

(1) (Music begins) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14)  
(15) (16) (17) (18) (19) (20) (21) (22) (23) (music fades out and narration begins).

As professionals evaluating the impacts of land management projects such as (24) timber harvesting, (25) chaparral management, (26) site preparation, (27) re-forestation, (28) stream improvement, (29) construction, and (30), timberland conversion, we sometimes neglect a resource which is valuable and unique (31). This is California's heritage, found in the State's archeological and historical sites, (32) structures and (33) artifacts. These resources represent the physical remains of our ancient past. Unlike the agricultural-based civilizations (34) of Central America who built cities containing pyramids and temples (35) out of cut-stone blocks, the aboriginal villages of ancient California (36) were composed of structures built from perishable materials (37), a fact which makes these sites more difficult to identify and therefore more vulnerable to the destructive impacts associated (38) with land management projects. (39) California's heritage includes a rich cultural history spanning at least 12,000 years and is being painstakingly re-constructed through archeological and historical investigations (40). Today, much of the story of our ancient past is still poorly understood. This makes management and study of our cultural resources very important. For each remaining site which is lost, the reconstruction of our past becomes more difficult.

Archeological surveys and excavations provide clues towards understanding of how ancient Californian's lived. (41). The remains of Indian dwellings can be identified through archeological excavations providing important construction details. Their \_\_\_\_\_ floors were dirt (42) but become hard as pavement from intentional \_\_\_\_\_ after many years of use. Although the support posts and other wooden parts of the structure do not often preserve in an archeological deposit, (43) the position and number of post holes and diameter of the floor can usually be identified. (44) Aboriginal structures ranged from 6 to 60 feet in diameter, the smaller ones probably represent a single family dwelling and typically contain a single central post and a single small doorway usually facing east to

catch the morning sun. At winter villages, the doorways were often directed away from the prevailing storms. Cairns of broken rocks and milling tools (45) are often found situated directly over a burial pit (46). (47) An examination of the skeletal remains (48) and artifacts also provide information about diet, disease and the rigors of ancient lifeways. The artifacts found in association with grave lots often provide the most reliable means for establishing the time-frames represented at a particular site. (49) An archeological excavation of a site is planned and conducted to recover as much information as possible--it is not designed simply to discover artifacts. The excavation units are often laid out by a grid system in checker-board fashion, or a series of contiguous units into a trench, in order to identify different work areas of a site and to fully expose features when discovered. (50) The individual units are carefully excavated with square sides and straight walls in order to estimate the amount of excavated soil and to record the geologic stratigraphy of the deposit. From this carefully gathered information, we are beginning to piece together the story of California's cultural history. (51) About 12,000 years ago at the end of the ice ages, small nomadic groups of people were hunting big game in California. Their prey included mammoth, bison, antelope, and other large extinct species that used to roam the great plains and savannas. The remains of their camps and kill-sites have been found at such places as the Tulare Lake and Borax Lake localities. They are distinguishable by the presence of large lanceolate projectile points. (52) with concave bases, fluted sides, and basal grinding. These points were made some 10,000 years before the bow and arrow were invented. They functioned as dart tips and were used with a spear-thrower to kill. Large channel flutes kept the wound open. The huge \_\_\_\_\_ of their day. Other early points (53) have long stems and also exhibit edge-grinding.

The big-game hunting tradition ended with the extinction of the Pleistocene megafauna. This forced early Californians to adopt a more generalized subsistence

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(54) and settlement strategy. These settlements were composed of complex hunter-gatherer societies. These societies were less nomadic, and began to place greater importance on (55) California's abundant plant foods. Acorns became a staple (56) source of protein and carbohydrates. They were easily dried and stored. Populations and social systems grew more complex around this food source. Acorns were processed with (57) a mortar and pestle which was fashioned (58) in a variety of portable forms (59) as well as on bedrock outcrops (60) (61). Pestles were fashioned (62) from oblong cobbles, usually with only slight modification. However, some pestles (63) were more elaborately finished, and shaped into phallic forms (64). Pine nuts, berries and seeds were also prepared into a food staple by milling with a mano and metate. (65) Manos are small, loaf-shaped or disc-shaped stones worn smooth from grinding. They were used with a metate that can be found in several forms. (66) It can occur as a shaped flat platter, (67) a shaped stone with a shallow basin, or (68) a small unmodified rock with a deep oval basin in its center. Metates also occur on bedrock outcrops (69), especially on flat-topped surfaces and can be best recognized by their smoothness when touched. Relatively deep metate basins (70) can also occur on bedrock. (71) Although there was a greater dependence on plant foods during the post-pleistocene occupation of California, small and medium-sized game were also hunted. Many different varieties of (72) projectile points were manufactured for weapons. Obsidian (73), which is volcanic glass, can be fashioned into beautiful sharp blades, knives, and projectile points, and was valued so highly it was traded throughout the state. Chipped-stone tools were also (74) manufactured from chert and many other fine-grained materials (75). Just like millions of people today, native Americans found California (76) an extremely attractive place to live. It is like no other region in North America with respect to the variation in its environments and richness of its resource base. At the time of contact with euroamericans there were over 100 separate tribes or nations of Indians present, (77) each speaking a different language and having a distinctive cultural tradition. In the northern portion of the state alone (78) there were 65 different language groups, many of which were specializing in the exploitation

of a particular group of resources found within their homeland. Many tribes in the northwest such as the Yurok, Karok and Hupa, settled in permanent villages along the major rivers and tributaries to exploit the seasonal salmon runs. These people developed an elaborate social structure which included the use of shell beads as (79) a form of money, and extremely ornate tools like these elk antler spoons (80) knives and well-polished stone objects including pipes (81) and a strange object referred to as a "slave killer." (82) Along the central and southern portion of the California coastline, bone pins, harpoons and shell fish hooks (83) have been found which indicate a well-developed maritime adaptation. In the southern part of the state (84), ceramic vessels were made for many purposes including water containers, (85) cooking pots, burial urns, and acorn jars. The presence of pottery in this area occurred in late prehistoric times and represents an influence with the Colorado River area. In the Great Central Valley, many ornate ceremonial objects have been recovered (86) including elk tibia wands with marine shell inlays, (87) bird bone tubes with elaborate incised designs (88) perforated charmstones made from calcite, and finely-worked obsidian blades and knives (89). In the foothills and mountains of the Sierra Nevada, acorns and pine-nuts were important food items and sites are often characterized by the presence of bedrock mortars (90) and chipped-stone tools and debris (91) usually consisting of basalt, or obsidian. In the Northeast, the obsidian sources which commonly occur ~~they~~ were thoroughly exploited for the manufacture of projectile points (92), large bifaces (93) and knives (94).

Another facet of California began in the early 16th Century when (95) California's euroamerican heritage began to emerge. Spanish explorations venturing north of New Spain <sup>were</sup> prompted by rumors that an Indian Civilization rich with gold could be found. The first landing took place in 1542 by Juan Rodriguez Cabrillo. (96) Cabrillo was greeted by friendly Indians who paddled out to the ships in sturdy plank canoes. The logs of this famous voyage indicate that the great captain died on one of the Channel Islands (97) from an aggravated arm injury, and recent

archeological investigations recovered what is thought to be Cabrillo's tombstone (98) on Santa Rosa Island. This tombstone may well be the oldest euroamerican artifact in California. It wasn't until 1769 that the Spanish actually began to settle in our state. They founded a series of missions (99) along the coast from San Diego to San Rafael. Their purpose was to calm and colonize the territory and convert the Indians to catholicism. When Mexico won its independence from Spain (100), the missions were secularized and major land grants were dispensed for ranching. Also about this time, the Russians established a settlement along the Sonoma County Coast (101) at Fort Ross, but after over-trapping the sea otter and disappointing agricultural success, they abandoned the fort in 1841. By 1845, there were about

600 Americans in the state, half of whom had entered via overland routes (102). The discovery of gold at Coloma in 1848 led to the establishment of numerous small towns (103) in the rapidly growing western frontier. California became the 31st American state in 1850, and the completion of the transcontinental railroad in 1869 (104) provided a link between the east coast and Sacramento. The major industries of American were ranching (105), timber harvesting (106), and mining (107). The physical remains of our euroamerican heritiage (108) can still be found, especially in undeveloped forested lands. These cultural resources (109) can greatly contribute to our understanding of how these peopled lived, where and how they constructed (110) their homes and workshops, and their engineering (111) and inventive capabilities (112). Many of these important relics of our heritage remain buried in the ground or covered the surface awaiting investigation (113). The physical remains of our native American (114) heritage can also be found through the use of a predictive model of aboriginal settlement patterns, and the identification of key items which characterize these cultural resources. Indian villages and camps were often located on relatively flat, open ground, near water sources, and can be recognized by the presence of dark, culturally stained soil called midden (115). The dark, greasy texture of midden is the result of the accumulation of organic material and ash into the soil of a particular locality over a considerable period of time and often contains other cultural materials including (116) chipped-stone and grindstone tools, (117) bone fragments and chipping waste (118). There are three main recognition factors for identifying these types of broken rocks as Indian artifacts. The first recognition factor is locating a fine-grained material such as obsidian, chert, basalt, jasper, chalcedony, felsite or other silicite rocks near a possible site. These sites may be found on flat ridges, or near a food and water source. The finding of this material should signal the investigator that further examination maybe necessary. The second factor is whether or not the material occurs naturally in the immediate area. Often cores or prepared flakes were brought to

the site for tool manufacturing, and a flake or fragment can be positively recognized as an artifact simply because it does not belong where it was found but is a culturally-derived intrusive. The third factor is the physical characteristics of the individual specimen. Indian tool fragments and chipping waste often have numerous fracture planes and scars from previously removed flakes and often have reworked edges. Most tools found on the surface of a site are fragmentary, (119) thus, the observer must be able to recognize the complete form from only a part. Mano fragments (120) can be recognized by their shaped profiles and smoothed grinding surfaces. Other features to look for (121) are house-pit depressions. These are characterized by a circular depression ranging in diameter from six to sixty feet and from one to four feet deep. They also typically occur near water sources on flat ground and represent the remains of what once was (122) semi-subterranean Indian dwelling or ceremonial structure. Another good place to look for cultural evidence is around bedrock outcrops (123), especially those with flat and level upper surfaces. Bedrock mortars (124) are often placed on the flat upper surfaces and represent an aboriginal seed-grinding station which may lack any other cultural evidence or, more often, is part of a habitation site with other cultural features present. Rock outcrops also can contain evidence of the ceremonial or ritualistic aspects of aboriginal societies such as (125) cupule petroglyphs. These petroglyphs were formed by one or several hundred small pitted depressions on a rock surface. Pitographs (127) were designs that were painted onto a rock surface. Rock formations with natural shelters or caves (128) should also be inspected, as these were often occupied by ancient Californians and can be recognized by the presence of tool fragments, dark soil, fire-pits, and smoke-blackened walls and ceilings. Mid-slope benches in mountainous regions (129) are also good places to look for sites since these formations often contain springs, oak groves, and open, flat grasslands, all of which were important resources to the natives.

(13) Shell middens can be found along California's coastal zone extending from the shore to several miles inland. They can be recognized by a cultural deposit of marine shells which typically occurs with a jet-black, greasy midden, and represent the remains of refuse from a shellfish gathering and processing camp. Chipped-stone and groundstone tools may be present in the deposit at large shell middens, but these items are also often absent. They typically occur along the edge of bluffs, on mesa-tops (131), or other raised prominences overlooking sandy tidal flats and other areas where shellfish such as clams, mussel, or abalone are abundant. Cultural deposits can often be recognized along road cuts (132) and stream banks where subsurface stratigraphy is exposed. A layer of dark loam overlying tan-colored subsoil should be considered suspect of having a cultural origin. The matrix of this dark soil should be closely examined for possible cultural materials such as chipping waste, fire-cracked rocks, ash lenses, bone fragments, etc.

Archeologists prepare site survey records (133) to register and identify individual cultural resources for inclusion into the statewide archeological inventory and numbering system. These records are useful for subsequent researchers and for cultural resource managers and include a brief physical description of the site, its location, and significance. Approximately 80,000 sites have been recorded and registered in the California Archeological Inventory. These records should be consulted to determine if any registered cultural resources are known to occur within the project area. Professional archeologists are on staff with public agencies such as California Department of Forestry (134) and will provide assistance in making archeological reviews including a records search (135), and an examination of the project area on a USGS topographic quadrangle (136). This should always be done prior to a field inspection to determine the important areas to survey. USGS quadrangles provide information such as availability of water, (137) relative topography, and boundaries of major vegetation communities which are extremely useful for making an archeological evaluation. (138) as a project manager, it is important to develop a good working relationship with the

landowner who has proposed the project. Often landowners have specific knowledge of cultural resources in or near the proposed project site and can help in locating or describing them.

They are often reluctant to discuss this information because of preconceived ideas of how an archeological survey will affect the project or restrict the use of their land. By explaining to the landowner that the survey is simply a means of recording the site and not collecting artifacts, landowners often cooperate freely. It is also important that the landowner be aware that if he does have a site on his property that doesn't necessarily mean the project will be stopped.

Mitigation of adverse impact to the resource usually involves only minor alteration of the project plan, to maintain a site. If after discussing necessary mitigation with the landowner he still disagrees, he can and may wish to hire an archeological consultant to propose alternative mitigation for his project.

(139) All equipment operators and crew foremen should be notified of the existence of any cultural resources situated within or nearby work areas so they are not accidentally destroyed.

(140) Archeology is not incompatible with land management projects - it simply warrants consideration during project reviews. The sound management of the physical remains of our cultural heritage is the responsibility of all project managers and personnel. We are all stewards of the past and responsible for what we leave behind for future generations of Californians to cherish and study. The winds of time blow softly over the physical traces of California's history. With vigilance and planning we can preserve these values - the "Roots" of our past.