

Protecting Archaeological Sites in California's Timberlands: A Guide for Licensed Timber Operators and Timberland Owners



prepared by:

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Revised Date: April 19, 2010

Did you know that:

- Archaeological sites can be damaged or destroyed during timber operations if they are not identified and protected before operations begin.
- Logging-related damage to archaeological sites may result in severe penalties including sizeable fines and/or loss of your LTO license.
- LTOs and Landowners are responsible to identify and protect significant archaeological sites during certain timber operations especially projects that do not involve a Registered Professional Forester such as 1038 Exemptions.
- Numerous archaeological sites exist on privately owned timberlands and many of these are unrecorded sites, not known to exist by the landowner, and can only be located by an on-the-ground search of the area made by people trained to recognize them.
- CAL FIRE has an Archaeology Program to assist RPFs, LTOs, and Landowners protect sites during timber operations. For more information visit the CAL FIRE Archaeology Program Web Site at http://www.fire.ca.gov/resource_mgt/archaeology/index.php or contact one of CAL FIRE's staff archaeologists through contact information available at: http://www.fire.ca.gov/resource_mgt/archaeology/contact_us.php

The California Department of Forestry and Fire Protection (CAL FIRE) developed this article to provide information for Licensed Timber Operators (LTOs) and timberland owners, particularly during situations such as timber operations that do not have the involvement of a Registered Professional Forester (RPF). This instructive information should ease concerns on regulation requirements, site protection, and affects to landowners and LTOs when dealing with archaeological sites during timber operations. CAL FIRE and the California State Board of Forestry and Fire Protection (Board) regulate

all commercial timber harvesting projects on private, state, county, and other non-federal lands in California. The Board adopts the Forest Practice Rules (rules) and establishes policy, while CAL FIRE is responsible for the review and approval of Timber Harvesting Plans (THPs) and other documents to ensure conformance with the rules and protection of all forest resources, including cultural resources. Protecting archaeological sites does not need to cost the LTO and landowner a lot of money from difficult logging practices or large volumes of unharvested timber. By working together we can protect California's cultural resources and harvest timber.

Cultural resources include historic archaeological sites such as old logging camps, emigrant trails, homesteads, Gold-Rush-era mining towns and features; prehistoric archaeological sites such as ancient Native American villages, campsites, milling stations, quarry locations or petroglyphs; or other specific locations having cultural significance to local Native American groups or individuals. These include sacred peaks, ceremonial dance grounds, trails, guardian trees, cemeteries, or gathering areas, and may or may not have visible artifacts or features. All cultural resources having important heritage values must be identified and protected during timber operations.

Stewards of The Past

California has a tremendously rich cultural history - from the earliest inhabitants with no written records to Spanish settlements and various Gold Rush activities. Much of the record of the past, especially the prehistoric past, lies in the ground. These resources have unique values that can be damaged or destroyed by timber operations if they are not located during preparation of projects or if the specific procedures developed to protect them are not carefully followed. Unlike animal habitat, fisheries, trees, or water-quality values, archaeological sites are finite, non-renewable resources, that cannot be restored nor can damage to them be repaired. Once an archaeological site is destroyed, it is lost forever. Archaeological information is rapidly disappearing, often destroyed inadvertently through activities that could be avoided with proper knowledge and care. Unless these sites are identified and protected, they are likely to be destroyed, sooner or later by some project.

Landowners who have historic or prehistoric sites on their property are stewards of California's past. In their safekeeping is the guardianship of these sites that provide future generations with the opportunity to learn from and experience our history. Landowner responsibility goes one step further as knowledge of the past is considered part of the heritage of all Californians. For this reason, laws protect cultural resources. In most cases, the preservation and wise management of an archaeological site, feature, or artifact is accomplished with little or no outlay of funds and minimal reduction of timber harvest yield, often none whatsoever. Protected resources include both historic and prehistoric sites as well as locations of cultural significance to local Native Americans that do not necessarily have visible artifacts or features. Archaeological sites are specific locations containing physical evidence of prehistoric or historic human activity. Important heritage values may include Indian villages, seasonal camps, trails, petroglyphs, hunting blinds, or stone quarries. Midden soil can often be recognized at these sites - the dark-colored, powdery soil and fire-cracked rocks caused by repeated cooking fires. Artifacts are often found here as well. These may include projectile points, grinding stones, chipped-stone flakes and flaked tools. Other specific locations of significance include sacred peaks, ceremonial dance grounds, trails, guardian trees, cemeteries, gathering areas, and other sacred places. Historic archaeological sites may include logging camps, emigrant trails, homesteads, Gold Rush-era mining towns and features.

Where to Look and What to Look For

Although most cultural resource sites are now identified and protected through implementation of a set of forest practice rules, some sites are still missed during harvest preparation, or are not identified prior to Exemption timber operations, and are unnecessarily damaged. Investigation of these cases that damaged archaeological sites reveals that the usual cause is an inadequate effort to search for archaeological sites prior to the commencement of timber operations. Prehistoric archaeological sites are often found in predictable locations although it is important to be aware that there are exceptions. Most sites occur near sources of fresh water such as springs, seeps, drainages, streams, rivers, or ponds. Flat areas along small forested streams, or above the confluence of two streams are excellent locations to find sites. Where streams meander through alluvial valleys, the most likely location is often back on the edge of the hillslope on slightly higher ground rather than directly along the stream. Natural springs within timberland areas are often developed into ponds for livestock or use by water trucks; however, the likelihood of finding an archaeological site in the adjacent area remains extremely high.

Archaeological sites in California forests often occur in or along the margins of natural openings, especially those with water sources nearby. Sites may be found along ecotones, those edge areas where different plant communities come together. The search intensity within and around openings should increase because California Indians favored these locations and ground visibility is often better here than it is under heavy forest canopy. Chances of finding a projectile point, mano or flake scatter is improved when mineral soil can be seen. Likely areas covered with duff must be periodically troweled during your survey, especially low flat outcroppings. A good technique is to examine the area from a distance, evaluate the archaeological sensitivity of specific zones, and identify them on a map for careful inspection.

A typical Sierran site may contain a midden deposit; numerous bedrock mortars on granite exposures, surface artifacts, and perhaps rock art. The presence of nearby oak trees is also a good indicator of archaeological sensitivity as they provided Native California people with their staple food-acorns.

One of the best ways to identify an archaeological deposit is by learning to recognize midden. Midden is formed by intensive sustained occupation of the same site area over hundreds or thousands of years. Midden soils can be recognized by black or dark brown powdery silt. It has a distinctive texture - full of soot and ash - and usually contains artifacts such as fire-cracked rocks (hearth remains), bits of burned bone or charcoal, or broken stone tools. There may also be a scatter of chipped-stone flakes (usually obsidian or chert) from the manufacture of tools. Be alert for suspicious, abrupt changes in soil color. Midden has a sooty feel to it, and a dark film of fine sticky dust sticks to your hands when scooped if the soil is dry. It usually occurs in favorable topographic settings such as stream terraces, mid-slope benches, slight rises, stream confluences, near springs, or on ridgetops. Rodents often burrow into midden deposits resulting in black back-dirt piles that allow midden identification. Look for a lens of dark soil in cut banks for possible buried deposits. Not all dark soil is midden. False middens may be formed near springs and under oak groves.

Another important surface indicator of archaeological resources is housepits. These circular depressions are remnants of structures or dwellings, usually found in open areas in the oak woodland as well as forests. They often occur as a cluster of pits on a flat bench near water, and are often found on sites with midden and/or artifact scatters. An earthen rim may be present and large rocks are sometimes found inside the pits or around its perimeter. The most common type found in California forests is the small family dwelling, usually about 8 to 12 feet in diameter and 1 to 2 feet deep. A

typical multi-family dwelling may result in a larger housepit, about 10 to 15 across, while a ceremonial dancehouse or roundhouse may exceed 50 feet in diameter. Housepit depressions in northwestern California are usually rectangular.

Two important archaeological features to look for at rock outcroppings are prehistoric rock art panels and bedrock milling stations. Rock art panels can be found in the form of petroglyphs (designs pecked, scratched, or ground in rock surface) or pictographs (painted designs). Become familiar with the type of rock art that occurs in your area and carefully examine similar rock surfaces. One type of rock art fairly common throughout California is the cupule boulder. Cupules are small pits ground into rock surfaces. Sometimes these are placed in arrangements such as rows while other times they appear randomly across a boulder surface, oftentimes on the sides of the rock. Bedrock milling stations are also common, particularly throughout the Sierra Nevada and in northeastern California. Milling features usually occur on flat-topped boulder groupings or exposed bedrock outcroppings. Bedrock mortars are the most common and most distinctive form of milling feature. These are circular holes or depressions ranging from 3 to 6 inches in diameter and from 2 to 28 inches deep although they are often concealed by dirt, pine needles, or other forest debris. Bedrock metates or mills also occur. These are grinding basins seen as oval depressions or "slicks" with milled areas appearing as polished surfaces with little or no depth. Milling tools may be found nearby. Typical pestles are elongated or triangular cobbles that use-wear on the pointed end. Manos are hand stones used for grinding seeds in bedrock or portable metates. These are loaf-shaped cobbles with one or more milled surfaces. It is extremely important to seek out and examine all low flat rock outcroppings. Look for rock art panels and bedrock milling features, feel for slicks, use a trowel to poke and clear for mortars, and examine the surrounding soil for midden and artifacts, housepits, or other evidence.

Although predictive modeling is a useful tool to find many sites, you should also conduct an archaeological survey within the moderate and low sensitivity areas such as forested flats away from water or sloping ground. Periodically trowel to mineral soil to search for midden, and be alert for anything that looks to be out of place, unnatural, or manmade.

Map Review

There are many historical clues to be found by examining a 7.5' USGS quadrangle. Archaeological sites within California forests usually occur in three main topographic settings: stream terraces, mid-slope benches, and ridgetops. Flat areas along streams are excellent locations for prehistoric and historic sites. Prehistoric sites often occur where two streams come together, especially the point of land immediately upstream from the confluence. Give extra attention to trending ridges, which prehistoric people used as travel routes through the mountains. Look for springs near ridgetops or ridgetop saddles. A ridgetop saddle is a low, flat area between two points of higher ground. These provide shelter from wind and also contain water sources and vegetation. Look for place names such as "Indian Bar" and "Arrowmakers Ridge" etc. Historic mines and ranches are sometimes shown on quad maps. These places may be historic homesteads in addition to camping places chosen by Native Americans as the best flat area near water. The margins of interior valleys are particularly sensitive since major prehistoric villages were often established there.

Requirements for A Timber Harvesting Plan (THP)

Timber harvesting activities involve ground disturbance, which can damage cultural resources. To protect these resources, the California State Board of Forestry has adopted a set of rules that requires

an archaeological investigation as part of any THP. Other land uses such as residential development, use of prescribed fire, and forest restoration also requires cultural resource evaluation. The Registered Professional Forester who prepares the THP must include a Confidential Archaeological Addendum as part of the THP preparation.

There are three main procedures required in a Confidential Archaeological Addendum to a THP: a check of the state's archaeological records, notification of the Indian tribe that occupied the land as part of its traditional territory, and an archaeological survey of the property conducted by an archaeologist or an archaeologically-trained resource professional.

The records check involves a search with the appropriate Information Center of the California Archaeological Inventory to determine if any known sites exist or if the area has received previous archaeological study. The local US Forest Service or CAL FIRE archaeologist may also be contacted for advice on what types of sites are found in the area, sensitivity determinations, and listings of available cultural resource references pertinent to the region. In addition, the landowner, property manager, or other knowledgeable individuals or neighbors should also be asked if any artifacts or sites have been found on the property or nearby.

The RPF is required to submit written notification of a proposed THP to local Native American groups and individuals listed on CAL FIRE's Native American Contact list (available at: http://www.fire.ca.gov/resource_mgt/archaeology/native_american_contacts.php) This notification contains specific elements including a scaled map with the project boundary, vicinity background, name of USGS quad map, etc. The notice requests information on the existence of any cultural resource sites that may be affected by the proposed operations. All written comments, including those on cultural resources, must be considered and responded to by CAL FIRE before THP approval.

A professional archaeologist or a person with approved archaeological training (often the RPF) must conduct an archaeological survey of the THP area. If sites are identified, appropriate protection measures are developed and incorporated into the THP. It is often possible to protect cultural sites with little or no impact to the landowner. With careful planning, the timber harvest can go ahead with some adjustments to avoid the site.

Procedures for Exemptions

Certain types of timber operations are exempt from the requirement to prepare a THP and may not require the use of a RPF. These projects are called ***Exemptions***, and allow for the harvesting of Christmas trees or the harvest of dead, dying or diseased trees of any size, fuelwood or split products in amounts of less than 10% of the average volume per acre, when certain conditions are met. One of the conditions to be exempt from preparation of a THP is 14 CCR Section 1038(b)(10) reads as follows:

No timber operations on any site that satisfies the criteria listed in 895.1 for a significant archaeological or historical site. Information on some of these sites may be available from Information Centers of the California Historical Resources Information System within the Department of Parks and Recreation.

This rule places responsibility on the LTO to ensure that no timber operations under 1038 exemptions are conducted upon significant archaeological or historical sites. To ensure that this rule is

implemented, the LTO must determine whether or not any significant archaeological sites exist in the area of timber operations and take steps to ensure that such sites are protected through avoidance. The LTO should follow this procedure to determine if any archaeological sites exist in the exemption area:

- Conduct an archaeological records check at the appropriate CHRIS Information Center to determine if any known site exists in the area. This procedure will cost approximately \$200, possibly more for large project areas. A listing of the 12 CHRIS Information Centers (including their counties of jurisdiction and contact information) and the CHRIS IC Rules of Operation Manual are available on-line at: http://www.ohp.parks.ca.gov/pages/1068/files/ic_operations_manual_9-26-08_amendment_3.pdf This information is confidential and the policy for access to it is discussed on page 4 of the above-listed manual. The property owner, and/or the owner's designee (such as the LTO) can obtain the information following procedures cited in Section (C) on page 4 of the Manual. Do not use the request form for CAL FIRE projects available on the Department's web site as that form may only be used by persons who have completed CAL FIRE's Certified Archaeological Surveyor training program.
- Contact the landowner, local Native Americans, local archaeologists, or local experts to check to see if they know of any archaeological, historical, or cultural sites on the property, or if any artifacts have ever been found that may indicate a site.
- Conduct a careful, on-the-ground inspection of the project area to search for archaeological sites, features or artifacts. Contact a CAL FIRE Archaeologist for assistance if a site is found.

To become a reliable surveyor for archaeological sites, the LTO must first become knowledgeable about the history and prehistory of the area, which types of sites are usually found, and where these sites usually occur. The local US Forest Service or CAL FIRE archaeologist may be contacted for advice on what types of sites are found in the area, sensitivity determinations, and listings of available cultural resource references pertinent to the region. Though it is not required, it is recommended that LTOs send a letter of inquiry to the local Native American contacts requesting information on sites they may be aware of. A listing of local Native Americans to contact is also provided on the CAL FIRE Archaeology Program Web Site at:

http://www.fire.ca.gov/resource_mgt/archaeology/native_american_contacts.php

The list is available on that page in two formats: PDF, and Word.

The LTO or landowner can conduct the required archaeological survey for exemption projects. If you do not feel qualified to search for possible sites, be sure to bring-in someone that can conduct the survey. The Information Centers of the California Historical Resources Information System maintain a list of consulting professional archaeologists that can be hired to conduct archaeological surveys, record sites, assess significance, and develop appropriate protection measures.

Once the survey is completed and archaeological sites are identified, CAL FIRE must be immediately notified. The significance of all identified sites must be determined, and all significant sites must be protected through complete avoidance or the project does not qualify as an Exemption. A careful logging plan should also be developed for the area surrounding the site and the area to be protected should be clearly identified to all logging personnel. A significant archaeological or historical site is defined in the forest practice rules (14 CCR Section 895.1) as follows:

A **significant archaeological or historical site** is a specific location which may contain artifacts or objects and where evidence clearly demonstrates a high probability that the site meets one or more of the following criteria:

- (a) Contains information needed to answer important scientific research questions.
- (b) Has a special and particular quality such as the oldest of its type or the best available example of its type.
- (c) Is directly associated with a scientifically recognized important prehistoric or historic event or person.
- (d) Involves important research questions that historical research has shown can be answered only with archaeological methods.
- (e) Has significant cultural or religious importance to Native Americans as defined in 14 CCR § 895.1.

Determining the significance of a site is not an easy task, as it requires a careful assessment of the site's scientific research potential, condition, uniqueness, and other values. CAL FIRE recommends avoiding all identified sites on Exemptions. This procedure may remove the necessity to determine site significance and possibly allow the project to proceed more quickly.

Confidentiality

One concern over site identification is an increased incidence of looting and vandalism. To avoid this, state policy and forest practice rules require that archaeological site location information (maps with plotted site locations, site records, reports, descriptions, etc.) be kept confidential and not included in copies of reports or plans provided to the general public. Although a Confidential Archaeological Addendum (CAA) is an enforceable part of a THP and discloses specific site locations and how each is to be protected, the CAA is confidential to the extent permitted pursuant to Government Code Sections 6254(r) and 6254.10, and is not included in any document released to the public. This report is restricted and is generally not included in the copy of the plan provided to the LTO. Its contents, especially the precise location of all archaeological sites requiring protection and the logging restrictions designed to protect them are provided to the LTO by the RPF or supervised designee during an on-the-ground meeting at each archaeological site requiring protection. It is at this meeting where the extent and boundary of each site, the specific plan to protect them, and the need to keep this information confidential will be discussed. For extremely complicated plans a copy of the Confidential Archaeology Addendum, or a portion of it containing the map of site locations, site descriptions, and list of protection measures, can be obtained from the RPF or plan submitter.

Post-Review Site Discovery

If an archaeological or historical site is discovered during a timber harvesting project, timber operations in that area must stop until CAL FIRE is notified and authorization is given to proceed. A CAL FIRE staff archaeologist will evaluate the site and appropriate protection measures will be developed. If the site is found on an exemption which does not have RPF involvement the LTO must avoid the site, unless the investigation finds that the site is not significant.

Archaeological Training Opportunities

CAL FIRE has an archaeological training program for Registered Professional Foresters and other Resource Professionals that may be working on CAL FIRE projects. LTOs and timberland owners are

welcome to enroll in the training courses that are offered each year. There are two types of courses: the initial course and refresher courses.

Initial Course - This class is offered to those who have never had the initial training or those who need to take the full course again to renew an expired certification. It is five days in length and is intended as a practical training course for foresters and other resource professional that may encounter archaeological or historical sites and resources in their daily field activities. This is an excellent course for CAL FIRE Forest Practice Inspectors, RPFs, LTOs, VMP Coordinators, Forest Managers, Battalion Chiefs, and timberland owners that may deal with archaeological resource management issues. Illustrated slide lectures, group workshops, group discussions, and archaeological field surveying exercises will familiarize students with the kinds of archaeological materials they are likely to encounter, their legal obligations towards them, and how to best achieve compliance with current cultural resource mandates. Course instructors include CAL FIRE, consulting and research archaeologists, as well as RPFs. The registration fee is approximately \$750. This fee, which pays for course instructors, includes a comprehensive (1200-page) reference manual and study guide, and lunches and breaks all five days. The certification is valid for five years.

Refresher Course - This class is only offered to those who have successfully completed a full course and kept their certification up to date. It consists of a one-day session, which may be held either in the classroom or field. The registration fee is approximately \$175. The refresher certificate is also valid for five years. Contact a CAL FIRE Archaeologist for more information about the archaeological training courses that are available and how to enroll.

More Information Is Available

To obtain more information about CAL FIRE's Archaeology Program or the Forest Practice Rules for the Protection of Cultural Resources, visit the CAL FIRE Archaeology Program Web Site on the Internet. Here you will find a complete set of the forest practice rules for the protection of archaeological and historical sites, survey report forms, site recording forms, lists, and other news and information.

LTOs and timberland owners may wish to contact one of CAL FIRE's staff archaeologists for assistance in complying with archaeological site protection requirements in the forest practice rules, cultural resources investigation procedures, or other concerns with logging projects on private and other non-federal lands. Their names, phone numbers, and areas of responsibility are provided below. To report concerns with cultural resources or logging projects on federal lands, contact the U.S. Forest Service.