# MYTHIC IMPLICATIONS OF FAUNAL ASSEMBLAGES FROM THREE OHLONE SITES

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Anthropology

by

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CERTIFICATION OF APPROVAL

I certify that I have read *Mythic Implications of Faunal Assemblages from Three Ohlone Sites* by Barbara Lee Jones, and that in my opinion this work meets the criteria for approving a thesis submitted in partial fulfillment of the requests for the degree: Master of Arts in Anthropology at San Francisco State University.

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# MYTHIC IMPLICATIONS OF FAUNAL ASSEMBLAGES FROM THREE OHLONE SITES

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This thesis will explore three San Francisco Bay Area Native American sites that have been archaeologically identified as Ohlone, in an effort to identify possible continuous cultural patterns of religious and spiritual beliefs through faunal remains associated with the human burials. This will be accomplished by using the Direct Historical Approach, which connects pertinent ethnographical cultures with archaeological cultures, revealing a pattern of cultural continuity between the two. These correlations offer clues to the relative significance of different animals in the regions analogous mythology. The three sites used for this study include CA-SMA-125 Filoli (1500-500 years BP), CA-SCL-690 Tamien Station (1300-800 years BP) and CA-SCL-732 *Kaphan Umux* or Three Wolves (2700-1500 years BP). The ethnographic and ethnohistoric records of the Ohlone and neighboring California Native American group's creation narratives and religious practices were examined. The ethnographic and ethnohistoric religious and supernatural beliefs pertaining to certain animals coincide with faunal remains associated with some human burials at the three California sites. A few distinguished individuals with salient faunal remains at each site substantiate a pattern.

_____ _____

Chair, Thesis Committee Date

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# INTRODUCTION

This study examines the relationship between faunal material and the spirituality of the Native California Ohlone tribe. (Figure 1). The faunal material that relates to Ohlone spirituality in this study will be referred to as Fauna Of Interest or (FOI). The term FOI will refer to animals that are associated with Ohlone creation narratives, spiritual, faith, shamanistic beliefs and moiety connections. The FOI are associated with the ancestral Ohlone through ethnographies, diaries of missionaries, Native American narratives and ethnohistories. In addition the FOI are found in association with ancestral Ohlone human burials and ancestral Ohlone ceremonial animal burials. The term 'ancestral Ohlone' is used to delineate the Ohlone before Europeans made first contact. Three Ohlone sites are examined with FOI as the focus: (1) CA-SMA-125 Filoli, (2) CA-SCL-690 Tamien Station, and (3) CA-SCL-732 *Kaphan Umux* (Three Wolves). CA-SMA-125 Filoli was selected due to the opportunity presented to this author to examine the archaeological artifacts and remains during a NAGPRA inventory conducted at San Francisco State University in 2004. CA-SCL-690 Tamien Station and CA-SCL-732 *Kaphan Umux* (Three Wolves) were chosen due to their thorough faunal reports from these Ohlone sites. The focal point of this study is to reveal a cultural continuity of the ancestral Ohlone spirituality and religion through the importance of animals utilizing the faunal material associated with human and animal internments.


Figure 1. California Ohlone Territory and Neighboring Tribes at Time of Contact. (Margolin 1978:61).

Anthropology is the study of man and the range of his cultural expression. Archaeology is the study of man and his culture through material remains and anthropological analogy. Spirituality and religion are integral aspects of human culture and are often overlooked by archaeologists studying prehistoric Native American cultures in California. There are many reasons and explanations for this oversight. Man's expression of spirituality is one of the most difficult features an archaeologist can hope to expose (Hawkes 1954; O'Day et al. 2004; Parker Pearson 2001). Unfortunately, the difficulty in revealing religion through archaeology is compounded by the fact that the ancestral Ohlone did not have a written language that left overt evidence of religious practices. In addition, the Ohlone are one of the groups of California Native Americans that are most adversely affected by the disruption of their culture by the Mission system (Bean 1994; Milliken 1995; Moratto 2004). This situation makes gathering unassailably reliable information about the past more difficult.

**Zooarchaeology**

The first step in revealing the important role animals may have played in ancestral Ohlone beliefs and religion begins with the awareness and identification of the faunal remains in this study. Zooarchaeology is the examination of animal or faunal remains from archaeological sites. The faunal remains uncovered primarily consist of the hard parts of the body such as bones, teeth, and shell. "Zooarchaeolgists emphasis is on

animals whose remains inform us about aspects of relationships between humans and their natural and social environments, especially site formation processes, subsistence strategies, and paleoenvironments" (Reitz and Wing 1999:xvii). The analysis of faunal remains has revealed a long history of man's relationship with animals since man's evolution. These relationships include how those interactions have changed over time and how they have remained the same.

Zooarchaeolgists explore many different areas. Some explore the animal use as resources by human populations and the common thread, which runs through diverse adaptations made in different environments (Broughton and Bayham 2003; Crabtree 1990; Follett 1954; Frison 1970; Hildebrandt and McGuire 2002; Lyman 2003; Shotwell 1955; Wheat 1972; White 1953; Wing and Brown 1979). Others explore a more holistic perspective of the human past by studying the integration of plant, animal, human and geological evidence (Bunn and Kroll 1986; Davis 1987; Hales and Reitz 1992; Parmalee 1958; Quitmyer and Reitz 2006). Biologic research can focus on the evolutionary history of animal populations, such as domestication (Barker 1985; Davis 1987; Dunnell 1986; Hesse 1995; Reitz and Wing 1999; Renfrew and Bahn 2000). Another aspect of zooarchaeology involves the exploration of the utility of animals in the making of tools, ornaments and use in rituals (Agrinsky 1943; Altuna 1983; Bennyhoff 1953; Bennyhoff and Hughes 1987; Campbell 1983; Charter 2001; Gifford 1940; Lauwerier 1993; Levy 1995; Luby and Gruber 1999; Muir and Driver 2004).

"Relatively few zooarchaeological publications have explicitly focused on ritual or religion" (O'Day et al. 2004:xiii). O'Day and her colleagues (2004) offer four primary explanations as to why the scarcity of such studies exist: (1) in certain parts of the world, sacred sites are often inaccessible to archaeologists, (2) some zooarchaeologists argue that ideological issues are either unimportant or are not subjects that zooarchaeology can reliably contribute to, (3) as a sub-discipline zooarchaeology tends to operate somewhat autonomously from other areas of anthropology; researchers often specialize exclusively in faunal analysis and may not be involved in a dialogue with researchers outside this specialty, (4) when large religious monuments are excavated, as in the case of some Buddhist temples, faunal remains are rarely collected and/or analyzed; in other situations, archaeologists may focus on grand architecture or human burials rather than fauna (O'Day et al. 2004).

Zooarchaeology utilizes many disciplines including biology, osteology, ethnoarchaeology, paleontology, ecology, taphonomy, and taxonomy. The kinds of information faunal remains can divulge are as diverse as the many disciplines they encompass. The full potential of faunal remains and what they can reveal has not been fully realized and this study will attempt to fill part of that void. Ancestral Ohlone, as well as other California Native Americans, were/are animists. Animists believe in personalized, supernatural souls that inhabit ordinary animals and objects (Tyler 1871). The Ohlone like other California Native Americans had creation narratives that involved animals. The Ohlone dances portray animals, the Ohlone family ties were/are animal

symbols, the Ohlone dream helpers were/are animals. This study explores the possibility that examining the faunal remains or zooarchaeology, can scientifically associate the Ohlone's religious beliefs with the faunal remains found with their burials.

**Direct Historical Approach**

In order to associate faunal remains with the Ohlone's religious and spiritual beliefs the ancestral Ohlone culture and customs must be studied and understood. In an attempt to embrace this knowledge one has to explore the Ohlone narrations, ethnographies, ethnohistories and diaries of those who had direct contact with those closest to the ancestral Ohlone. These sources include the missionaries who wrote in response to questions posed by Spain regarding the Native Californians (Geiger and Meighan 1976). Another source is Brown's (2001) translation of Juan Crespi's original journals of Crespi's description with the first European expedition into California in 1769-1770. Anthropological material is also drawn from Alfred Kroeber (1907; 1925), John P. Harrington (1942), Samuel Barrett (1917), and Gifford and Block (1930). Narratives from the Ohlone will also be used (e.g. Beverly Ortiz 1989, 1994). Because of the general paucity of supporting ethnographic material specifically for the Ohlone, material from neighboring tribes, such as the Miwok, Pomo, Wappo, Wintun, Yokut, Esselen, and Salinan will also be analyzed. (Figure 2) This method of relating information from ethnographies, ethnohistories, diaries and narrations to archaeological artifacts and remains is called the Direct Historical Approach (Wedel 1938).

The Direct Historical Approach (DHA) has been utilized to identify archeological artifacts and remains that are associated with burials from other Native American cultures (Kidder 1916; Kroeber 1916; Nelson 1916; 1924; Parker 1916, 1922; Spier 1917; Strong 1929; Wedel 1938). One of the earliest and best efforts of this method is attributed to William D. Strong whose life spanned from 1899-1962 (Beals 1972). Strong was initially a zoology student at the University of California, Berkeley. He became a student of Alfred Kroeber and changed his focus to anthropology where most of his contributions were made to archaeology. In his 1929 study of "Aboriginal Society in Southern California", Strong presented detailed fieldwork among the Serrano, Luiseño, Cupeño, and Cahuilla peoples (Strong 1929). This work is characterized as "one of the earliest and one of the best efforts by a United States anthropologist to combine structural-functional analysis with Nebraska Archaeology", and is credited with providing a major impetus for the Direct Historical Approach in archaeology (Willey and Sabloff 1980:64). It was one of Strong's students, Waldo R. Wedel who actually coined the term 'Direct Historical Approach' in 1938 (Wedel 1938:95).

The DHA attempts to reveal cultural continuities from historical periods and extend those continuities back into earlier times using archaeological remains and artifacts. This involves exploring, examining and learning about the spiritual aspects of the Ohlone through the narratives, ethnographies, ethnohistories and diaries and relating them to the excavated material from the human and animal burials at the three sites. One cannot establish exactly what the faunal remains meant to the ancestral Ohlone, but there may be

a cultural continuity of the spiritual significance of some animals to the Ohlone today and the ancestral Ohlone of yesterday. The historical data is the basis of analogy and homology for the study of the prehistoric communities at the three sites themselves and other sites in the region.

This study examines the possibility that some faunal material found with ancestral Ohlone burials are associated with Ohlone spiritual and cosmological beliefs. This study uses ethnographic, ethnohistoric, narratives, and diaries and taking note of all the Ohlone references to animals in a cosmological, spiritual, and religious fashion. Next a review of all the ceremonial internments of animals and faunal material found with human burials will be noted. Finally, any continuity of the faunal remains associated with the human burials and Ohlone spirituality will be scientifically analyzed and noted if found. This might reveal a broader picture of a culture that has been covered up. "My major message is that, by emphasizing artifacts, investigators can build scientific theories that provide more general and more satisfactory explanations of both communication and behavior" (Schiffer 1999:x).

# LITERATURE REVIEW

The purpose of this study is to examine the archaeological evidence for spiritual significance of some faunal remains that are associated with ancestral Ohlone burials. A brief history of the methods and contributions of faunal analysis or zooarchaeology will be reviewed to furnish a background on the importance of the field in this thesis and anthropology. Archaeological theory and its objective to reveal the totality of human culture including spirituality, will be discussed. A concise consideration of the Ohlone history, culture and their physical and spiritual connection to animals will follow. These discussions will unite a cultural connection of the faunal remains found with the ancestral Ohlone burials to their spiritual beliefs. This will be accomplished by employing the Direct Historical Approach (Wedel 1938).

## Methods of Faunal Analysis

A zooarchaeologist must always be aware of existing contemporary and extinct archaeological fauna that may be found at a site (Reitz and Wing 1999:12). After a list of the area's fauna is compiled, identification of the faunal remains follows. It is very important for a zooarchaeologist to have a comparative faunal collection available for the best possible identification. There are many comprehensive reference books available,

such as Elbroch (2006); Gilbert (1990); Gilbert and coworkers (1996); Schmid (1972) and many more, but they cannot be a substitute for a comparative collection. Both a comparative collection and references are imperative. "The reference collection constitutes the voucher for all identification" (Reitz and Wing 1999:361). If the faunal material is not identified correctly, then all of the extrapolation of the meaning of the faunal remains will be worthless.

Whatever meaning is derived, the zooarchaeologist has to accept that the archaeofaunal samples being analyzed are not complete and totally inclusive (Gifford-Gonzalez n.d.:9-31). The samples, at best, are representative samples and the patterns observed are likely to be results of human intervention, various taphonomic processes, or methods of sampling, identification and analysis (Gifford-Gonzalez n.d:9-31).

The analysis and enumeration of the recovered faunal material allows an assessment of each species and element in accordance to absolute or relative abundance. From the analysis and enumeration zooarchaeologists can determine which sites potentially contain the same faunal material, unique faunal material and in what quantity. The ability to identify and quantify faunal material before drawing conclusions about their importance either as a nutritional indicator or as a spiritual symbol is paramount.

The most common counting units used today are Number of Identified Specimens (NISP), Minimum Number of Individuals (MNI), Minimum Number of Elements (MNE), and Minimum Animal Units (MAU) (Davis 1987; Gifford-Gonzalez n.d.; Lyman 1994; Reitz and Wing 1999). NISP is the most basic and straightforward count used in

zooarchaeology. NISP is the total count of specimens identifiable to a species or more general levels of taxonomic classifications. If 89 bones in an assemblage are identified as sea otter, and 18 are identified as pelican, then the NISP for sea otter is 89 and 18 for pelican. This can lead to an overestimate of the actual number of specimens if preservation is good and fragmentation of the bones is high.

Theodore White originally defined MNI (1953) as an estimate based on NISP. MNI is the quantitative concept of the minimum number of individuals at a site. MNI is derived from using the most common left or right bilaterally symmetrical bone or tooth of a given taxon. If an assemblage has 32 right humeri and 29 left humeri from a sea otter then the MNI for sea otters would be 32. "However, some researchers first divide all specimens from a taxon into age groups (e.g. newborn, juvenile, adult), as elements in one group logically cannot come from another, and then derive an MNI statistic for each group" (Gifford-Gonzalez n.d.:9.32). In some fauna (certain birds, elephant seals, hyenas, sheep, deer, antelope and many fish) sexual differences can also be determined and MNI can be further extended to numbers of male and female species.

All MNI and MAU estimates are based on the MNE. "MNE represents the lowest number of individual anatomical elements, e.g. femora or tibia, which had to have entered the site in order to account for the individual fragmentary specimens we have in an assemblage" (Gifford-Gonzalez n.d.:9.32). "MNE is derived by determining how many elements are represented by the fragmentary remains, based on the presence of overlapping landmark features, and hence is not the same as NISP" (Reitz and Wing

1999:215). Unfortunately the procedure to determine MNE is not standardized and can vary with the researcher (e.g., Bunn and Kroll 1986; Gifford-Gonzalez n.d.; Landon 1996; Lyman 1994; Marean 1992; Reitz and Wing 1999; Ringrose 1993). Marean and coworkers (2001) present a new method that is based on using image analysis GIS software to count overlapping fragments that have been converted to pixel images. This method claims to maintain the strengths of other methods while overcoming most of their weaknesses.

MAU or minimum animal units, is used most often to describe certain identified butchered segments. This statistic is derived from "summing all specimens (right plus left of bilaterally symmetrical elements, total of all elements for certain axial body segments e.g. cervical vertebrae after the atlas and axis, etc.)" (Gifford-Gonzalez n.d.:9.35). Thus 12 right tibias and 30 left tibias results in a MAU of 21 (12+30=42/2=21). Binford argues that this number produces an "undistorted conversions of the actual count of bones into animal units" (Binford 1978:70).

**Brief History of Faunal Analysis/Zooarchaeology**

The anthropological contributions of faunal remains and analysis are potentially immense. Faunal material ranges from the fairly simple mollusk to the complex mammal and all manner of life in between. These remains are mainly derived from bone, tooth, horn, antler, claw, talon and shell of the animals. Faunal material is found not only on

every continent, but in every body of water as well. Faunal remains have been involved in mind and spiritual awakenings as well as many other historical crossroads. Man and animal have always been intertwined in many more ways than one might realize.

Zooarchaeology now includes many research orientations which incorporate methodological research, anthropological research and biological research. Methodological research emphasizes obtaining reliable results while maximizing interpretive potential, by focusing on first-order, or taphonomic changes (Lyman 1994) and second-order changes associated with excavation decisions and identification procedures. Anthropological research emphasizes the relationship between humans and animals focusing on continuity and change of subsistence strategies, social status, spread of domestic animals as well as the symbolic or structural relationships (e.g. Altuna 1983; Cooke 1993; Lauwerier 1993; Levy 1995). Biological research is a fundamental aspect of revealing domestication of animals and can indicate demographic change (Reitz and Wing 1999:297). The main aspect that will be explored in this study is the utility of certain animals or fauna of interest (FOI) that are associated with Ohlone cosmology and spirituality. How those animal bones are fashioned into tools, ornaments and their use in rituals will be analyzed. As will be illustrated, zooarchaeology can be so much more than a 'laundry list' of animals found at a site, but the awareness of that importance must exist.

***Major Zooarchaeological Contributions World-Wide***. Faunal remains have revealed a great deal about human culture. Those revelations include which animals were utilized for food and tools, at what age the animals were killed, often what season they were

killed and that change over time (Bickel 1981; Brain 1983; Davis 1987; Gifford-Gonzalez n.d.; Jones 1992; Klein and Cruz-Uribe 1984; Moratto 2004; Nelson 1909; Parker Pearson 1990; Reitz and Wing 2001; Shipman 1981). However, one of the first major contribution made by faunal remains was providing proof of the antiquity of man (Davis 1987).

Even as late as the 1850's, the common belief was that the world was created in 4004 BC. According to this popular scenario, man had not been created until after the latest geological changes and after the great extinct animals died out. Therefore, it is not surprising when John Frere (1800) discovered flint weapons in 1779 associated with 'some extraordinary bones, particularly a jaw-bone of enormous size, of some unknown animal' the implications of the find were ignored by most. Similar reports came in from Germany, France and Italy throughout the 1800's (Daniel 1975). In addition to these finds of extinct animals commingled with human artifacts, discoveries by geologists and other scientists such as Charles Lyell and Charles Darwin, began to reveal a more scientific and acceptable view of the antiquity of man during the second half of the 1800's.

Faunal remains continued to contributed to organizing prehistoric remains into a chronology. In the 1860's Edouard Lartet recognized changes in the species composition of different cave strata in France. From the different strata he distinguished four periods according to their associated animals: (1) cave bear period, (2) wooly mammoth and rhinoceros period, (3) reindeer period, and (4) aurochs or bison period (Daniel 1975).

Another significant contribution made by faunal remains was in revealing man's transition from hunting animals to herding animals. This work is often associated with two Swiss men, L Rutimeyer and J. Ulrich Duerst. In 1862, Rutimeyer was the first to distinguish between bones of domesticated animals and their wild ancestors (Davis 1987:21). From 1904-07 Duerst (1908) studied half a ton of animal bones from a site in Turkistan. From those remains he was able to show, through a reduction of size and the texture of the bone itself, the transition of wild cattle and sheep to their domestic descendents (Duerst 1908).

Faunal analysis also contributed to human origins research in Africa. C.K. Brain studied the taphonomy on australopithecines and baboons in a Transvaal cave. Through his analysis of teeth marks on the skulls of the australopithecines and baboons, Brain concluded that it was not the australopithecines that were the hunters as Raymond Dart (Dart 1953) had hypothesized. Brain put forth the theory that the australopithecines were the prey of other animals such as saber-toothed tigers or ancestors of hyenas and/or leopards (Brain 1981). His innovative research helped draw younger paleoanthropologists into research on nonhuman bones (Gifford-Gonzalez n.d.).

In the 1980's Pat Shipman made a tremendous impact on faunal analysis by introducing the Scanning Electron Microscopy (SEM) images to define and identify certain signatures of various bone modifiers (Shipman 1981). By looking at the marks on the bones, the SEM could distinguish between stone and metal tools, teeth marks and other environmental factors. From the 1970's through the 1990's Richard Klein and his

students, especially Kathryn Cruz-Uribe, developed methods to determine the basic age of animals and reconstruct mortality profiles (Klein and Cruz-Uribe 1984).

Another seminal contribution to faunal analysis is Diane Gifford-Gonzalez's work on culinary processing. Little work had been done on cooked bones before Gifford-Gonzalez began her research. During Gifford-Gonzalez's work in East Africa during the 1980's she noticed that work on bone breakage and cut marks focused almost exclusively on uncooked bone. This one dimensional focus may be explained by looking back at the historical aspect of faunal analysis where one can see its development was influenced by mass butchery practices, such as the work done at the Olsen-Chubbuck site (Wheat 1972). Gender bias might have also played a role as Gifford-Gonzalez (n.d.) puts forward, the male outlook dominates western culture and values the acquisition of 'big game' over kitchen duties. However, as Gifford-Gonzalez has established, by noting the various marks on the different parts of the cooked bone, one can discern what sort of cooking practices were utilized, such as pot boiling, roasting on a fire, or stripping the bone of its meat for drying (Gifford-Gonzalez n.d.). Thus revealing a broader more encompassing outlook on human culture.

Anthropological theories about the relationship between humans and their environment are closely linked with zooarchaeology (Reitz and Wing 1999). Exploring environmental relationships between man and the world we live in is a major theme of anthropological research. These theories influence the study of animal remains in archaeological research.

The following is a collection of zooarchaeological examples of specific sites in the various regions in the United States. This will give a brief overview of the variety of work, theory and questions that are being asked and investigated using faunal material.

***Northeastern United States***. The Engelbert Site in New York was repeatedly used as a cemetery by the ancestors of the Iroquois for 600 years from 1,150 years B.P. to 450 years B.P. The faunal assemblage had a significant number of frogs, toads and dogs, and assessed the assemblage in two ways (Beisaw 2006). In the first method Beisaw (2006) used Spearman's correlation, which suggested that the Engelbert Site's faunal assemblage was not statistically different from other faunal assemblages in the region and these were invasive agents at the site. A taphonomic analysis of these remains suggests that instead of the typical interpretation that concludes these faunal remains are intrusive, they may in fact have played a role in native food. Beisaw suggests that additional data from sites both old and new are needed to "move zooarchaeology of the Northeast beyond the standard research questions of subsistence and paleoecology" (Beisaw 2006:52).

In October of 2001, Craig S. Charter read his paper at the Council for Northeastern Historical Archaeology Annual Meeting in Albany, New York. In his paper he investigated the position of the European Chicken (*Gallus gallus*) in the 17$^{th}$ century New England Native American Culture of Tura site. As early as 1623 or about 300 years BP, the Plymouth colonists describe giving chickens to the Native Americans (Charter 2001). The discrete, semi-articulated remains of adult male domesticated roosters were

uncovered at this site in such a way that Charter (2001) interpreted the burial to possibly represent something more than just the remains of someone's chicken dinner. Feathers hold special significance to Native Americans, and roosters have long, bright, shiny red, white, black and dark blue feathers, which were coveted. From his archaeological and ethnographic research Charter (2001:7) speculates "the Native people that had this bird probably felt that they were able to assume some of the birds power and by association some of the power of the English settlers."

***Southeastern United States***. Hales and Reitz (1992) detail the excavations near St. Augustine, Florida where 415 otoliths from Atlantic croaker (*Micropogonias undulates*) were recovered. The age of the Atlantic croaker was determined by growth increments of the otoliths. During a 3,000 year span the coastal Native Americans captured Atlantic croaker that ranged from 1-10 years old. After the Spanish interacted with the Natives the Atlantic croaker they caught were older and larger. "The differences in age and size class composition of Prehispanic, First Spanish Period, and modern catches are consistent with those of a species whose rates of exploitation have increased" (Hales and Reitz 2004:73). It is speculated that the Spanish showed the Native Americans new methods and tools to catch larger and older Atlantic croaker.

Another study by Quitmyer and Reitz (2006) analyzed the marine trophic levels (transfer of food or energy in a chain) from two different time periods: (1) Swift Creek from 1700 years BP to 1300 years BP and (2) Savannah from 800 years BP to 500 years BP at three different sites off the coast of Georgia, USA. These three sites have "similar

suites of estuarine animals" and the remains of these animals were analyzed (Quitmyer and Reitz 2006:806). However, the mean trophic level is higher at the Swift Creek site including both biomass and Minimum Number of Individuals. More research is needed to specifically identify distinguishing characteristics and how they relate to temporal and spatial patterns that are attributable to environmental and cultural variables. The groundwork has been laid down by zooarchaeologists and more pointed questions are now raised.

***Midwest United States.*** Another example of zooarchaeological studies came to light when 'The Remains of Rare and Extinct Birds from Illinois Indian Sites' was published (Parmalee 1958). This study disclosed a great deal of information regarding past distribution and abundance of avian faunal material in the area. Parmalee (1958) identified the shell and bone found in the refuse pits and kitchen midden deposits to better visualize the ecology and environment at certain times. The sites were divided into three general time periods and were classified as the Archaic period -10,000 to 2,500 years BP, Woodland period– 2,500 to 800 years BP, and Middle Mississippi period– 800 to 450 years BP. The following are the birds found in abundance at the Native American sites but are now extinct or rare in Illinois – White Pelican (*Pelecanus erthrohynchos*), Brown Pelican (*Pelecanus occidentalis*), Trumpeter Swan (*Olor buccinator*), Swallow-tailed Kite (*Elanoides forficatus*), Mississippi Kite (*Ictinia misisippiensis*), Golden Eagle (*Aquila chrysoetos*), Greater Prairie Chicken (*Tympanuchus cupido*), Large Sandhill Crane (*Grus canadensis*), Passenger Pigeon (*Ectopistes migratorius*), Carolina Parakeet

(*Conuropsis carolinensis*), Ivory-billed Woodpecker (*Campephilus principalis*), and the Common Raven (*Corvus corax*).

***Northwest United States.*** In this study Lee Lyman (2003) looks at foraging theory, which suggests that human predation will depress the population of high-value prey relative to low value prey. Lyman found an exception as he reanalyzed the pinniped and ungulate data from sites on the Oregon coast. He found one local population at 35LNC14 of Stellar sea lions that had been exploited over 600 years by Native Americans before European contact. The pinnipeds at this site reached equilibrium, while other populations of pinnipeds and ungulates became depressed. The reason for the population equilibrium is not clear, but presents the opportunity for many theories. Was a high population of breeding males killed at this site, leaving just enough to continue the equilibrium? Were the breeding males killed because they are the ones who defend their breeding territories – a form of "resource defense polygyny" (Lyman 2003:385)? Why are there so many remains of male Stellar sea lions but so few remains of pups? Perhaps the remains of males had some ritual significance? Or maybe the Native Americans understood the mating habits and behavior of the Stellar sea lions and consciously practiced there own conservation. We may never know the answers to these questions but an important aspect to any faunal foraging theory involving human predatory behavior must be considered: "If we seek to infer human predatory behavior from the remains of their prey, then we must consider prey behavior in the interpretive equation"(Lyman 2003:386).

***Southwest United States.*** After World War II, animal bones at Paleo-Indian sites began to be explored with more detail. In 1958 Joe Ben Wheat began excavating the Olsen-Chubbuck site in Colorado, which dates back to 5,000 years BP to 4,000 years BP (Wheat 1972). Wheat (1972) produced a seminal example of a bison kill-butchery site. He reconstructed the season, the actual hunting tactics, and butchery practices from the distribution of carcass units at the site. Wheat also used ethnographic and historical analogies in his reconstruction of this and other sites (Gifford-Gonzalez n.d.). George Frison (1970) and many others followed in his tradition of detailed spatial and faunal analysis.

Muir and Driver (2002) look at the role that numerous species of vertebrates had in ritual and ceremonial life of the Puebloan people of the southwest. They studied the abundant ethnographic data that indicates numerous species of animals were incorporated into the physical manifestations of ideology and symbolic relationships of the Puebloan Natives. Animals permeated the Puebloan oral histories, cosmology and use in ritual and ceremony. Some of these animals include deer, pronghorn, cotton-tail, jack rabbit, rattle snake and mountain lion. Muir and Driver (2002) further explore the changes in frequency and distribution of faunal material to indicate a significant social and economic reorganization of many smaller communities into larger communities in the northern San Juan region.

***Zooarchaeological Contributions from California.*** Zooarchaeology in California typically centers on the identification and interpretation of animal remains from

archaeological sites associated with Native Americans. These remains are mostly bone fragments, which can be used to reconstruct past environments, understand paleoecological relationships and study how Native Americans utilized the animals in their environment. This reconstruction is accomplished by understanding and applying the taphonomic and quantitative principles to the interpretation of the archaeofaunal remains.

In 1999, Porcasi and her colleagues analyzed the faunal material from Eel Point Site (CA-SCLI-43) on San Clemente Island. It was occupied from ~ 9040 years BP to 600 years BP, and "represents one of the longest sequences of near-continuous marine resource exploitation on the west coast of North America" (Porcasi et al. 1999:200). The faunal remains analyzed throughout the thousands of years suggest many variations regarding the exploitation of marine mammals. They conclude these trends did not correlate with environmental changes such as sea temperatures fluctuation. The changes are best interpreted as results of over-hunting and an increase use of watercraft over time.

In 2002 Hildebrandt and McGuire proposed an alternate theory as to why the hunting of highly ranked large mammals increased during the middle and late Holocene time (~4000-2500 years BP) in California. This was a time of increased population densities and the "optimal-foraging theory would predict a decline in foraging efficiency, resulting in a greater reliance on the hunting of smaller prey" (Hildebrandt and McGuire 2000:231). Hildebrandt and McGuire demonstrate a growing body of subsistence data that large-game procurement was actually on the rise during much of the middle and late

Holocene. Hildebrandt and McGuire advance the theory of evolutionary ecology that view large game hunting in a myriad of approaches. Large game hunting is not only an element of provisioning but also confers an aura of fitness on the hunter which can lead to increased mating opportunities, enhanced treatment of offspring, and greater access to political power or "show-off hunting" (Hildebrandt and McGuire 2000:232-235). Hildebrandt and McGuire put forth the theoretical tenets of evolutionary and behavioral ecology enhance the optimal foraging theories and one should not be considered without the others.

True to anthropological tradition, when a novel theory is put forth, there is a rebuttal. Broughton and Bayham (2003) don't dispute that large-game hunting has both social and economic motivations, but they believe there is a "more parsimonious hypothesis" for the patterns Hildebrandt and McGuire identify. Broughton and Bayham (2003) hypothesize that the reason for more large-game hunting was due to an increase of artiodactyls, which occurred after the drought dominated middle Holocene period. They "do not see a basis to think that in over 13,000 years of human history in California, only the context of the early late Holocene would have favored high levels of show-off hunting and that this is the cause for the increase in large-game hunting" (Broughton and Bayham 2003:788). Broughton and Bayham's theory follows the standard prey model of foraging theory and explains the increase of large-game hunting.

Many different kinds of studies regarding human behavior can be observed by analyzing faunal bones. These studies have been just a few examples of the many

zooarchaeological implementations that have occurred in the United States and the world. Much more can be revealed through analyzing faunal remains and drawing from the past studies as well as looking for different ways of analyzing the material.

As can be seen from the relatively small number of examples presented here, the contributions faunal analysis makes to archaeology is far reaching. These cases represent just a few ways zooarchaeology has led to exploring the relationship between the environment and human behavior. It also reveals the rigor required to introduce an acceptable new concept or disprove an old belief (Brain 1981; Daniel 1975; Frere 1800;). Shipman's (1981) example emphasizes the dependency on new technology to distinguish from old technology. Gifford-Gonzalez's (n.d.) example proves that one can still be a pioneer in a new zooarchaeological direction (cooked bone) that is derived from the ancient practice of controlling fire.

The examples of zooarchaeology in the United States cover a wide variety of theories and methods. Beisaw (2006) proposes a new way of looking at faunal material found at old and new sites including a look beyond subsistence patterns to include ritual roles. Charter (2001) suggests the possibility that certain bird remains may have represented European power to the Native Americans in Plymouth. Hales and Reitz's (1992) excavation in Florida study the size of the otoliths from the Atlantic croaker and put forward that the Spanish may have taught the native Americans how to catch larger fish. Quitmyer and Reitz's (2006) analysis of the marine trophic levels of estuarine animals at two different sites lays the groundwork as to what forces may have led to the differences

that exist between the two sites. Parmalee's (1958) list of birds from an Illinois Native American site gives us an insight as to what the environment was like during three different time periods ranging from about 10,000 years BP to about 450 years BP. In another study Lee Lyman (2003) raises new questions regarding foraging theory as he looks at the population equilibrium a pinniped community achieved while others around it fell. Was this difference due to predatory behavior alone? Wheat's (1972) excavation of the Olsen-Chubbuck butchery kill site in Colorado produced a classic detailed spatial and faunal analysis that others have been mimicking for decades. In another example Muir and Driver (2002) explore the relationship and interconnection the Puebloan people had with their cosmology and the animals and how it may have changed over time.

When looking at zooarchaeological examples from California we continue to see a number of different foci. Porcasi and coworkers (1999) extract faunal analysis for thousands of years and speculate the variations seen in the analysis are man made. Hildebrandt and McGuire (2002) propose the 'show-off hunting' theory to help explain and give more depth as to why large game was killed during much of the middle and late Holocene. In response Broughton and Bayham (2003) dispute Hildebrandt and McGuire (2002) proposal and claim the standard prey model of the foraging theory explains the increase of large-game hunting.

These examples reveal that faunal analysis can help reconstruct man's relationship to his environment and how that relationship can change. Faunal analysis can be and should be more than a laundry list of animals found at a site. These few examples cited cover

the roughly three facets of modern zooarchaeological research: (1) methodological, (2) anthropological, (3) biological. These facets are not mutually exclusive and with the utilization of numerous theories and methods the realization and the contribution faunal analysis can be fulfilled.

**The Ohlone**

Due to the devastating disruption caused by Europeans, Mexicans and Americans, the past Ohlone lifestyle and beliefs are not easily reconstructed. However, the attempt to describe the Ohlone and their territory has been made by many anthropologists (Bean 1994; Cambra et al. 1996; Edwards and Schenk 1970; Field et al. 2008; Fentress and Griffin 2004; Fitzgerald 2007; Fredrickson 1974a, 1974b; Galloway 1976; Hamilton 1936; Harrington 1942; Hart 1929; Hylkema 2007; Jones and Klar 2007; Kelsey 1985; King 1974; Kroeber 1907,1925; Laylander 2000; Leventhal 1993; Leventhal et al. 1994; Leventhal et al. 1996; Levy 1978; Milliken 1995; Moratto 2004; Nelson 1909; Skowronek 1986; Wallace, W.J., and D.W. Lathrap 1974). The Ohlone culture, history and territory will be further examined to facilitate the connection of faunal material with the Ohlone cosmology and spirituality in Chapter 3.

**The Ohlone Spiritual Outlook**

The ancestral Ohlone were animists, as were all ancestral California Native Americans (Bean 1992; Kroeber 1907a; Skowronek 1998). As animists they believed that all animate and inanimate objects in the world have spirits. Like all animists they also believed in the generalized malevolent and benevolent spirits (Bean 1992; Skowronek 1998). These malevolent spirits made the world an uncertain and potentially dangerous place to live. As a result of this outlook individuals carried or "wore amulets or charmstones to protect themselves and behaved in order to placate each of the spirits" (Shoup 1995:17-19). "Their spiritual beliefs intertwine with their social customs to the point that they are virtually indistinguishable from one another" (Harlan 1996:89).

Kroeber (1907) divided California into three main cultural regions based on distinctive patterns in their traditional narratives, specifically creation narratives or lack of creation narratives. Gayton (1935) later reexamined Kroeber's divisions and agreed to their validity to a certain extent. She emphasizes a "gradational character of the transitions between the regions" (Gayton 1935:595). Gayton also describes the central California area traditional narratives as being "a comparatively discrete nucleus composed of the Miwok, all the Yokuts tribes, the Salinan and probably the Costanoan (Ohlone) Coast Miwok, and the Patwin, which appear to be rather aloof from the surrounding regions" (Gayton 1935:595-596).

Ohlone creation narratives and myths involve animals (Field et al. 2008; Gayton 1935; Kroeber 1907a; Morrow 1991; Ortiz 1989; Ortiz 1994; Williams 2003; Yamane 1998). These accounts range from explaining how the world was created, why animals look and act the way they do, who was the first animal in the sea, how fire came to man and why death is inevitable (Field et al. 2008; Kroeber 1907a; Morrow 1991; Ortiz 1989, 1994; Yamane 1998). The Ohlone creation narrative involves the Eagle, Coyote and Hummingbird (Harrington 1942; Morrow 1991; Ortiz 1994; Williams 2003).

The Ohlone believed that when the world was first created, it was covered with water. Eagle picked up Coyote and along with Hummingbird flew up to the highest mountain until the water went down. After a period of time, Eagle told Coyote to go down and see if the world was dry. Coyote went down the mountain and returned to report the world was dry. Eagle then gave Coyote an abalone shell and stick for digging and told him to make children with the woman by the river. Coyote had five children who went out and built five different villages with five different languages of the Ohlone. Coyote gave useful items to the people, such as the carrying net and the bow and arrow (Kroeber 1907; Margolin 1978; Ortiz 1994). Coyote was also the one who decided people could not live forever, but must die and make room for the next generation. Eagle was the leader, the hummingbird was the favorite and Coyote was both an object of ridicule and the originator of the culture for the people (Kroeber 1907; Williams 2003).

***Coyote***. The importance of Coyote as an important 'mythic' figure to the Ohlone is highlighted by a number of individuals (Kroeber 1907a; 1925; Levy 1978b; Ortiz 1994).

Numerous Ohlone groups, including the Chochenyo and Rumsen "performed a coyote dance" (Broadbent 1972:79; Kroeber 1907:189-190; Levy 1978b:490). "A coyote dance was also performed by the neighboring Salinan" (Mason 1912:178). This dance was done "individually with the dancer imitating the movements and sounds of the coyote" (Simons 2007:386).

***Birds***. Birds of all kinds were spiritually important to the Ohlone. Two symbolic birds, the Eagle and the Hummingbird are part of their creation narrative (Ortiz1994). Certain birds such as the eagle, condor and owl have a special place in the Ohlone cosmology. Eagles have been discussed as one of the creators and owls were known to be totems for shamans (Galloway 1976). It was also noted by early ethnographers that no one was allowed to kill an eagle without permission from the head (chief) of the group (Gifford 1940). Bird feathers, talons and bones have been used for many Native American spiritual activities and power bundles. Bird bone whistles are still used in ceremonial dances and rituals that have been passed down for many generations (Ortiz 1994). Bird bone whistles have been widely accepted as ideotechnic or related to spiritual meaning (Galloway 1976; Gifford 1940; Harlan 1996; Pahl and Wieberg 1984).

***Bat Rays (Myliobatis californica).*** Apparently there are no ethnographies that spiritually relate bat rays to the Ohlone or any California Native Americans. This study does reveal the importance of bat rays to one site. There are spiritual narratives regarding bat rays in other cultures such as the Mayas and the Polynesians (Baughman 1948). There is certainly evidence that the Ohlone and other Native Americans fished for the bat

rays in the shallow waters of the San Francisco bay (Follett 1954). Bat rays are often found in less than 10 feet of water and their range encompasses Eureka, California to Panama (Johansson et al. 2004).

An interesting aspect, which might lead to a spiritual relationship of bat rays to the Ohlone are their barbed caudal spines, which are venomous, painful and potentially fatal if provoked. Throughout history poison has been used for both its curative and lethal properties and as a powerful weapon. In Greek mythology, "Odysseus, the great king of Ithaca, was killed when his son, Telegonus, struck him using a spear tipped with the spine of a bat ray" (Apollodorus et al.1976:303). The Native Americans, especially curing shamans, were very well versed in the medicinal qualities of many herbs and poisons. The bat ray spines could be very evocative of the power poison represents.

The bat ray spines are also regenerative. If pulled off or lost in an attack, the spine grows back. In addition to this phenomenon the spines fall off and regenerate on a seasonal basis as well. "As the new spine grows, the old spine remains intact leaving the bat ray with two spines until the old spine falls away" (Johansson et al. 2004:116). The Native Americans based their spirituality and cosmology on animals that inhabited the land and water where they lived (Barrett 1917; Gayton 1930a; Gifford and Block 1930; Kroeber 1907; Morrow 1991: Ortiz 1989, 1994). Native Americans were very observant of the environment and the habits of the living creatures they based their spiritual life and narratives around.

***Abalone (Haliotis).*** "Since the first decade of the twentieth century, ethnographers have recorded numerous narratives about abalone told by Native peoples living in a area stretching from Santa Barbara to the Oregon border" (Field et al. 2008:5). These stories concentrate on a spirit being named 'Abalone Woman', who is killed by her husband. Her remains become the Abalone, and also the first animal of the sea. There are many versions and interpretations of this narrative among various tribes in California such as the Yurok, Karuk, Miwok, Hupa, Wiyot and the Pomo to name a few (Field et al. 2008). The archaeological and ethnohistorical information also demonstrate the long-term significance of abalone as food and as sacred material present in the Ohlone territory (Field et al. 2008).

There has been a longstanding association between the "iridescent, white and blue-green abalone shell, which symbolizes light to many Native American cultures" (Reid 2004:58). "Varying attitudes towards brilliant objects appear to have emerged from and cohered around a worldview that saw light, dazzling colors, and shiny matter as indicating the presence of supernatural beings and essence" (Quilter and Hoopes 2003:32). This seems to be true for the Ohlone as well. "Abalone is still used in Dreamers' regalia today because it was the first creature to inhabit the ocean" (Field et al. 2008:62). It is thought that when you wear abalone you are "not cheating or stealing spirit. You're united with spirit: the abalone and the person" (Field et al. 2008:62). The sound it makes while dancers wear it as ornaments, as it hits other abalone ornaments and the dancers bodies "itself is music" (Field et al. 2008:76).

***Spirituality.*** Solitary prayers as well as village-wide ceremonies and events were performed (Skowronek 1998). "Dances comprised the main form of communal expression" (Milliken 1995:28). The dances were also "central aspects of religious ritual" in which the participants believed they could positively affect the balance of the world (Bean and Vane 1978). "The participants and regalia of the most sacred dances could only be touched by specialists, since they were thought to be endowed with supernatural powers" (Milliken 1995:28). In these dances the Native Americans portrayed various animals, by dressing as them and mimicking their movements (Field et al. 2007; Williams 2003). Dances and ceremony allow energy to be drawn from both individual prayer in addition to the 'collective effervescence' of group dance (Durkheim 1961). These dances were and are a part of the Ohlone's spiritual connection to the world they live in.

The Franciscans noted, "The Indians have some foolish practices when they go hunting and fishing which if they fail to practice they forgo the hunt and the fishing. For instance, they plant a stick with feathers and seeds or they abstain from meat" Geiger and Meighan 1976:51). This is similar to the practice of prayersticks, which de Waal (1968) refers to as visual representatives that a prayer has been offered and a visual reminder and a gift to the gods. This was characterized as foolish by the Franciscan's because they were either ignorant of the Ohlone religion or they were in denial the Ohlone were practicing another valid belief system. Whatever the reason the Franciscans discounted the Ohlone's beliefs and practices, many others who followed did the same.

***Shaman***. The term ‘shaman’ has a fractious history. The word ‘shaman’ is an English translation of a Tungus word šamán, which originally referred to a particular spiritual role in a particular Eurasian cultural zone now known as Siberia (Kehoe 2000). In the past anthropologists have co-opted the term ‘shaman’ to identify any number of spiritual practitioners in cultures they are unfamiliar with. “Shamans” and “shamanism” are words used so loosely and naively, by anthropologists no less the general public, that they convey confusion far more than knowledge” (Kehoe 2000:2). For the purpose of this work, and to avoid a debate about cultural bias and perceived cultural evolution, the term ‘shaman’ will be used.

Shamanism will be partially defined as a belief in a world that is permeated by invisible forces or spirits that affect the lives of the living. The term ‘shamanism’ will be used as it constitutes a range of traditional beliefs and practices concerned with communication with the spiritual world, all over the world. Shamans are believed to be able to influence those spirits. Unlike animism or animatism in which all members of a society practice, shamanism knowledge and special abilities is only known by a select few. Shamans usually operate alone although some may take on an apprentice. A shaman can be either a man or a woman (Eliade 1964; Kehoe 2000).

There are many variations of “shamanism” recognized by anthropologists throughout the world, and several common beliefs shared by all. Mircea Eliade (1964), throughout his work identifies some of these common beliefs that have been extrapolated from the original Siberian culture and conveniently juxtaposed with other cultures: (1) spirits exist

and they play important roles both in individual lives and in human society, (2) the shaman can communicate with the spirit world, (3) spirits can be good or evil, (4) the shaman can treat sickness caused by evil spirits, (5) the shaman can employ trance inducing techniques to incite visionary ecstasy and go on 'vision quests', (6) the shaman's spirit can leave the body to enter the supernatural world to search for answers, (7) the shaman evokes animal images as spirit guides, omens, and message-bearers, (8) the shaman can tell the future, scry (predict the future by looking at crystals), throw bones/runes, and perform other varied forms of divination.

***Native California Shamans.*** "Bears have long been associated with native people as a potent source of supernatural power" (Simons 2007:384). Bear doctors and shamans occurred throughout native California (Barrett 1917: Bean and Vane 1978; Heizer 1978; Heizer and Hewes 1940; Kroeber 1925; Storer and Tevis 1955). "A special class of shamans found to a greater or less extent among probably all the Central tribes, are the so-called bear doctors, shamans who have received power from grizzly bears" (Kroeber 1907:331). Bear doctors and shamans were seen as mediators between human and spirit worlds (Holliman 2004:27). Kroeber (1907:331) describes that many bear shamans believe they acquire this power by following a bear, who has taken a human form, to its dwelling. When the man returns to their villages he possesses many of the qualities of the grizzly bear, including his apparent ability to avoid a deadly attack. It is also believed that the bear shamans can assume the form of a bear to inflict harm on its enemies and can also be killed an indefinite number of times as a bear and each time return to life.

Kroeber also describes the bear shaman in the Pomo and Yuki region where it's thought the bear shaman remains a man who clothes himself in the skin of a bear to "complete disguisement and by his malevolence, rapidity, fierceness, and resistance to wounds to be capable of inflicting even greater injury than a true bear" (Kroeber 1907:331).

Some groups of Native Americans were known to raise bear cubs as a symbol of power and/or to be used in a ritualistic fashion. Eventually when the bear became too strong and unruly they would kill it. "One of the duties of the Ohlone tribe chief was to care for the captive grizzly bears" (Levy 1978b:487) Often they would use parts of the bear such as the paws, teeth and pelts for ritual and ceremonies (Kroeber 1925:201).

Another category of shaman was the rattlesnake shaman. The rattlesnake shaman was able to cure or prevent rattlesnake bites and was usually distinct from other medicine men or doctors. The Yokut rattlesnake shamans held an "annual public ceremony designed to prevent rattlesnake bites among the tribe" (Kroeber 1907:331). At these occasions the rattlesnake shamans would "display their power over the snakes by handling them, and even allowing themselves to be bitten"(Kroeber 1907:331). Gifford (1914:26) recounts that Susie and Tom Williams told many stories regarding "various Miwok shamans and their animal allies". Tom Williams made it clear that his cousin, a rattlesnake shaman would bleed from the nose and declare "my friend got killed" if someone nearby killed a rattlesnake (Gifford 1914:26; Field and Leventhal 2003:116).

Poison and venom have been used since as long as humans have been around. Power and control over that poison has been revered in many cultures, as poison has been used

to harm and to cure. As Alfred Swaine Taylor, a 19th Century toxicologist once said, "A poison in a small dose is a medicine, and a medicine in a large dose is a poison"(Taylor 1875:2). It has been noted that "ancient Greek dentists used the venom from the stingray's spine as an anesthetic" (Johns 2005:2). Most poisons have a healing side and compounds such as arsenic have been used to treat leukemia and mercury was an early treatment for syphilis. This is relevant in regards to the rattlesnake shamans and potentially for one of the burials at CA-SMA-125 (Filoli) that had 386 bat ray spines associated with it.

Curing shamans were believed to gain knowledge and mystical power through direct contact with spiritual beings and they used their power for curing. They also possessed the ability to "foretell the future, find lost objects, call in game animals, remove ritual contamination, as well as use their supernaturally acquired powers to bring about disease, misfortune, or even death" (Harrington 1942:2). Some of the specifics concerning traditional Ohlone shamanism are no longer known. It is known that both women and men could become shamans, and in some instances a novice shaman obtained supernatural power during visions induced by ingesting concoctions made from the hallucinogenic plant Jimsonweed and all novices were trained by an older shamans. (Geiger and Meighan 1976:35). According to Kroeber (1925:472) precisely how one entered into the profession, what other means of acquiring supernatural power (other than ingesting Jimsonweed) existed, and what the shaman's relationship to her/his spirit helpers was "are all matters on which the evidence is lost."

It may have been lost to Kroeber, however in 1814 the missionaries wrote about this very issue. “Trained specialists (shamans) performed rituals to maintain good relations with forces in the environment. Both women and men could be specialists, and they were usually older people” (Geiger and Meighan 1976:49-50). Dreams were a door through which invisible forces gave power to humans: “Their principal superstition is their extremely obstinate belief in everything they dream about to such an extent that it is impossible to convince them of the unreality of their dream content” (Geiger and Meighan 1976:51). “People believed that specialized powers came through association with supernatural beings or forces (Bean 1995:27). It could be said that shamans are the experts employed by animistic communities.

***Ohlone Shamans***. The Ohlone, like many other California Indian tribes, had several types of medicine persons/shamans. The most prominent shamans were the curing shamans, individuals who, according to the priests at Mission San Juan Bautista, in Mutsun Ohlone territory, "cure by chanting and by gestures and shouts" (Geiger and Meighan 1976:78). Some shamans were well versed in the use of herbs, others, such as weather shamans, were thought to have the ability to make rain begin or end. Still other shamans were thought to have the capability to transform themselves into grizzly bears and then back into human form. According to Harrington (1942:39) the grizzly bear shaman was well-developed among the Ohlone. “Among the Rumsen, grizzly bear shamans wore bear skins, and had bear teeth and claws filled with poison with which they killed people. The Chochenyo believed bear shamans killed their parents and siblings.

When the shamans identity was discovered, they were usually killed with arrows" (Simons 2007:385).

Illnesses were thought to be caused by other people or by supernatural beings. "Human enemies could use witchcraft to send invisible pains into a person" (Merrial 1910: 227). Healing was a process in which "poison was turned back against a sorcerer or objects into the body were removed" (Geiger and Meighan 1967:78). Some specialists used dances and songs to promote healing while others used herbal remedies (Geiger and Meighan 1976). In addition, the "spirits of places and objects could cause sickness or environmental problems if they were not honored by correct ritual means" (Geiger and Meighan 1976: 50-51). Thus people were careful to make gifts at power spots: "These oldsters make the rest believe that in order to prevent the devil from harming them they should offer him a little flour, which they eat, in a definite tree trunk, in this or that place" (Geiger and Meighan 1976:50).

**Ohlone Mortuary Practice**

Milliken and his colleagues (2007:110) identify four modes of mortuary location and organization in the Bay Area. The most common pattern seems to be the noncemetery pattern, where people were buried under house floors or next to a village in an informal way. "The other three are dedicated cemeteries where internments were placed in some formal structure: (1) cemeteries in rich midden adjacent to villages, (2) cemeteries away

from villages in sterile or near-sterile sediments, and (3) possible dedicated cemetery mounds with formal burials and some dietary residue from feasting" (Milliken et al. 2007:110)

"Evidence of ritual treatment of the dead is one of the few archaeological windows for viewing the social complexity of the past and how it changed" (Milliken et al. 2007:110). The precise 'meaning' of the body position, posture, cremation or internment, artifacts associated with the individual or not, will never be fully realized. However, many attempts are made to rationalize the rituals. "By 1984 most scholars agreed that formal cemeteries with differential grave wealth, reflecting the emergence of status ascription and hierarchical social control, appeared late in Bay Area prehistory" (Milliken et al. 2007:112). Exactly when this change occurred is still debated (Fredrickson 1974b; Hylkema 2002; King 1974b; Luby 2004; Pahl and Weiberg 1982).

After European contact there have been records of Ohlone mortuary practices written down by missionaries (Brown 2001:392; Geiger and Meighan 1976:99) and passed down through generations by Native Americans (Kroeber 1907; Margolin 1978; Morrow 1991). "By far the most important of the customary observances in California are those relating to death" (Kroeber 1907:321-322). The mortuary custom was described in the following way: when someone died, the family and close friends would express their grief openly with sobbing and wailing (Margolin 1978). If there was a widow she might demonstrate her despair by screaming and wailing and beating her breast. Widows would singe their hair and put ash on their faces so she would not be recognized by the ghost. There were

certain ceremonies that had to be strictly followed. It was the Ohlone's belief that the man's ghost demanded proper treatment and would be angry if the ceremonies were not followed precisely. At the time of death, figures from the spirit world would mixed closely with the villagers. These were thought to be dangerous times for the people, especially the widow, who felt extremely vulnerable to the ghost.

The dead were usually buried or cremated on the same day they died (Kroeber 1907:322; Margolin 1978:145-147; Morrow 1991;41). This involved the whole community, as people would go through the village and collect the person's possessions and throw them into the pyre or into the grave (Margolin 1978:147; Geiger and Meighan 1976:99; Gifford 1955:311-312). Sometimes people would throw some of their own valued possessions –beads, baskets, or featherwork garments –onto the pyre or into the grave as gifts to the deceased (Leventhal 2009). The Franciscans at Mission San Jose describe the Ohlone funerary practices in a report of 1812: "In their mourning for and burial of their dead they do not have much ceremony beyond a great deal of weeping and groaning and wailing and wrapping the dead man in his clothes, jewels, etc, which they assume will be of service to him, for they are not without some idea (albeit a rather ridiculous one) of the immortality of some part of the man" (Geiger and Meighan 1976:274).

The Ohlone believed that the dead person's soul could now begin its journey westward across the ocean to the Island of the Dead (Margolin 1978; Morrow 1991). Here they would be greeted and received, and here they would eat, dance, and sing with

the other spirits. The concept of the afterlife, although present, was not linked with any idea of punishment or reward for one's life on earth: "They relate that their departed relatives live in other lands or on the other side of the sea (depending on which side they are); that they play, etc., go about and dance; that they are happy etc" (Geiger and Meighan 1976:145-146).

The Island of the Dead was thought to be neither a sad or happy place. For a long time after the funeral everyone, especially the relatives, acted with great care and caution. The body had been disposed of but the ghost may not have completed the journey. The relatives feared that the soul of the deceased, instead of going to the land of the dead, would stay close and cause serious damage to the living. They especially feared that the ghost in its loneliness would be drawn to its old family, friends, dwelling, or possessions; and it was for this reason as well as out of grief, that a person's house was burned and possessions destroyed (Kroeber 1907: 323; Margolin 1978:148).

Taboos also existed against speaking directly about the dead (Kroeber 1907:323; Morrow1982:41; Margolin 1978:148). "These natives consider it very disrespectful to talk about their deceased parents and relatives….In the course of a quarrel for greater vituperation they exclaim: "Your father is dead," and the flame of their fury grows greater" (Geiger and Meighan 1976:59).

In prehistoric times through the present, when loved ones are buried, they are often buried with some artifacts. Do the artifacts represent items made specifically for use in the burial ritual, personal possessions of the deceased, and/or offerings brought by friends

or relatives? Each of these possibilities has different implications for the interpretation of the burial assemblages. They are not mutually exclusive. (Loendorf 2001) Ethnographic research concerning the Ohlone suggests that personal possessions were commonly interred with the dead (Geiger and Meighan 1976:99; Leventhal 2009:personal communication, March 25, 2009); Margolin 1978:145; Morrow 1982:41) as well as from friends and relatives in the community (Margolin 1978:145; Leventhal 2009:personal communication March 25, 2009).

In one sense, all of the artifacts and faunal elements associated with the Ohlone burials are connected to their spiritual or religious beliefs if they were deposited with the body in order to keep the ghost from coming back to the world of the living. It was believed that if the belongings of the deceased remain with the living, then that familiar object may draw the lonely ghost/spirit back to the living, which was not a welcoming thought to the Ohlone. Gifts from others in the community may have been donated in order to help the ghost continue its journey to the Island of the Dead (Leventhal 2009: Personal communication, March 25, 2009). This is the Ohlone's spiritual and religious belief as far as we know. Accounts from missionaries, anthropologists, and oral histories corroborate this.

The artifacts interred with the dead are representative of how objects can be both sacred and profane at various times. All of the deceased person's everyday possessions become sacred as they are placed with the dead and are buried or burned with the body of the deceased in a religious ceremony. According to Durkheim (1961) sacred is a realm

apart from the profane. Profane things may occasionally be transferred to the sacred realm but only through elaborate ritual. Burials or cremations are elaborate as well as significant rituals. Evans-Pritchard (1965) does not believe that such exact dichotomies can always be drawn and that some transitions from the sacred are often made casually. However, in the case of the Ohlone inhumations it becomes very obvious that the artifacts accompanying the body do become sacred to the Ohlone.

***Shellmounds.*** Some of the burial sites in California are considered shellmounds, or earth mounds with shell lenses while some are considered cemeteries (Moratto 1984). How these different burial sites have been defined in the past, have had an effect on how the human burials have been interpreted and treated. In the early 1900's archaeologist Nels Nelson was the first to survey and record more than 400 'shellmounds' lining the shores of San Francisco Bay (Nelson 1909). Many of these have been reassigned as earth mounds with shell lenses, including CA-SMA-125-Filoli. For the most part, shellmounds and shell lenses have been looked upon as ecological sites, which offer a backdrop to the subsistence patterns of the natives. However, instead of "accidental aggregates of shell refuse that happen to contain artifacts," others and this study maintain that a more comprehensive view can be obtained by developing a symbolic and cosmological analysis (Field and Leventhal 2003:114; Leventhal 1993:201; Luby and Gruber 1999:95).

While the shellmound and shell lenses have provided an ecological site for the archaeologist, the shellmounds would have been considered "home" for the Ohlone, whether it was inhabited year round or seasonally (Leventhal 1993:201; Luby and Gruber

1999:102). The shellmounds were sites where many meals were eaten, some of them likely to be related to mortuary feasting (Leventhal 1993:206-207; Luby and Gruber 1999:96). In some instances, hundreds or thousands of individuals, were sometimes buried in the same shellmound for over two millennia (Luby and Gruber 1999:95), which strongly suggests that shellmounds played a central role in mortuary ceremonialism. These mounds are not only the burial sites of the dead but can also be considered a protective covering over their remains. This cosmological outlook may not be obvious to most 'Westerners' but there is support for this view (Leventhal 1993; Luby and Gruber 1999; Ortiz 1994).

When home and food symbols are added to burials, the result is a powerful combination. Customs regarding the dead are universally associated with food (Van Gennep 1960; Parker Pearson 1999). In addition both food and death are ritualized in all human populations. Food provides intricate symbols and metaphors as well as nutritional substance (Parker Pearson 1999:10). Archaeological research should never neglect the fundamental symbolic aspects of food, home and burials. Doing so discounts the humanity of myth and symbols of the very people archaeologists are attempting to reveal.

One of the most accurate reflections of the past is a product of an interdisciplinary and multisided approach also known as a 'Cubist' approach, which is illustrated by Thomas (1989). All of the resources we have regarding the Ohlone must be utilized which, include accounts from the Franciscans, local and civil and military authorities, foreign travelers, Native Americans themselves in addition to the testimony provided by

archaeology and the ethnographic and historic records. All undoubtedly biased in there own way, yet none contradict the ancestral Ohlone's behavior in regard to the mortuary practices revealed through archaeology.

**Animal Ceremonialism**

Animal ceremonialism is the ritual around animals that have been killed, where the placement of the carcass is in anatomical order. This ceremonial act is intended to propitiate the animal or its spiritual master who may have been offended by the killing. The anatomical order of the bones is an "objectification of the wish that the slain animals may rise again, in this world or the next" (Earhart 1992:369). The practice of 'animal ceremonialism' has been unearthed from every corner of the world and has been noted since the time of Neanderthals (Campbell 1983:54-56; Campbell and Loy 1996:441; Shreeve 1995:52; Marshack 1990:481; Morton 2004:15-16). Many animals have been associated with ceremonialism including bear, deer, elk, elephant, wolf, dog, and bird (Campbell 1983; Campbell and Loy 1996:41; Davis 1987:145-148; Field and Leventhal 2003:102-108; Marshack 1990:481; Morton 2004:15-16; Shreeve 1995:52).

***California Animal Ceremonialism.*** Animal ceremonialism is described throughout California through numerous ethnological literature, such as Brooks (1975:107-114), Leventhal et al. (1996b:7.1-7.15), Haag and Heizer (1953:263-265), Heizer and Hewes (1940:587-590), Johnson (1970:65-144), Moratto (2004:179,198,258,278,258,325),

Pastron and Bellifemine (2007:89,91-97), Wallace and Lathrop (1959:262). Fredrickson (1973:125-126) observes that human burials are "sometimes accompanied by bird and animal bones and occasionally by articulated portions of skeletons". "Only instances in which articulated skeletons occur, buried commonly in cemetery areas, or in which particular parts of animal skeletons are associated with human burials, seem to merit consideration" (Heizer and Hewes 1940:586). Heizer and Hewes (1940: 587) observe that certain ethnographers believe that California Native Americans special attitudes towards their local fauna have developed into "cults". This special affinity towards local fauna may have resulted in special treatment of animal bones and associations with human burials. "Animal Burials" have been identified at CA-SCL-674 as probable ceremonial burials of specific parts, selected as being emblematic of animals of ceremonial and mythical importance" (Pastron and Bellifemine 2007:97).

Specific instances of animal ceremonialism noted in California include some early finds by Barrett (1917), Gayton (1940) Gifford (1916), (1926), Kroeber (1925) and Merriam (1908). In central California Haag and Heizer 1953) found intentional burials of dogs/coyote, bears, raptorial birds and other animals. J. Johnson (1970) found disarticulated bones of eight or more canids buried in two separate features at the Applegate site (CA-AMA-56) on Jackson Creek in northern California.

According to Holliman (2004:30) the most promising archaeological evidence of bear shamanism can be found in the "ritual" deposition of bear bones, such as accompaniments in human burials, or bear skeletal remains that were deliberately buried

and lack evidence of food preparation. In Heizer and Hewes (1940) three *Ursus americanus californiensis* (California black bear) ceremonial burials are noted in the three Sacramento and Contra Costa counties in California. California Native Americans, like many other native people, have long respected and honored bears as a fellow "being" with whom they share the land. Because of the bears power, intelligence, acute senses, and physical features, which closely resemble that of a human, they have also played a major role in legends and ceremonialism (Campbell 1983; Holliman 2004; Pavlik 1997).

One of the bears Heizer and Hewes (1940) refers to, was fully articulated, except for the absence of most of the claws and caudal vertebrae. These faunal remains may have been used in dances or ceremonies or shaman activities. The right side of the face had been crushed, presumably by an intentional blow. This may have followed the practice of raising a bear cub and then sacrificing it (Heizer and Hewes 1940; Brown 2001). Five whole abalone shells (*Haliotis refescens*) were placed directly above the skull and neck of this bear. About 100 rectangular *Olivella biplicata* beads were found in five strips at two-inch intervals on the thorax and abdomen, parallel to the ribs. These appear to have been "attached to some sort of textile, rather than strung as beads" (Heizer and Hewes 1940: 588-589).

Holliman (2004) cites more examples of bear ceremonialism from CA-CCO-308 (in San Ramon Valley), where a California grizzly bear (*Ursus horribilus*) was discovered in a Middle Horizon context (Fredrickson 1966), and CA-CCO-138 (Hotchkiss), which

revealed a California black bear (*Ursus americanus californiensis*) buried with a child about five years of age in a Late Horizon deposit (Cowen et al. 1975).

Simons (1995) notes that unmodified bear bones occur at many prehistoric sites throughout California as well as the bear burials noted. Bear bone artifacts fashioned from teeth and claws are also included. Schenck and Dawson (1929) mention finding 24 bear claws with human burials in their Delta survey. The Stockton and Lodi areas yielded large numbers of obsidian curves, practically all occurring as burial objects at eight sites. It is thought these were probably "imitation bear claws worn in the Central Miwok grizzly dance" (Heizer and Hewes 1940: 589). Rock art representations of bears, especially paw prints, are also found at sites in the Sierra Nevada and Chumash region (Gortner 1994; Grant 1965; Heizer and Clewlow 1973).

Heizer and Hewes (1940) also mention thirteen occurrences of coyote (*Canis latrans*) burials from five sites in the Sacramento area. Some of these burials are associated with charmstones, quartz crystal, and clam shell disc beads (Heizer and Hewes 1940). Canid burials have also been noted in other Native American cemeteries. An example is comes from CA-AMA-56 the Applegate site. The remains of eight individual coyotes were discovered in two features (Johnson 1970; Moratto 1984) at the CA-AMA-56 Applegate site. The remains of very large *Canis* sp. have also been found at Central California sites such as CA-SAC-43 (Simons 2007). The mandible of a large canid, which may be a wolf was noted there (Simon 1995a). One Contra Costa site revealed the complete skeletons of seven foetal deer or elk, while another site from Sacramento contained a complete deer

skeleton associated with three charmstones. The bones of raptorial birds (eagles, hawks and condors) have also been found suggesting ceremonial internment in eight sites throughout the Contra Costa and Sacramento counties (Heizer and Hewes 1940).

Making a distinction between dog and coyote remains is a very difficult task given the similarities of the two animals and the often fragmentary condition they are found. Kroeber (1941:6-8) notes "dogs were scarce among ethnohistoric Native American groups in northern California, especially in the North Coast Ranges". This area includes in its southern half encircling San Francisco Bay on the north and east, and extending east through Sacramento-San Joaquin Delta into the Sierra foothills (Simons 2007). Many central and southern Native Californians ate dog meat, including the Ohlone (Harrington 1942; Kroeber 1941; Levy 1978b). The Ohlone were known to use dogs for hunting, and gave them special hereditary dog names, different from those given to humans (Harrington 1942; Kroeber 1941). No apparent data exists for the "treatment of housing dogs or disposing of their remains" (Simons 2007:386).

***Ohlone Animal Ceremonialism.*** There are many examples in the Ohlone territory of animal ceremonialism. In the shellmound in West Berkeley at CA-ALA-307, a ceremonial burial of a California condor was uncovered (Brooks 1975; Moratto 2004). In south San Jose three wolves were recovered from CA-SCL-732 *Kaphan Umux* (Three Wolves), as well as two partially articulated hind legs of a deer with the remains of a snake (Cambra et al. 1996). At CA-SCL-690 Tamien Station, a *Canis sp*. burial was uncovered (Simons 2007).

Grizzly bear remains have been recovered from Santa Clara Valley sites such as CA-SCL-38 Elmwood mound. Here a probable immature (epiphysis were not completely fused) grizzly bear burial was discovered, bearing cut marks on several elements (Bellifemine 1997). At this same site in another burial, 10 juvenile elk bones were recovered. The remains of this elk were associated with a charmstone and a small pestle (Bellifemine 1997). Eight individual isolated grizzly bones are reported from CA-SCL-128 Holiday Inn site (White 1978). At CA-SCL-178, a grizzly cranium and postcranial elements were also found (Hall et al. 1988).

**Clans and Moieties**

There is a great deal of general data on North American Indian clans and moieties, and yet much specific information is lacking. It appears that membership to these groups is based on the "exclusive affiliation of the mother or the father depending on the North American Indian" (Tooker 1971:357). Each clan has a totem. An individual's "totem animal apparently depended on his/her social, economic and ritual status" (Field and Leventhal 2003:115). While this totem is not regarded as a direct ancestor, the totem is seen as a "being" the members of the clan feel closely associated (Tooker 1971:359). Tooker (1971:360) suggests "North American clans are not only a kind of nationality, but a kind of religious nationality". Like other types of relationships to religious deities or the supernatural beings among North American Indians, for example, the vision-quest-

guardian-spirit and the medicine society complexes, the “clan often involves an animal as the supernatural spirit” (Tooker 1971:360).

A token of that relationship to the supernatural can “take the form of a fetish or bundle, and a ritual can confirm and reaffirm this relationship” (Tooker 1971:360). In many North American Indian societies, the relationship of clan members to the clan fetish is based on responsibility of the rituals associated with the fetish. A member of the clan is regarded as keeper of the fetish and some are consequently leaders of the ceremonies associated with the fetish. Such a position often carries political as well as religious obligations, as the two are not exclusive of one another.

California Native American moieties are binary models based on a system connecting humans to animals (Gifford 1916b:141). Clans appear to be a type of ritual relationship to a supernatural being, while moieties seem to be a type of ritual relationship between people (Tooker 1971). For North American Indians, moiety functions center on reciprocity in burial and mourning rituals. Usually this reciprocity involves the obligation of a moiety to bury the deceased of the opposite moiety. In California, moiety reciprocity in connection with mourning rituals is reported for the Miwok, Yokuts and Western Mono (Gayton 1945:422; Gifford 1916a:294, 1916b:145). In this way and others, the “moieties had specific ceremonial jobs that ensured the health and success of the Native American nations as a whole” (Williams 2003:27).

Field and Leventhal (2003:113-117) very succinctly intertwine the moiety and dream-helper beliefs of the Ohlone with animal ceremonialism, which has been found

throughout the Ohlone territory. They draw from Heizer and Hewes (1940:602) who surmised that the animal ceremonialism in California reflected a special status related to their moiety system, which may have resulted in animal mortuary treatment resembling humans. Pastron and Bellifemine (2007:96) suggest that Costanoans were maintained their moiety classification through the ethnographic present. "These totemic moieties associated themselves with either bear (non-specific) or deer" (Pastron and Bellifemine 2007:96). Pastron and Bellifemine (2007:96) go on to suggest that the ethnographic Deer Moiety is "descended" from the prehistoric Elk following the localized extirpation of the elk. Field and Leventhal (2003) hypothesize that the deer-bear moieties, or something similar existed for all the Ohlone people based on Bennyhoff (1977), Bean and Vane (1978), Gifford (1915), Levy (1978) and Ortiz's (1994) description of moieties. Gifford's (1915) description of moieties is useful in constructing a model of how California Native Americans connect to animals. For similar moiety structures Field and Leventhal (2003) also reference Kroeber (1925) for the Miwok, and Kelly (1978) (1991) for the Coast Miwok.

The same animals, that were and continue to be the First People remembered in Native American stories and creation narratives, are also totem animals, dream helpers and animals buried ritually (Field and Leventhal 2003). Some of the responsibility of each moiety included redeeming its totem animals that had been captured or killed by the other moiety and then for burying those animals with the proper respect and ceremony (Field and Leventhal 2003). Applegate (1978), Kelly (1978), (1991), and Kroeber

(1925), conclude that the Ohlone are cosmologically associated with those animals as their moieties and dream helpers, and that may be why they are found buried ceremonially and also with human burials.

## Cognitive Archaeology

Archaeology is the scientific study of the physical evidence of human cultures recovered through excavations. Cognitive archaeology is the study of past ways of thought, revealed through material remains (Renfrew and Bahn 2000:385). There is no way of determining the exact thoughts of the ancestral Ohlone, but there is a method of studying the physical and material remains which were/are symbolic to the Ohlone. This thesis seeks to prove that some faunal remains were spiritual symbols to the ancestral Ohlone.

***Importance of Spirituality***. All human cultures have spiritual and cosmological beliefs. It is thought to be one of the unique aspects of humanity. Most people believe that spirituality is a defining facet of human culture. While religion/spirituality is considered to be the universal feature of human societies, it is often considered the most elusive and inaccessible component of culture archaeologically (Hawkes 1954; Parker Pearson 2001). Yet, according to Max Weber (1964) all religious systems express man's conception of himself. Archaeology is part of the process that reveals past human cultures and as part of that revelation cannot ignore the spirituality that makes those

"other" cultures human.

David Hurst Thomas suggests that our concept of the past is an idealized construction that reflects a distorted image of past reality (1989:6-9). Our ideas of 'truth' change through time and as a result require revisions to reflect these changes of reality (Skowronek 1998:678). Not only must the Ohlone culture be put into its own contextual cultural perspective, but the people who gathered and revealed that culture must also be viewed from their own contextual cultural perspective. Each perspective is going to unveil different 'realities'. The information we have about the Ohlone ethnographic culture comes from many different viewpoints and as a result can seem very vague.

These various narratives are related to us by a number of different sources and yet there is a common theme that emphasizes the importance of animals to the ancestral Ohlone. It's true that these accounts of the Ohlone are not from the times of the three sites (2700–500 years BP). The assumption is the importance of animals in relation to the Ohlone spirituality has not changed dramatically from 1000 AD to the early 1800's when contact with the Ohlone began to be written down. Animals were extremely important to the ancestral Ohlone in their everyday life as well as their religious and ceremonial life. Their creation symbols are animals, they prayed to animals when they hunted, they gave thanks to animals after the hunt, they portrayed animals in their ceremonial dances, their kinship ties were animal based, some shamans/spiritual leaders were thought to be connected to animals such as bears or rattlesnakes, they made tools and ceremonial regalia out of animal remains, and they wore animal teeth necklaces, such

as bear (Brown 2001) or coyote or dog.

***Ladder of Inference.*** As early as 1954, Christopher Hawkes, a British archaeologist made an important contribution to archaeological theory and the debate about the nature of archaeological evidence. His concept came out of ecological-functionalism and was termed the 'ladder of inference' (Hawkes 1954:161-162). According to this model, "archaeology is better equipped to study certain aspects of the past than others; techniques of production would be the easiest inference and at the bottom of the ladder, followed by subsistence economies on the next rung, then social/political institutions up next, with religious institutions and spiritual life the most difficult of all at the top of the ladder" (Hawkes 1954:162). From this, Hawkes reasoned, it is precisely those features that make humans different from other animal species that are the most difficult for the archaeologist to interpret.

Hawkes (1954:162) notes the "shadow of mental paralysis" that his ladder of inference throws on interpretation. As the ladder goes higher and the concepts become more difficult to interpret, the archaeologist is enveloped with mental paralysis. The downside of Hawkes' scheme is that "some archaeologists have been convinced that according to 'the ladder', some questions can never be answered and, therefore should have a lower priority in investigations, e.g. gender and symbolic expression" (Hawkes 1954:163). Ambiguity is ubiquitous in archaeology and anthropology. Archaeologists must process the material matter in a systematic fashion and not allow it to become paralyzing, which can lead to ignoring or dismissing certain artifacts that may reveal

spiritual aspects of a culture.

One way to deal with the ambiguity of archaeology is to reach a consensus on at least the 'material parameters' of an artifact or feature. These sorts of parameters may include; what the artifact is made of, where it was produced, how much is available now, where it is consumed, how often, and where it is found. Scientific archaeology often stops once the material parameters have been reached, because beyond those parameters is often more ambiguity. Using the material parameters as a foundation may possibly lead to a more complete picture of a culture and not merely a list of artifacts. This is especially relevant if those materials are connected to ethnographies, ethnohistories and related narratives of that particular culture.

***Ideotechnic.*** In 1962, Lewis Binford addressed the concept of ideology in relation to archaeology when he articulated and defined artifact function classifications. Lewis Binford (1962) argues that all aspects of sociocultural systems are reflected in the archaeological record and he coined the term 'ideotechnic' to help identify and acknowledge those ideological features and symbols that represent our humanity. Binford's definition variously characterizes artifact function as technomic; the function of an object in technological situations, sociotechnic; the function of an object in social situations, and ideotechnic; the function of an object in ideological situations (Binford 1962). One example that is often given to help clarify this definition includes the many functions of a candle: technomic (gives light), sociotechnic (birthday candles, fancy dinners), and ideotechnic (candles used in religious ceremonies or vigils to convey

spiritual or ideological meaning). Certain artifacts are identified with only one function while others may represent many functions.

Lewis Binford's 'New Archaeological' systems approach did include religion, for he believed that "formal artifact assemblages and their contexts can yield a systematic and understandable picture of total extinct cultures" (Trigger 1989: 298) of which spirituality is always present. Within his paper 'Archaeology as Anthropology', Binford (1962: 218-19) refers to 'ideological sub-systems' and also what he called 'ideotechnic artifacts' - items such as 'figures of deities, clan symbols, symbols of natural agencies, etc.', described as having their primary functional context in the ideological component of the social system. However, beyond describing some artifacts as ideotechnic, such as bird bone whistles used in dance ceremonies, archaeologists in California don't often address the connection of the ideotechnic artifact and an ideological component of the culture.

***Symbols, Context, Meaning and Religion/Spirituality.*** It is impossible to infer the meaning of any symbol without context and knowledge of the culture. There are potentially many meanings that will never be revealed, as the artifacts don't directly disclose a singular meaning or multiple meanings. The "meaning" here will be defined as the relationship between the symbols and the culture it is associated with. This study hopes to establish some, but by no means all, of the original relationship between the symbols observed (Renfrew and Bahn 2000; Parker Pearson 1999; Field et al. 2008). "Symbols are used to represent and try to regulate human relations with the 'Other World', the world of the supernatural or the transcendental" (Renfrew and Bahn

2000:391). As the ancestral Ohlone did not have a writing system, there is no direct written evidence of the meaning of any symbols for the ancestral Ohlone. This does not mean the ancestral Ohlone didn't have artifacts that were symbolic to them, especially in regards to their spirituality, religion and burial practices.

Past work in the anthropology of religion focused on symbols and cognition, as illustrated in the writings of Douglas (1970), Geertz (1973), Ortner (1973), and Turner (1969). The debate regarding how one interprets a symbol will never be resolved, but most believe that all religions do have symbols (Douglas 1970; Geertz 1973; Ortner 1973; Turner 1969). According to Geertz (1973), religion is a system of symbols, which help establish powerful motivations for men by expressing concepts of the general order of existence. These symbols can be pictures; they can be objects, actions, events, relationships, or anything else that conveys some meaning to someone. The symbols themselves have meaning; they portray a picture of how things are in the world and how to respond. They communicate something about the ethos - the ideal, the values, and a way of life.

Geertz (1973) contends that religious symbols also act to establish powerful, pervasive and long-lasting moods and motivations. Moods are the way we respond to and feel about the world, while motives are things we aspire to; the values we hold. In addition, Geertz (1973) believes that religion and its symbols formulate conceptions of a general order of existence. The symbols intend to persuade us that there is an overall cosmic

order when a crisis arises and we feel there is no order. The symbol represents a wider more permanent reality.

When the Spanish missionaries first came into contact with the Ohlone, they believed the Ohlone's idea of religion was "nonsense" (Gieger and Meighan 1976:145-146). The Ohlone's world-view was so foreign to the Spanish they were not able or they were unwilling to comprehend it. The two cultures were polar opposites. The Spanish were not inclined to interpret what the Ohlone spirituality was or what spiritual symbols they might have had. We have read the dismissive accounts of the Ohlone practices from the missionaries (Gieger and Meighan 1976). The anthropologists that came to California in the early 1800's tried to collect as much information as they could, but they too had their priorities, bias and little time with the Ohlone. Certain aspects of the Ohlone's' religion/spirituality might not have been as forth coming as some anthropologists might hope. The uncertainty in the Ohlone's belief system was due in part to the massive disruption and impact of missionization. Another aspect, which should be considered, is that many Native Americans, as well as other religious groups (i.e. Mormons and Scientologists) believe that to "expose all aspects of their religion or spirituality to someone not part of their culture is disrespectful, and might even harm someone" (Williams 2003:33). Anthropologists were able to collect what they refer to as creation 'myths', which are of course filled with symbols. The inadequacy of many scholarly approaches to sacred objects and places has a tendency to silence Native interpretations (Field et al. 2008).

***Connecting Symbols with Narratives.*** Most cultures have a story of the creation of the world and their human society, which accounts for many aspects of their cosmological outlook in a single or multiple narratives. The Old Testament story of creation is one example; the creation story of the Ohlone American Natives is another. Thus oral traditions and written records, should be explored when they are available, to help understand the other stories and the symbols (Renfrew and Bahn 2000). The written record can insure some continuity, but the oral narrative should not be discounted as more unreliable than the written word. Both the written word and oral history can be altered to suit the aspirations of the author (Ehrman 2005).

***Grave Goods as Symbols***. "Archaeologists today recognize that the grave goods in a burial are chosen to give a representation or "construction" of the identity of the deceased individual" (Renfrew and Bahn 2000:405). Not all artifacts, especially textiles, placed with the deceased survive to be excavated and categorized. As a result what is recovered through excavation may certainly not be the complete "construction" of the identity. Material possessions buried with individuals can offer information about differences in wealth and status within a community (Crabtree 1990; Galloway 1976; King 1974; Parker Pearson 1999; Renfrew and Bahn 2000; Skowronek 1998; Wallace and Lathrop 1974). These items can also illustrate how the community is guided by their beliefs about death and what may follow (de Waal Malefijt 1968; Parker Pearson 1999; Renfrew and Bahn 2000).

**Direct Historical Approach**

Most California precontact archaeologists do not include cosmology and spiritual symbolism in their reconstruction of cultures. This omission is most likely due to the fragmentary nature of the evidence. Yet most archaeologists who work for any length of time with Native Americans will recognize the important roles that cosmology and ideology play in that society. This sort of cognitive archaeology needs a scientific method just as "settlement and subsistence archaeology" does (Marcus and Flannery 1994:56). In this study the methodological approach that will address the issue of ancestral Ohlone faunal symbolism and cosmology is called the Direct Historical Approach (Wedel 1938).

Throughout the late nineteenth and early twentieth centuries, New World archaeologists such as Kidder (1916), Nelson (1916), Parker (1916, 1922) and Spier (1917), used ethnographic data from elderly living informants, as well as ethnohistoric records, to interpret the archaeological sites they were excavating. This method entails searching for direct historical connections between ethnographically documented cultures and archaeological cultures. It was also implemented to delineate modern groups of Native Americans who then tried to trace their cultural antecedents to prehistoric groups (Johnson 1999). Classic examples of this method can be found in Arthur C. Parker's 'Archaeological history of New York (1922), William Duncan Strong's 'An introduction

to Nebraska archaeology' (1935) and finally, Waldo R. Wedel (1938) gave the method its name in his article, 'The Direct-Historical Approach in Pawnee Archaeology'.

Archaeologists often use burial evidence as a basis for social interpretations, because material possessions buried with the individuals can offer potential information about differences in wealth and status within the community (Crabtree 1990; Galloway 1976; King 1974; Parker Pearson 1999; Renfrew and Bahn 2000; Skowronek 1998; Wallace and Lathrop 1974). Those material possessions interred with the individual are also influenced by the culture's belief about death and what may come after death. When looking at the faunal remains associated with the individual burials, these elements may also reflect the spiritual and cosmological aspects of their lives and their deaths. An integral aspect of the Direct Historic Approach is the observation and identification of the burials and artifacts. Intertwined in the identification is the research of the ethnography and ethnohistory of that culture. In this work, an attempt will be made to identify a pattern or explanation as to why certain faunal remains might be interred with the individual through the ethnographies, ethnohistories, and narratives.

"The Direct Historical Approach (DHA) is seen as a way of working back in time from the known to the unknown" (Marcus and Flannery 1994:58). Wedel, for example used Pawnee ethnographic and ethnohistoric data to enhance his reconstruction of protohistoric and Upper Republican cultures of Nebraska, which preceded the historic Pawnee. Wedel emphasized he was most comfortable when the reconstructions could show continuity from the archaeological record to the ethnographic present (Wedel

1938). DHA also concerns itself with change as well as continuity, as most archaeologists are concerned with both. For example, Strong (1933) uses DHA to document how the introduction of the horse from Europe changed Plains horticulturists into 'mounted nomads'. It seems as if DHA was used quite frequently during Strong and Wedel's generation, due to well-rounded anthropologists who knew ethnology and ethnohistory as well as they knew archaeology.

Sacred traditions, when not disrupted by life threatening invading forces, generally maintain a high degree of continuity. The ethnographic and ethnohistory of Mesoamerica emphasizes how religion and ritual in that region are conservative and slow to change (Marcus and Flannery 1994). The Valley of Oaxaca is one of those areas where there was great continuity from prehistoric to Spanish Colonial times. Flannery and Marcus (1983) use that continuity to trace the Zapotec and Mixtec civilizations from their common ancestral culture using DHA.

The Direct Historical Approach has also been applied to many cultures including the research of rock art studies in southern Africa. By studying the Bushmen ethnography and trying to match patterns observed in both ethnographic and archaeological records, the results have helped end an era that regarded Bushman rock art as merely art for art's sake. The rock art can now also be explained through the Bushman's ethnography, as the visual expression of their religious beliefs (Lewis-Williams 1986; Lewis-Williams and Dowson 1990). The Direct Historical Approach has also been applied to the Zapotec of central Mexico (Marcus and Flannery 1994).

The ancient Zapotec ritual activities provide clues to their pre-Hispanic religious beliefs. Marcus and Flannery (1994) begin with the ideology, religion and ritual practices of the Zapotec, as they were described by the 16th century Spaniards. Other ethnohistories and ethnographies of rituals and spiritual beliefs are gathered. Then the archaeological sites are studied and connections are made between the artifacts, ethnohistories, and ethnographies. Many narratives were recorded which describe human sacrifices that were practiced with obsidian leaf-shaped daggers in certain areas of the ritual complex. Obsidian leaf-shaped daggers were found in these same locales. Information regarding ritual blood letting with stingray spines (real and obsidian replicas) and shark teeth were also found in certain parts of the ritual complex. More narratives refer to certain animals that are deemed appropriate for sacrifices, such as quail, dog, turkey and deer. These faunal remains are also found in the area described. This method has also been applied to other ancient cultures such as the Aztecs and in Incas for insight to their religious beliefs.

The ancestral Ohlone culture, and the historic Ohlone culture are certainly not identical, as cultural change will always occur. However, specific historical analogy is intertwined by general comparative analogy, in which similarities between ethnographic sources and archaeological subjects are the result of convergence (Lyman and O'Brien 2001). The ethnographies, ethnohistories and oral histories and narratives we have available today will not verify the spiritual beliefs of the Ohlone 2400 years BP. However, they may help establish a cultural continuity of those beliefs through the faunal

remains we see associated with the individual burials.

***Ohlone Ethnographies, Ethnohistories and Narratives.*** There are many ethnographies, ethnohistories and narratives that will be utilized in relation to the Direct Historical Approach for the Ohlone. This literature will reveal some of the knowledge regarding the Ohlone's (and other California Native American's) actions regarding burial practices, and the importance of animals in their religious beliefs, moiety connections, creation narratives since the time of European contact. From these ethnographies, ethnohistories and narratives the FOI found associated with the discrete human burials discussed in this thesis, will be revealed as much more than dietary remains.

## Archaeology and Religion

Archaeology and religion are linked together the world over. A few examples include Africa, where not only Egyptian (Budge 1991; Clarysse 1998; Fleming and Lothian 1997; Wilkinson 2003) religion is studied, but Christianity (Lowrie 2006; Morrey 1991; Rogers 2006), Judaism (Abu El-Haj 2001; Amiran 1969; Kenyon 1967) and Islam (Bennison and Gascoigne 2009; Insoll 1999) as well. Some examples of the connection of archaeology to religion in Asia include works regarding cosmological beliefs in early China from Allan (1991), and overviews of the various religions in China from Stark (2006) and Wang (2000). In Europe Douglas (1970) explores natural symbols and their connection to cosmology; Graham-Campbell and Valor (2007) delve into religious

aspects of medieval Europe; Green (1992, 1998) looks into the religious symbols in Celtic culture; Lauwerier (1993) explores the meanings of bird remains associated with Roman burials. A few of the Middle America and the Caribbean religions are represented by archaeologists such as Flannery and Marcus (1983) who research the evolution of the Zapotec and Mixtec religion and culture; Hayward and coworkers (2009) look into the meaning of rock art in the Caribbean; Oliver (2009) investigates the Caribbean and the religious idols that were/are worshipped; and Reid (2009) writes about the 'myths' that encompass the Caribbean. Oceania archaeology and religion are touched upon by Lilly (2005), Kirch (2002), and Peregrine (2001). Illustrations of the connection archaeology and religion have with each other in South America can be seen in the works of Conklin and Quilter (2008) through the art architecture and culture of the region; Cooke (1992) who analyzes animal icons in society; and Joyce (1912) who gives a detailed analysis of archaeology and religion from the early 1900's. Some examples of archaeology and religion in North America are seen in the works of Binford (1962), Charter (2001), Elsasser (1978), Field and Leventhal (2003), Holliman (2004), Leventhal (1993), Luby and Gruber (1999), Muir and Driver (2004), O'Day et al. (2004), Parker (1992), and Pavlik (1997).

Interpreting religious symbols and ritual within prehistoric sites is a daunting task for archaeologists. The challenge is to develop appropriate methodologies that break through the blockades of silence that surround the symbols and rituals inherent in prehistoric sites and artifacts. Archaeologists need to utilize the excavated records and artifacts and any

other appropriate materials at hand to continue to develop scientific methodologies, which will extract the maximum amount of information. Theorizing and setting up appropriate methodologies will increase aspects of religion and ritual from many different angles as is demonstrated by the archaeologists previously discussed.

# MATERIALS

This chapter begins to clarify the Ohlone and their land. Both the people and their territory are integral aspects in determining the importance of animals to the ancestral Ohlone spiritual and cosmological outlook. A brief overview of the history of the Ohlone will be presented first. Next, each of the three Ohlone sites will be discussed in relationship to their geographic location, temporal aspects, and the age and sex ratio of the number of discreet burials. The analytical and methodological data retrieved from these sites will help prove the hypothesis that certain faunal remains are related to the ancestral Ohlone spiritual and cosmological beliefs.

## Brief History of the Ohlone in the San Francisco Bay Area

Richard Levy (1978) suggests the Ohlone people came into the San Francisco Bay Area about 1500 Years BP from the San Joaquin-Sacramento River areas. It is thought they probably displaced the Hokan speakers, coinciding with what is generally now considered by archaeologists as a Late Horizon assemblage (Bean 1994). One of the primary reasons for the uncertainty of Native American's past is the absence of a primary writing system to record the events. In addition, their culture was thoroughly disrupted

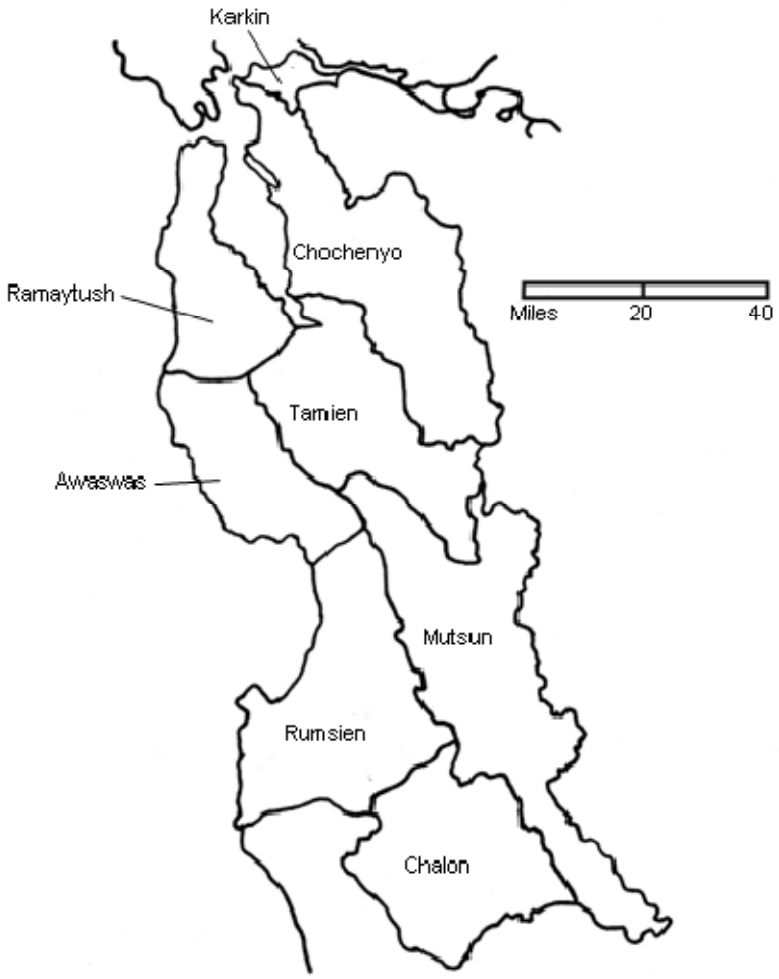


Figure 2. Eight Ohlone Linguistic Territories per http://en.wikipedia.org/wiki/Ohlone.

by the Europeans, Mexicans and finally the Americans, so that little reliable ethnographic information was available from these secondary sources. Each of these controlling groups took their toll on the Ohlone culture, language and customs which led the Ohlone to be declared “virtually extinct for all practical purposes” by Kroeber (1925:464).

Kroeber later recanted his former declaration but this sentiment persists in the California culture of the uninformed while the Ohlone continue to seek federal recognition.

At the time of the Spanish incursion in the 1770's, the San Francisco Bay Area was sparsely populated (Cooke 1976) by today's standards. The Native American group we now call Ohlone "occupied the area now defined by the southern edge of the Carquinez Strait in the north, the San Francisco peninsula on the west, the Livermore Valley on the east, and the Sur and Salinas rivers in the south" (Levy 1978:485). Figure 1. The highest densities seem to occur along the southern and northern extremities of the shores of the San Francisco Bay itself, where "populations of approximately six people per square mile are found" (Milliken 1995:19).

In 1776 the Spanish established the Mission and Presidio in San Francisco. In 1777 the Mission Santa Clara was created and in 1797 the Mission of San Jose was complete. The Spanish brought to the Ohlone a completely new perspective on the world and forced upon the Ohlone a new culture, language, ways of utilizing land – agriculture and animal husbandry, Christianity, the Mission system and new diseases.

**Historical Period for the Ohlone**

Diaries and notes regarding the Native Americans from the California Missionaries date back to the early 1800's (Geiger and Meighan 1976; Brown 2002). Anthropologists such as Alfred Kroeber (1907a; 1907b; 1925; 1932) and John P. Harrington (1942) began

gathering Native American ethnographies and ethnohistories in the early 1900's. Some California anthropologists and archaeologists refer to the contact-period political groups of west Central California as "tribelets," following Kroeber (1932). Kroeber created this term because these Native Americans did not fit into the traditional definition of a "tribe".

Kroeber identified basic characteristics of Native Californian political units that made them unique among North American Indians (Kroeber 1966) and thus felt the need to create a new term to describe and define them.

> "In any strict usage, the word "tribe" denotes a group of people that act together, feel themselves to be a unit, and are sovereign in a defined territory. Now, in California, these traits attached to the Masut, Pomo, once again to the Elem Pomo, to the Yokaia Pomo, and to 30 other Pomo tribelets. They did not attach to the Pomo as a whole, because the Pomo as a whole did not act or govern themselves, or hold land as a unit. In other words, there was strictly no such tribal entity as "the Pomo": there were 34 miniature tribes." (Kroeber 1966:100).

Kroeber's analytical framework, as many other early ethnographers, was instilled with an "evolutionist ideology, which considers the Native Californians primitive and far less complex than other tribal groups in North America" (Leventhal et al. 1994:301). Alfred Kroeber's views are an example of this bias and as a result, his outlook regarding the Ohlone did not allow the full recognition of the complexity of these different groups. Neither has this term "tribelet" taken hold to describe "similar multifamily landholding groups in other hunter-gatherer and agriculture societies" (Milliken 1995:13). As a result

Lowell John Bean (1994), Thomas Blackburn (1976), Randall Milliken (1995) and others have come to similar conclusions and do not use “tribelets” when referring to the Ohlone but describe the Ohlone as various “tribes”. The term ‘tribe’ will be used in this paper.

Within fixed territories, many independent Ohlone tribes had numerous associations with many families who worked together to harvest animal and plant resources to “maintain annual ceremonial cycles” (Milliken 1995:13). Every tribe adapts an overall analogous religious concept to its own regional environmental landscape. This allows “the spiritual narratives and ceremony to become unique to a specific locale. In fact, each tribe might be thought of as an independent, landholding religious congregation” (Milliken 1995:13). This concept may be revealed through the FOI, and other associated funerary objects observed at the three different sites discussed here.

Most linguists consider the Ohlone language to be part of the Utian family (Levy 1978; Milliken 1995; Shipley 1978). Within the Ohlone language there are some eight linguistically separate groups noted: Karkin (Carquinez Strait), Chochenyo (most of the East Bay), Tamien (Santa Clara), Ramaytush (San Francisco Peninsula), Awaswas, Mutsun, Rumsien and Chalon (Levy 1978:486). See Figure 2. “Some cultural traits did covary with linguistic distributions, other traits were shared in restricted local areas by neighbors who spoke distinct languages” (Milliken 1995:14). It appears that the most obvious cultural contrasts within the Bay Area are probably determined by ecological and geological factors, and are the result of the differences that exist between the coastal, riverine habitats, interior valley bay shore. (Milliken1995).

The documentary and material records reveal that social inequality existed among the pre- and post-contact Ohlone (Skowronek 1998; Galloway 1979). Skowronek (1998:690) contends that in post-contact and pre-contact times the elite "were addressed deferentially, wore items of clothing that set them apart from others, and had greater access to exotic goods". He contends that even if the elite's power was diminished in the missions, "their hereditary positions continued to be recognized by the neophytes and the Spanish" (Skowronek 1998: 690). Skowronek has looked at he archaeological and ethnohistoric records and finds that the Ohlone, like the Salinan Native Americans of the central coast (Hoover 1977) and others, maintained aspects of their pre-contact culture through more than sixty years of missionary attempts. "These include religious practices such as dance, healing, and mortuary rituals" (Skowronek 1998:699).

***Temporal Periods.*** Rosenthal and coworkers (2007) hybridized previous temporal periods and incorporated modern calibration curves and new radiocarbon determinations to make the following temporal periods: Emergent (Historic - 900 years BP), Upper Archaic (900 years BP - 2,550 years BP), Middle Archaic (2,550 Years BP – 7,550 years BP), Lower Archaic (7,550 years BP – 10,550 years BP), Paleo-Indian Period (10,550 years BP – 13,550 years BP).

The first two sites addressed in this study, CA-SMA-125 Filoli (Galloway 1976) and CA-SCL-690 Tamien station (Hylkema et al. 2007), are considered to be in the Emergent and Upper Archaic periods. The third site CA-SCL-732 *Kaphan Umux* (Three Wolves) contains at least two temporal components, the Archaic Upper and Archaic Middle time

periods. The temporal span containing the human burials at CA-SCL-732 *Kaphan Umux* (Three Wolves) is radiocarbon dated from 2700 years BP to 1500 years BP. See Table 1 and Figure 16. For approximate location see Figure 3.

Table 1. Time Periods for Three Sites

| **Site** | **Trinomial** | **Time Period** | **Site Report** |
|---|---|---|---|
| Filoli | CA-SMa-125 | 1500-500 Years BP | John P. Galloway 1976, Griffin et al. 2004 |
| Tamien Station | CA-SCL-690 | 1300-800 Years BP | Hylkema et al. 2007 |
| *Kaphan Umux* (Three Wolves) | CA-SCL-732 | 2700-1500 Years BP | Cambra et al. 1996 |

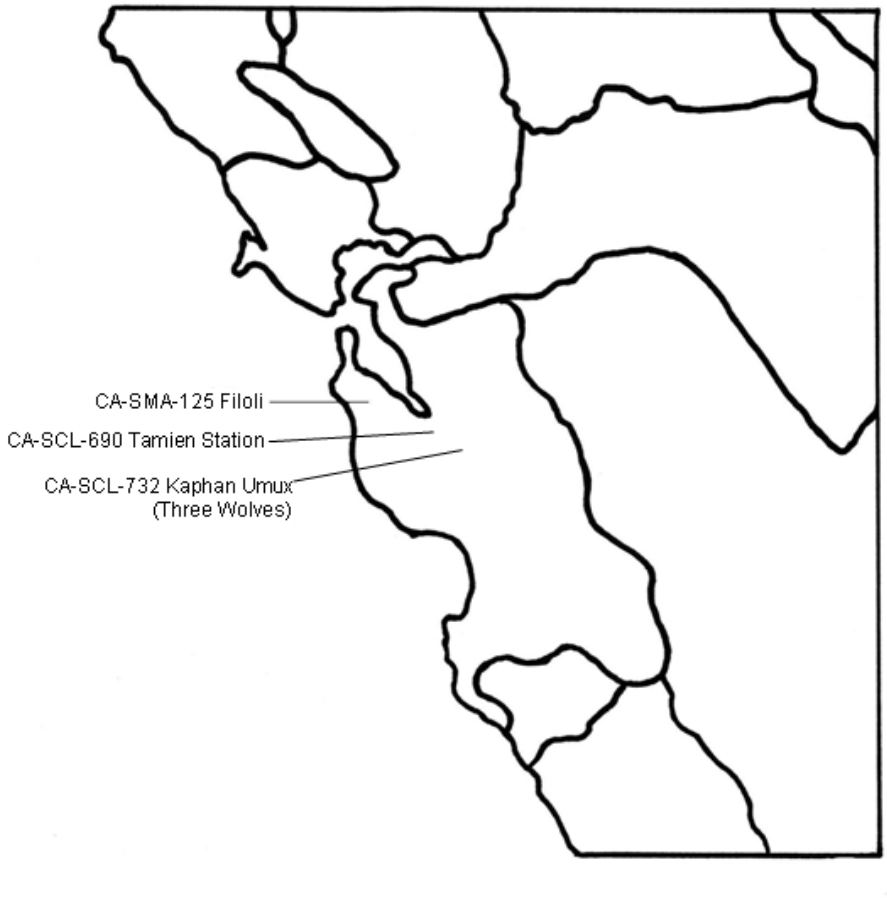


Figure 3. Approximate Location of the Three Sites per Milliken et al. 2007.

**CA-SMA-125 Filoli**

CA-SMA-125 Filoli is the first of three Ohlone sites explored in relation to FOI. Filoli is named for its location on the Filoli estate in Woodside, California south of

Crystal Springs. The site location is about 30 miles south of San Francisco on the eastern slope of the Coast Range and approximately seven miles from the Pacific Ocean directly over the Coast Mountains and seven miles from the San Francisco Bay. CA-SMA-125 is carbon dated to about 1500 to 500 years BP and is associated with a broad set of characteristics considered the 'Augustine Pattern' (Frederickson 1974; Moratto 2004).

This pattern is characterized by the introduction of the bow, arrow, harpoon and bird bone whistle. A general intensification of densely occupied areas, an increase in social stratification and use of cremation for differential burials are also indicated. There is an ongoing emphasis on the gathering of shellfish and acorns, but with more hunting and fishing than before. Bone awls for basket making are common at this time as well as distinctive forms of *Haliotis* (Abalone) and *Olivella* shell beads. Finally, trade appears to encompass a wider geographic distance than in earlier periods (Moratto 2004). Most of these characteristics are found in relation to burials found at Filoli.

In 1915 William Bourne bought 654 acres in California and named his new estate Filoli. He took the first two words of his credo for the name of his estate; Fight for a just cause, Love your fellow man, Live a good life. In 1936 G. Hamilton first reported a Native American site on the Filoli estate and described it as being on the "south end of Crystal Springs Lakes" (Hamilton 1936:5). This site was first 'sampled' in 1936 by Harold Squire who was associated with the San Mateo Junior College. This excavation resulted in a "Display Case Burial" which was to be part of a traveling exhibit of local Indian artifacts prepared in the Museum of the San Mateo County Historical Association

at the College of San Mateo (Fentress and Griffin 2004:11-12). In 1937 Mr. and Mrs. Roth bought Filoli and begin to extend the gardens dramatically, using the rich, dark earth of the Native American mound (Griffin et al. 2004).

In 1970 the site was described as consisting of "an earth and shell midden on a small hill-terraced above (a) natural plain…most of the site has been destroyed; about 1/5 is left. The remaining portions of the site measured 100X100m with a depth of at least 2 meters" (Edwards and Schenk 1970:2). The deep deposits, numerous human burials, several large ground stone artifacts, along with large amounts of food materials (faunal and shell debris) "indicate repeated occupation" (Fentress and Griffin 2004:9).

Between 1970-1978 extensive excavations at CA-SMA-125 Filoli were directed by Eldon Earnhardt of Canada College, Redwood City, CA. These excavations occurred over 12 semesters with Earnhardt's field archaeology classes. Earnhardt used the artifacts and human burials found at this site to teach his classes. In 1975 Mrs. Roth donated the estate to the National Trust for Historic Preservation. The excavated collection at that point went to San Francisco State University where John Paul Galloway analyzed the partially excavated site for his Master's thesis, 'An Analysis and Comparison of Burial Data From CA-SMA-125', in 1976. After Galloway's analysis the collection was returned to Canada College. In 1998 Federal funding ended for the Trust, which made Filoli and the collection, private property for the National Trust for Historic Preservation. In 2002 Canada College became aware of the NAGPRA laws, which pertained to the Filoli collection. In 2003 the collection was moved to San Francisco

State University for NAGPRA analysis according to those NAGPRA laws. In 2004 the collection was returned to the Filoli Estate, also in accordance with the law.

The reports on CA-SMA-125 Filoli (Galloway 1976; Griffin et al. 2004; Fentress and Griffin 2004) expose an unusually rich and heterogeneous Ohlone site. Though only a portion of the site was excavated and examined, a great deal was revealed. One of the "most significant aspects revealed from the excavation is the diversity of non-utilitarian artifacts" (Fentress and Griffin 2004:10). Many of these artifacts are considered ideotechnic (Binford 1962; Galloway 1976) and thought to been used in rituals or ceremonies. Some of these artifacts include "cupule rocks, hundreds of stingray spines, and a large piece of hematite (iron oxide) which was used in body painting and creating pictographs in the Bay Area" (Fentress and Griffin 2004:10). Other artifacts found at CA-SMA-125 Filoli considered ideotechnic, include bird bone whistles and a bone dagger with 24 skate teeth imbedded in asphaltum (Galloway 1976).

"Social ranking" is implied in Galloway's (1976:55) thesis. According to Galloway (1976), in a ranked society, certain artifact classes are associated with particular age and sex groups. Burial modes for ranked societies should show a greater degree of variability than those observed for egalitarian societies. By statistically analyzing the burials and associated artifacts, following Lewis Binford's (1962) three types of artifact assemblages "ideotechnic", "sociotechnic", and "technomic", Galloway classified CA-SMA-125 Filoli as a ranked society.

Burial #3 is identified as one of the richest burials, which aided in proposing social ranking occurred at this site. According to Galloway, "50.8% of the artifacts associated with Burial #3 are ideotechnic, 45.7% are sociotechnic and only 3.5% are technomic. Of the ideotechnic assemblage of Burial #3, 142 bone whistles and 386 bat ray spines were uncovered" (Galloway 1976:18). This is an unusually large number of these particular artifacts.

**Burials at CA-SMA-125 Filoli**

The burials and the FOI associated with them at CA-SMA-125 Filoli are an important and integral aspect of the hypothesis. As some faunal material is important in the cosmological and spiritual aspect of Ohlone life, it is also important in the mortuary complex. Galloway's (1976) thesis is an incomplete assessment of the excavation and identifies only 46 individuals, which include 15 adults, 1 female, 1 that is probably a female, and 13 males. The remaining individuals consist of 27 term fetuses, 2 children, a preadolescent and a sub-adult (Galloway 1976). Excavations continued after Galloway's examination of the individuals and associated artifact assemblage.

Through the San Francisco State University NAGPRA osteology report for CA-SMA-125 (Griffin et al. 2004) the complete ostoelogical assessments of the excavated material is made. There are 19 complete individuals from the numbered burials. There are an additional 25 individuals commingled with the numbered burials. A total of four

| S03 W15 | S03 W14 | S03 W13 | S03 W12 | S03 W11 | S03 W10 | S03 W09 | S03 W08 | S03 W07 | S03 W06 | S03 W05 | S03 W04 | S03 W03 | S03 W02 | S03 W01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Bur #6 | | | | | S04 W01 |
| | | | | | | | | | Bur #4 | Bur #2 | | | | S05 W01 |
| | | | | | | | | | | | | | | S06 W01 |
| | | | | | | | | | Bur #5 | | | | | S07 W01 |
| | | | | | | | | | | | | | | S08 W01 |
| | | | | | | | | | | | | | | S09 W01 |
| | | | | | | | Bur #16* | | | Bur #19* | Bur #18* | | Bur #8 | S10 W01 |
| | | | | | | Bur #12* | | | | | | | Bur #9* | S11 W01 |
| | | | | | | | | | Bur# 11,17 | | Bur #13* | | | S12 W01 Bur #3* |
| Bur #15* | | | | | | | Bur #7* | | | | | | | S13 W01 |
| | | | | | | | | | Bur #14 | | | | | S14 W01 |
| | | | | | | | | | | | | | | S15 W01 |
| | | | | | | | | | | | | | | S16 W01 |
| | | | | | | | | | | | | | | S17 W01 |
| | | | | | | | Bur #21* | | | | | | | S18 W01 |
| | | | | | | | | | | | | | | S19 W01 |
| | | | | | | | | | | Bur #22 | | | | S20 W01 |

Figure 4. Distribution. Distribution of Discrete Burials from CA-SMA-125 Filoli. *Burials Associated with FOI.

cremated individuals are identified and 34 individuals are represented by fragmentary remains from isolated units. The "total minimum number of individuals is 82" at this site (Griffin et al. 2004:9). Many of the individuals are not associated with a clear provenience and as a result their artifact associations are also unclear. This thesis will only refer to identifiable discrete individual burials and their artifact associations. As a result only 20 discrete burials will be addressed from this site. Figure 4. The individual assessments (Figure 5), the age of death distribution (Figure 6) and the sex ratio (Figures 7) assist in enlightening the demographics of this population recovered from CA-SMA-

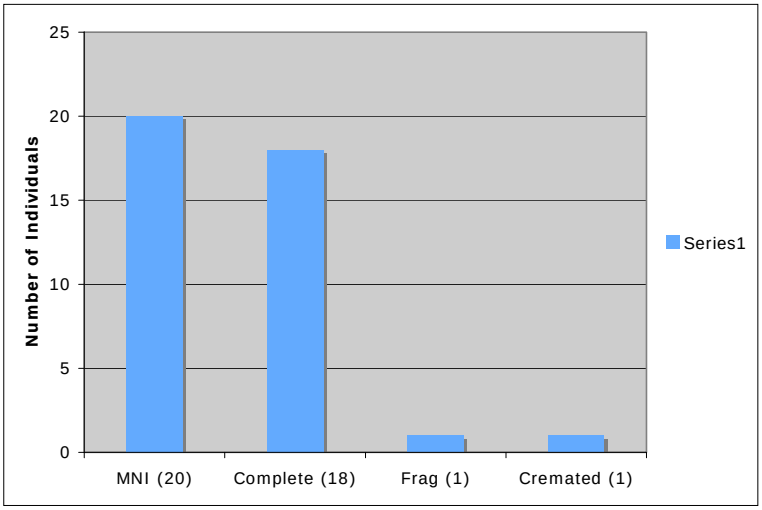


Figure 5. Assessment of Individuals Recovered From CA-SMA-125 Filoli.

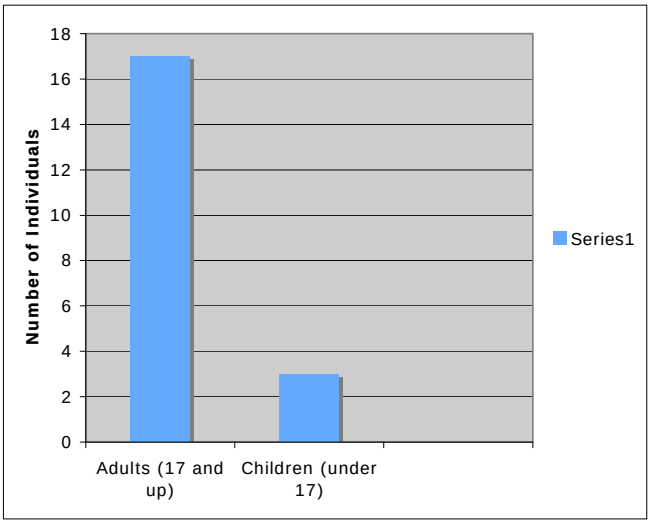


Figure 6. Age of Death Assessment for Individuals Recovered From CA-SMA-125 Filoli.

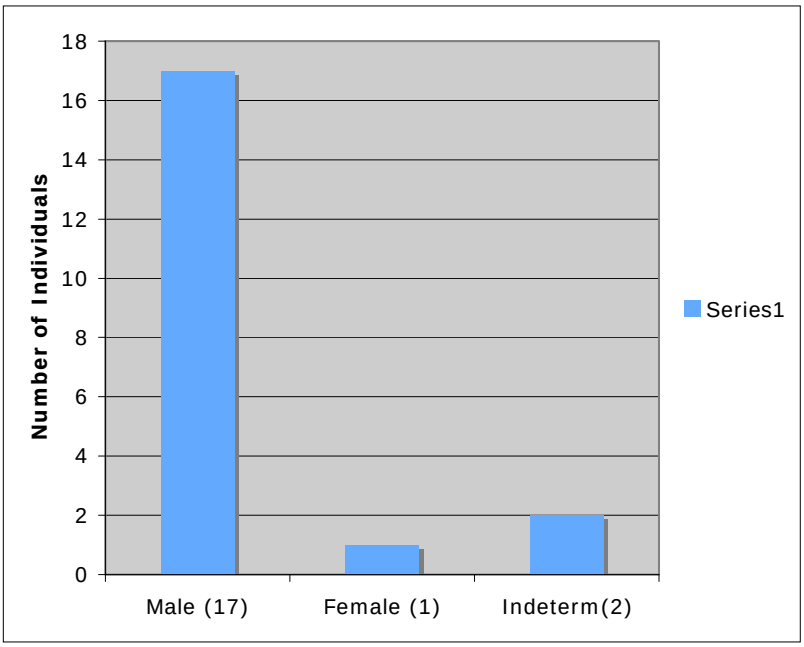


Figure 7. Sex Ratio of individuals Recovered From CA-SMA-125 Filoli

The individuals sampled at the Filoli site also reveals an unusual age distribution.

> "Considering only the adults, more than 86% of the sample is older than 35 and 50% is older than 40. Considering the entire sample (subadults and adults) more than 57% of the individuals are less than 2 years of age. The most probable explanation for this very unusual distribution is differential burial. This sample likely represents only the older elite males, elite females, and children generally under the age of 3 years. The rest of the population was likely buried elsewhere"(Griffin et al. 2004:51).

Potential familial relationships may indicate that social ranking and association with FOI are family based. Griffin and coworkers in lab analyses revealed an interesting osteological anomaly at this site (Griffin et al. 2004), which may help establish familial relationship to rank and FOI. Their examination reveals "the majority (9 of 17; 53%) of the complete individuals from the numbered burials in this population sample exhibit a pattern of joint changes that resembles spondyloarthropathy" (Griffin et al. 2004:42). Spondyloarthropathy is a subset of arthritis that seems to be genetically related. The gene that is associated with spondyloarthropathy is the HLA-B27 gene and only occurs in ~ 8% of populations. "The high frequency of spondyloarthropathy here would suggest that a high number of individuals carry the HLA-B27 gene and therefore have a high probability of being closely related to one another" (Griffin et al. 2004:43).

Another unusual find by Griffin and coworkers was the detection of another genetically inherited osteological variance. "Tarsal-metatarsal coalition (TMC) is an abnormal union of two bony elements of the foot". "Tarsal-metatarsal coalition are likely congenital" (Griffin et al. 2004). This condition usually has a reported incidence of 1% or less in a population (Stormont and Peterson 1983). According to Griffin and

colleagues (2004) among the 17 complete adult burials, 6 (35.3%) exhibit fibrous tarsal-metarsal coalition between the 3rd cuneiform and the 3rd metatarsal. The high rate of this most probable congenital condition suggests these individuals were closely related. Another interesting observation is three of these individuals express both TMC and spondyloarthropathy. It has been hypothesized that for some Native California tribes "both property and political power were inherited in the male line" (Johansen 1998:37). These congenital conditions could be significant to determining if FOI could be connected by such familial relationships.

Throughout this thesis, all further references to human osteology assessments at CA-SMA-125 Filoli will be per Griffin and coworkers (2004). These references include number of individuals, age, sex, and any osteological anomalies, which may be represented in figures and tables at this site.

**CA-SCL-690 Tamien Station**

The next site addressed in regards to the importance of FOI with Ohlone burials is CA-SCL-690 Tamien Station site. There had been no previous indication this site had any archaeological value. Until 1989, during the demolition of a large fruit cannery in San Jose, California, this major archaeological site was discovered. The demolition was carried out in order to construct a large transportation terminal. During the interim between the demolition and the building of the new terminal an emergency

archaeological program was implemented. The site is located along the west side of Lick Avenue between Alma and Willow avenues near the east band of the Guadalupe River. "The site is now the location of the parking lot and underground concourse entryway into the newly constructed Tamien Station multi-model transportation terminal" (Hylkema 2007:1).

By 1990 Caltrans, in consultation with the State Office of Historic Preservation, Federal Highway Administration, Native American Heritage Commission, the Muwekma Ohlone Tribe, and other Ohlone descendants, employed a data-recovering program (Hylkema 2007). During the excavation of this prehistoric Ohlone occupation site and cemetery complex, somewhere between 121 to 130 individuals along with a variety of artifacts were uncovered. "Radio carbon dates, obsidian sourcing and hydration analysis, and temporally diagnostic artifact types indicated that the ancestral Ohlone people buried their dead at this site between circa 1200 to 800 BP; although the greatest temporal affinity is with the years spanning 1100 to 900 BP" (Hylkema 2007:1). Tamien Station is essentially a single component site dating to the Middle/Late Transition of California prehistory, about 1100 to 800 BP. "The artifact assemblage from this site dated to the Middle/Late Transition and early part of Late Phase 1, and revealed a profound emphasis on the placement of beads and ornaments among the graves" (Hylkema 2007:418-419). "The distribution of bead wealth among most of the burials, male and female, young and old, is in striking contrast to earlier sites where grave wealth is not so visible. It is also in

contrast with later sites where wealth is exhibited in still more concentrated amounts, but with fewer individuals." (Hylkema 2007:419).

"The introduction and increased proliferation of Haliotis banjo pendants, which first appeared in the South Bay at SCL-690 during the Middle/Late transition Period, has provided insight into the mechanism of social change that differentiates the earlier Berkeley Pattern from the Augustine Pattern. Both Gifford (1947) and Heizer (1978) have suggested that these pendants might have represented the deity impersonated in ethnographic "big-head" performances of the Kuksu God-impersonating cult and membership society of Central California. Breschini and Harvesat (2005) have also commented on this possibility. Unfortunately, no direct ethnographic account has yet been found to prove that these pendants do indeed represent the Kuksu "Big Head dancers" (Hylkema 2007:419).

"The distribution of Banjo pendants from archaeological contexts coincides with ethnographic accounts of Kuksu membership. Furthermore, the accrual of beads coincident with sites that had banjo pendants accords with ethnographic descriptions ascribing wealth with Kuksu membership" (Goldschmidt 1951:339-340). Fredrickson (1974b:64) suggested that it is possible that the accrual of bead wealth associated with the Kuksu tradition may in fact relate to ideotechnic functions rather than sociotechnic ones (membership emblems rather than wealth)."

The Tamien Station site is now "considered the type-site for this period in the Santa Clara Valley" (Fitzgerald 2007:i). "This pivotal period of California prehistory is one of

significant settlement disruption and economic and social transformation putatively brought about by a climatic anomaly that altered the biotic communities of California" (Fitzgerald 2007:i). This site could also be considered a precursor to the complex and rich cultures that typified the final period of central California prehistory.

In addition to the human burials five other features were carefully excavated, these included hearth, oven and animal ceremonialism features. As Hylkema (2007) reviews the cultural elements associated with some of these features he concluded that they were " a result of a variety of meal preparation activities occurred in relatively close proximity to the primary concentration of burials" (Hylkema 2007:227).

**Burials at CA-SCL-690 Tamien Station**

Figure 8 indicates where the majority of the burials were recovered. For a more detailed map see Bethard (2007: 103-104). The Ohlone burials at CA-SCL-690 Tamien Station give some information as to the age group and sexes that are interred (Figures 9 and 10) and as a result what age and sex are associated with FOI. There was a considerable amount of historical disturbance at this site, which complicates the precise minimum number of individuals. "Excavation methods were well-controlled and discrete burials were designated only when elements were found in articulation, the number of assigned lots is actually probably very close to the minimum number of individuals represented" (Bethard and Jurmain 2007:187).

Of the 123 grave lots 54 (44%) contained the remains of a least two individuals. "Most of the supernumerary individuals are represented by only a handful of elements which are probably derived from the relative recent disturbances of adjacent burials"

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 96 | | | | | | | | | | | | | | |
| | 94 | 95 | | | | | | | | | | | | | | | |
| | | | | 90<br>91* | | | | | | | | | | | | | |
| | | 79 | 80 | | | 15<br>26 | 65 | 78 | | | | | | | | | |
| 82 | 81 | | 68<br>73 | 69<br>51 | 23,50<br>54 | 35,58<br>41,71 | | 36<br>22,14 | | | | | | | | | |
| | | | 74 | 62<br>66 | 57,52<br>56,37 | 60*,<br>53 | | 34<br>33 | | | | | | | | | |
| | | | 77<br>76 | 64<br>59 | 48,41*<br>44 | 25,28<br>8,9 | 24,12<br>10,5*, | 17<br>3 | 21<br>20 | 27 | | 87 | | | | | |
| | | 72 | | 49,75<br>61 | 39*<br>29* | 31 | 7,4<br>6 | | | 19 | | | 67 | | | | 88 |
| | | | | | | | | | 1 | | | | | | | | |
| | | | | | | | | | 2 | 18 | | | | | | | |
| | | | | | | | | | | | | | 83 | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | 42 | | | | | | 13<br>85 | 86* | |

Figure 8. Distribution of Burials at CA-SCL-690 Tamien Station. * Indicates Burials with FOI. Each Quadrant Represents 2 Meter Units of Excavation.

(Bethard and Jurmain 2007:188). The actual number of individuals represented at CA-SCL-690 is somewhere between 121 and 130 individuals. The number of discrete burials is 125 individuals (Bethard and Jurmain 2007). Sex determination resulted in 29 males, 25 females and 71 indeterminate individuals. Age assessment is as follows: eight individuals between 0-2 years, eight young children between 3-10 years, four adolescents from 11-16 years, 92 adults ranging from 17 years to 40, 12 adults over 40 and one indeterminate. Genetic anomalies such as TMC and spondyloarthropathy are not noted at this site. Throughout this thesis, all further references to human osteology assessments at

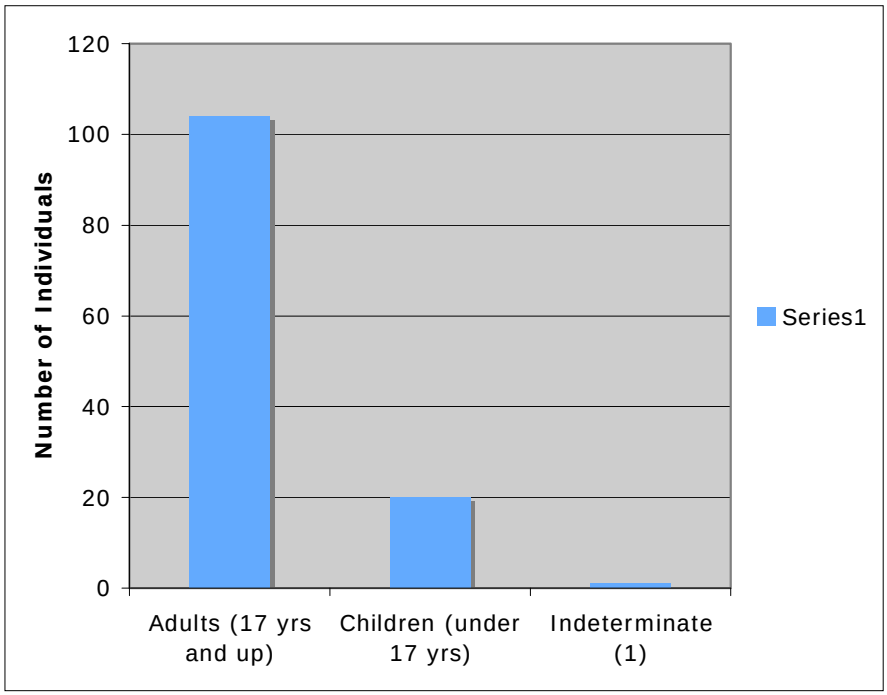


Figure 9. Age of Death Distribution of Individuals Recovered From CA-SCL-690 Tamien Station.

CA- SCL-690 Tamien Station, will be per Bethard and Jurmain (2007). These references include number of individuals, age and sex including all figures and tables at this site.

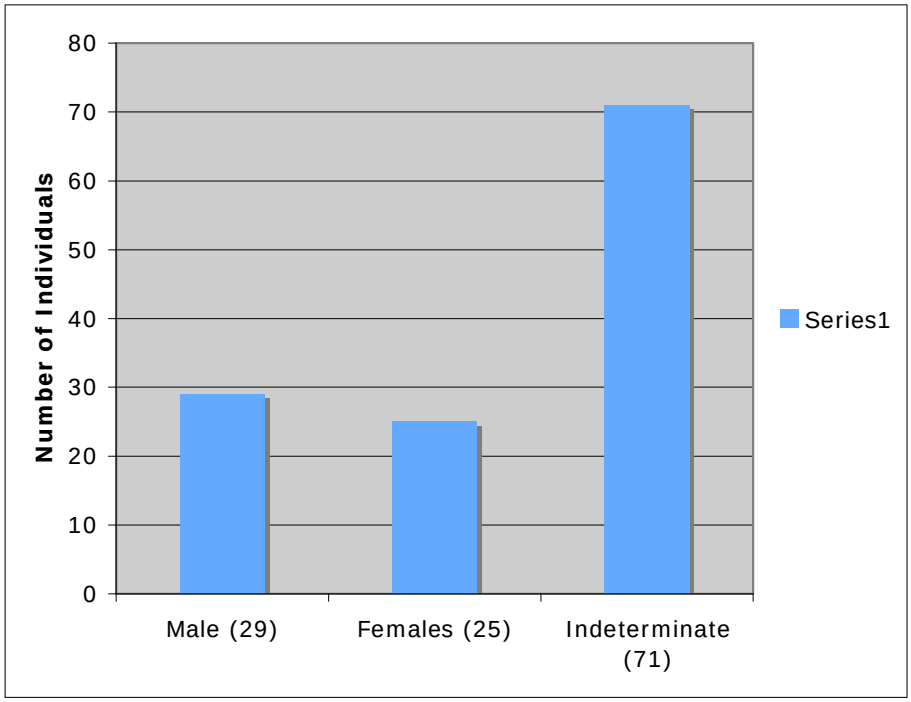


Figure 10. Sex Ratio of Individuals Recovered From CA-SCL-690 Tamien Station.

***Animal Ceremonialism.*** "An almost complete dog/coyote (*Canis* sp.) was found in Feature 3" (Simons 2007:385). The remains include a total of 330 whole elements and

fragments. "The remains appear to principally come from one individual with the bones of a second apparently commingled" (Simons 2007:385). "These bones were within and below the bottom of the cobbled layer in a section that contained many faunal bones and also produced an incipient charmstone, a pestle fragment, a handstone, and a *Haliotis* pendant fragment" (Hylkema et al. 2007:238).

**CA-SCL-732 *Kaphan Umux* (Three Wolves)**

CA-SCL-732 *Kaphan Umux* (Three Wolves) site is the last of three Ohlone sites that may help substantiate the hypothesis that some faunal remains, (FOI) associated with ancestral Ohlone, show a cultural continuity of importance to the historic Ohlone. During the construction of Route 85/101 interchange and a riparian mitigation basin in southern San Jose California, it was thought there was the potential of encountering prehistoric archaeological materials and human burials. This site is located on the west bank of Coyote Creek and is in close proximity to two other prehistoric sites: CA-SCL-200, which is downstream and CA-SCL-178, which is upstream. In the past this site has been used for agriculture but is currently managed by the County of Santa Clara Parks and Recreation Department. In August of 1991, as the result of a backhoe test dig, a human burial was uncovered. Excavations of the one hundred human burials, three animal burials, several rock and charred features and many isolated artifacts from the surface were complete by the end of 1992. The excavation was conducted by the Ohlone

Families Consulting Services, in conjunction with the San Jose State University Foundation.

CA-SCL-732 is considered a Lower Middle Period cemetery with a number of cultural features associated with a non-cemetery Late Period component Cambra et al 1996). Most of the human burials date from 1770 ± 90 years BP to 2340 ± 80 years BP (Cambra et al. 1996). A total of 27 organic samples were radiocarbon dated from the Washington State University. These uncorrected radiocarbon dates range from 150 ± 80 years BP to 6460 ± 150 years BP. These dates are generated from samples of animal bone and charcoal.

**Burials at CA-SCL-732 *Kaphan Umux (*Three Wolves)**

The individuals assessed from CA-SCL-732 may also help imply cultural continuity regarding the importance of FOI in the Ohlone mortuary practice. However, the poor soil matrix (containing caliche, a calcium carbonate) and the pervasive and severe impact of heavy equipment and historical agricultural activities for the past 100 years have not readily facilitated this endeavor. The results of this situation left the human osteological collection in poor condition (Jurmain 1996). The number of discrete individuals recovered from this site is 100. The number of adults from 17 years old to 40+ is 78, and the number of individuals identified under the age of 17 is 22 (Jurmain 1996). Sex determination could be made reliably from 47 individuals. Of these, 23 are identified

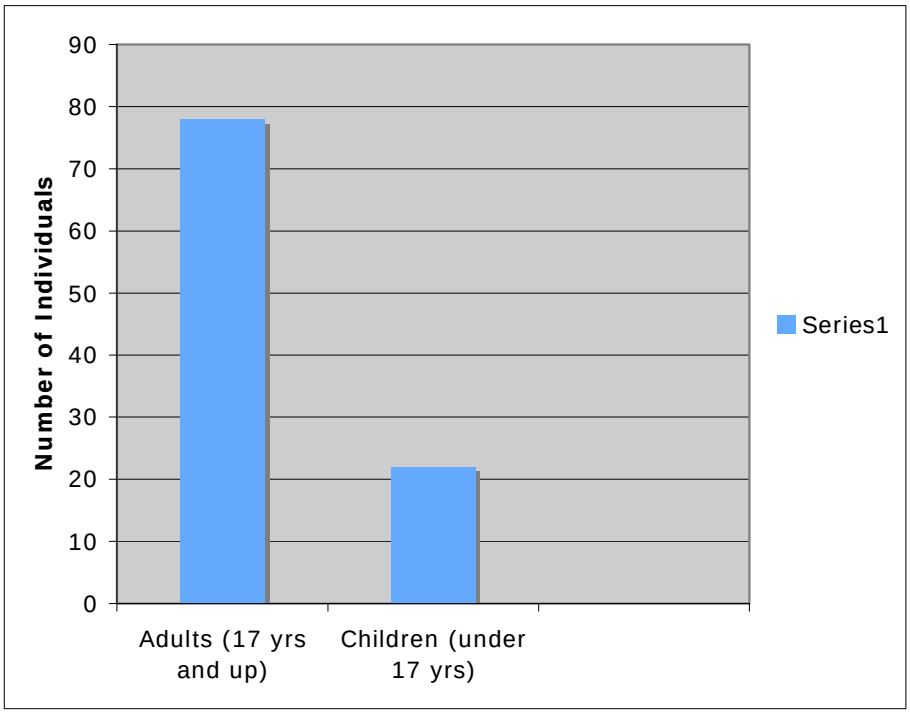


Figure 11. Age Distribution From Individuals Recovered From CA-SCL-732 *Kaphan Umux* (Three Wolves).

as male, and 23 are female. Genetic anomalies such as TMC and spondyloarthropathy are not noted at this site.

Throughout this thesis, all further references to human osteology assessments at CA-SCL-732 *Kaphan Umux*, will be per Jurmain (1996). These references include number of individuals, age and sex including all figures and tables pertaining to this site.

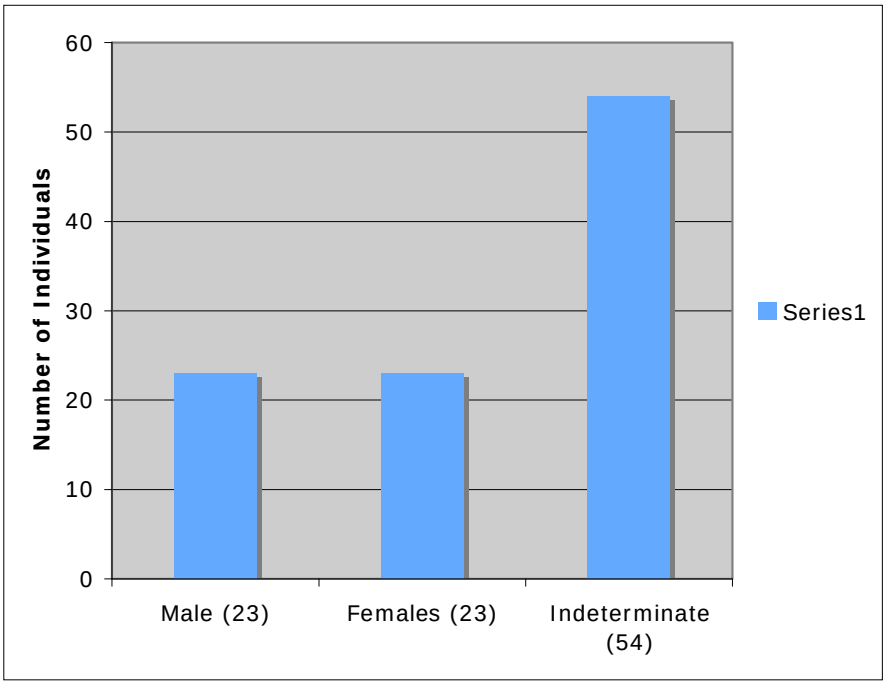


Figure 12. Sex Ratio From Individuals Recovered From CA-SCL-732 *Kaphan Umux* (Three Wolves).

***Animal Ceremonialism.*** In addition to the one hundred human burials at this site there were a number of animal burials found at various features. The first animal burial was identified as an articulated wolf. "The cranial-cervical region was resting upon an area that contained a darker brown soil with a lot of charcoal" (Leventhal et al. 1996b:7.1). Several *Mytilus edulis* shells were noted near the mandible and scattered in the burial pit as well as some small sandstone cobbles. This feature was carbon dated to 150 $\pm$ 80 years BP. Another feature held the remains of two wolves. The wolves were generally articulated and buried head down –feet up in extended position with one on top of the

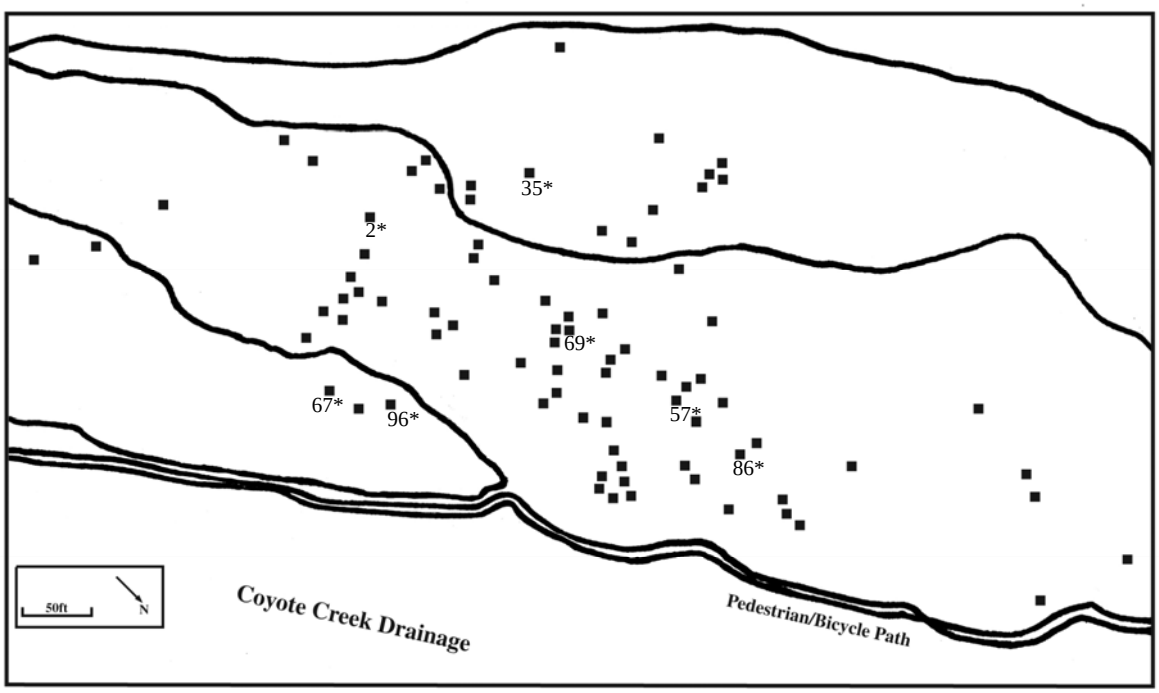


Figure 13. Distribution of Burials at CA-SCL-732 Kaphan Umux (Three Wolves). Numbered Burials with * Indicate Burials with FOI. Burial #36 Was Not Indicated on Map per Cambra et al. 1996.

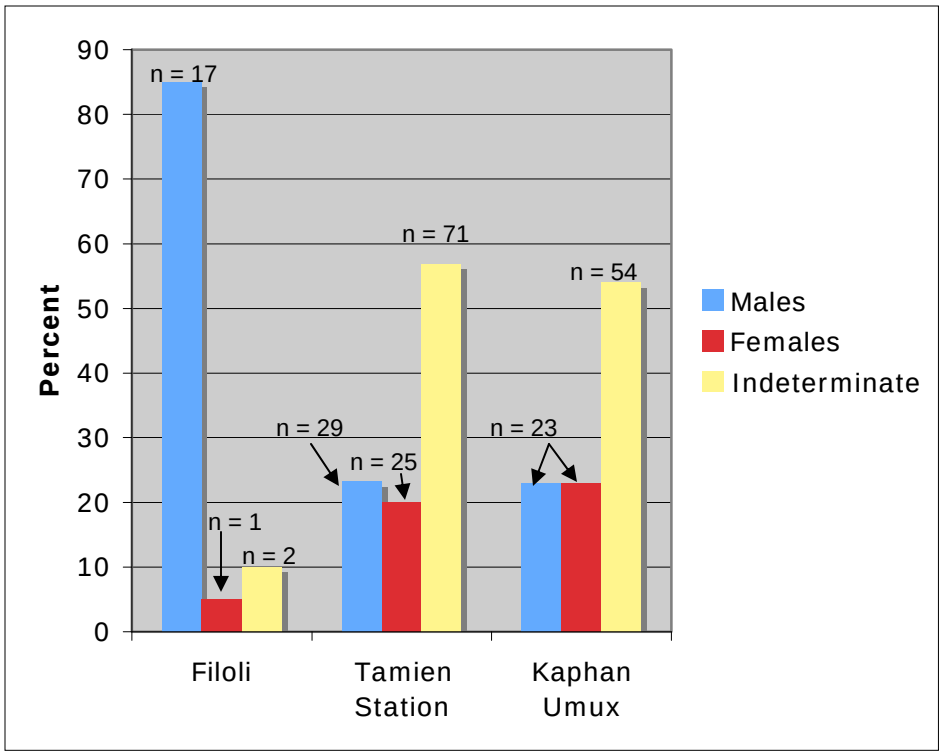


Figure 14. Sex Ratios of the Three Sites.

other (Leventhal et al. 1996b:7.1). Also in association with these burials were a number of items such as a primary flake of green Franciscan chert, two unmodified sandstone cobbles, and fragments of charred braided rope or net wrapped around the neck region and hind quarters of the wolves. The rope was dated 4,370 ± 90 years BP. A third feature revealed a burial that contained the unburned remains of two partially articulated artiodactyl (deer) hind legs that included: the right distal tibia, tarsals, metatarsals and phalanges, a left metatarsal and an indeterminate long bone fragment (Leventhal 1996b:7.4). The articulated remains of a snake just adjacent to the articulated foot of the

deer were also uncovered. Unfortunately the snake was headless, so identification was not possible. It was determined that the snake was probably not intrusive, but rather an *in situ* placement (Leventhal 1996b:7.4). Snake skeletal elements have been recovered from nearby sites including CA-SCL-178, about one mile south of this site CA-SCL-732 *Kaphan Umux* (Leventhal 1996b:7.4).

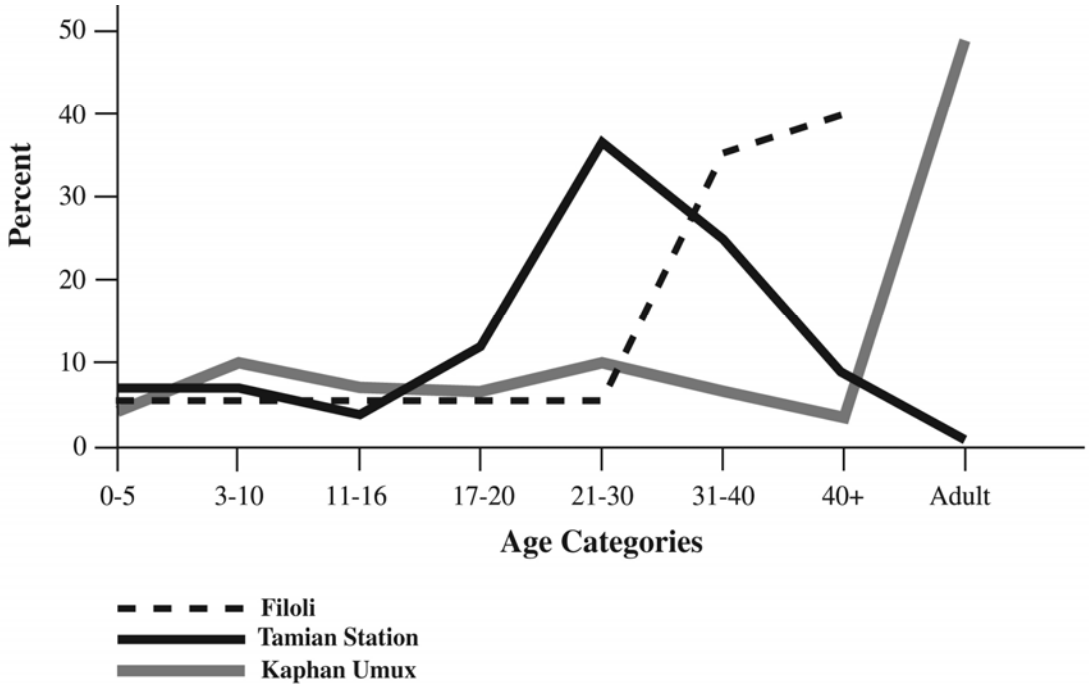


Figure 15. Distribution of Age at Death at the Three Sites**.**

| Years Before Present | **Period** | **Patterns** | **CALIFORNIA SITES** | | |
|---|---|---|---|---|---|
| | | | Filoli CA-SMA-125 | Tamien Station CA-SCL-690 | Kaphan Umux CA-SCL-732 |
| 0 | Emergent | | | | Wolf burial#1 200 years BP |
| 300 | | Augustine | | | |
| 500 | | | Occupied 500 -1500 years BP | | |
| 1000 | | | | Occupied 800-1300 years BP | |
| 1500 | Upper Archaic | Berkeley | | | Occupied Human Burials 1500-2700 years BP |
| 2000 | | | | | |
| 2500 | | | | | |
| 3000 | Middle Archaic | Windmiller | | | |
| 3500 | | | | | |
| 4000 | | | | | Double wolf burial (4400 BP) |
| 4500 | | | | | |
| 5000 | Lower Archaic | | | | |
| 5500 | | | | | |

Figure 16. Time Line of Three Sites. Patterns and Periods modified after Bennyhoff and Hughes 1987, Rosenthal et al. 2007

# METHODS

Identifying faunal material associated with the interred individuals at the three Ohlone sites is an important aspect of this hypothesis. The "Direct Historical Approach" (DHA) will be employed to connect some of the faunal material with the ancestral Ohlone's spiritual and cosmological beliefs. As discussed in the Literature Review chapter, the Direct Historical Approach is "a North American term, referring to the project of delineating culture groups in prehistory by working from 'known' groups in ethnography and ethnohistory back into the protohistoric and prehistoric past" (Johnson 1999:190).

The three sites, CA-SMA-125 Filoli, CA-SCL-690 Tamien Station, and CA-SCL-752 *Kaphan Umux* (Three Wolves) present a range of animal burials and human burials that span over 4000 years. This considerable time period provides the opportunity to determine if there might be cultural continuity through the presence of faunal remains with the human and animal burials at these three sites.

Only the actual number of identifiable *in situ* primary inhumations from each site will be considered in this work. *In situ* primary inhumations are those burials that are determined to be the initial burial of a deceased individual who has not been moved from the original deposition and is thus termed a discrete burial. As a result of the *in situ* inhumation, the artifacts found with the individual can be determined to be associated with only this individual. This significantly reduces the number of individuals that will

be included from the CA-SMA-125 Filoli site as previously discussed. Most of the human remains at the Filoli site come from highly disturbed contexts where there is no reliable way of assessing the presence or absence of grave goods (Fentress and Griffin 2004). However, 20 individuals from CA-SMA-125, Filoli, have been determined to be discrete burials (Fentress and Griffin 2004) and are part of the analysis. From CA-SCL-690 Tamien Station site 125 individuals are considered discrete (Bethard and Jurmain 2007). From CA-SCL-732, *Kaphan Umux* (Three Wolves) 100 discrete individuals are identified (Jurmain 1996).

**Identification of Faunal Remains**

*CA-SMA-125 Filoli.* The complete identification of the faunal material took place during a number of stages. The initial identification of faunal remains was made by Professor Earnhardt's class from Canada College from 1970-1978 (Fentress and Griffin 2004) and from Galloway (1976) and Morejohn and Galloway (1983). During this time period the identification of the bird bone whistles, bat ray spines, four unmodified tarsometatarsus of owls, twenty-two teeth from the big Skate (*Raja binoculata*) and other various elements were identified. There was not a formal list of the fauna recovered at CA-SMA-125 nor was one compiled for Galloway's thesis (Galloway 1976). G.V. Morejohn and John P. Galloway identified the species of the bird bone tubes and whistles in the manner describe by Morejohn and Galloway (1983). The original notes indicating

the bird species identification was rediscovered by Jeff Fentress at San Francisco State University, while he was conducting the NAGPRA inventory for CA-SMA-125 Filoli in 2004.

In 2003, the entire collection was transferred from Canada College, to San Francisco State University in order to perform a full NAGPRA analysis. The faunal material had already been placed in various receptacles, such as plastic and paper bags and marked with the location they were found, the date they were found and which students excavated them at Canada College. At San Francisco State University the author organized and supervised the identification and cataloguing of the faunal material with the help of other San Francisco State students and professors Gary Pahl and Mark Griffin.

The faunal identification process at San Francisco State University begins with comparing the faunal bones to previously identified faunal specimens. The specimens in the comparative collection were either identified before their maceration process or identified with reference to standard taxonomic keys in the comparative faunal collection. The identification is a process of elimination, starting with the broadest taxonomic classification, such as phylum and class, and working down to genus and species if possible (Wing and Brown 1979). Much of the faunal material from CA-SCL-125 Filoli was fragmentary. The first step to the positive identification to a generic and specific level was made by comparing the unidentified material to an identified specimen in the comparative collection at San Francisco State University. To identify lower taxons, references were made to the comparative collection or increasingly specialized texts.

Along with the comparative faunal collection at San Francisco State University, identification was facilitated by consultation with Mark Griffin and Gary Pahl, and referring to such literature as: 'California Bone Artifacts' by E.W. Gifford (1940), 'Mammalian Osteology' by B. Miles Gilbert (1990), 'Atlas of Animal Bones: For Prehistorians, Archaeologists and Quaternary Geologists' by Elisabeth Schmid (1972), and 'Avian Osteology' by B. Miles Gilbert and coworkers (1996).

Primary data of the faunal remains are recorded during the identification phase. This primary data includes the date the remains were excavated, the unit and level they were found and association with a particular burial or indeterminate burials or mound, as well as the excavator names. Additional information is recorded including taxonomic identification, elements represented, left or right side of those elements, specimen, modifications of the element, such as broken, burned, polished, split, etc., pathologies, age, whether adult or juvenile, by epiphysis closure and sex if possible, as well as measurements and weight. Gifford artifact types were noted when applicable. Drawings were also made of elements and FOI on the 'Faunal data catalogue' forms (Figure 17 and Figure 18). All of the identifiable *Canis* sp., *Ursus* sp. elements, bone whistles and tubes, and bat ray spines were drawn.

After recording the primary data the number of identifiable species (NISP) is determined for each identified vertebrate taxon by tallying the total numbers of identified

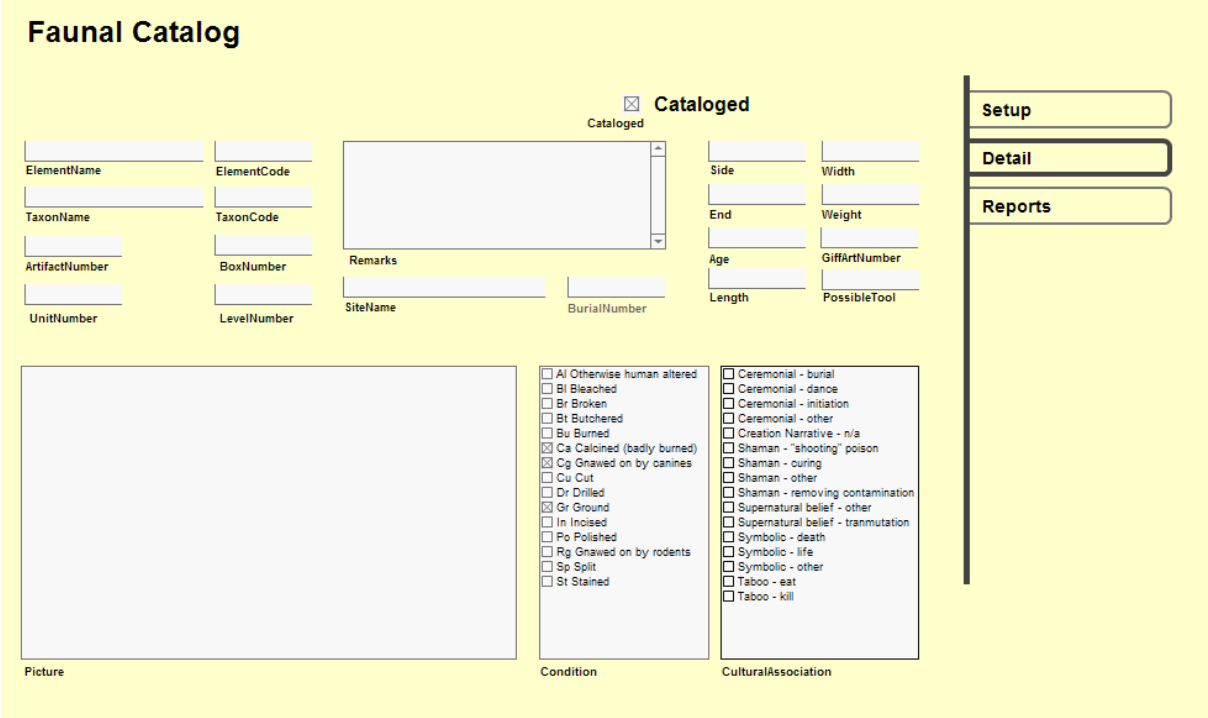


Figure 17. Data Collection Form for Previously Catalogued Items.

skeletal elements assigned to each vertebrate taxon. "NISP is related to the number of identifiable elements in each animal, site formation processes, recovery techniques, and laboratory procedures" (Reitz and Wing 1999:192). This number does not necessarily represent the actual number of different species at the time the site was inhabited by the Ohlone.

Estimates of the minimum number of individuals (MNI) is also used in this report. Shotwell (1955:330) defines MNI as the "smallest number of individuals, which is

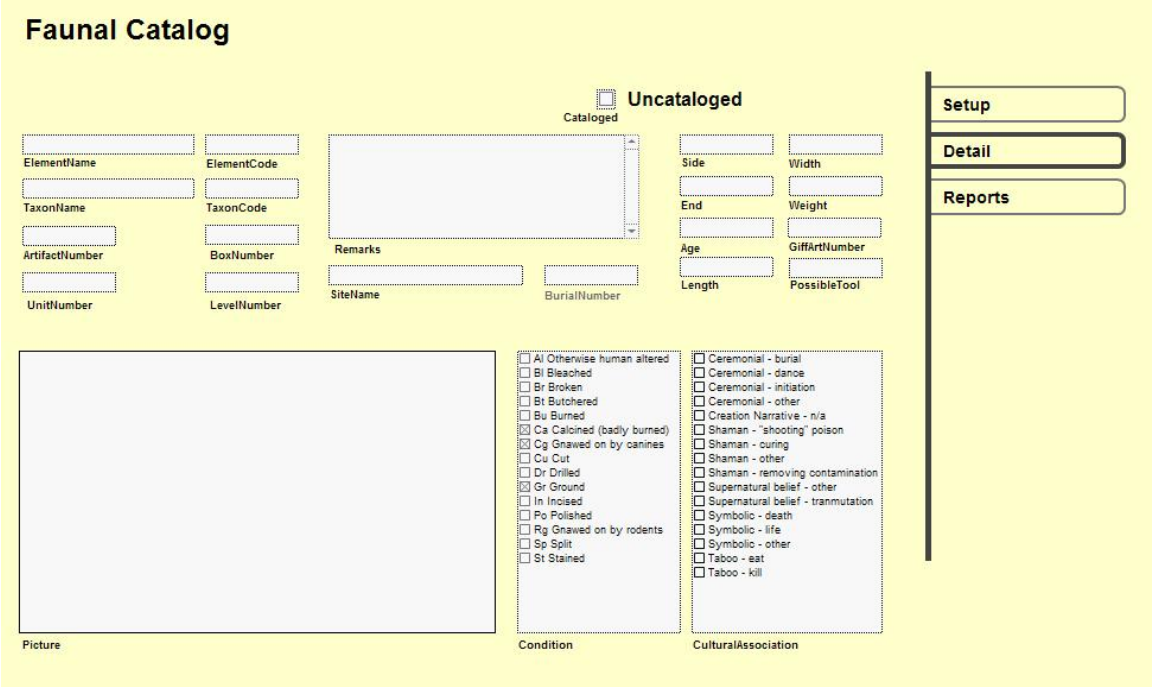


Figure 18. Data Collection Form for Previously Uncatalogued Material.

necessary to account for all the skeletal elements (specimens) of a particular species found in the site". MNI is an analytical product and should not be interpreted as actual individuals. MNI will be based on the observation that most vertebrates are symmetrical: elements from either side or the mid-line are distinctive. The elements are separated into the most abundant element of the species found into right and left components and then use the greater number as the unit of calculation. In addition to symmetry distinction, consideration of age, sex, and size to determine MNI has been employed when obvious (Bokonyi 1970; Chaplin 1971). The symmetrical skeletal elements cannot be made in the

case of bat ray spines. Bat rays (*Myliobatis californica*) can have up to two spines at a time (Johansson et al. 2004) and thus MNI will reflect this.

**Identification of 'Fauna Of Interest'**

Fauna of interest (FOI) are the animals connected to the Ohlone spiritual and cosmological beliefs. Californian ethnological literature is replete with descriptions of ceremonial observances and treatments accorded various animals living and dead. Notwithstanding the fact that special attitudes have apparently been developed by all peoples toward their local faunas, it appears that in California this phenomenon has been emphasized and specialized into what certain ethnographers have called cults. This general aspect has been recognized by numerous investigators such as Barrett (1917), Field (2008), Gayton (1930), Gifford (1916, 1926), Heizer and Hewes (1940), Holliman (2004), Kroeber (1925), and Merriam (1908). These ethnographers give a general view of the animals California Native Americans deem important in their spiritual as well as everyday lives. This study will attempt to focus on the importance of fauna from the Ohlone viewpoint. Drawing from the archaeological and ethnographic evidence, the attempt will be made to show a cultural continuity of the spiritual importance of certain animals from the ancestral Ohlone to the Ohlone of today.

Table 2 below is the result of eight articles, books, papers, that deal with the animal spirituality, shamanism, moiety relationships, of the Ohlone culture. The number

Table 2. FOI Reflected Through Ohlone Ethnography*

| **Animal** | **Life-ways/ Creation Narratives** | **Dance/Dress/ Ceremony/ Raising** | **Healing/ Shaman** | **Customary Observances/ Death** |
|---|---|---|---|---|
| Coyote | 175 | 5 | | 1 |
| Bear | 21 | 9 | 17 | 3 |
| Eagle | 26 | 13 | | |
| Snake | 6 | 1 | 6 | |
| Deer | 8 | 3 | | 1 |
| Turtle | | 2 | | |
| Hummingbird | 17 | | | |
| Wolf | | 2 | | 2 |
| Bone whistle | | 3 | | |
| Bone tube | | | 2 | |
| Kuksu | 1 | | | |
| Feather | 5 | 8 | | 1 |
| Owl | 3 | | 1 | 1 |

*Brown 2001, Bean 1994, Field and Leventhal 2003, Gieger and Meighan 1976, Kroeber 1907, Laylander 2000, Morrow 1991, Skowronek 1998. See Appendix E for specific references.

of times certain animals or animal artifacts have been mentioned and in what narrative or ceremonial relationship have been tallied.

Determining the faunal of interest (FOI) through the ethnohistory, ethnography, narratives and diaries of those in contact with the Native Americans in the earliest time of contact is an integral aspect of the Direct Historical Approach. By understanding the importance of certain animals in the ethnographic material discussed in the Literature

Review chapter and exposing the archaeological faunal evidence at each site should prove revealing. First, the Ohlone mortuary rituals, creation narratives, moiety and clan relationship with animals, shamanism and animal association and the importance of animals spiritually and their connection to Ohlone cosmologically will be examined. Next, that knowledge will be combined with the archaeological evidence of animal ceremonialism, the faunal remains associated with the human burials and the cultural continuity of the FOI may be revealed.

***FOI Found at CA-SMA-125 Filoli.*** Some faunal identification for CA-SMA-125 Filoli was made by John Galloway (1976), all bird species were identified by G.V. Morejohn and John P Galloway (1983), and the remaining faunal identification was determined by the author, including all the *Canis sp.* and *Ursus sp*. with the help of Mark Griffin and Gary Pahl (2004). This identification applies to the rest of this thesis, which include any figures or tables herein. The following are the FOI identified at CA-SMA-125 Filoli. See appendix A for drawings of some of the FOI identified at this site.

Table 3. NISP/MNI of Identifiable FOI at CA-SMA-125 Filoli by Burial

| Vertebrate taxon | Burial 3 | Burial 7 | Burial 9 | Burial 12 | Burial 13 | Burial 15 | Burial 16 | Burial 18 | Burial 19 | Burail 21 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dog/Coyote (*Canis sp.*) | 5/1 | 3/1 | | 1/1 | | 1/1 | | | | 1/1 | 11/5 |
| Bear (*Ursus sp.*) | 3/1 | 5/1 | | | | 2/1 | | | | | 10/3 |
| Bat Ray (*Myliobatis californica*) | 386/193 | 3/2 | 3/2 | | 1/1 | | 3/2 | | 4/2 | | 400/200 |
| Great Blue Heron (*Ardea herodias*) | 4/2 | | | | | | | | | | 4/2 |
| Short-tailed albatross (*Diomedia albatrus*) | 41/17 | 2/1 | | 1/1 | | | | | 2/1 | | 46/20 |
| Black footed albatross (*Diomedia nigripes*) | 1/1 | | | | | | | | | | 1/1 |
| White pelican (*Pelecanus rythrorhynchus*) | 1/1 | | | | | | | | | | 1/1 |
| Brown pelican (*Pelecanus occidentalis*) | 8/5 | 2/1 | | 1/1 | | | | | | | 12/7 |
| Whistling Swan (*Olar columbianus*) | 7/4 | 1/1 | | | | | | | | | 8/5 |
| White-Fronted Goose (*Anser albifrons*) | 28/14 | | | | | | | | | | 28/14 |
| Snow Goose (*Chen caerulescens*) | 10/7 | | | | | | | | | | 10/7 |
| Canada Goose (*Branta canadensis*) | 1/1 | | | | | | | | | | 1/1 |
| Lesser Canadian Goose (*Branta canadensis minima*) | 8/4 | | | | | | | | | | 8/4 |
| Indeterminate Goose (Anserine) | 16/? | | | | | | | | | | 16/? |
| Large Sandhill Crane (*Grus Canadensis tabida*) | 2/1 | | | 2/1 | | | | | | | 4/2 |
| Great Horned Owl (*Bubo virginianus*) | 2/1 | | | | | | | | | | 2/1 |
| Barn Owl (*Tyto alba*) | 2/1 | | | | | | | | | | 2/1 |
| Turkey Vulture (*Cathartes aura*) | 2/1 | | | | | | | | | | 2/1 |
| California Condor (*Gymnogyps californicus*) | 1/1 | 1/1 | | 2/1 | | | | | | | 4/3 |
| Bald Eagle (*Haliaeetus leucocephalus*) | 4/2 | 2/1 | | 4/1 | | | | | | | 10/4 |
| Golden Eagle (*Aquila chrysaetos*) | 1/1 | | | 1/1 | | | | | | | 2/2 |
| Cormorant (Phalacrocoracidae) | | | | | | | | 1/1 | | | 1/1 |
| Bald or Golden Eagle (*Aquila/Haliaeetus*) | 2/? | | | | | | | | | | 2/1 |
| Indeterminate Aves | 25/? | | | | | | | 1/? | | | 26/? |
| Skate (*Rajiformes*) | 24/2 | | | | | | | | | | 24/2 |

Table 4. Total NISP/MNI of FOI Associated with Discrete Burial at CA-SMA-125 Filoli.

| **Vertebrate taxon** | **Total # NISP/MNI** |
|---|---|
| Dog/Coyote (*Canis sp.)* | 11/1 |
| Bear (*Ursus Sp.)* | 10/1 |
| Bat Rays (*Myliobatis californica*) | 401/201 |
| Great Blue Heron (*Ardea herodias*) | 4/2 |
| Short-tailed Albatross (*Diomedia albatrus*) | 46/18 |
| Black footed Albatross (*Diomedia nigripes*) | 1/1 |
| White Pelican (*Pelecanus erythrorhynchus*) | 1/1 |
| Brown Pelican (*Pelecanus occidentalis*) | 11/6 |
| Whistling Swan (*Olar columbianus*) | 8/4 |
| White-Fronted Goose (*Anser albifrons*) | 28/14 |
| Snow Goose (*Chen caerulescens*) | 10/7 |
| Canada Goose (*Branta canadensis*) | 1/1 |
| Lesser Canadian Goose (*Branta canadensis minima*) | 8/4 |
| Indeterminate Goose (Anserine) | 16/? |
| Large Sandhill Crane (*Grus Canadensis tabida*) | 4/1 |
| Great Horned Owl (*Bubo virginianus*) | 4/1 |
| Barn Owl (*Tyto alba*) | 2/1 |
| Turkey Vulture (*Cathartes aura*) | 2/1 |
| California Condor (*Gymnogyps californicus*) | 4/1 |
| Bald Eagle (*Haliaeetus leucocephalus*) | 10/2 |
| Golden Eagle (*Aquila chrysaetos*) | 1/1 |
| Bald or Golden Eagle (*Aquila/Haliaeetus*) | 2/? |
| Indeterminate Aves | 20/? |
| Double-breasted Cormorant (*Phalacrocoras auritus*) | 1/1 |
| Stellar Sea lion (*Eumetopias jubatus*) | 1/1 |
| Turtle (*Testudines*) | 1/1 |
| Skate (*Rajiformes*) | 24/2 |

Table 5. NISP/MNI of FOI at CA-SMA-125 Filoli Not Associated with Discrete Burials.

| **Vertebrate taxon** | **Total # NISP/MNI** |
|---|---|
| Dog/Coyote (*Canis sp.)* | 17/1 |
| Bear (*Ursus Sp.)* | 12/1 |
| Bat Rays (*Myliobatis californica*) | 11/6 |

The level of cultural modification the FOI went through at this site is noted in Table 6. The total cultural modification index for FOI associated with discrete burials at CA-SMA-125 Filoli is 550. This index gives some information regarding the time and effort put into the artifacts and FOI that was associated with the burial.

FOI found at CA-SCL-690 Tamien Station. The reptile, bird, and mammal elements at this site are identified by Dwight D. Simons, using comparative osteological collections maintained by the Department of Ornithology and Mammalogy, California Academy of Sciences, San Francisco, California, and the Department of Biology, San Jose State University, and San Jose, California (Simons 2007). The faunal assemblage is assigned to three principal cultural provenience: the midden (n=1,779); the feature (n=1,077); and

Table 6. Level of Cultural Modification of FOI Associated with CA-SMA-125 Filoli.

| **FOI** | **#'s** | **Burials** | **Modification#** | **Total** |
|---|---|---|---|---|
| Bird bone whistle | 166 | 3,7,12,13,18,19 | 3 | 489 |
| Mammal whistle | 1 | 3 | 3 | 3 |
| Bone tube | 15 | 3 | 2 | 30 |
| *Canis* sp. elements | 11 | 3,7,12,15,21,22 | 0 | 0 |
| *Canis* sp. elements burned | 4 | 3,12 | 1 | 4 |
| *Canis* sp. elements burned & drilled | 1 | 12 | 2 | 2 |
| *Canis* sp. element ground to a point | 1 | 7 | 2 | 2 |
| Bear element | 10 | 3,7,15 | 0 | 0 |
| Bear element burned | 4 | 3,15 | 1 | 4 |
| Bat Ray spine | 399 | 3,7,9,16,19 | 0 | 0 |
| Bat Ray spine modified | 2 | 3 | 1 | 2 |
| Dagger (with 24 big skate teeth) | 1 | 3 | 3 | 3 |
| Incised Turtle shell | 1 | 7 | 2 | 2 |
| | | | | **Total 550** |

#'s=how many found at all burials. Burials=which burials had these items. Modification # - 3=high amount of cultural modification, 2=medium amount of cultural modification, 1=low amount of cultural modification, 0=no cultural modification

the burials (n=508). After identification Simons records various data for each specimen, which include, taxonomic identification, skeletal element, side of the body, portion of the element (whole, distal etc.), adult or juvenile. "Classification of the bone and antler artifacts closely follows Gifford's (1940) seminal publication, yet also incorporates aspect's of Bickel's (1976) classificatory scheme" (Hall 2007:309). "Skeletal element counts (number of specimens=NISP) were determined for each identified vertebrate taxon by tallying total numbers of identifiable skeletal elements assigned to each" (Simons 2007:353). Minimum number of individuals (MNI) is calculated by counting number(s) of the most plentiful skeletal element(s) of each identifies vertebrate taxon. The highest count(s) represents the MNI count (Simons 2007). A total of 3,363 elements are identified that represent 49 vertebrate taxa at the CA-SCL-690 Tamien site (Simon 2007: 353).

Berthard and Jurmain (2007) describe each of the burials and the artifacts and some of the faunal remains associated with them. Faunal elements not "worked' are not necessarily assigned to a burial, but to the burial cultural provenience. The grizzly bear remains were not mentioned until a section on Animal Ceremonialism (Simons 2007). "At SCL-690, grizzly bear remains occur in the midden (n=3). They are associated with features 3 and 4 (n=4), and burials 42, 86, and 91 (n=3). Most (n=8) are foot elements. A proximal ulna and scapula fragment also are represented" (Simons 2007:383).

The report describes the numerous bear burials discovered in various California sites and concludes that, "It thus is likely grizzly bear bones recovered from the midden,

Table 7. NISP/MNI of FOI Associated with Discrete Burials at CA-SCL-690 Tamien Station.

| **Vertebrate taxon** | **Total # NISP/MNI** |
|---|---|
| Dog/Coyote (*Canis sp.)* | 1/1 |
| Bear (*Ursus Sp.)* | 3/1 |
| Goose (*Anser/Branta/Chen* sp.) | 8/2 |
| Hawk (*Buteo* sp.) | 1/1 |
| Barn Owl (Tyto alba) | 1/1 |
| Unidentified bird bone whistles | 18/? |
| Unidentified bird bone tube | 1/1 |
| Tule Elk (*Cervus elaphus*) | 9/2 |
| Black-Tailed Deer (*Odocoileus hemionus*) | 32/2 |

features, and burials at CA-SCL-690 Tamien Station had religious significance" (Simons 2007:385). The abundant foot elements may have been part of grizzly hides used as part of costumes worn by shamans, dancers, or bear impersonators" (Hylkema 2007:38). The description of the specific grizzly bear elements associated with a specific burial or feature is not disclosed.

Bird bone whistle elements at this site are in most cases extremely fragile and species

identification was not possible. Three of the burials had bundled multiple sets of whistles encased in hardened soil matrix. The specimens that were most intact appear to be large bird "(heron, egret?)" ulnae with the feather papillae obscured through abrasive action (Hall 2007:318). The *Aves* sp. identified in Table 7 are not bird bone whistles, but include some of the same species of bird bone whistles at CA-SMA-125 Filoli. All faunal identification for CA-SCL-690 Tamien Station, was made by Dwight Simons (2007). This identification applies to the rest of this thesis, which include any charts or tables herein.

Table 8 below gives the cultural modification index of the FOI found at CA-SCL-690 Tamien Station. This number of 56 is much lower than CA-SMA-125 Filoli's number of 550, which is not unexpected.

Table 8. Levels of Cultural Modifications of FOI with CA-SCL-690 Tamien Station.

| **FOI** | **#'s** | **Burials** | **Modification#** | **Total** |
|---|---|---|---|---|
| Bird bone whistle | 18 | 5,29,39,41,60 | 3 | 54 |
| Bird bone tube | 1 | 113 | 2 | 2 |
| Bear element | 3 | 42,86,91 | 0 | 0 |
| | | | | **Total 56** |

#'s=how many found at all burials. Burials=which burials had these items. Modification # - 3=high amount of cultural modification, 2=medium amount of cultural modification, 1=low amount of cultural modification, 0=no cultural modification

***FOI Found at CA-SCL-732 Kaphan Umux (Three Wolves).*** Glen Wilson identified the faunal material for *Kaphan Umux*. He compiled 'Faunal Data Sheets' which included the unit level, taxon, element, special provenance, burnt or not, and additional comments which include whether the element is complete, proximal end or distal end, fragmented, what was missing, etc. There is no other section that details the overall faunal material at this site. There is no mention of MNI or NISP. Table 9 was created from notes on the burials and the 'Faunal Data Sheets' (Cambra et al. 1996).

Table 9. NISP/MNI of FOI with Discrete Burials at CA-SCL-732 *Kaphan Umux* (Three Wolves).

| **Vertebrate taxon** | **Total # NISP/MNI** |
|---|---|
| Dog/Coyote (*Canis sp.)* | 3/1 |
| Bear (*Ursus Sp.)* | 4/1 |
| Goose (*Anser/Branta/Chen* sp.) | 1/1 |
| Unidentified bird bone whistle/ tube | 3/? |
| Tule Elk (*Cervus elaphus*) | 2/1 |
| Black-Tailed Deer (*Odocoileus hemionus*) | 21/1 |

The total number of cultural modification index for CA-SCL-732 *Kaphan Umux* (Three Wolves) is 9. Table 10. This number is much less than both CA-SMA-125 Filoli and CA-SCL-690 Tamien Station.

Table 10. Levels of Cultural Modification of FOI Associated with CA-SCL-732 *Kaphan Umux* (Three Wolves).

| **FOI** | **#'s** | **Burials** | **Modification#** | **Total** |
|---|---|---|---|---|
| Bird bone whistle | 2 | 35,67 | 3 | 6 |
| Bird bone tube | 1 | 69 | 2 | 2 |
| Coyote element | 4 | 2,36,86,96 | 0 | 0 |
| Coyote element burned | 1 | 2 | 1 | 1 |
| Bear element | 4 | 57 | 0 | 0 |
| | | | | **Total 9** |

#'s=Number found associated with all human burials. Burials=which burials had these items. Modification # - 3=high amount of cultural modification, 2=medium amount of cultural modification, 1=low amount of cultural modification, 0=no cultural modification

The identification of the three wolves at this site is worthy of note. Initially Animal Burial #1 was thought to be a human burial, but after more exposure the consensus was that it was a medium-sized carnivore. Due to the size and the pronounced sagittal crest, it was next theorized it might be a small black bear. However, when the remains were

completely exposed it became clear it was a large canid. Distinguishing between a *Canis lupis* (wolf), *Canis latrans* (coyote) and *Canis domesticus* (domesticated dog) was based on several criteria including size and length of individual long bones and other biological indicators (Cambra et al. 1996). The humerus and calcaneus lengths of the *Canis* sp. recovered from Animal Burial #1 was much closer to those corresponding bones identified as *Canis lupis*, from SJSU, than the corresponding bones of the largest prehistoric dogs in the Americas (Haag and Heizer 1952) or *Canis latrans* (coyote) or *Canis domesticus* (domesticated dog). The long bones of the two canid burials from Animal Burial #2 were also identified as *Canis lupis*.

The wolves from CA-SCL-732 *Kaphan Umux* were also taken to the Academy of Sciences in San Francisco for comparison. The robusticity of the CA-SCL-732 *Kaphan Umux* wolves, in general matches the *Canis lupis* male specimen from Alaska (museum #9786). When the CA-SCL-732 *Kaphan Umux* wolves were compared to a male *Canis latrans frustrar* (museum # 15927) the CA-SCL-732 *Kaphan Umux* specimens were much more robust and long bones were longer. "Therefore, as a result of this comparative study, it was concluded that the canid specimens recovered from CA-SCL-732 are indeed wolves" (Cambra et al. 1996:7.17).

There was an attempt to identify the genus of the snake that was recovered from animal burial #3. Since the snake was recovered without a head, the articulated ribs were taken to SJSU Department of Biological Sciences vertebrate museum for comparison. Unfortunately, the result of the comparison was inconclusive. However, one researcher

thought it might have some similarities to the small boas, which are indigenous to the Bay Area (Cambra et al. 1996).

All references to faunal identification at this site CA-SCL-732 Kaphan Umux, including all tables and charts, are attributed to Glen Wilson (1996).

## Identification of Discrete Individuals

***Discrete Individuals Identified at CA-SMA-125 Filoli.*** In Griffin and coworkers (2004) report, the discrete individual burials are identified and the associated burial artifacts are noted and also reported in Fentress and Griffin's (2004) report. The author identified the faunal remains, which were located in various receptacles that conveyed the burial or mound associations. Of the twenty discrete burials, FOI was found associated with eleven burials or 55%.

***Discrete Individuals Identified at CA-SCL-690 Tamien Station.*** In Hylkema's (2007) report on Tamien Station, each burial is described as disturbed or not, incomplete, complete or fragmentary, age and sex if possible, condition of the osteological elements and dentition, posture of the remains, and associated funerary objects and faunal remains. In the report (Hylkema 2007), Jeffrey Hall describes the bird bone whistles and their burial associations are re-established. Dwight D. Simons (Hylkema 2007) discusses the vertebrate faunal remains and the burial associations are confirmed once again. The Appendix B: Field Observations of Burial Associated Artifacts, in Hylkema (2007) report

also confirmed burial associated artifacts. Through the various writings, tables and figures that are presented in the report (Hylkema 2007), the FOI are associated with eight burials. One Feature reveals the *Canis* sp. burial is associated with grizzly bear remains. Grizzly bear remains are associated with another Feature as well. What exact elements those grizzly bear remains represent was not revealed.

***Discrete Individuals Identified at CA-SCL-732 Kaphan Umux (Three Wolves).*** In order to recover and salvage the burials and their associated artifacts a scraping blade methodology was utilized. This methodology allowed the scraping of two inches of soil to be monitored very effectively for signs of human remains. All confirmed human burials, features and their associated artifacts were then clearly flagged, recorded and excavated. Each burial is described with general condition of the remains, where in the site it was recovered, body position, and orientation of body. Biological information that could be established, such as age, and sex were determined by Jurmain (Cambra et al. 1996) and his coworkers. The faunal remains were identified by Glen Wilson and added to each burial description. In addition to the burial descriptions, Glen Wilson compiled an appendix of faunal data sheets and Aaron Brody, Julia Lopez and Susanne Rodriguez assembled an appendix of artifacts (Cambra et al. 1996). Of the 100 discrete burials at CA-SCL-732, eight were associated with FOI.

**Statistical Procedure**

In order to evaluate the hypothesis that some of the faunal remains found associated with some individuals, are related to the Ohlone spiritual and cosmological beliefs, statistical methods will be employed. The statistical procedure utilized for this goal is the chi square for independence. In this case, this statistical method compares three sets of categories to determine whether the two groups are distributed differently among the categories. The two groups in this case are the individuals with FOI and the individuals without FOI. The categories are the three different sites, Filoli, Tamien Station and *Kaphan Umux*. A null hypothesis is established which states that the likelihood of finding individuals with FOI and finding individuals without FOI is the same at all three sites.

Each individual site is examined for statistical significance regarding individuals with FOI or individuals without FOI. The chi square procedure can only be applied if all the numbers and values are equal to or larger than five. For the special case of two row by two columns, with some of the numbers smaller than five, a useful alternative to chi-square is the Fisher Exact Probability Test.

***Fisher Exact Probability Test for CA-SMA-125 Filoli.*** This statistical test will attempt to find statistical significance with individuals with FOI and individuals without FOI at this site. The FOI will be associated with the "social classes" determined by Galloway (1976:55-67). He statistically determined three social classes from the number

of different artifact assemblages associated with the burials. The Fisher's Exact test is employed to test any statistical significant difference between two groups: 1) Galloway's two higher social classes (those with five or more different artifact assemblage types) and 2) the lower social class (with less than five artifact assemblage types) and two categories; 1) individuals with FOI and 2) individuals without FOI. The null hypothesis states there is no association between individuals in the higher classes or lower classes with those individuals with or without other FOI. When calculating the numbers the result is P=0.0128. (Lowry 1998 - http://faculty.vassar.edu/lowry/VassarStats.html). If the Null Hypothesis were true, the exact probability of finding a positive association between individuals in the higher classes and lower class and individuals with and without FOI, would be 0.0128. Therefore, the null hypothesis is rejected. The conclusion can be made that individuals in Galloway's social class 1 and 2 and the individuals in lower class 3 and individuals with and without FOI, do tend to be associated. In other words, individuals in the higher social classes are significantly more likely to also have FOI than individuals in the lower class.

***Fisher Exact Probability Test for CA-SCL-690 Tamien Station***. This procedure will test the statistical significance of FOI and *Haliotis* ornaments at this site. The *Haliotis* ornaments may be linked with religious status Fredrickson (1974b). This test will attempt to find statistical significance of individuals with FOI and individuals without FOI. The Fisher's Exact test is employed to test any statistical significant difference between two groups: (1) Individuals who are associated with *Haliotis* ornaments and (2)

those who are not; and two categories: (1) individuals with FOI and (2) individuals without FOI. The null hypothesis states there are no associations between individuals with *Haliotis* ornaments and those individuals without and with those individuals with or without other FOI. When calculating the numbers the result is P=0.006 (Lowry 1998-http://faculty.vassar.edu/lowry/VassarStats.html).

If the Null Hypothesis were true, the exact probability of finding a positive association between individuals in the higher classes and lower class and individuals with and without FOI, would be 0.006. Therefore, the null hypothesis is rejected with a comfortable degree of confidence. The conclusion can be made that the individuals with *Haliotis* ornaments and those without and individuals with and without FOI, do tend to be associated. In other words, individuals with *Haliotis* ornaments are significantly more likely to also have FOI than individuals without *Haliotis* ornaments.

***Fisher Exact Probability Test for CA-SCL-732 Kaphan Umux (Three Wolves).*** This procedure will test the statistical significance of FOI and Deer/Elk remains at this site. Deer and elk remains, which have been linked to Ohlone moieties, were found with an animal burial as well as human burials in great numbers (Cambra et al. 1996). This procedure will test the statistical significance of FOI and Deer/Elk remains. The Fisher's Exact test is employed to test any statistical significant difference between two groups: (1) Individuals who are associated with Deer/Elk remains and (2) those who are not, and two categories: (1) individuals with FOI and (2) individuals without FOI. The null hypothesis states there are no associations between individuals with Deer/Elk remains

and those individuals without and with those individuals with or without other FOI. When calculating the numbers the result is P=0. 0075. (Lowry 1998- http://faculty.vassar.edu/lowry/VassarStats.html). If the Null Hypothesis were true, the exact probability of finding a positive association between individuals with Deer/Elk and those without and individuals with and without FOI, would be 0.0075. Therefore, the null hypothesis is rejected with a comfortable degree of confidence. The conclusion can be made that individuals with Deer/Elk remains and those without and individuals with and without FOI, do tend to be associated. In other words, individuals with Deer/Elk remains are significantly more likely to also have FOI than individuals without Deer/Elk remains.

# STATISTICAL RESULTS

To further explore the hypothesis that some faunal material found with some of the Ohlone burials may be related to the Ohlone spiritual and cosmological outlook, this chapter focuses on the statistical significance that might be found. The faunal materials or FOI (Fauna Of Interest) that are addressed in this thesis are the remains of animals that are associated with the discrete burials and also connected to the Ohlone creation narratives, spiritual and religious faith, shamanistic beliefs, moiety and clan systems.

## FOI (Fauna Of Interest)

As previously discussed FOI or fauna of interest are those fauna that are associated with the Ohlone spiritual, ceremonial, religious, cosmological outlook, moiety and clan distinctions. These have been identified through the Ohlone ethnographies, ethnohistories, narratives and diaries of those most closely associated to the ancestral Ohlone. When these fauna remains are found with human burials, they may have religious meaning to the ancestral Ohlone.

***FOI at CA-SMA-125 Filoli.*** FOI at this site is correlated to the class distinctions (Table 11) recognized by John Galloway (1976). Galloway describes three different

"social classes" at CA-SMA-125 Filoli based on the number of artifact assemblages. Numerous sociotechnic artifacts associated with the burial are indicative of a ranked society Fredrickson (1974b); King (1974); Milliken and coworkers (2007). Within CA-SMA-125 Filoli, 60% of the burials have one or more sociotechnic artifacts. Also, Galloway notes the unequal distribution of *Olivella* spire lopped beads that suggests a ranked society.

Galloway's class 1 burials are those with 10 or more artifact classes. High status individuals such as chiefs, their immediate families, and shamans may be included in this class. Class 2, are considered any burial with 5 or more artifact classes. This class is considered to encompass "commoners" or the working class of the society. Class 3 burials have less than 4 artifact classes and are considered to be a lower status than a commoner. Ethnographically, a "tripartite system is characteristic of most California cultures" (Bean 1974:22). According to Galloway (1976), the 3 class distinctions proposed for Filoli seems compatible with the ethnographic material.

Figure 19 is a reproduction of Galloway's (1976) class distinction per the number of different artifact assemblages. Burials #10 and #16 did not make it into Galloway's original histogram but he placed them in class 3 (Galloway 1976). Burials #21 and #22 had not been excavated when Galloway wrote his thesis, but according to his criteria they would have been in his class 2.

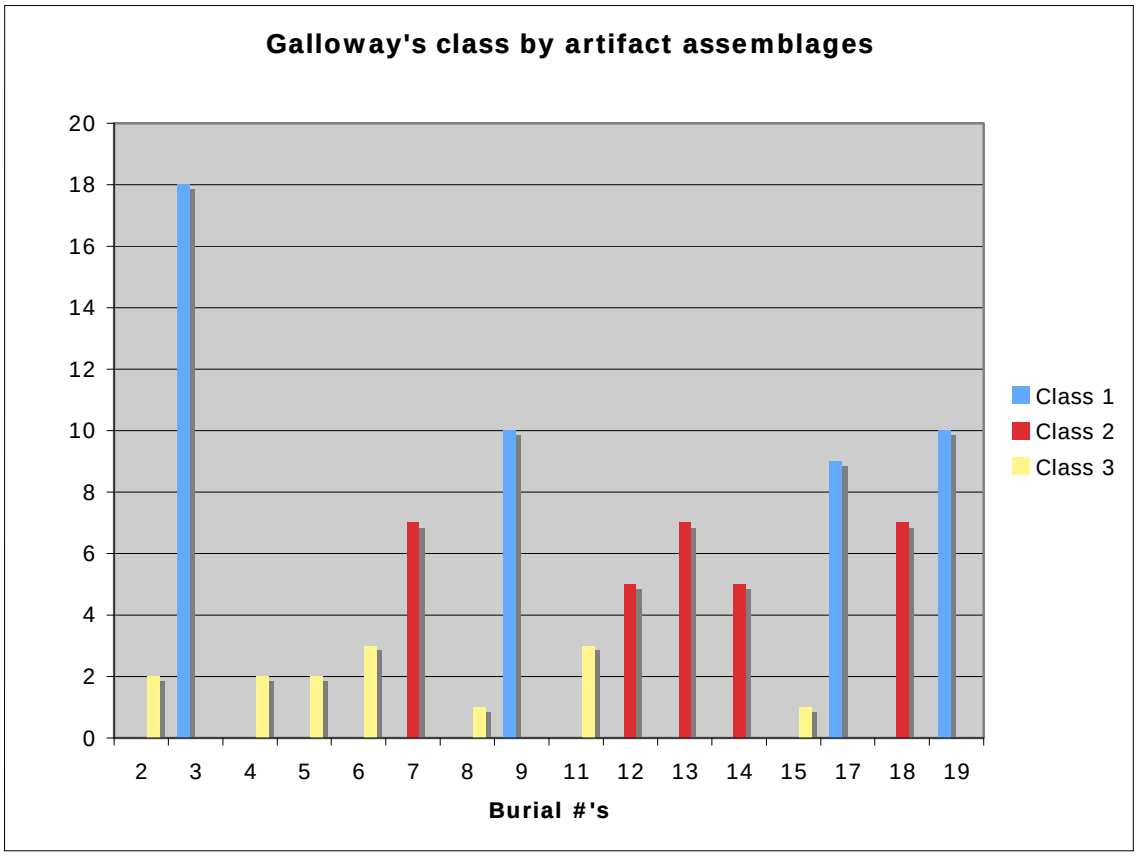


Figure 19. Burials and Class per Galloway's Definition and Histogram (1976).

Table 11 provides the discrete burials found with the identified FOI and the class distinctions per Galloway's categorization (Galloway 1976).

Table 11. FOI and Class Status at CA-SMA-125 Filoli.

| Burial # | Age | Sex | FOI | Burial Class* |
|---|---|---|---|---|
| 3 | 35 | M | 4C,3U, 386 spines,142 bone whistles, 1 dagger w/ 24 skate teeth, 15 bone tubes | 1 |
| 7 | 52 | M | 3C,5U, 3 spines, 8 bird bone whistles, incised fragmented turtle shell | 2 |
| 9 | 30 | M | 3 spines | 1 |
| 12 | 38 | M | 1C, 11 bird bone whistles | 2 |
| 13 | 55 | M | Emergent bird bone whistle | 2 |
| 15 | 40 | M | 1C, 2U | 3 |
| 16 | 42 | M | 3 spines | 3 |
| 18 | 44 | F | 2 bird bone whistles | 2 |
| 19 | 40 | M | 4 spines, 2 bone whistles | 1 |
| 21 | 55 | M | 1C | 2 |
| 22 | 55 | M | 1 spine | 2 |

*Galloway's classification. C=*Canis* sp. element, U=*Ursus* sp. element.

Figure 20 summarizes the number of individuals found with FOI and the breakdown of that FOI by sexual determination. There were twenty discrete individuals identified, eleven had FOI associated with them, one females was identified and she had FOI associated with them, 15 males were identified and 8 were associated with FOI.

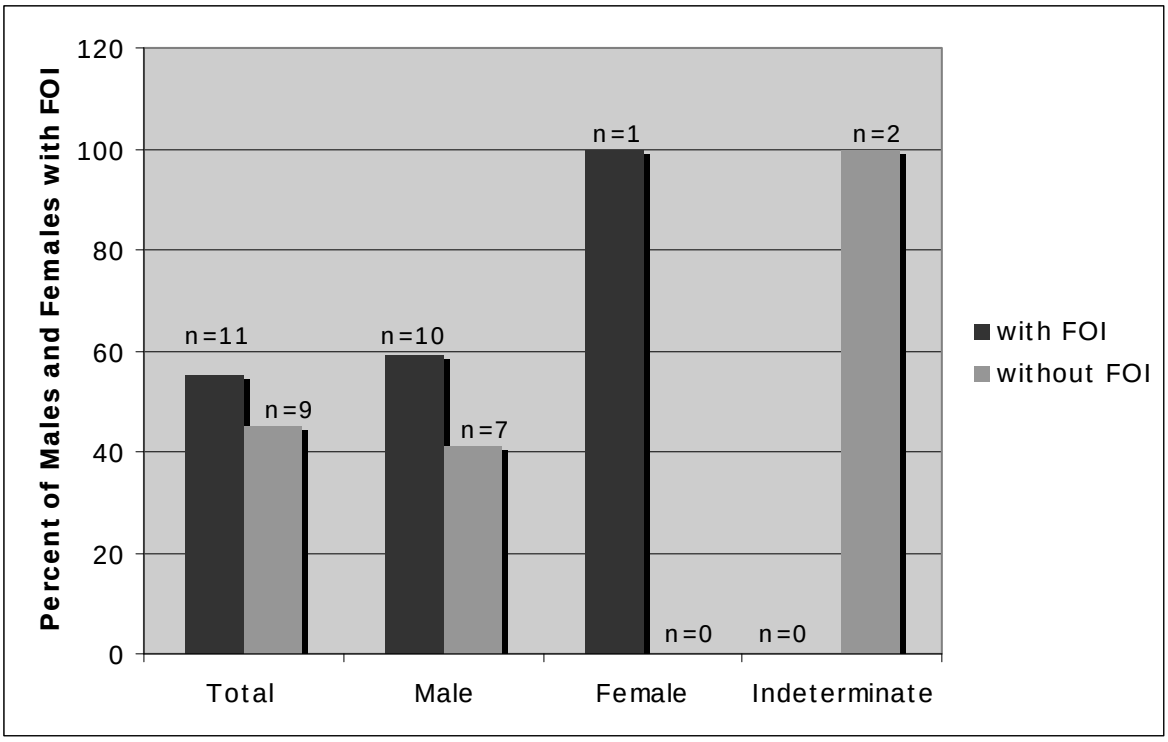


Figure 20. Distribution of FOI by Sex Determination at SMA-125 Filoli.

***FOI at CA-SCL-690 Tamien Station.*** At this site FOI is correlated to the abalone *(Haliotis)* material (Table 13) found associated with the burials. Fredrickson (1974b:64) suggests Banjo pendants (made of *Haliotis*) coincide with the *Kuksu* tradition and accrual of bead wealth "may in fact relate to ideotechnic function." The *Kuksu* cult was a central California religious cult system based on a male secret society and characterized by the Kuksu or "big head" dances. The secret society inferred that only the initiated and instructed could participate in a set of mysterious rites. In this case it was thought that only men could participate in what was thought to be spirit impersonations (Kroeber 1907a).

An aspect of secret societies, which the Kuksu cult was believed to be, used masks and disguises as a means of concealment (Kroeber 1907a). True masks had not been reported at Native American sites when Kroeber wrote about this in the early 1900's. However at this site an asphaltum mask was recovered with male Burial #39. This burial was one of the richest grave lots in the cemetery, along with over 3,000 *Olivella* beads as well as 32 *Haliotis* ornaments. Table 12 displays an overview of the prevalence and distribution of *Haliotis* found at the three sites.

Table 12. Distribution of Haliotis at the Three Sites.

| | **Filoli** | **Tamien Station** | ***Kaphan Umux*** |
|---|---|---|---|
| # of Individuals | 20 | 125 | 100 |
| # with *Haliotis* | 12 | 30 | 5 |
| % with *Haliotis* | 60% | 24% | 5% |

Figure 21 summarizes the number of individuals found with FOI and the breakdown of that FOI by sexual determination at CA-720 Tamien Station. There were 125 discrete individuals identified, 8 had FOI associated with them, 25 females were identified and none of them had FOI associated with them, 28 males were identified and 5 were associated with FOI.

Table 13. FOI and Haliotis at CA-SCL-690 Tamien Station.

| **Burial #** | **Age** | **Sex** | **FOI** | ***Haliotis* Ornaments** |
|---|---|---|---|---|
| 5 | 25-30 | M | 6 bird bone whistles | none |
| 29 | 45-55 | M | 1 bird bone whistle | 1 *Haliotis* pendant |
| 39 | 25-35 | M | Fragmented bird bone whistles (estimate of 5) | 32 *Haliotis* |
| 41 | 21-31 | M | 8 bird bone whistles | 2000 *Haliotis* ornaments |
| 42 | 35-44 | M | 1 grizzly bear element | none |
| 60 | Adult | Indet | 1 bird bone whistle | Pair of *Haliotis* ornaments |
| 86 | 21 | Indet | 1 grizzly bear element | none |
| 91 | 21+ | Indet | 1 grizzly bear element | 1 *Haliotis* pendant |
| 113 | 25 | Indet | bone tube | 3 *Haliotis* ornaments |

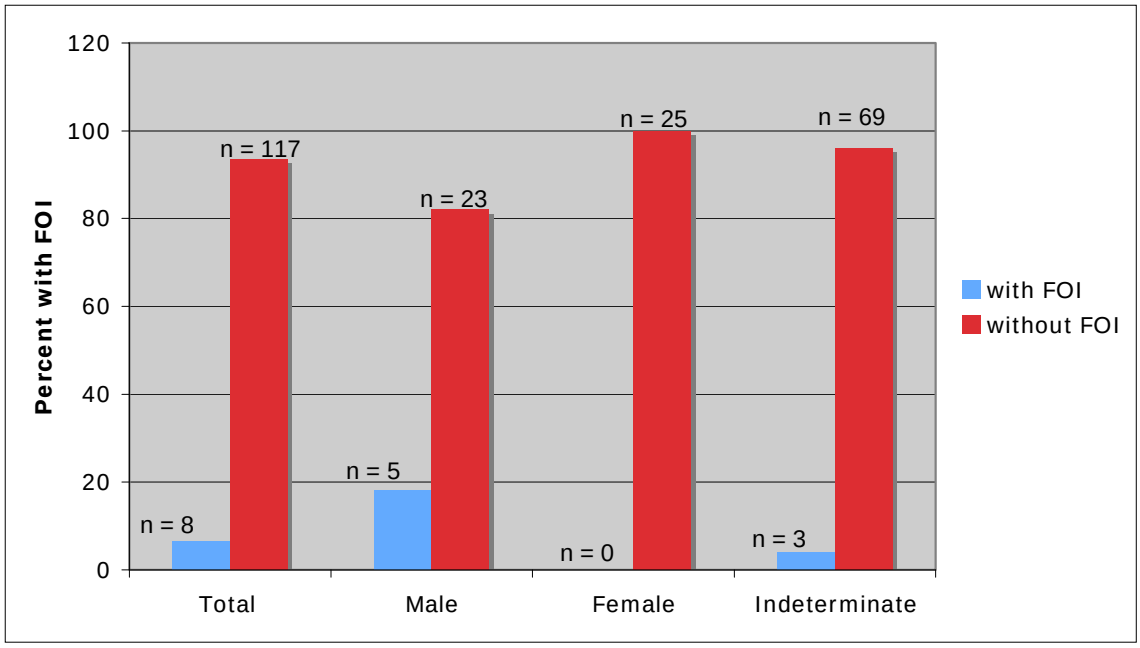


Figure 21. Distribution of FOI by Sex Determination at CA-SCL-690 Tamien Station.

***FOI at CA-SCL-732 Kaphan Umux (Three Wolves).*** Archaeologists at this site noted a large amount of deer and or elk elements associated with the burials (Cambra et al. 1996). As a result FOI is correlated with the deer/elk elements at this site (Table 14). Elk/deer are considered connected to Native American moieties as reviewed in the Literature Review chapter.

Table 14. FOI and Deer and Elk elements at CA-SCL-732 *Kaphan Umux* (Three Wolves).

| **Burial #** | **Age** | **Sex** | **FOI** | **Deer/Elk** |
|---|---|---|---|---|
| 2 | 16-25 | F | *Canis* sp. mandible | Deer long bone |
| 35 | 25+ | Indet | 1 bird bone whistle | 5 deer 'sized' bones |
| 36 | 4-5 | Indet | *Canis* sp. left femur | none |
| 57 | 40+ | Prob M | 4 *Ursus* sp. elements | none |
| 67 | 17-20 | Indet | 1 bird bone whistle | none |
| 69 | 35-45 | F | Bone tube w/asphaltum residue | Deer scapula |
| 86 | Adult | M | *Canis* sp. left ulna | 3 deer bones |
| 96 | 18-25 | M | *Canis* sp. vertebra | Burnt distal humerus of a deer |

Figure 22 below summarizes the number of individuals found with FOI and the breakdown of that FOI by sexual determination at CA-SCL-732 *Kaphan Umux* (Three Wolves). There were 100 discrete individuals identified, 8 had FOI associated with them. A total of 23 females were identified and one had FOI association, 23 males were identified and 3 were associated with FOI.

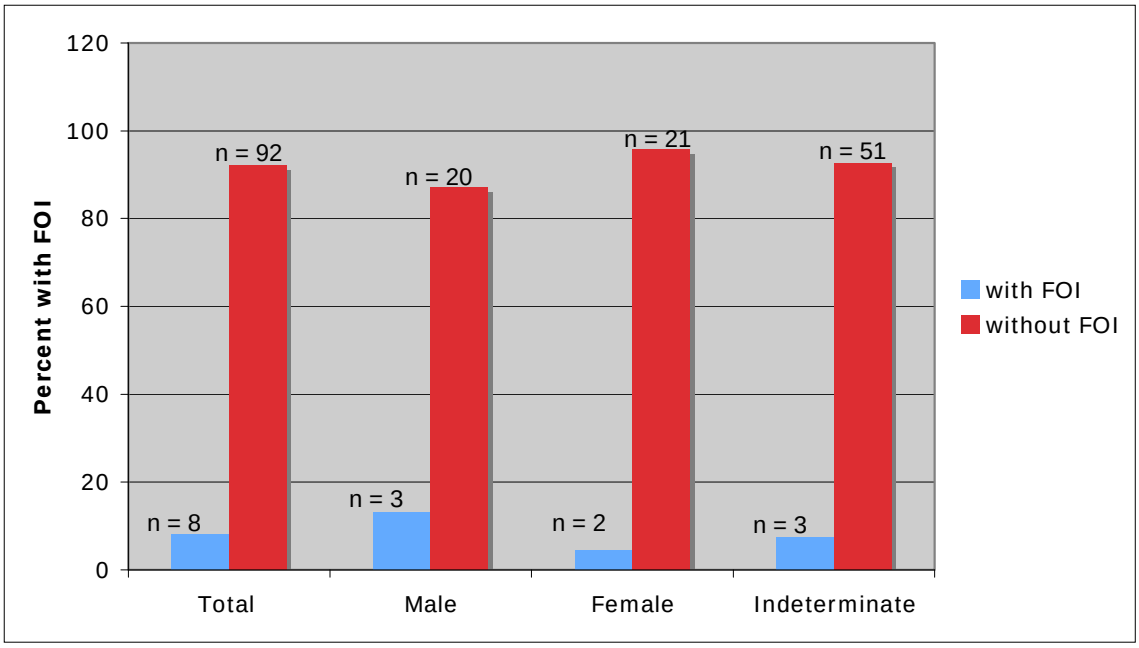


Figure 22. Distribution of FOI by Sex Determination at CA-SCL-732 *Kaphan Umux* (Three Wolves).

Figure 23 below gives an overview of the three different sites and the percentage of individuals that are associated with FOI and those who are not.

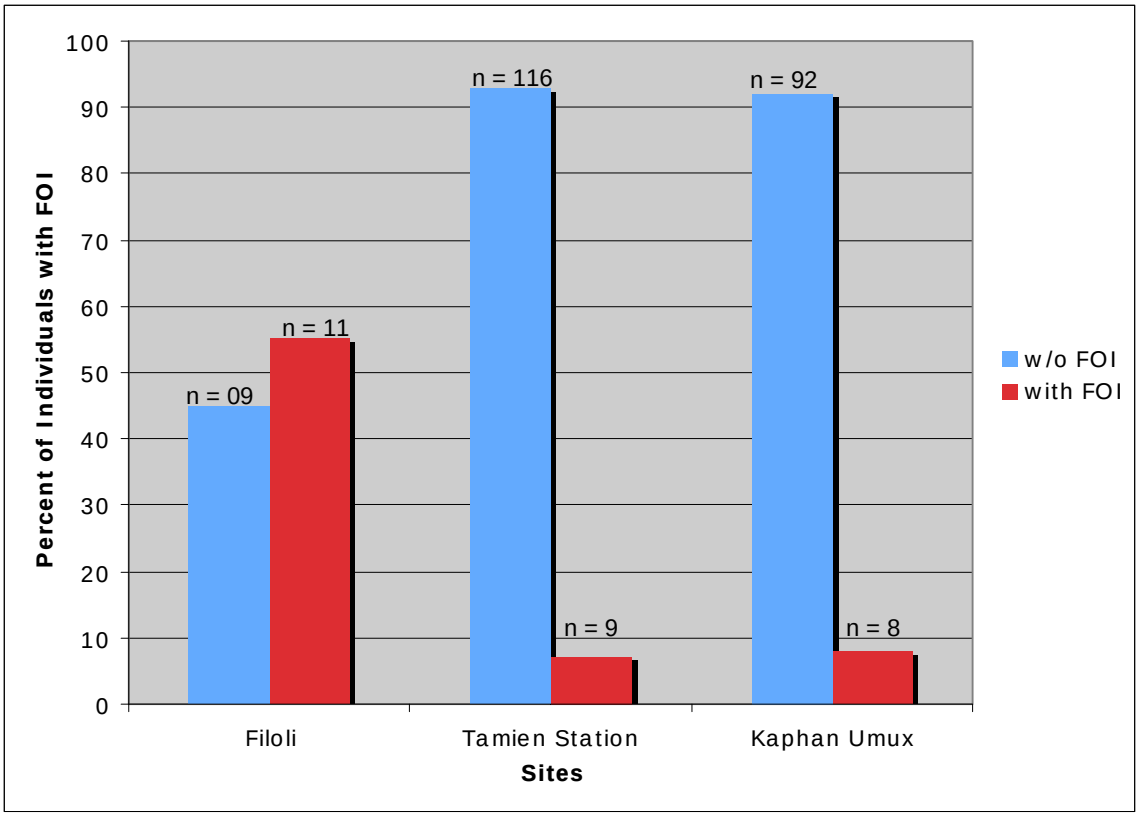


Figure 23. Discrete Individuals and FOI at Each Site.

There are 20 discrete burials at CA-SMA-125 Filoli, 45% or 9 of the discrete individual burials do not have FOI, while 55% or 11 of the discrete burials do have FOI. There are 125 discrete burials at CA-SCL-690 Tamien Station, 92.8% or116 of the discrete individual burials do not have FOI, while 7.2% or 9 individuals do have FOI. There are100 discrete burials at CA-SCL-732 *Kaphan Umux* (Three Wolves) 92% or 92

of the discrete individual burials do not have FOI, while 8% or 8 individuals do have FOI.

**Chi Square Test**

A chi square test for independence is performed to determine whether the two groups (discrete burials with FOI and discrete burials without FOI) are distributed statistically differently throughout the three sites (Lowry 1998 http://faculty.vassar.edu/lowry/VassarStats.html). Taking the number of individuals with FOI and those individuals without FOI at each of the sites the P value is calculated to = < 0.05. There is a statistical significance of the distribution of FOI between the 3 sites. See Figure 23.

**Fisher's Exact Test**

The statistical significance of FOI in relation to the discrete individuals is determined at each site in relation to specific criteria of each of the three sites using Fisher's exact test.

***Fisher's Exact Test at CA-SMA-125 Filoli.*** In pursuant to Galloway's hypothesis (Galloway 1976) that a hierarchy exists at Filoli, the FOI will be assessed by Galloway's class definition. There are nine individuals in Class one and two and two individuals in

Class three with FOI. There are two individuals in Class one and two and seven individuals in Class three without FOI. To determine if the FOI is statistically significantly associated with Class one and Class two, Fisher's exact test is performed (Lowry 1998-http://faculty.vassar.edu/lowry/VassarStats.html). The results from the Fisher's exact test are P=0.0124. Those individuals in Class one and Class two are more likely to have FOI than those in Class three.

Another distinctive aspect of CA-SMA-125 Filoli was the exceptionally high presence of TMC and spondyloarthropathy in the population. This presents an opportunity to explore whether FOI may or may not be passed along by a familial connection. Of the nine individuals identified with spondyloarthropathy, six are associated with FOI or 66.6%. Six individuals were associated with TMC and of those three or 50% were associated with FOI. Three individuals were identified with both spondyloarthropathy and TMC, and two or 66.6% of those were associated with FOI. Fisher's exact test does not reveal a statistical significance between those with FOI and those with spondyloarthropathy and TMC.

***Fisher's Exact Test at CA-SCL-690 Tamien Station***. At this site FOI is tested to see if there is a statistically significant associated with individuals with *Haliotis*, which may be connected to the *Kuksu* religion (Fredrickson 1974b:64) and spirituality of the abalone (Field et al. 2008). There are six individuals with *Haliotis* and three without *Haliotis* that are associated with FOI. There are 24 individuals with Haliotis and 92 individuals without *Haliotis* that are not associated with FOI. The Fisher exact test is

performed (Lowry 1998-http://faculty.vassar.edu/lowry/VassarStats.html) P=0.006. Individuals with *Haliotis* ornaments/pendants are more likely to have FOI than individuals without *Haliotis* ornaments/pendants.

***Fisher's Exact Test at CA-SCL-732 Kaphan Umux (Three Wolves).*** At this site the Fisher exact test was performed (Lowry 1998-http://faculty.vassar.edu/lowry/VassarStats.html) in relation to FOI and associations with deer and elk elements, which have been associated with Ohlone moieties. There are five individuals associated with deer and or elk elements and three individuals without deer and or elk elements associated with FOI. There are 15 Individuals with deer or elk elements and 77 individuals without deer or elk elements not associated with FOI. The fisher exact test for this site resulted in P=0.0075 and results in individuals with deer and elk elements are more likely to have FOI than individuals without deer or Elk elements.

# RESULTS

This study is an attempt to evaluate the hypothesis that certain animal remains found with human burials at three Ohlone sites, function as cultural symbols that represent ancestral Ohlone spirituality. These certain animals or FOI have been identified through oral narratives, ethnohistories, ethnographies and diaries of those closest to the Ohlone at the time of European contact. Perhaps the spiritual significance of certain animals identified through various ethnographic works, will help prove that these specific faunal remains found with some human burials may be associated with the ancestral Ohlone spiritual beliefs. Despite the devastating impact on the Ohlone culture from the European, Mexican and American onslaught, this study hopes to prove a cultural continuity from ancestral Ohlone times regarding these animals and their spiritual significance of the Ohlone today.

It is important to put in perspective that every tribe adapts an overall analogous religious concept to its own regional environmental landscape. This allows the "spiritual narratives and ceremony to become unique to a specific locale" (Milliken 1995:13). "In fact, each tribe might be thought of as an independent, landholding religious congregation" (Milliken 1995:13). We may be able to observe this continuity and diversity of spiritual beliefs through the FOI associated with the burials in the three different sites. There seems to be a continuity of remains from deer, bear, coyote and

bird bone whistles. There also seems to be is a unique emphasis of sting ray spines at CA-SMA-125 Filoli, *Haliotis* ornaments at CA-SCL-690 Tamien station, and deer/elk bones at CA-SCL-732 *Kaphan Umux* (Three Wolves). These differences may be due to the ecological and geological factors that result in emphasizing different spiritual animals at the three sites.

**Chi Square Test**

The results of the chi square test for independence among the three sites demonstrates the difference in frequency of the individuals with FOI and individuals without FOI is statistically significant. The P value is calculated to = < 0.05. At CA-SMA-125 Filoli, 55% of the individuals were associated with FOI. At CA-SCL-690 Tamien Station 7.2% were associated with FOI, while at CA-SCL-732 *Kaphan Umux* (Three Wolves) 8% were associated with FOI. The chi square test for independence is statistically significant perhaps because this site may have been an area for "elite" burials (Griffin et al. 2004:51). This significant difference may mean that the elite at CA-SMA-125 Filoli were associated with ideotechnic life ways and articles. It may mean individuals associated with spiritual aspects of life were more likely to be associated with spiritual artifacts and elements in the mortuary complex. It may mean the elite were associated with food or animal remains more than the 'common man'.

Table 15. Total Number of Individuals with FOI.

| **Site** | **# Individuals** | **# with FOI** | **Percentage w/ FOI** |
|---|---|---|---|
| Filoli | 20 | 11 | 55% |
| Tamien Station | 125 | 9 | 16.4% |
| *Kaphan Umux* | 100 | 8 | 8% |

**FOI Results of CA-SMa-125 Filoli**

Fauna of interest (FOI), associated with the burials at CA-SMa-125 may begin to reveal the cultural continuity of spirituality that may exist between the ancestral Ohlone and the Ohlone of historical times. The FOI at CA-SMA-125 Filoli are observed in relation to the human burials and the three social classes defined by Galloway (1976). Class one is associated with 10 or more artifact classes, class two has five or more artifact classes, while class three has less than four artifact classes. This categorization reveals four individuals meet the criteria for Class one, five individuals qualify for class two, and seven for class three. The FOI is identified in conjunction with all burials they were associated with. Table 11 discloses which FOI are associated with each of the individuals and reveals that FOI is found in all three classes. This might indicate there is no class distinction in regards to FOI.

The burials are also categorized by FOI association and sexual identification, which reveals 55% or 11out of 20 individuals are associated with FOI. The one female identified is associated with FOI, and eight males or 50% of the males identified are associated with FOI. Seven males were not associated with FOI and two indeterminate individuals were not associated with FOI. From these results one might conclude that females are much more likely to be associated with FOI. However, this is a very small sample and far from conclusive. It does reveal that FOI is not only associated with one sexual category, but crosses both genders at CA-SMA-125 Filoli.

Fisher's exact test on the relationship of individuals with and without FOI and Galloway's class distinctions is performed. In this study class one and two have been combined into one category. Of the 11 individuals in class one or class two, nine individuals have FOI while two individuals do not. Of the nine individuals in class three, two individuals are associated with FOI while seven individuals are not. Fisher's exact test results (Lowry 1998- http://faculty.vassar.edu/lowry/VassarStats.html) are P=0.0124, which is statistically significant. Those individuals in class one and two are more likely to have FOI than those in class three. This may be true for the FOI that can be recovered from the earth after hundreds of years, but certainly other FOI, such as bird feathers would not be seen in the archaeological record and not applicable at any archaeological site.

From looking at Table 16 below, some observations can be made. Over half of the individuals from this site are associated with FOI. All of the individuals who are

associated with FOI are adults. There is only one female assessed at this site and she did have FOI associated with her burial. CA-SMA-125 Filoli did not produce enough discrete burials to make any large sweeping conclusions, except this site has a high percentage of individuals with FOI.

Table 16. Discrete Individuals with FOI at CA-SMA-125 Filoli.

| **Total # Individuals** | **#Individuals with FOI** | **Percentage w/ FOI** |
|---|---|---|
| Total - 20 | Individuals w/ FOI - 11 | 55% |
| Adults -17 | Adults w/ FOI - 10 | 58% |
| Under 18 - 3 | Under 18 w/ FOI - 0 | 0% |
| Males - 17 | Males w/ FOI - 9 | 53% |
| Female - 1 | Females w/ FOI - 1 | 100% |
| Indeterminate - 2 | Indeterminate w/ FOI - | 0% |

The FOI found at this site was distributed among half of the discrete burials. The burial designated as # 3, was exceptional in the number and kinds of FOI. A staggering number of 142 bird bone whistles were found with this male who was assessed to be about 35 years old. These bird bone whistles were made from eagles, condors, owls, albatross and many others (see appendix A). Some of these birds are spiritually connected to the Ohlone from the ethnographies, ethnohistories, and narratives that have been collected. See Table 2. It is not only possible that the bird bone whistles are connected to the Ohlone's religious and spiritual life for their ideotechnic function but in

some cases due to the particular species the whistles are made from. An eagle bird bone whistle may have been perceived as more powerful or used in a different ceremony than a bird bone whistle made out of a turkey vulture or cormorant. There were no bird bone whistles made out of small ubiquitous birds.

The individual from burial #3 was also associated with 386 bat ray spines. No other burial in the San Francisco Bay Area has ever recorded such a large concentration of spines. Spines have been reported from a number of sites (Follett 1975) but not in such great numbers and not usually in association with burials. For instance, there was only one burial at CA-ALA-328 Patterson Mound that was associated with "six bat ray spines" (Davis and Treganza 1959:14). In addition to burial #3 which has 386 spines, burial # 7 has three spines, burial # 9 has three spines, burial #16 has three spines, burial #19 has 4 spines. Galloway (1976:68) suggests the large number of spines and bird bone whistles makes the individual from burial #3 "a person of very high status". This study concurs with that suggestion and contends the importance and/or spiritual meaning of the sting ray spines associated with the individual from burial #3 extends to the other four burials with bat ray spines at this site.

We do not know the specific meaning or spiritual importance of bat ray spines to the Ohlone at CA-SMA-125 Filoli. The DHA did not reveal any information regarding their importance. There are ethnographies and ethnohistories that reveal other cultures connection to the bat ray spine. The Mayas used bat ray spines for their auto-sacrifices of blood (McKillop 2004; Pahl 2009). "The Polynesian's worship a principle (household)

god that takes the form of a bat ray" (Craig 1989:73). Similarly in Samoa, "one of the household gods of some families, was incarnated in the form of a bat ray" (Baughman 1948:375). The Ohlone at CA-SMA-125 Filoli, like some Maya, and Samoans live close to the waters that are home to the bat ray. If we examine the bat ray and it's spine many intriguing possibilities arise.

If the spines are pulled out of a bat ray or dislodged in an attack, the spine has the ability to grow back. The bat ray spines are also regenerated on a seasonal basis (Teaf 1987; Johansson et al. 2004). While the new spine is growing the old one is still intact which reveals a bat ray with two spines during part of the year. This sort of phenomenon would not be missed by the Native Americans. The ability to grow something as powerful as a poisonous spine, over and over could be very appealing to an individual seeking power. The collection of bat ray spines could have been a fetish of the individual from burial #3. Fetishism has been often associated with shaman. Another possibility is that the spines may have been used for tattooing (Canzonieri 2004). Bat ray spines are very sharp and we know the post-contact Ohlone did a great deal of tattooing for various rites-of-passage ceremonies for both men and women (Kroeber 1925; Milliken 1995).

The awl with the 24 big skate teeth found with burial #3 may have a connection to the bat rays in the precontact Native American world. In body type the big skate (*Raja binoculata*) and bat rays (*Myliobatis californica*) look very similar and inhabit the same shallow waters of the bay or ocean. Big skates don't have the same poisonous caudal spine, but they do have very sharp teeth unlike the bat rays. One can actually distinguish

the male and female big skates by the composition of the teeth-not by the size of the teeth. This is very unusual. If the individual from burial #3 had a connection to bat rays he could have seen the seemingly family connection to big skates– part of the family. Family and kinships are very important to Native Americans.

**FOI Results of CA-SCL-690 Tamien Station**

To strengthen the purported spiritual significance of FOI at CA-SCL-690 Tamien Station the FOI is statistically associated with abalone (*Haliotis*) ornaments. *Haliotis* ornaments have been suggested by others, such as Fredrickson (1974b) and Field (2007), to have Ohlone spiritual and cosmological significance. If *Haliotis* ornaments are considered ideotechnic and they are associated with Ohlone burials then perhaps other material such as FOI also have ideotechnic significance.

Table 12 shows that 24% of the individuals at CA-SCL-690 Tamien Station are associated with *Haliotis*. At CA-SCl-732 *Kaphan Umux* (Three Wolves) 5% are associated while at CA-SMA-125 Filoli 60% are associated. CA-SMA-125 Filoli is an unusual site (Fentress and Griffin 2004) with a large percentage of individuals associated with artifacts. The number of individuals from CA-SCL-690 (125 individuals) and CA-SCL-732 (100 individuals) are much more comparable and the difference between the individuals with *Haliotis* is much greater. This could mean that *Haliotis* was more important to the people of CA-SCL-690 Tamien Station than the other sites. It could

mean these individuals had better access to the ocean to harvest the abalone or had better relations with the Natives closer to the ocean and traded with them more often.

Table 13 demonstrates the various types of FOI that are associated with individuals and the style of *Haliotis* artifacts. Figure 21 illustrates the distribution of FOI by sex. Only eight individuals were associated with FOI, 5 were determined to be male and 3 were indeterminate. Fisher's exact test on the relationship of individuals with and without FOI to individuals with and without *Haliotis* is performed. Fisher's exact test results are 0.006 (Lowry 1998 - http://faculty.vassar.edu/lowry/VassarStats.html), a statistical significance. Individuals with *Haliotis* ornaments/pendants are more likely to have FOI than individuals without *Haliotis* ornaments/pendants. These results could be interpreted in a number of ways. If an individual has spiritually significant artifacts like *Haliotis*, then those individuals are more likely to have other spiritually significant artifacts, such as FOI. Or, those individuals with *Haliotis* are more likely to have animal remains associated with them and neither is spiritually or cosmically connected. Another interpretation could be the *Haliotis* and faunal material is merely refuse from a meal that happens to be associated with a human burial.

Table 17 below reveals that only a 6.4% of the discrete individuals are associated with FOI. All of the individuals that are associated with FOI are male at this site and all are adults. Sex assessment for three of the individuals with FOI was indeterminate.

According to Simons (2007) grizzly bear remains are found in the midden (n=3), associated with features 3 and 4 (n=4) burials 42, 86, and 91(n=8). "Most (n=8) are foot

elements. A proximal ulna and a scapula fragment also are represented" (Simons 2007:383) referring to the grizzly bear remains associated with the burials. MNI bears

Table 17. FOI Associated with CA-SCL-690 Tamien Station.

| **Total # Individuals** | **#Individuals with FOI** | **Percentage w/ FOI** |
|---|---|---|
| Total - 125 | Individuals w/ FOI - 8 | 6.4% |
| Adults (17-45+) - 104 | Adults w/ FOI - 8 | 7.6% |
| Under 16 - 20 | Under 16 w/ FOI - 0 | 0% |
| Males - 20 | Males w/ FOI - 5 | 17.2% |
| Female - 25 | Females w/ FOI - 0 | 0% |

found at this site is 3 (Simons 2007: 354). These elements are noted and associated with the burials and features but the specific elements are not associated with the specific burials or features. If these elements had been modified the elements would have been identified and the exact association would have been noted. Even though bear remains have been acknowledged as "ideotechnic" in this Tamien site report (Simon 2007:387), the bear elements are generalized as to where they are found and what exact elements are represented.

There are 18 bird bone whistles associated with five burials, #5 (n=6), # 29 (n=1), #39 (n=1(a fragile bundle encased in hardened matrix soil – estimated as 5 whistles)),

#41 (n=9), #60 (n=1), all Gifford Type FF2. The bird bone whistles described by Simons are as follows: “undecorated (no incised decoration) single-stop bird bone whistles” (Simons 2007:318). However, according to the appendix, burial #41 had eight bird bone whistles – one of these whistles “had a small disc shaped *Haliotis* stopper glued with asphaltum to the end of the whistle”, revealing that at least one whistle was decorated. Species identification of the whistles was not possible. Poor condition stems form historical disturbances and long-term placement in clay soils” (Simons 2007:318). No bat ray (*Myliobatis californica*) spines are identified at this site.

A feature not observed at Filoli but which is found at the Tamien site is an animal burial. This animal burial is of an almost complete dog/coyote (*Canis* sp.) skeleton found at feature 3 in Unit 35 (10N/14W). A total of 330 whole elements and fragments were recovered from this animal burial. Many of the fragments show evidence of fresh breaks, which probably occurred during the recovery. Most of the remains are postcranial axial bones (vertebrae, sternum, ribs, sacrum, innominates), (n=219), foot (n=42), forelimbs (n=32), cranial (n=25), and hind limbs (n=11) (Simons 2007). This burial appears to come from one individual, with the “bones of a second apparently commingled” (Simons 2007:385). Simons is unclear whether this burial is that of a coyote (*Canis latrans*) or a domestic dog (*Canis familiaris*) - this is a very difficult determination. This canid burial apparently awaits application of multi-variate statistical analysis of metric data obtained from various complete skeletal elements (Simons 2007). DNA analysis might also make these specific determinations if favorable specimens are analyzed.

Within the Tamien Station ‘midden’, there are 13 NISP. Only one MNI of the *Canis* sp. was found. Simons does not divulge the information regarding which elements besides the above identification, or what condition they are in. Simons mentions 1 wolf element was found in the ‘midden’ but not where in the ‘midden’ or what the element is (Simons 2007:354).

As discussed in the Literature chapter *Canis* sp. burials occur at a number of Central California sites. The Applegate site (CA-AMA-56) in the Sierra foothills southeast of Sacramento contained the remains of eight individual canids (coyotes?), which were discovered in two features (Johnson 1970; Moratto 2004). In the Sacramento-San Joaquin Delta area Heizer and Hewes (1940) refer to13 articulated coyote interments found at three Late Period/Augustine Pattern sites (CA-SAC-16, CA-SAC-32, CA-SJO-66) and two Middle Period/Berkeley Pattern sites (CA-SAC-66 and CA-SAC-99). Two of these internments are described as having been “covered with banjo-shaped abalone pendants” (Heizer and Hews 1940:589-590). These thirteen specimens were identified by S.B. Benson, Assistant Curator of Mammals, from the University of California Museum of Vertebrate Zoology. An Early Period/Windmiller Pattern articulated dog burial is described by Haag and Heizer (1953). In the East-South San Francisco Bay Area, Wallace and Lathrop (1975) note a canid burial (coyote?) with a Berkeley Pattern age from the West Berkeley shellmound, CA-ALA-307. The earlier references to animal burials admit that animal burials are not uncommon (Haag and Heizer 1953) but little or no discussion regarding what they might mean or what significance they might hold is

addressed. The potential significance is finally addressed within the Tamien site (Hylkema 2007) and the *Kaphan Umux* (Cambra et al. 1996) site reports.

**FOI Results of CA-SCL-732 *Kaphan Umux* (Three Wolves)**

To enhance the spiritual connection of FOI with CA-SCL-732 *Kaphan Umux*, the FOI is statistically associated with large deer and elk remains that are considered to be associated with Native Americans as well as Ohlone moiety relationships (Field and Leventhal 2003). This may reinforce the idea that if one is interred with some ideotechnic objects, then that individual is likely to have other ideotechnic objects. Figure 22 gives the percentage and number of individuals who are identified with FOI. Out of 125 individuals, eight had FOI, three were male, one was female and four could not be sexually assessed. Only half of this sample could be sexually assessed and if any results were based on sex assessment that statistic would have to be taken into consideration.

Table 14 shows the various types of FOI and deer/elk elements that are associated with the discrete burials. Fisher's exact test is performed on the relationship of individuals with and without FOI to individuals with and without deer/elk elements. Fisher's exact test results are 0.0075 (Lowry 1998 - http://faculty.vassar.edu/lowry/VassarStats.html), a statistical significance. Individuals with deer/elk elements are more likely to have FOI than individuals without deer/elk

elements. These results too, could be interpreted a number of ways. It could mean that these individuals are members of a deer/elk moiety and these faunal remains are part of who they are and what is important to them in life and death. It could mean they were the hunters for their family and tribe. It could mean there are many meals of many different animals associated with burial

Table 18. FOI Associated with CA-SCL-732 *Kaphan Umux* (Three Wolves).

| **Total # Individuals** | **#Individuals with FOI** | **Percentage w/ FOI** |
|---|---|---|
| Total - 100 | Individuals w/ FOI - 8 | 8% |
| Adults (17-40+) - 78 | Adults w/ FOI - 7 | 8.9% |
| Under 17 - 22 | Under 17 w/ FOI - 1 | 4.5% |
| Males - 23 | Males w/ FOI - 3 | 13% |
| Female - 23 | Females w/ FOI - 1 | 4.3% |

From Table 18 above only 8% of the individuals at this site are associated with FOI. Seven out of eight or 87.5% of those with FOI are adults. Only one individual associated with FOI is under the age of 17. This individual was 4-5 years old, and the sexual assessment was indeterminate. This child was associated with an "unburnt left femur of a Canid (dog/coyote), 13 mussel shell fragments, two red Franciscan chert primary flakes, two green Franciscan primary flakes, a secondary flake of chalcedony and a calcined bone of a large mammal" (Leventhal 1996:3.14).

It appears from observing all three sites that the majority of FOI is associated with adult males. If FOI is associated with the spirituality of the ancestral Ohlone, as this hypothesis suggests, it might indicate that the majority of spiritual practitioners were male. Apart from CA-SMA-125 Filoli, only a small minority of individuals at the other two sites are associated with FOI. This may indicate that only a small percentage of individuals are associated with spiritual and cosmological aspects or that these few were unique and or elite. It also helps confirm that CA-SMA-125 Filoli was an area for the elite to be interred.

CA-SCL-732 *Kaphan Umux* (Three Wolves) has 3 animal burials that strengthen the hypothesis that FOI demonstrates cultural continuity of some faunal remains. Along with the 100 human burials at *Kaphan Umux* three animal burials are uncovered. What is considered Animal/Wolf Burial #1 was first thought to be a small black bear due to the size and pronounced sagittal crest. After complete exposure it appeared to be an articulated large canid and has since been identified as a wolf (*Canis lupus*) (Leventhal et al. 1996). Several *Mytilus edulis* shells are scattered near the mandible and in the burial pit. These same shells are found associated with the nearby human remains as well.

The second animal burial, known as Animal/Double Wolf Burial #2 was discovered approximately six meters north of human Burial #89. The animals were buried head down – feet up in extended position with one on top of the other (Leventhal et al. 1996). In association with this burial was flaked green Franciscan chert, two unmodified sandstone cobbles. In addition, a partially charred braided rope or net is found wrapped

around the neck region and the hind-quarters. Examination of this material reveals it is probably made of either soaproot or yucca. A portion of the rope was submitted to Washington State University for radiometric assay. This specimen dated 4370 ± 90 years BP, which is approximately 2,000 years older than the cemetery date (Leventhal et al. 1996).

"Wolf remains have been reported from several San Francisco bayshore shellmounds" (Simons 2007:362). These sites include CA-ALA-309 Emeryville (Broughton 1999), CA-ALA-329 Ryan Mound near Coyote Hills and CA-SFR-114 Yerba Buena shellmound located in downtown San Francisco. Wolf remains have also been reported from CA-SCL-302 (Kobori 1981) and CA-SCL-200 (Cartier 1991). Simons (2007:362) furnishes three existing interpretive scenarios regarding the significance of large canid remains present at the Central California archaeological sites: "(1) They represent remains of wolves living in the vicinity of the sites, hunted by their human occupants, (2) They belong to animals hunted elsewhere, most likely in the Sierra Nevada, and subsequently traded into lowland Central California, (3) They are the bone of large domestic dogs instead of wolves".

The third animal burial identified as Animal/Deer and Snake Burial #3 contained the unburned remains of two partially articulated artiodactyl (deer) hind legs that included the right distal tibia, tarsals, metatarsals and phalanges a left metatarsal, and an indeterminate long bone fragment (Leventhal et al. 1996). Just adjacent to the articulated foot of the deer, the articulated remains of a headless snake were discovered. Without the

head, the species identification was impossible. It was however, determined that the snake was probably not intrusive, but rather an *in situ* placement, due in part to the lack of any krotovinas. Also associated with this feature are eight sandstone cobbles, some are thermally blackened and spalled (Leventhal et al. 1996).

Bird bone whistle and tubes were found associated with 3 human burials, Burial #26, #35, #67. All these burials are of adults. Burial 26 is of an adult male, age 25+. He is found in association with a worked bird bone, three unburned deer bones, twenty-five unburned faunal remains, sixty-three mussel shells, a bifacial mano fragment of sandstone, a primary flake of red Franciscan chert, two primary flakes of green Franciscan chert, sixteen caliche nodules, two pieces of burned clay and seven sandstone cobble fragments. Burial 35 is one of the richest burials found and had the only specimen that could be identified as a bird bone whistle. An attempt was made to identify the genus of all the bird bone specimens, but without much success. Additional material found in association with Burial 35 include six + I series (Gifford 1947) worked limpet shell rings, sixteen + *Haliotis cracherodii* series ornaments (Gifford 1947), thirty-four G2 series *Olivella* shell beads (Bennyhoff and Hughes 1987), a teardrop shaped pendant of fossilized shell, a hammerstone of actinolite/blue schist, eighteen mussel shell fragments, five unburned deer-sized mammal bones, and four unburned rodent bones (Leventhal 1996). Burial 67 was an inhumation of an adult, age 17-20 of unknown sex. Associated with this person is a bird bone whistle, the unburned phalanx of an elk, two calcined antler fragments, six unburned mammal fragments, thirteen mussel shell fragments, a

quartz pebble, a piece of cortical shatter of red Franciscan chert, and a piece of shatter of green Franciscan chert.

Burial 69 was an adult female, age 35-45 and she was associated with a thoroughly polished mammal bone tube that is similar to those classified by Gifford (1940:180, 270) as EE1b. It showed some asphaltum residue and was found 15 cm from her right shoulder near her mouth. Also recovered with this burial was an unburned deer scapula, six unburned mammal bone fragments, a primary flake of red Franciscan chert, a cortical flake and a primary flake of green Franciscan chert, and approximately 30+ unmodified cobbles.

*Ursus* sp. remains are found associated with burial 57. Four skeletal elements of a grizzly bear (*Ursus horribilis*) are recovered, one of which was of the "central portion of the innominate" (Wilson 1996:G7). This burial is of a poorly preserved adult, probably male, age 40+. Also associated with this burial is a primary flake of red Franciscan chert, a primary flake of green Franciscan chert, and eleven mussel shell fragments.

Three human burials are associated with canid remains. Burial 2 is determined to be an adult female, age 16-25 years old in association with the right mandible of a canid, along with ten unburned bone fragments of rodent and large mammal, including a deer (*Odocoileus hemionus*) long bone. Burial 28 is an adult of indeterminate gender, estimated age is 25+ years old. Associated with this burial is one ulna identified as *Canis* sp., five unburned bird and mammal bones (including a goose ulna) one burned deer (?) bone, one burned scapula of a rodent sized animal, and two mussel shell fragments.

Burial 96 interred an adult, probably male, age 18-25. Associated with this person was an unburned cervical vertebrae of a canid, seventeen unburned mammal bones, two burned rodents bones, a burned right distal humerus of a deer, thirty-eight mussel shells, a sandstone abrader, a cortical flake, three secondary flakes of red Franciscan chert, a primary flake of green Franciscan chert, and a primary flake of Monterey chert. No bat ray (*Myliobatis californica*) spines are identified at this site.

The description of the different burial artifacts reveal the similarities and differences of these burials. Most of the individuals with FOI (seven out of eight) are adults. Only one female was identified with FOI and a majority (six out of eight or 75%) of the individuals with FOI have Deer/Elk remains associated with them as well.

Table 19. Percentage of Individuals with FOI at Sites.

| **Site** | **% Individuals w/ FOI** | **% Adults w/ FOI** | **% Sub-Adults w/ FOI** | **% Males w/ FOI** | **% Female w/ FOI** |
|---|---|---|---|---|---|
| Filoli | 55% | 58% | 0% | 53% | 100% |
| Tamien Station | 6.4% | 7.6% | 0% | 17.2% | 0% |
| *Kaphan Umux* | 8% | 8.9% | 4.5% | 13% | 4.3% |

**Genetic Anomalies**

CA-SMA-125 Filoli was the only site out of the three in this study where individuals expressed osteological anomalies identified as spondyloarthropathy and tarsal-metatarsal coalition (TMC). Spondyloarthropathy corresponds with a gene that corresponds with only occurs in 8% of populations (Griffin et al. 2004). Most researchers report an incidence of 1% for TMC (Stormont and Peterson 1983). Both of these genetic differences are exhibited within this population at very high percentages. Table 20 below indicates which individuals were assessed with which anomaly and if those individuals are associated with FOI. There are six individuals with tarsal-metatarsal coalition (TMC) and nine with spondyloarthropathy. Three individuals have both conditions. The six individuals with TMC, three or 50% are associated with FOI. Of the nine individuals with spondyloarthropathy, five or 55% are associated with FOI. Of the three of the individuals who have both TMC and spondyloarthropathy, two of these individuals or 66.6% are associated with FOI. Considering that half of the identified individuals at this site are associated with FOI, these percentages are not a conclusive indication that the spiritual significance of FOI is passed along by inheritance.

The results from these studies show a statistical significance of individuals with items that are already considered ideotechnic, and FOI. This alone does not prove that the FOI associated with the burials are spiritually significant to the ancestral Ohlone. However, when they are connected to other evidence from the DHA and animal ceremonialism in

Table 20. FOI, TMC and Spondyloarthropathy at CA-SMA-124 Filoli.

| **Burial #** | **TMC** | **Spondyloarthropathy** | **FOI** |
|---|---|---|---|
| 2 | Yes | No | No |
| 4 | Yes | No | No |
| 6 | Yes | Yes | No |
| 7 | Yes | Yes | Yes |
| 10 | No | Yes | No |
| 13 | No | Yes | No |
| 14 | No | Yes | No |
| 15 | No | Yes | Yes |
| 16 | Yes | Yes | Yes |
| 19 | No | Yes | Yes |
| 21 | Yes | No | Yes |
| 22 | No | Yes | Yes |
| Total | Total | Total | % |
| 12 | 6 | 9 | 50% |

California and Ohlone territory, there may be little doubt. Like other Native Americans, animals permeated the Ohlone oral histories, cosmology and were used in ritual and ceremony. When members of the tribe passed away, their belongings were interred with them to help them make the journey to the other side without delay. Any spiritual or cosmological items belonging to the dead or related in some way to the dead, have been known to be included.

# DISCUSSION

From the plethora of historic information, including the eight sources from Table 2, it is clear that some animals were important to Ohlone spirituality and impact their view of the world. There is no way of knowing or proving the ancestral Ohlone had identical beliefs to the historic Ohlone. That is not what this study is attempting to do. This study is conducted to reveal a cultural continuity of those beliefs. A culture's spiritual beliefs and practices are generally slow to change (Marcus and Flannery 1994). Even after the Spanish missionization, there is abundant ethnographic evidence the Ohlone continued practicing their religious beliefs despite the denial of the missionaries at hand (Geiger and Meighan 1976). As Harlan (1996:89) suggests "their spiritual beliefs were intertwined with their social customs to the point that they were virtually indistinguishable from one another". The lack of distinction makes the spiritual symbols more difficult to identify in the archaeological records but not impossible.

Simons (2007) suspects that the faunal remains of bear and coyote found with the burials are of spiritual significance – he goes further and believes the coyote and bear remains found in the middens are also spiritually significant. The evidence that has been presented in this study does not prove the spiritual beliefs of the ancestral Ohlone and historical Ohlone are the same, but the data does show cultural continuity of the

importance of animals to Ohlone spirituality. This data should encourage archaeologists to pay close attention to the faunal remains found with Native American burials. Some faunal material may reveal a spiritual aspect of the culture. The concept of revealing spirituality through faunal remains may be too ambiguous for some, but there is a great deal of evidence in this study that supports this hypothesis. When all the ethnology, ethnohistory and archaeological facts are pulled together following the DHA, there is little to doubt that the faunal material or FOI found with some of the ancestral Ohlone burials are related to their spiritual beliefs.

**Direct Historical Approach**

The archaeological record confirms and corroborates the various ethnographies, ethnohistories, oral narratives, and diaries regarding the spiritual practices and importance of certain animals to the Ohlone, as the DHA supports. Beginning with the eagle that is a spiritually important bird in the Ohlone creation narrative. Eagles are associated with the leaders of the tribe and eagle bird bone whistles are found in only a few burials (See appendix B-burial #3, #7 and #12) that are considered high status. Bird bone whistles are found at all three sites and are used in dances and ceremonies to this day. When the species of the bird bone whistles are identified they are often found to be impressive birds with large wing spans such as the condor whose average wing span is nine feet, and the albatross whose wing span can be 11 feet. There have been numerous

reports in California of ceremonial burials of raptorial birds including a condor ((Brooks 1975; Moratto 2004:258; Haag and Heizer 1953; Heizer and Hewes 1940: 590-591).

Coyote is also important to the creation narrative of the Ohlone and their remains or *Canis* sp. remains have been found ceremonially interred (Heizer and Hewes 1940; Johnson 1970; Moratto 1984) in various sites. Coyote or *Canis* sp. faunal remains are also associated with human burials in two of the sites in this study CA-SMA-125 Filoli and CA-SCL-732 *Kaphan Umux* (Three Wolves). CA-SCL-690 Tamien Station did not have any *Canis* sp. remains identified with the human burials, however a *Canis* sp. ceremonial burial is revealed. The exact species is still under investigation (Simons 2007). In addition there are three wolves ceremonially interred at CA-SCL-732 *Kaphan Umux* (Three Wolves). The spiritual significance of the wolves could be extrapolated from their close resemblance to coyotes and the power they show, but no spiritual ethnographic material regarding wolves could be uncovered for the Ohlone. Leventhal and his colleagues (1996:7.16) suggest the "presence of wolves in the CA-SCL-732 cemetery might imply that they were pets of high ranking persons of the tribe", much like the bear that was known to be kept by Ohlone chiefs (Levy 1978b). The archaeological evidence of the three wolves ceremonially buried, leaves little doubt to spiritual significance the wolf had to the ancestral Ohlone had for over 4000 years.

The archaeological record from CA-SCL-732 *Kaphan Umux* (Three Wolves) site reveals a cultural continuity of animal ceremonialism for 4200 years. "The double wolf burial is carbon dated to ~4400 years B.P. while the single wolf burial is carbon dated to

~200 years B.P." (Leventhal et al. 1996:7.1). Another animal burial of a deer and snake was also recovered at this site. As the archaeological evidence around California suggest animal ceremonialism occurs in many other places as well. What specifically these animal burials represent is open to debate and discussion. Few could dismiss the obvious spiritual importance of these ceremonial internments of animals to the Ohlone or to other Native Americans. Animals that are buried are often buried with artifacts that are also found with human burials such as *Mytilus* shells, green Franciscan chert (Leventhal et al. 1996) abalone (*Haliotis*) shells ((Heizer and Hewes 1940). These animal burials are not accidents.

The connection to the archaeological record and ethnographies are true for the abalone (*Haliotis*) as well. Abalone has been noted by ethnographers in relation to food, ornaments, trade, ceremonies, Kuksu religion, wealth, and spiritual connections (Field et al. 2008; Fredrickson 1974b:64; Gifford 1940; Goldschmidt 1951:339-340; Harrington 1942; Heizer 1978; Kroeber 1907a; Milliken 1995). Abalone has also been widely observed in the archeological record. Abalone is associated with burials (human and animal), middens, features in various shapes and sizes. The number of abalone ornaments and pendants have helped identify individuals of status in the community and in the case of CA-SCL-690 Tamien Station those individuals who are connected to other spiritual material such as FOI (Table 13).

Abundant ethnographic data is cited in this and other studies that demonstrate the significance of bears in the religion and spirituality of California Native Americans,

including the Ohlone (Barrett 1917; Bean and Vane 1978; Heizer 1978; Heizer and Hewes 1940; Kroeber 1907a; Kroeber 1925; Simons 2007; Storer and Tevis 1955). The Ohlone appear to have been divided into deer and bear moieties (Field and Leventhal 2003; Gifford 1915; Leventhal 1993; Levy 1978; Pastron and Bellifemine 2007). This practice is similar to the Eastern Miwok (Levy 1978; Gifford 1916) Yokuts (Gayton 1930a, Wallace 1978) and Salinian (Gifford 1916; Mason 1912; Hester 1978) where bears were frequently totemic animal assigned to a particular moiety. As noted by Levy (1978b:487) "one of the duties of the Ohlone tribal chief was to care for the captive grizzly bears". Bear dances were mentioned in the Rumsen vocabulary (Broadbent 1972) as bear dances were held by many California groups (Aginsky 1943; Driver 1936; Essene 1942; Gifford 1955; Kroeber 1925; Mason 1912; Voegelin 1942). Bear dancers, impersonators and societies were important components of the Kuksu religion (Bean and Vane 1978; Gifford 1926; Gifford and Kroeber 1937) as well as shamans (Barrett 1917; Bean and Vane 1978; Heizer 1978; Heizer and Hewes 1940; Kroeber 1925; Storer and Tevis 1955).

The archaeological record reveals that many intentional ceremonial bear burials have occurred in Central California sites (Cowen et al 1975; Heizer and Hewes 1940). Unmodified bear bones occur at many prehistoric sites throughout California as well (Simons 1995c). Unmodified *Ursus* sp. remains are also found at the three sites in this study. Many of the *Ursus* sp. remains at these three sites are foot and hand elements,

which “may have been part of grizzly hides used as costumes worn by shamans, dancers or bear impersonators” (Simons 2007:385).

This study does help to prove that when certain faunal remains (FOI) are found associated with human remains they should be examined and scrutinized by archaeologists using all approaches that may be meaningful to the Ohlone culture. FOI remains do not lose their importance when they are disarticulated. FOI remains are still spiritually important even if they have not been made into ‘artifacts’. All too often the elements of FOI are not given the status of worked bones and artifacts. This act of dismissal is ignoring an integral aspect of Ohlone spirituality.

Each Ohlone site in this study has similarities and differences regarding their relationship to FOI. This is what one would expect as the ancestral Ohlone did not follow a formal religious practice set in stone or written down on paper. Each site within the Ohlone territory is unique. Their diverse environments and geological areas would be reflected in their spiritual practice and symbols. It is speculated by others such as Barrett (1917), Field (2008), Gayton (1930), Gifford (1916), (1926), Heizer and Hewes (1940:587), Holliman (2004), Kroeber (1925), and Merriam (1908) that special attitudes developed by all peoples toward their local faunas. It appears that in California this phenomenon has been emphasized and specialized into what these same ethnographers have called cults.

**FOI Associations**

The results from this study disclose that FOI from these three sites are most often associated with individuals of high status. Most individuals who had FOI associated with them also had numerous other artifacts, including shell and lithics. At CA-SMA-125 Filoli 50% of the individuals were associated with FOI. This helps confirm that the CA-SMA-125 Filoli site is unusual and probably an 'elite' burial area. FOI was also associated with more adult male burials than any other category. This also helps define the spiritual leadership role to more males than females, which conforms to the ethnographic writings that most spiritual leaders were male.

The FOI at the three sites of this study are also statistically significantly connected to other items or groups that have previously been considered "high status" and ideotechnic such as *Haliotis* ornaments and pendants and Deer/Elk elements. If a spiritual leader or a person of high status, is interred with their possessions they may be interred with more spiritually related items such as FOI. They may have more access to such items in life and those same items would potentially help them pass on to the Island of the Dead without delay.

**Possible Future Studies**

Similar relational studies using the DHA should be conducted to clarify the diffuse definition of faunal material as spiritual symbols in archaeology. "Bird bone whistles and

tubes were assigned a role in musical, recreational, religious, or healing functions" by Bennyhoff (1953:171). In 1962 they were established as ideotechnic (Binford 1962) and are still used in Native American dances and ceremonies today. Very little has been written as to the meaning (if any) of the bird the whistle is made from (Morejohn and Galloway 1983; Harlan 1996). The majority of bird bone whistles from the three sites in this study are from large birds such as the eagle, condor and albatross. Are the larger birds chosen more often due to the spiritual association the Native Americans may have with them? Or is it just more practical in that bird bone whistles may be easier to make from the larger humeri, ulnas, femurs and tibias? From the ethnographies about the Ohlone and other Native Americans, a case for the spirituality the birds may represent is strong. This direction should be examined more closely at other sites as well. We can gather from Ohlone ethnographies the specific spiritual meaning of the eagle, hummingbird and owl. Perhaps the exact spiritual meaning of the other birds has been lost, but not the spiritual importance.

Where did the Ohlone from CA-SMA-125 Filoli get 19 albatross to create the 47 albatross whistles? Albatross are sea-faring birds and do not come on to the mainland. Perhaps a few might blow onto shore after a big storm, but 19 albatross at one Ohlone site is not easily explained nor can be left to chance. The Farallone Islands are the closest an albatross has been seen near Ohlone territory (Carboneras 1992). There is no evidence the Ohlone ventured to the Farallone Islands but the Miwok have been associated with

the islands. This would be an opportunity to explore the trading relationship the Ohlone had with the Miwok as well as the Chumash who also had sea faring boats.

More analysis needs to be done at other Ohlone sites to see if this study reveals an anomaly or a norm. Are the majority of individuals who have FOI male adults? This could help confirm the pattern that spiritual leaders were mostly male, with some females included. In the cases of the younger individuals associated with FOI it might help confirm that some spiritual leaders had younger apprentices or passed on their practice to young members of the tribe. Other studies could pay close attention to the faunal remains and what has been defined as FOI, and make every effort to identify those elements and disclose exactly where they are found. More studies might help identify these faunal remains as not merely dietary refuse, but a part of the spirituality of the Ohlone. This study just begins to lay down the groundwork to explore how faunal material or FOI can reveal a more complete look at Ohlone spirituality. Spirituality is an integral aspect of human culture.

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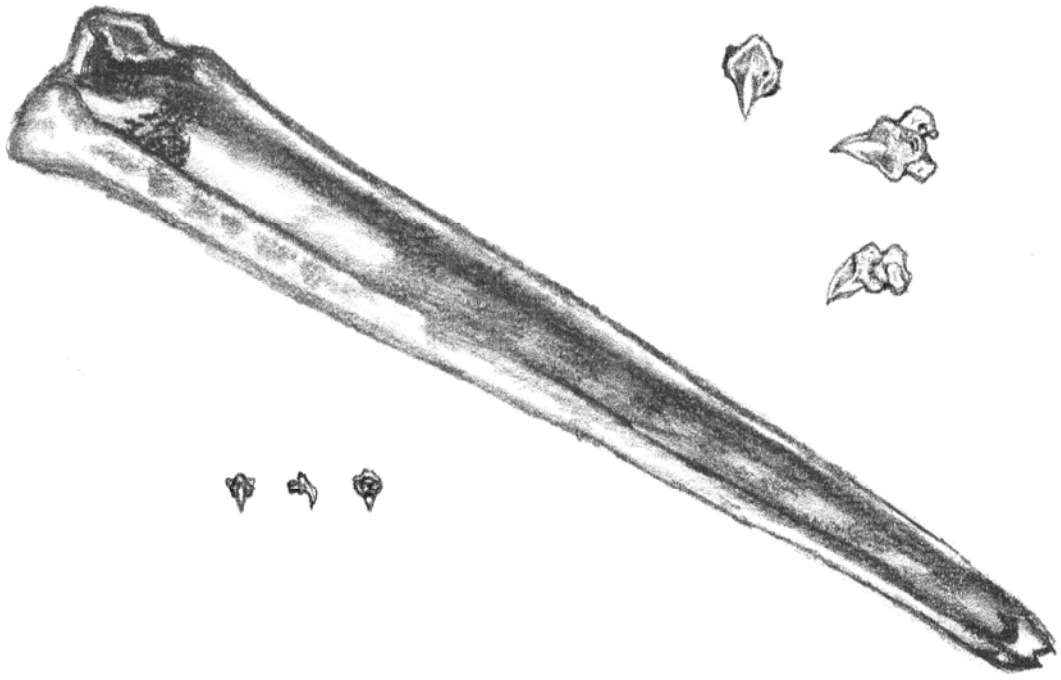
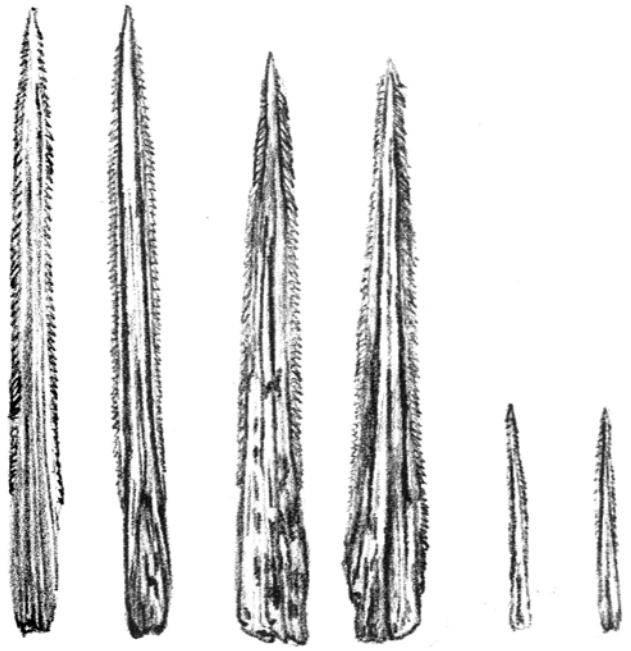
# APPENDIX A: Examples of FOI from CA-SMA-125 Filoli - Burial #3

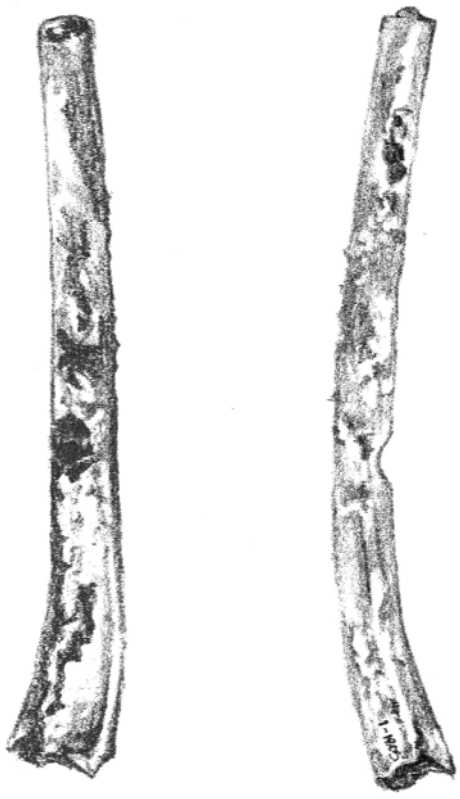
## All FOI drawings by Gabriella Pena



Bone dagger with one big skate (*Raja binoculata*) tooth drawn from three angles at two sizes. 24 teeth had been previously removed from the dagger and placed in a jar to avoid loss.

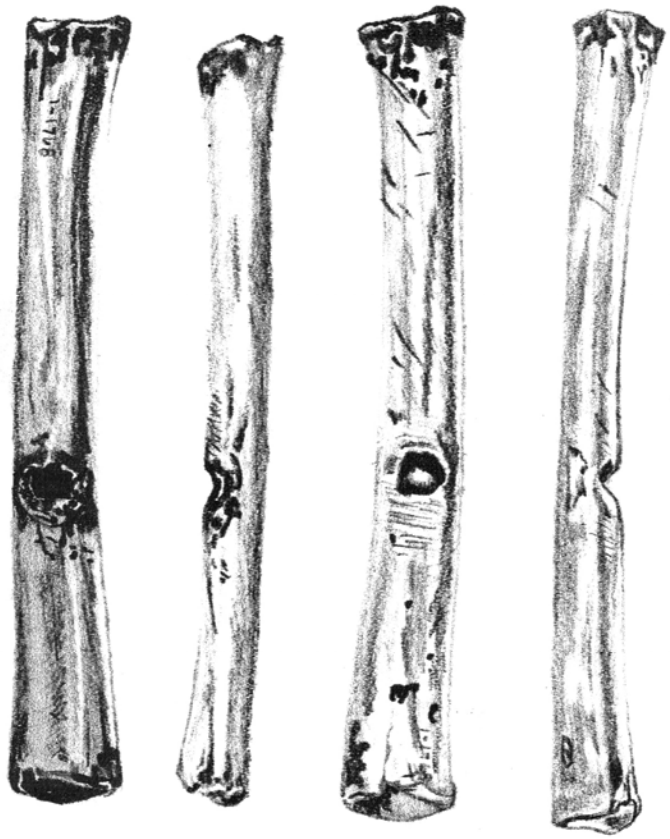


Bat ray (*Myliobatis californicus*) spines. Two views of three spines found at CA-SMA-125 Filoli. The longest (3.5 inches) the widest and the shortest.

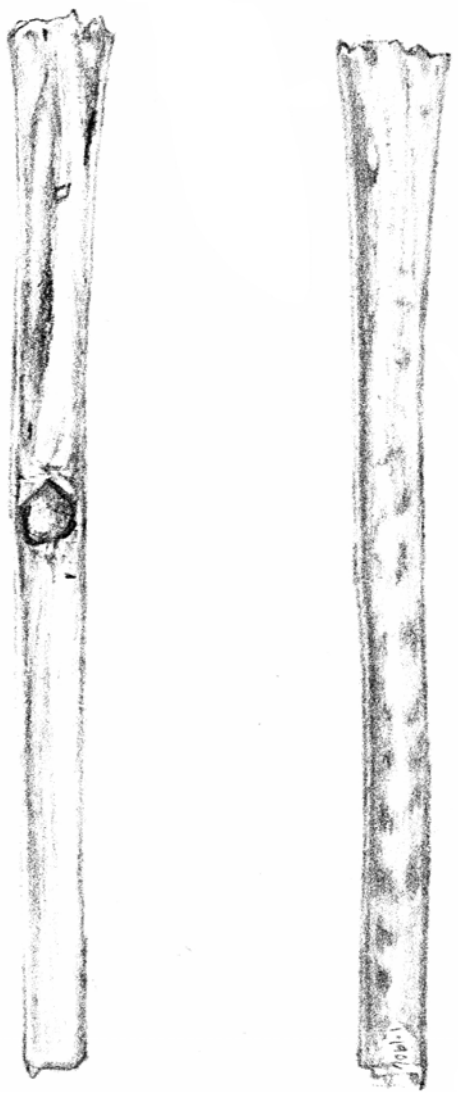


Two views of a Great Horned owl (*Bubo virginianus*) bird bone whistle. The element is identified as an ulna.

Part of a Bald eagle (*Haliaeetus leucocephalus)* bird bone whistle. The element is identified as a femur.



Two views of two bobcat (Lynx rufus) whistles. The elements are identified as femurs.



Two views of a short-tailed albatross (*Diomedia albatrus*). The element is identified as an ulna.

# APPENDIX B: Distribution of FOI and Some Artifacts in Burials from CA-SMA-125 Filoli

(FOI identified per Morejohn and Galloway (1983) and the author. All other artifacts identified per Morejohn (1976)

| Burial # | Complete | Incomplete | Age | Sex | TMC | Spond | # artifacts | #FOI | Canis sp | Ursus | Bat Ray | Bone Whistles | other FOI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | cremated | adult | F | | | 12 | 11 | | | 11 spines-NISP=11, MNI=6 | | |
| *2 | yes | | 47 | M | yes | | 8 | 0 | | | | | |
| 2 | no | Fragmentary | neonate | indet | | | | | | | | | |
| ***3 Carbon dated charcoal from soil matrix-1105-1140 BP | yes | | 35 | M | | | 1121 | 576 | 5-1 rt radius, distal end broken off and prox end burned, 1 rt femur prox end burned, 1st rt phalanx burned, 1 lft distal end of prox phalanx, 1 distal end of humerus-NISP=5,MNI=1 | 3-2 prox phalanges-prox end is broken on one and the distal end is burned and possibly polished on the other. 1 left molar in a bit of maxilla-part of tooth is cracked-found in a lithics bag! NISP=3, MNI=1 | 386 spines-2 are modified (A5a) and lighter in color than most-NISP=386 MNI 193 | 142 bone whistles(41 short-tailed albatross-MNI 17,1 black footed albatross,1 white pelecan,8 brown pelican-MNI 5,7 swans-MNI 4,28 Great White Fronted Goose-MNI 14, 10 Snow Goose-MNI 7,1 Canada Goose, 8 Cackling Goose-MNI 4, 2 Sandhill Crane-MNI 1, 2 Great Horned Owl-MNI 1, 2 Turkey Vultures-MNI 1, Calif Condor,4 Bald Eagle-MNI 2, 1 Golden Eagle,25 unidentified) 15 bone tubes -varies indeterminate | 1 dagger w/ 22 skate teeth-NISP=24, MNI=2(Male and female teeth) 1modified sea lion baculum NISP=1, MNI=1 |
| 3 | no | Fragmentary | child | indet | | | | | | | | | |
| 3 | no | Fragmentary | neonate | indet | | | | | | | | | |
| *4 | yes | | 35 | M | yes | | 11 | 0 | | | | | |
| 4 | no | Fragmentary | adult | indet | | | | | | | | | |
| *5 | yes | | 18 | M | | | 4 | | | | | | |
| 5 | no | Fragmentary | 50+ | M | | | | | | | | | |
| *6 Carbon dated fromsoil matrix - 995-1040 BP, from human bone 780-840 BP | yes | | 40 | M | yes | yes | 3-technomic | | | | | | |
| 6 | no | Fragmentary | 45 | M | | | 36 | 0 | | | | | |
| ***7 | yes | | 52 | M | yes | yes | 561 | 20 | 3-1 canine, 1 metatarsal, 1 4th metatarsal, ground to a point-NISP=3, MNI=1 | 5-1 phalanx, 2 middle phalanx, 1 5th metacarpal, 1 metatarsalNISP=5, MNI=1 | 3-NISP=3, MNI=2 | 8-2 short tailed albatross-NISP=2, MNI 1, 2 Brown pelicans-NISP=2, MNI -1, 1 Swan-NISP=1, MNI=1, 1 Calif Condor-NISP=1, MNI=1, 2 Bald Eagles-NISP=2, MNI 1 | 1 frag - turtle shell-incised NISP=1, MNI=1 |

*Discrete burial, ***discrete burial with FOI

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***9 Carbon dated from human bone 550-160 BP | no | Fragmentary | 30 | M | | | 164 | 3 | | | 3 NISP-3, MNI-2 | | 1 bat ray tooth - do not consider FOI at this time |
| 9 | no | Fragmentary | 47 | M | | | | | | | | | |
| 9 | no | Fragmentary | neonate | indet | | | | | | | | | |
| *10 | yes | | 45 | M | | yes | 0 | 0 | | | | | |
| *11 | yes | | 2 | indet | | | 38 | 0 | | | | | |
| ***12 | yes | | 38 | M | | | 1283 | 12 | 1 - calcaneus-partially burned and drilled-NISP=1, MNI=1 | | | 11( 1 short tailed albatross-NISP=1, MNI=1, 1 brown pelican, NISP=1, MNI=1,2 Sandhill cranes-NISP=2 MNI=1, 2 Calif Condors, NISP=2, MNI=1, 4 Bald Eagles, NISP=4, MNI=2, 1 Golden Eagle, NISP=1, MNI=1) | |
| ***13 | yes | | 55 | M | | yes | 237 | 1 | | | | unidentified bird humerus-both ends cut off, 2 cut marks that look like emergent hole for a whistle | |
| *14 | yes | | 32 | M | | yes | 45 | 0 | | | | | |
| ***15 | yes | | 40 | M | | yes | 4 | 3 | 1 prox foot phalanx-NISP=1, MNI=1 | 2-(1 prox phalanx, burned black, 1 foot phalanx)NISP=2, MNI=1 | | | |
| ***16 | yes | | 42 | M | yes | yes | 5 | 3 | | | 3-NISP=3, MNI=2 | | |
| *17 | yes | | 11 | M | | | 923 | 0 | | | | | |
| 17 | no | cremated | 40 | F | | | | | | | | | |
| ***18 | no | cremated | 44 | F | | | 16 | 2 | | | | 2- I Cormorant-NISP=1, MNI=1, I indeterminate-NISP=1, MNI=1 | |
| 18 | no | Fragmentary | fetal | indet | | | | | | | | | |
| 18 | no | Fragmentary | child | indet | | | | | | | | | |
| ***19 | yes | | 40 | M | | yes | 184 | 6 | | | 4-NISP=4, MNI=2 | 2 Indeterminate | |
| Burials 1-6 | | | | | | | | 6 | 3 | 3 | | | |
| No burial 20 | | | | | | | | | | | | | |
| Burial 3 or 9 | | | | | | | | 2 | 2 | | | | |
| ***21 | yes | | 55 | M | yes | | 1 | 1 | 1-glenoid fossa of the scapula-NISP=1, MNI=1 | | | | 1 sea otter molar, and part of a maxilla with 3 teeth- NISP=2, MNI=1 |
| 21 | no | Fragmentary | adult | indet | | | | | | | | | |

*Discrete burial, ***discrete burial with FOI

| Burial # | Complete | Incomplete | Age | Sex | TMC | Spon | # artifacts and faunal remains | #FOI | % FOI | Canis sp | Ursus | Bat Ray | Bone Whistles | other FOI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | no | Fragmentary | child | indet | | | | | | | | | | |
| 21 | no | Fragmentary | neonate | indet | | | | | | | | | | |
| ***22 | yes | | 55 | M | | yes | 1 | 1 | 100% | | | 1 | | |
| 22,UNK H&K | | | | | | | 3 | | | 1-2nd rt metatarsal | 2-1 prox phalanx, 1 broken phalanx distal end- half burned | | | |
| 22, UNK I | | | | | | | 1 | | | 1-ULC | | | | |
| 11,16,UNK K | no | Fragmentary | neonate | indet | | | 1 | 1 | | 1-distal end of rt radius | | | | |
| UNK A | no | cremated | adult | F | | | 0 | | | | | | | |
| UNK B | no | Fragmentary | adult | indet | | | 1 | 1 | | | middle phalanx | | | |
| UNK B | no | Fragmentary | infant | indet | | | | | | | | | | |
| UNK C | no | Fragmentary | infant | indet | | | 1 | 0 | | | | | | |
| UNK D | no | Fragmentary | adult | indet | | | 0 | | | | | | | |
| UNK D | no | Fragmentary | child | indet | | | 0 | | | | | | | |
| UNK D | no | Fragmentary | neonate | indet | | | 0 | | | | | | | |
| UNK E | no | Fragmentary | adult | indet | | | 0 | | | | | | | |
| | no | Fragmentary | infant | indet | | | | | | | | | | |
| UNK F | no | Fragmentary | neonate | indet | | | 0 | | | | | | | |
| UNK G | no | Fragmentary | subadult | indet | | | 0 | 0 | | | | 2 teeth-Not FOI | | |
| UNK H | no | Fragmentary | adult | indet | | | 2 | 2 | 100% | 2nd rt prox phalanx | phalanx -prx epiphysis is missing | | | |
| UNK I | no | Fragmentary | infant | indet | | | 1 | 1 | | tooth bead-painted with ochre and pine pitch - has hole in it | | | | |
| UNK J | no | Fragmentary | adult | indet | | | 1 | 1 | | | associated w/ J, L, M &N-prox phalanx - broken distal end and burned | | | |
| UNK L | no | Fragmentary | neonate | indet | | | | | | | | | | |
| UNK M | no | Fragmentary | infant | indet | | | | | | | | | | |
| | no | Fragmentary | neonate | indet | | | | | | | | | | |
| Unk N | no | Fragmentary | fetal | indet | | | | | | | | | | |
| UNK O | no | Fragmentary | infant | indet | | | 3 | 3 | 100% | 3- lft 2nd metacarpal-prox end broken off, rt 2nd metatarsal-prox end broken off, rt canine (not sure if upper or lower) | | | | |
| UNK P | no | Fragmentary | adult | indet | | | 0 | | | | | | | |
| UNK P | no | Fragmentary | infant | indet | | | | | | | | | | |
| UNK Q | no | Fragmentary | neonate | indet | | | 4 | 4 | 100% | 2 -rt 1st prox phalanx-partially burned & lft prox phalanx - front paw | 2-1 epiphysis of phalanx, MC III(3rd Metecarpal) prox end | | | |
| UNK Q | no | Fragmentary | neonate | indet | | | | | | | | | | |
| UNK Q | no | Fragmentary | 2 | indet | | | | | | | | | | |

*Discrete burial, ***discrete burial with FOI.

OTHER UNITS

| Units | Canid sp | Ursus | Bat Ray | bone whistles |
|---|---|---|---|---|
| S17-W2-3 | | 1 prox phalanx-sub adult-prox epiphysis missing | | |
| S17 W8-9 | 1 lft 2nd or 3rd metatarsal-prox end broken off | | 1 tooth | |
| Box 89 | 1 lft 2nd metacarpal-prox end broken off, 1 lft 5th metacarpal-prox end broken off, 1 caudal vert | | | |
| | | | | |
| Unassociated | | | | |
| | | | | |
| Box 90 | | 1 middle phalanx-hand, 1 URM2 part of root is split away | | |
| E-6 | | 1 prox phalanx-hand - burned | | |
| E7, E8 | 2nd prox phalanx | middle phalanx-prox epiphysis missing | 7 | |
| E9, E10 | 1 prox phalanx-burned, 1 prox phalanx-prox end broken off | 1 rt 5th metatarsal, 1 claw-distal phalanx-burned | 1 tooth, 5 spines | |
| Unit 11 | 1- LRP3 | 1 distal phalanx-worn | 4 vertebrae | |
| | | | | |
| Historic Non- | | | | |
| Burial Units | | | | |
| Box 96 | | 1 Prox phalanx | 1 spine | |
| N12-W2, N12-E2, N12-E3, N14-15W, N18-W8, N26-W2(box 97) | | 1 Rt MC IV, 1 metatarsal-subsdult-missing prox epiphysis | mouthplate(Gifford TT w/o perforation)1 vertebra | |
| | | | | |
| Box 98 | 1 rt 1st metatarsal-prox end broken off | | | |
| | | | | |

| Units | Canid sp | Ursus | Bat Ray | bone whistles |
|---|---|---|---|---|
| No Provenance - Box 100 | | 1 lft patella | 10 spines- 1 burned, 4 teeth - 2 burned | 1 bird bone whistle (art #144) stained w/ asphaltum, 6 pieces of bird bone whistles with asphaltum plugs-broken at the aperture |
| Box 101 | 3rd and 4th middle phalanx | | | |
| | | | | |
| | | | | |
| Display Box -1 complete male- 25 yrs From 1936 | | | | 17 bird bone whistles - "Leg bones of large birds" |

# APPENDIX C: Distribution of FOI and Burials with More Than 200 Shell Artifacts from CA-SCL-690 Tamien Station

| Burial # | Complete | Incomplete | Age- Mid range estimate | Sex | FOI,shell & other artifacts |
|---|---|---|---|---|---|
| 5*** | nearly | | 25-35 | M | 6 bone whistles, 40 spire-lopped (A-1) Olivella shells-three size classes |
| 7 | nearly | | 23 | F | 1701 Shell |
| 10 | nearly | | 42 | M | 739 shell |
| 15 | | 3/4 recovered | Adult | INDET | 350 shell |
| 24 | nearly | | 1.5 | INDET | 2000 shell |
| 28 | | missing cranium and lower rt forearm and hand | 35 | M | 467 |
| 29*** | nearly | | 50 | M | 1 bird bone whistle, 467 shell, including an Haliotis pendant |
| 31 | nearly | | 39 | M | 2901 shell |
| 32 | nearly | | 36 | F | 1583 shell |
| 38 | | 1/2 present | at least 25 | INDET | 492 shell |
| 39*** | | 70-80% present | 30 | M | 3408 shell, Asphaltum face mask - perhaps dance regalia from emergent Kuksu religion Middle/Late transition date. fragile bundle in hardened matrix soil-estimate 5 whistles in bundle, Pestle fragment - (largest # of Haliotis shell -31) |
| 41*** | nearly 100% | | 21-30 | M | 1740 Olivella beads,"a pair of bird bone whistles -found along the lower abdomen and hands"- per burial report, Per the appendix- Eight bird bone whistles were resting on the abdomen-One of these whistles had a small, disc shaped Haliotis stopper glued with asphaltum to the end, of the whistle. Hliotis pendants as well. |
| 43 | mostly? | | 25 | PROB F | 941 shell |
| 44 | mostly? | | 2 | INDET | 787 shell-(2nd largest haliotis shell # - 9) |

***Burials with FOI

| Burial # | Complete | Incomplete | Age- Mid range estimate | Sex | FOI,shell & other artifacts |
|---|---|---|---|---|---|
| 45 | nearly | | 21 | PROB F | 3905 shell |
| 49 | nearly | | 32 | M | 351 shell |
| 53 | | yes | 29 | F | 540 shell, complete pestle, |
| 55 | mostly? | | at least 25 | INDET | 809 shell |
| 60*** | mostly? | | Adult | INDET | 1 bird bone whistle -Pair of Haliotis ornaments lay near upper chest, 218 shells beads |
| 63 | | yes | 35 | M | 559 shell |
| 64 | | yes | over 25 | F | 234 shell |
| 66 | | | 8 | INDET | a pair of large finely crafted pestles, a handstone, battered stone & cobble mortar (complete food processing kit)-646 shell (8 Haliotis pendants) |
| 70 | nearly | | 1.75 | INDET | large amount of charcoal, fire-affected rock and faunal bone.933 shell |
| 72 | | yes | 7.5 | INDET | 774 shell |
| 78 | nearly | | 30 | M | 1014 shell |
| 86*** | | yes | over 21 | INDET | 1 Grizzly bear element |
| 89 | nearly 100% | | 30 | F | 301 shell |
| 91*** | | yes | 0ver 21 | INDET | 1 Grizzly bear element, 1 elongated Haliotis pendant, 310 spire-looped Olivela shell beads, chert flake scraper, 1 ground limpet shell. |
| 113*** | | | at least 25 | Indet | 1 bone whistle, 3 Haliotis ornaments, a charmstone, two bone awls, a fragmented steatite smoking pipe |

***Burials with FOI

Animal Burial

| Animal burial | Species | Deposition |
|---|---|---|
| Feature 3, Unit 35 (10N/14W) | articulated canid remains(dog/ coyote/wolf) representing a single individual. | "found within and below the bottom of the cobble layer in the south-east quadrant. This section of the larger feature area contained many faunal bones in addition to the canid remains, and also produced debatage, an incipient charmstone, a pestel fragment, a handstone, and a Haliotis pendant fragment". pp238 |

# APPENDIX D: Distribution of FOI and Burials from CA-SCL-732

## *Kaphan Umux* (Three Wolves)

| Burial # | Complete | Age | Sex | # shell, shell beads and ornaments | Canis sp | Ursus | Bone Whistles | Morters | Other faunal material of potential interest |
|---|---|---|---|---|---|---|---|---|---|
| 2*** | | 16-25 | Female | 1 mussell shell | rt mandible - edges burnt | | | | 10 unburned bone fragments of rodent and large mammal, including a deer long bone |
| 10 | | 40+ | Female | 232 Olivella Beads G-2 , 10 frags. Core fragment of Green Franciscan chert, 1 quartz primary flake, | | | | | |
| 14 | | 21+ | Indet | | | | | small boulder type | |
| 16 | yes | 5-6 yrs | Indet | 443 Olivella Beads | | | | | |
| 18 | | Indet | Indet | | | | | medium boulder type | |
| 21 | | adult | indet | 1 Olivella Beads | | | | | |
| 22 | | 13-18 | Indet | 143 Olivella Beads | | | | 3-large boulder types, 1 shaped | |
| 26 | | 25+ | Male | | | | | | worked bird bone - not a whistle |
| 28 | | 25+ | indet | | | | | | 5 unburnt bird and mammal bones-including a goose ulna |
| 35*** | "this person appears to have been a high status individual-adorned dance regalia?" | 25+ | Indet | 34 Olivella Beads, 19 Haliotis"Ring" type pendandts, 7 limpet pendants, 1 teardrop shaped pendant of fossilized shell | | | 1 | | a hammerstone of actinolite/blue schist, 18 mussel shell fragments, 5 unburned deer-sized mammal bones |
| 36*** | | 4-5yrs | indet | 13 mussel shell fragments, 2 red Franciscan chert primary flakes, two green Franciscan primary flakes, a secondary flake of chalcedony | unburnt lft femur | | | | calcined bone of a large mammal |
| 39 | | 13-19 | Indet | 39 Olivella Beads | | | | shaped | (56 unburnt mammal bones) |
| 41 | | 1.5-2.5 | Indet | | | | | | bird bone fragment on top of head |
| 43 | | adult | indet | 1 Haliotis pendant | | | | | |
| 55 | | 30-45 | Male | | | | | shaped | distal humerus of an elk |
| 56 | | 31-40 | Female | 8 Olivella beads, 1 Haliotis rim fragment | | | | | 9 faunal bones |
| 57*** | | 40+ | Prob Male | A primary flake of red Franciscan chert, a primary flake of green Franciscan chert, 11 mussel shell fragments. | | 4 skeletal elements-of grizzly bear | | | |

***Burials with FOI

| Burial # | Complete | Age | Sex | # shell, shell beads and ornaments | Canis sp | Ursus | Bone Whistles | Morters | Other faunal material of potential interest |
|---|---|---|---|---|---|---|---|---|---|
| 58 | | 18-20 | Female | 68 Olivella Beads | | | | | |
| 59 | | 30+ | Female | 57 Olivella beads | | | | | unburnt scapula of a small mammal, 32 unburnt fragments from large mammals |
| 61 | semi-sitting | 25+ | Male | | | | | medium boulder type | 6 unburnt mammal bone frags, 1 burnt mammal bone |
| 66 | | 15-18 | Female | | | | | large boulder type | 12 unburnt mammal bone frags, 3 calcined mammal bones, 1 deer phalanx |
| 67*** | | 17-20 | Indet | a quartz pebble, a piece of cortical shatter of red Franciscan chert, a piece of green Franciscan chert, 13 mussel shell fragments | | | 1 | | unburnt elk phalanx, two calcined antler fragments, 6 unburnt mammal bone frags |
| 69*** | | 35-45 | Female | a primary flake of red Franciscan chert, a cortical and primary flake of green Franciscan chert, 30+ unmoddified cobbles | | | 1-tube | | FOI* worked mammal bone tube w/ asphaltum residue, 1 unburnt deer scapula, 6 unburnt mammal bone frags |
| 72 | | 25+ | indet | | | | | | 3 unburnt frags of deer pelvis, rt astragalus-unburnt deer |
| 74 | | 15-17 | Indet | | | | | large boulder type over the cranium | 4 unburnt mammal bones |
| 75 | | 15-20 | Female | | | | | small boulder type | |
| 76 | | 15-18 | Indet | | | | | | 3 unburnt faunal bones (mandible, maxilla, rt humerus-8 other bones-probably badger) |
| 86*** | | adult | Male | 2 primary flakes of red Franciscan chert, 2 primary flakes of green Franciscan chert, 56 mussel shell fragments | unburnt lft ulna | | | | 7 unburnt faunal fragments, 3 unburnt deer bones |
| | | | | | | | | | |

***Burials with FOI

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Burial # | Complete | Age | Sex | # shell, shell beads and ornaments | Canis sp. | Ursus | Bone Whistles | Morters | Other faunal material of potential interest |
| 87 | | | Female | 2 Haliotis pendants | | | | | 3 unburnt mammal bones |
| 89 | | 25+ | Female | | | | | large boulder type | |
| 96*** | | 18-25 | Male | 3 secondary flakes of red Franciscan chert, a primary flake of green Franciscan chert, 38 mussel shells | unburnt cervical vertebra | | | | burnt rt distal humerus of a deer, 17 unburnt mammal bones, 2 burnt rodent bones |
| 97 | | 25-40 | Male | | | | | | 1 burnt bird bone |
| 100 | | 12-15 yrs | indet | 1 Haliotis pendant, 40+ abalone pendant frags | | | | | 7 unburnt deer bones, 3 unburnt deer antler frags |

***Burials with FOI

Animal Burials

| Animal Burials | Animal | Artifacts | |
|---|---|---|---|
| AB1 | Wolf-moslty articulated | Mytilus edulis shells, small sandstone cobbles | pg 7.17 Wolves identified |
| AB2 | 2 wolves-one on top of the other | flaked green Franciscan chert, 2 unmodified sandstone cobbles, fragments of charred rope or net wrapped around the neck region and hind quarters - the rope contains three strands and is braided -radiometeric assay dates this to 4,370 +or- 90 years BP Pg 7.17 also a rt and lft tibia, rt and lft femur, lft and 2 rt humeri of a deer (Odocoileus hemionus) One speculation that the wolves were provided wiht food for the afterlife, or perhaps this burial represents a ritual burial that ties to both cosmological and moiety symbols and rules. | pg 7.18 -"Canid burials have been reported in Native American cemetaries from a number of sites in Central CA such as: CA-SCL-690, CA-ALA-307, West Berkeley Mound, CA-ALA-329, Ryan Mound, CA-SJO-68 Blossom Mound, CA-MER-3 the Menjoulet site". |
| AB3 | two partially articualted artiodactyle (deer) hind legs:rt distal tibia, tarsals, metatarsals and phalanges a lft metatarsal, indeterminate long bone frag.Plus articulated remains of a snake-w/o head. | Eight sandstone cobbles-some thermally blackened and spalled | "Due to the lack of any obvious krotovinas, snake was probably an in situ placement w/ feature. Snake elements have been recovered from nearby sites -CA-SCl-178, yielded several genus and species of snake-included rattlesnake non-poisonous snakes, and poisonous snakes" - pg 7.4 |

# APPENDIX E: Ohlone Ethnography Utilized for Table 2

**A Description of a Distant Road by Alan Brown 2001**

| | Life-ways/ Creation Narratives | Dance/Dress/ Ceremony/ Raising | Healing/ Shaman | Customary Observances/ Death |
|---|---|---|---|---|
| Coyote | | 2 | | |
| Bear | | 3 | | |
| Eagle | | | | |
| Snake | | | | |
| Deer | | | | |
| Turtle | | | | |
| Wolf | | | | |
| | | | | |
| Kuksu | | | | |
| Whistle | | | | |
| Tube | | | | |

**The Ohlone Past and Present edited by Lowell John Bean 1994**

| | Life-ways/ Creation Narratives | Dance/Dress/Ceremony | Healing/ Shaman | Customary Observances/Death |
|---|---|---|---|---|
| Coyote | 131 | | | 1 |
| Bear | 20 | | | |
| Eagle | 12 | | | |
| Snake | 6 | | | |
| Deer | 8 | | | |
| Turtle | | | | |
| Hummingbird | 12 | | | |
| Wolf | | | | |
| | | | | |
| Kuksu | | | | |
| Whistle | | | | |
| Tube | | | | |
| Feather | 5 | 1 | | |
| owl | 3 | | | |

**What It Must Have Been Like by Les Field and Alan Leventhal 2003**

| | Life-ways/ Creation Narratives | Dance/Dress/Ceremony/ Raising | Healing/Shaman | Customary Observances/Death |
|---|---|---|---|---|
| Coyote | 1 | | | |
| Bear | 1 | | | 1 |
| Eagle | | | | |
| Snake | | | | |
| Deer | | | | |
| Turtle | | | | |
| Wolf | | | | 2 |
| | | | | |
| Kuksu | | | | |
| Whistle | | | | |
| Tube | | | | |

**As The Padres Saw Them: California Indian Life and Customs as Reported by the Franciscan Missionaries 1813-1815 by Maynard J Geiger O.F.M. and Clement W. Meighan 1976**

| | Life-ways/ Creation Narratives | Dance/DressCeremony/ Raising | Healing/ Shaman | Customary Observances/Death |
|---|---|---|---|---|
| Coyote | | | | |
| Bear | | | | |
| Eagle | | 9 | | |
| Snake | | | | |
| Deer | | | | 1 |
| Turtle | | | | |
| Hummingbird | | | | |
| Wolf | | | | |
| | | | | |
| Kuksu | | | | |
| Whistle | | | | |
| Tube | | | | |
| Feather | | 7 | | |

**The Religion of the Indians of California by Alfred Louis Kroeber 1907**

| Animal | Life-ways/ Creation Narratives | Dance/Dress/ Ceremony/Raising | Healing/ Shaman | Customary Observances/ Death |
|---|---|---|---|---|
| Coyote | 10 | 1 | | |
| Bear | | 1 | 12 | |
| Eagle | 2 | 4 | | |
| Snake | | 1 | 6 | |
| Deer | | 3 | | |
| Turtle | | 2 | | |
| Wolf | | | | |
| | | | | |
| Kuksu | 1 | 1 | | |
| Whistle | | 1 | | |
| Tube | | | 2 | |

**Early Ethnography of the Californias: 1533-1825 by Don Laylander 2000**

| | Life -ways/ Creation Narratives | Dance/DressCeremony/ Raising | Healing/ Shaman | Customary Observances-Death |
|---|---|---|---|---|
| Coyote | | | | |
| Bear | | | | |
| Eagle | | | | |
| Snake | | | | |
| Deer | | | | |
| Turtle | | | | |
| Hummingbird | | | | |
| Wolf | | | | |
| | | | | |
| Kuksu | | | | |
| Whistle | | | | |
| Tube | | | | |
| Feather | | | | 1 |
| owl | | | | 1 |

**People at the Edge of the World-the Ohlone of Central California by Betty Morrow 1991**

| | Life-ways/ Creation Narratives | Dance/Dress/ Ceremony/ Raising | Healing/ Shaman | Customary Observances/ Death |
|---|---|---|---|---|
| Coyote | 32 | | | |
| Bear | 1 | | 5 | |
| Eagle | 12 | | | |
| Snake | | | | |
| Deer | | | | |
| Turtle | | | | |
| Hummingbird | 5 | | | |
| Wolf | | | | |
| | | | | |
| Kuksu | | | | |
| Whistle | | 2 | | |
| Tube | | | | |

**Sifting the Evidence: Perception of Life at the Ohlone (Costanoan) Missions of Alta California by Russell K. Skowronek 1998**

| | Life-ways/ Creation Narratives | Dance/Dress/ Ceremony/ Raising | Healing/ Shaman | Customary Observances/ Death |
|---|---|---|---|---|
| Coyote | 1 | 2 | | |
| Bear | | 5 | | 2 |
| Eagle | | | | |
| Snake | | | | |
| Deer | | | | |
| Turtle | | | | |
| Hummingbird | | | | |
| Wolf | | 2 | | |
| | | | | |
| Kuksu | | | | |
| Whistle | | | | |