cultural resource stewardship is essential to achieving these goals. These goals can be further broken down into sub-goals which define aspects of stewardship. Cultural resource sub-goals (CR-1 through CR-5) address components of cultural resources stewardship and support the overall cultural resource goals. This section provides five sub-goals and four actions which support the stewardship of cultural resources through identification, protection, preservation, and interpretation. The District should implement these actions as resources allow.

Sub-goal CR-1: Identify and evaluate cultural resources within the District preserves, including prehistoric and

historic archaeological sites, structures, and cultural landscapes.

- 1) Systematic Inventory Survey – either project driven or as resources allow, as part of ongoing goal to expand the District’s inventory of cultural resources.
 - a) Employ a qualified archaeologist to conduct archaeological investigations.
 - b) Record sites on appropriate DPR forms, including GPS boundaries and feature locations, as appropriate.
 - c) As resources allow, build and maintain a confidential Cultural Resource Inventory Database as defined in Policy CR-1 of the *Resource Management Policies* (Midpeninsula Regional Open Space District 2011).
 - i) Include site location and descriptive information in District inventory (GIS database, master site record file)
 - ii) Maintain archive of current DPR forms and cultural resources reports for resources in District.
- 2) Evaluate the resources for California Register of Historical Resources (CRHR)/National Register of Historic Places (NRHP) eligibility.
 - a) Employ a qualified archaeologist to evaluate archaeological resources. Archaeological qualifications are defined based on the regulatory environment of the investigation.
 - b) CRHR /NRHP eligibility provides a measure for identifying sites that may be priorities for protection, preservation and interpretation.
 - c) Consult with Native American community on resource identification, particularly for Native American cultural landscapes and sacred sites.
- 3) Address inadvertent discoveries of cultural resources.
 - a) Employ archaeological and/or Native American monitors on projects with potential to affect cultural resources.
 - b) Create an inadvertent discovery plan for ground disturbing projects that have the potential to identify cultural resources.
- 4) Inventory known buildings and structures within park preserves to identify historic period structures.
 - a) Prior to proposed renovations or modification of historic period structures, have a qualified architectural historian evaluate structures for CRHR/NRHP eligibility.
 - b) Mitigate impacts of project to structures based on recommendations from a qualified architectural historian.
 - c) A qualified architectural historian meets the secretary of interior qualifications for architectural history (http://www.nps.gov/history/local-law/arch_stnds_9.htm).
- 5) Train District staff how to identify cultural resources to provide baseline information and help target areas for future inventory and recording.
- 6) As resources allow, create a multi-media archive for digital and hardcopy documents related to cultural resources. Archive should meet state and federal curation standards for digital and paper documents. Archive will allow District staff and consultants to more effectively manage known resources and conduct research. Relevant documents to include in the archive are:
 - a) DPR forms
 - b) Cultural resources reports
 - c) Primary historic documents
 - d) Archaeological, historical and architectural reference materials
 - e) GIS database of resource locations
 - f) Photographs
 - g) Video/film
 - h) Maps

Sub-goal CR-2: Protect and preserve cultural resources within District preserves while allowing appropriate public access and providing appropriate amenities for low-intensity recreation and conducting land management activities.

- 1) Identify current and potential threats to known cultural resources
- 2) Identify projects which may impact known cultural resources, implement mitigation measures for cultural resources based on the project activities and threat potentials.
- 3) Protect cultural resources from threats
 - a) Avoidance is preferred option.
 - b) If avoidance is not possible, develop a plan to mitigate the effects
 - i) Potential mitigation measures may include:
 - (1) Evaluation for CRHR/NRHP eligibility
 - (2) Data recovery which may include: documentation, archival research, excavation, and/or interpretation
 - (3) Archaeological monitoring
- 4) Consult with Native American community to identify which cultural resources and Native American landscapes to protect and preserve and define specific actions to achieve this goal.
- 5) Consult with appropriate Native American tribe(s)/individual(s) about mitigation measures.
- 6) Examples of resource specific protection/preservation measures that relate specifically to threats
 - a) Vegetation clearing around cultural resources such as bedrock mortars, historic structures or sites with wooden components (e.g., corduroy logging road) to prevent impacts from fire.

- b) Locate new or relocate existing trails and roads away from sensitive cultural resources.
 - c) Provide security measures (fencing and patrols) for resources that are vulnerable to threats related to public access (e.g. pothunting, defacement).
- 7) Provide training to District staff for identification of cultural resources, cultural sensitivity of resources, and potential threats and their impacts to cultural resources.

Sub-goal CR-3: Involve and engage communities in protection, management, and stewardship of cultural resources, as appropriate.

- 1) Consult with stakeholders including descendant communities (Native American and other ethnic groups), historical societies and other interest groups in developing protection and stewardship plans for cultural resources that are relevant for each group (such as, Native American input on Native American archaeological sites and cultural landscapes).
- 2) Involve Native American community in project planning.
- 3) Consider contracting with Native Americans on project basis to provide compensation for consultation.
- 4) Consult with local Native Americans about projects that may affect sensitive Native American sites such as sites with burials.

Sub-goal CR-4: Educate the community and interpret cultural resources to increase public knowledge, understanding and appreciation of cultural resources and local history.

Tie education and interpretation approaches to cultural sub-themes and storylines provided by the *Interpretation Guide* (Conservation by Design, Inc. 2011). The relevant subtheme for cultural resources is: “History Lies Underfoot” and its two

storylines are: 1) archaeological resources of the District provide clues to what life was like for the prehistoric people who hunted, gathered and camped on what is now District land; 2) more recent cultural and historical features such as buildings, fences and other infrastructure illustrate the region's ranching, logging, and farming past, as outlined in the *Interpretation Guide* (Conservation by Design, Inc. 2011).

- 1) Interpretation is informal instruction (interpretive plan) (Conservation by Design, Inc. 2011)
 - a) Integrate aspects of cultural resources, community heritage, past life ways and local history into informal environmental instruction. For example,
 - i) include Native American uses, names, role in subsistence or other aspects of Native American culture in interpretive information about the native flora and fauna in District preserves. Alternatively discuss the origin and local historical relevance of non-native species present in the District preserves;
 - ii) incorporate historical land use such as logging, mining, agriculture, ranching and settlement into the interpretation of local history and historic period cultural resources.
 - b) Interpret Native American cultural landscapes as a proxy for cultural resources in order to protect the confidentiality of cultural resource locations and preserve Native American archeological sites or other culturally sensitive locations.
 - c) Develop cultural resource guides for interpreters, guides may be District-wide or tailored individual preserves.
 - d) Provide both self-guided and person-to-person interpretation of cultural resources, community heritage and past ways of life.

- e) Focus cultural resource interpretation efforts in places that have both high visitor rates and good examples of cultural resource types or Native American cultural landscapes.
 - f) Include preservation and protection issues in interpretive displays.
 - g) Consult with community groups, including Native Americans, when developing interpretive materials and interpretation priorities.
- 2) Education is formal instruction tied to a developed curriculum (Conservation by Design, Inc. 2011).
 - a) Develop curriculum to address community heritage and past ways of life using cultural resources.
 - b) Expand existing environmental education curriculum to address cultural resources, community heritage and past ways of life.

Sub-goal CR-5: Integrate the concept of cultural landscapes and prehistoric and historic land uses in the planning and implementation of land management actions (e.g. fire and forest management, vegetation management).

- 1) Identify cultural landscapes and their contributing elements
- 2) Identify threats to known cultural resources
- 3) Protect cultural resources from threats
 - a) Avoidance is preferred option.
 - b) If avoidance is not possible, develop a plan to mitigate the effect. Potential mitigation measures may include:
 - i) Evaluation for CRHR/NRHP eligibility
 - ii) Data recovery which may include: documentation, archival research, excavation, and/or interpretation.

- 4) Consult with Native American community on resource identification, particularly for Native American cultural landscapes.
- 5) Consult with appropriate Native American tribe/individuals about mitigation measures.

Priority Actions

Based on the definition of actions for the stewardship of cultural resources the following actions are identified as priorities for the District.

1. **Build Cultural Resources Archive** – Archive includes a cultural resources database and system for curating digital and hardcopy documents.
2. **Build Cultural Resources Inventory Database** – Identify and record cultural resources within District preserves. Focus efforts on areas where there is a high potential for cultural resources and greatest threat from District activities.

3. **Consultation with Stakeholders** – Stakeholders include Native Americans tribes and individuals, other ethnic groups whose history is tied to cultural resources and District lands, and historical societies. Consultation on identification, areas with high cultural sensitivity, interpretation, and project specific planning.
4. **Interpretation** – Use best examples resources to interpret community heritage. Develop guides for interpreters to ensure accuracy of message. Protect and preserve and interpret historic period resources that communicate past life ways related to logging, settlement, ranching, military, agricultural activities in the region. Identify Native American cultural landscapes in high traffic preserves that can be used to interpret Native American lifeways.

REFERENCES

Conservation by Design, Inc.

2011 *Interpretive Planning Guide*. On file, Midpeninsula Regional Open Space District, Los Altos, California.

Midpeninsula Regional Open Space District (MROSD)

1999 *Basic Policy of the Midpeninsula Regional Open Space District*. On file, Midpeninsula Regional Open Space District, Los Altos, California.

2011 *Resource Management Policies*. Midpeninsula Regional Open Space District. On file, Midpeninsula Regional Open Space District, Los Altos, California.

2012 *Strategic Plan 2012*. On file, Midpeninsula Regional Open Space District, Los Altos, California.



Appendix E-3:

NATURAL, CULTURAL, AND SCENIC LANDSCAPES ASSESSMENT

Prepared for:

Midpeninsula Regional Open Space District
330 Distel Circle, Los Altos, CA 94022

March 2015

Prepared by:

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INTRODUCTION

This memorandum provides an overview and assessment of the natural, cultural, and scenic landscapes within the Vision Plan Area, including the District’s approximately 62,000 acres of open space preserves. It is a high level assessment that touches upon the important, iconic places and sights— those that define the region’s unique sense of place. Many of these landscape features have already been preserved within Midpen’s open space preserves, but others are threatened and their loss could alter the scenic, natural character of the landscape. This memo also identifies potential opportunities for Midpen to take action for the benefit of these natural, cultural, or scenic resources.

The assessment was developed by open space planners Sandra Sommer, Zachary Alexander, and Alex Roa, based upon input from the community as well as Midpen staff, partners and volunteers. Analyses for this theme included work to identify scenic resources within the Vision Plan Area. To identify important scenic landscapes, Midpen inventoried county- and state-designated scenic areas, surveyed knowledgeable staff on areas of high scenic significance, interviewed partners concerned with cultural and scenic issues, and created a spatial database and map of these scenic resources. In addition, this memorandum was also informed by the Vision Plan assessment of cultural resources (presented in a separate report, appendices E-2 and 3).

Information contained in this memorandum can be used to develop various aspects of the “Natural, Cultural and Scenic Landscapes” theme of the Vision Plan, including the goals and priority actions; it also provides information that might inform subsequent open space preserve planning, land conservation, and management activities.

VISION PLAN AREA-WIDE OPPORTUNITIES

Overall

- Increase access or protection of iconic locations and natural features, relevant to the Bay Area and beyond
- Increase sense of place by protecting locally significant natural or cultural features

Natural Landscapes

- Provide additional access to narrow trails with limited manmade features
- Emphasize areas designed for quiet experiences, shielded by earth, vegetation, or other means to provide a restful experience free of traffic and other sounds of daily life

Scenic Landscapes

- Preserve the scenic backdrop seen from urban areas
- Protect lands within designated scenic corridors or that can be seen from protected land
- Preserve the scenic qualities of the coast and rural areas within the District’s boundaries, including vegetation and vistas.
- Provide access to quiet places to enjoy vistas and take refuge from urban life
- Closely monitor outside projects and potential threats to scenic views. Monitor and attempt to stop the destruction of historic landscapes and traditions

Cultural Landscapes

- Identify and protect immediately at-risk cultural resources
- Emphasize partnerships that preserves and/or enhances cultural resources
- Provide increased access to interpretive features or locations for cultural resources
- Inventory and archive, as well as increase interpretation of cultural resources on District lands

SUBREGIONAL OPPORTUNITIES

North San Mateo County Coast		
Iconic Places and Sights	Threats	Potential Opportunities
The view of the curve of Half Moon Bay	Development, lack of public access to Vista points	Monitor development, provide access Consider access at Miramontes Open Space Preserve Consider connections with Burleigh Murray State Park
The bluff/lighthouse at Pillar Point		Increase access in conjunction with partner agencies
Montara Mountain		Ensure view corridors
Ocean, rugged coastline, views of waves	Environmental pollution, development	Ensure view corridors
Tidepools / Beaches	Tight public agency budgets leading to restricted public access	Ensure view corridors. Support ongoing access.
Agricultural fields/greenhouses	Urban development, fallowing	Allowing for views of working agriculture on the Coast from Highway 1, major coastal roads, and other public lands
Coastal landscape character	Development Loss of connection with historic past including working lands	Incorporate consideration for iconic landscapes in land preservation activities <ul style="list-style-type: none"> • Riparian mouths/streams/delta • Marine terraces • Coastal grasslands/coastal scrub • Eucalyptus rows/wind rows • Scenic - ridge top views or coastal terraces/views/beach access • Preserving historic/cultural agricultural lands • Windblown cypress/coastal vegetation/forests
South San Mateo County Coast		
Iconic Places and Sights	Threats	Potential Opportunities
Redwood forest scenic backdrop		
Coastal landscape character	Development Loss of connection with historic past including working lands	Incorporate consideration for iconic landscapes in land preservation activities <ul style="list-style-type: none"> • Riparian mouths/streams/delta • Marine terraces • Coastal grasslands/coastal scrub • Eucalyptus rows/wind rows • Scenic - ridge top views or coastal terraces/views/beach access • Preserving historic/cultural agricultural lands • Windblown cypress/coastal vegetation/forests • Support and partner with local agencies to protect rural landscapes and scenic vistas

South San Mateo County Coast		
Iconic Places and Sights	Threats	Potential Opportunities
Redwood forest scenic backdrop		
		from potential development.
Agricultural way of life, farms, cattle grazing	Urban development, fallowing	Allow for views of working agriculture on the Coast from Highway 1, major coastal roads, and other public lands Reintroduce grazing to La Honda Creek Open Space Preserve, and increase public access Preserve/support coastal ag labor housing
Ocean, rugged coastline, views of waves	Environmental pollution, development	Ensure view corridors
Tidepools / Beaches		Ensure view corridors. Support ongoing access.
Narrow rural roads		
Pigeon Point Lighthouse		
Año Nuevo Native American village	Tight public agency budgets leading to restricted public access	Partner with Native American tribes and State Parks to develop an interpretation program for Native American coastal to ridgeline lifestyle.
Coastal streams (San Gregorio, Pescadero)		
Central Coastal Mountains		
Iconic Places and Sights	Threats	Potential Opportunities
Redwood forests		
		Enhance public access and interpretation
Rugged stream canyons		Support and partner with local agencies to protect rural landscapes and scenic vistas from undesirable alteration
Narrow rural roads		Support and partner with local agencies to protect rural landscapes and scenic vistas from undesirable alteration
Logging history	Lack of features and access to historic sites	Enhance interpretation
Skyline Ridge		
Iconic Places and Sights	Threats	Potential Opportunities
Mindego Hill and Lake	Lack of public access	Increased public access to scenic vistas and natural landscapes Provide interpretation of past Native American settlement on and near Mindego Lake
Cattle grazing history		Provide interpretation of past use of Mindego Ranch property
Redwood forests		Increase public access to and interpretation of natural landscapes

Skyline Boulevard scenic corridor (Highway 35)	Development	Support and partner with local agencies to protect rural landscapes and scenic vistas from undesirable alteration
Bayside vistas		Increase accessible Vista points
Peninsula Foothills		
Iconic Places and Sights	Threats	Potential Opportunities
Historic country estates	Lack of public access and interpretation	Prioritize/explore partnership opportunities to provide protection, public access, and interpretation of local history at the Hawthorns site and at Thornwood OSP.
Windy Hill		
Bayside vistas		Increase accessible Vista points
Farming and grazing history		With partners and volunteers, continue to interpret history of Deer Hollow Farm at Rancho San Antonio OSP
Views of Santa Clara valley floor and rolling foothills		
South Bay Foothills		
Iconic Places and Sights	Threats	Potential Opportunities
Remains of the Alma historic townsite and valley	Few remaining structures	Create and execute a plan to highlight and preserve the Beatty property and associated structures to emphasize cultural interpretation of the valley and Town of Alma
Alma College site	Physical decay Lack of interpretive information Lack of public access	Explore options to preserve historic buildings. Introduce hands on interpretative sites and information <ul style="list-style-type: none"> • Prehistoric resources • Alma College Buildings • Railroad Bridge • Stables • San Andreas Fault
Views of Santa Clara valley floor and rolling foothills	Lack of roadside and publicly accessible vista points	Implement Bear Creek OSP Master Plan with emphasis on cultural resources and scenic viewpoints of valley floor, Sierra Azul, and rolling foothills
Picchetti Ranch	Minimal interpretive information	Expand interpretive features (signage) to explain history and how it ties together the past and present. Partner with other groups to bring back working lands (Orchards + vineyards) Use old styles of farming, have harvest days for the public
Fremont Older House	House can only be seen by the public once per year	Re-evaluate the use of the house to allow regular tours

Sierra Azul		
Iconic Places and Sights	Threats	Potential Opportunities
Mt Umunhum	Minimal interpretive information	Emphasize: <ul style="list-style-type: none"> Capturing the historic/prehistoric stories and presenting them. Importance of the peak in Native American culture, and during the Cold War Era Views of Monterey Bay and SF Bay
Bald Mountain, Loma Prieta, El Sombroso, ridgeline		Execute BCR/SA master plan, focusing on providing more access to scenic vistas and unique natural landscapes
Remains of New Almaden mining district	Environmental contamination prevents public access. Physical decay.	Emphasize layers of history, how important the mines were to Native American lifestyle/trade and the importance during the gold rush as demand increased. Integrate with the interpretive facilities at Almaden Quicksilver County Park.
Views of Guadalupe Creek from Hicks Road		Incorporate awareness of need for visual connection to Creek into restoration efforts
San Francisco Baylands		
Iconic Places and Sights	Threats	Potential Opportunities
Migrating wildlife	Lack of suitable habitat and interpretive facilities	With partners, provide additional interpretation and strive to preserve habitat
History of man's use of the Bay's edge	Lack of interpretive facilities	Provide additional interpretation discussing historic and prehistoric bayfront uses at District preserves. Continue to partner with other agencies to develop interpretation facilities.
Marshlands	Development, climate change	With partners, expand and preserve existing marshlands to address sea level rise.
San Francisco Bay Trail	Gaps in trail prevent continuity	Continue to work with partners toward the goal of seamless trail
Peninsula and South Bay Cities		
Iconic Places and Sights	Threats	Potential Opportunities
Stream corridors	Lack of access and visibility	Ensure visibility of and access to streams as part of restoration and flood control projects
Remnant natural landscapes	Development	With partners, explore ways to interpret nature in the city
Distant ridgeline views		Ensure view corridors and interpretation of landmarks