IV. PRIMARY DUTIES OF THE CDF ARCHAEOLOGY PROGRAM

The Early Years

Although archaeology is a relatively small component of CDF, and got a relatively late start in the 100-year history of the Department, it has come to play a leading role in heritage resource management within state government. In the years since the consideration of impacts to archaeological and historical resources has been mandated by CEQA, the CDF Archaeology Program has developed a system of policies and procedures to accomplish this mission. Important factors leading to the development of an archaeology program within CDF include public pressure, regulatory compliance, and economic incentives. Public concern for resource protection and the resulting legislation has been reviewed in the preceding chapters. An event that demonstrated the potential economic consequences of archaeological issues is described below.

Up until the 1970s, DPR was the lead agency for most archaeological and historic preservation activities within state government. As a result of the NHPA, DPR was assigned several important functions that included the development of a statewide historic preservation plan, the role of official clearinghouse for archaeological information, and the review of projects for compliance with state and federal cultural resource protection mandates. Because of this leadership position, officials at CDF believed that DPR was responsible for CEQA compliance on the part of other state agencies, and ultimately for all archaeological protection. Whenever a site was damaged as a result of a CDF project, officials somehow believed that it was the responsibility of DPR. CDF officials did not feel that they needed to be concerned about archaeology. Unfolding events would begin to demonstrate the erroneous nature of this assumption.

The earliest archaeological work conducted by CDF began in 1975 when the Department entered into an interagency agreement with DPR for archaeological services. John Foster, Glenn Farris, and Jim Woodward were some of the DPR archaeologists that performed work for CDF under this agreement. John Foster was the first DPR archaeologist to conduct work for CDF which included numerous surveys and THP reviews, the first cultural resource training for CDF foresters, participation in the THP Task Force, and testimony in an important law enforcement action. Archaeological surveys were conducted by DPR Archaeologist Glenn Farris for timber sales on Jackson and Mountain Home Demonstration State Forests (Farris 1980a, 1980b, 1992). DPR Archaeologist Jim Woodward worked at CDF for seven months during 1981 conducting surveys for forest management projects, surveys on several state forests, and numerous THP reviews. Interagency agreements with DPR continued to provide CDF with archaeological services through the 1980s and into the early 1990s.

Following the certification of functional equivalency in the late 1970s, CDF worked out an informal arrangement with OHP to do nominal THP reviews. Nick Del Cioppo, the staff archaeologist at OHP assigned to this work, would evaluate the available information to determine if recorded archaeological sites existed within plans, make generalized recommendations, and identify plans requiring a field inspection by a professional archaeologist. Protection measures usually consisted of avoiding heavy equipment operation within site areas,

but rarely entailed restrictions on logging. This review was performed with limited input from THP applicants. At that time the THP form had no questions regarding archaeology. In 1985, OHP informed CDF that due to a loss of federal funding, it could no longer perform THP reviews, causing CDF to expand their program of archaeological review on THPs (Martin 1989:39-40).

A major turning point in the perceptions of CDF officials regarding the importance of archaeology came in the late 1970s. During this period, timber sales were being conducted each year at Jackson State Forest and every other year on the smaller forests. Complete EIRs were prepared for each sale. In 1977, a THP called the "Headquarters Sale" was being planned at Mountain Home State Forest. The EIR prepared by CDF Forester III Cliff Fago included a discussion of potential environmental impacts and how such effects would be mitigated. This EIR was submitted to the OHP for review while CDF proceeded with contract preparation. The sale included three million board feet of pine and fir that was valued at approximately $600,000. OHP commented on the lack of any discussion of impacts to archaeological sites, but CDF countered by stating that if any archaeological sites were found, work would be stopped. OHP rejected this stipulation and insisted that an archaeological survey be conducted. The survey was contracted to CSU Fresno for $500 through a sub-purchase order, and conducted under the supervision of Dudley Varner. The survey crew found a previously unknown archaeological site within the sale area. They recorded the site, identified its boundaries, and recommended that it be protected by avoidance. The specified site protection was amended into the EIR which was then approved by OHP. The delay resulting from the archaeological survey and correction of the EIR caused the cancellation of the timber sale. When the sale was offered the following year, timber values had dropped dramatically, and CDF received only $285,000 for the same timber. Essentially, $315,000 in revenues were lost to the state because of the absence of a $500 archaeological survey. CDF officials were surprised to discover that archaeological issues could have such a dramatic impact on a timber sale project. This event had a direct influence on the initiation of an independent archaeology program within CDF and the hiring of the first staff archaeologist.

In 1980, a Budget Change Proposal (BCP) was written to add one State Archaeologist II position to the CDF Resource Management staff for the fiscal year 1981-1982. The proposal was approved and Daniel G. Foster was hired on December 14, 1981, as the first full-time staff archaeologist at CDF. Duties and responsibility for archaeological protection covered the entire state and consisted of a variety of programs and projects. The majority of efforts were directed in support of forest management programs. Fallout from the Headquarters Sale made surveys of the state forests a top priority. Forest Practice related work was very limited with field inspections occasionally requested by CDF foresters.

One of the primary duties of the new CDF archaeologist was to provide support for the various forest and wildland management programs administered by CDF including the California Forest Improvement Program (CFIP) and the Chaparral Management Program (CMP). CFIP was established in 1978, creating additional demands for archaeological review. In the early years, CFIP was well funded with revenues from timber sales on the state forests, and consequently received comparatively good archaeological treatment. CDF recruited private landowners into this cost-share program of projects which had been developed by private RPFs. The state

contributed up to 75 percent of the funds for improvements to these private timberlands. The Chaparral Management Program was established in 1981, requiring additional archaeological review needs. This program was later designated the Vegetation Management Program (VMP), and consists primarily of the application of prescribed fire and other mechanical fuels treatments.

In the first few years of the CDF Archaeology Program, THP review was so infrequent that it was not even listed as an official duty. Occasionally someone would stumble into an archaeological site and the CDF archaeologist would be asked to go out and make some recommendations. In 1981, a question was added to the THP form asking the submitter if they had any knowledge of recorded archaeological sites. Three check-the-box responses were provided on the form: Yes, No, or Unknown. Nearly all RPFs checked "Unknown", because to answer "Yes" or "No" would have required an archaeological records search at an Information Center which charged a small fee for this service. CDF did not believe it had sufficient authority to require THP submitters to obtain record searches due to the resulting costs to landowners.

In its role as an archaeological information repository, in 1980 OHP established an initial, extremely limited, electronic database of all recorded archaeological site locations (Hata 1992). CDF contributed $35,000 of funding to encode site locations into this primitive database (in the hope that the database would have statewide coverage – which it never did), and became one of its first users. During the 1980s, the CDF Archaeology Office began conducting record searches for projects through the OHP computer system. A check of this database at Sacramento Headquarters on some plans was an early attempt to consult existing archaeological information during THP review. The CDF Archaeology Office acquired a computer which could be connected with the central database to allow the staff archaeologist to perform a record search. In August 1985, CDF began providing RPFs with information about recorded sites so that plans could be designed to avoid sites before they were submitted. This service became so popular that by the following Spring the staff archaeologist was overwhelmed with requests (Martin 1989:40).

The increasing workload of forest practice review helped to justify a second staff archaeologist position at CDF. Part-time assistance was provided by DPR beginning in 1984 and a second full-time position was created in 1986. With approximately 1,500 plans per year being submitted at this time, THP review became a mounting problem. THPs were reviewed for known sites, but the sheer volume of plans and limited review time available made this a hit-or-miss operation. Many recorded sites were slipping through the cracks and unrecorded sites were rarely identified. There were certainly hundreds of sites within the many plans that were being approved each year, but there were no policies in place to ensure their identification or protection. CDF did not have the authority to require archaeological surveys, record searches, or site recording; and archaeological training for RPFs was voluntary. There were no rules to prevent even the proposed destruction of sites. Copies of THPs were not readily accessible to the public for review or comment. CDF policy stipulated that if an archaeological site was legally designated, it was declared a "Special Treatment Area" and restrictions were placed on the THP to avoid adverse impacts to the area. Legal designation was regarded as a site having been formally recorded and issued a permanent state trinomial.

Throughout the 1980s, it was the legal responsibility of CDF to ensure the approval of a THP

would not result in preventable damage to significant cultural resources. In the early 1980s, fewer than 75 sites were being found each year during the review of CDF projects, and approximately half of these were on THPs. Unfortunately, many of these discoveries took place after the sites had been damaged by logging operations or other project activities. Many requests came in to look at sites damaged by logging, some of which were recorded sites that were not identified by the limited project review procedures in place at that time. Through the course of this period, requests to review THPs gradually increased and Forest Practice work became dominant over other archaeological responsibilities, largely because CDF was so vulnerable in this area. Environmental groups began using archaeological shortcomings as a means to promote their anti-logging agendas.

During this period, the CDF archaeologist investigated many cases of sites damaged by logging operations that were reported by neighboring property managers. These reports were sometimes made by adjacent landowners, but more commonly by agency personnel responsible for public lands such as archaeologists from the Forest Service or the Bureau of Land Management (BLM). Archaeologists from the Modoc, Plumas, Tahoe, Eldorado, Sequoia, Mendocino, Shasta-Trinity, and Six Rivers National Forests frequently notified CDF when sites were damaged on adjacent private lands. Charla Meacham, Mike Boynton, and Greg Greenway of the Mendocino National Forest were particularly aggressive about alerting CDF to site damage. The common element in all of these incidents was that the CDF archaeologist was contacted after the damage had already occurred. These incidents provided a growing body of evidence that sites were not being adequately identified and protected prior to THP approval. As these reports of site damage became more frequent, CDF could no longer ignore their obligation to consider archaeological resources and was forced to develop policies to better address these problems. The Tobias Meadow incident was a major embarrassment and the destruction of a site on Louisiana-Pacific lands near the Mendocino National Forest led to criticism by the Forest Service. The public began to realize that archaeological sites were not being protected and started to put pressure on CDF to do something about it.

Following the *EPIC v. Johnson* decision, the CDF Archaeology Office began to receive many more requests for THP review, particularly if there was a good chance of a challenge. This led to a paradoxical situation where plans with limited archaeological potential were carefully scrutinized (because of the likelihood of legal challenge), while plans with high archaeological sensitivity received minimal review if they were in a region with no environmental activists. Numerous plans were carefully reviewed in the Whitethorn area because EPIC was looking over CDF's shoulder, even though these plans had relatively low archaeological sensitivity. By contrast, a 500-acre plan in eastern Lassen County with considerable archaeological potential was often not examined well at all. During this time it was learned that decisions on conducting preharvest inspections were based, in part, on the steepness of the plan area. The steeper the plan, the more erosion and watershed issues that could be expected. Flat plans, even if they contained perennial streams, were considered low risk for environmental impacts. From an archaeological perspective, this sensitivity model should be completely reversed. This realization provides an indication of the low priority given to archaeology as an environmental concern. Eventually, CDF policymakers began to recognize some of the flaws in assumptions regarding THP review, and archaeology began to receive more consideration.

An incident that provides an example of the type of emergency situation that frequently arose, and the unbridled enthusiasm with which they were approached, is illustrated in the following account. Early one morning an urgent call came into the CDF Archaeology Office regarding a VMP project in Shasta County. Firelines were being constructed by bulldozers across an extensive field of lava rocks. The CDF project manager observed rocks disturbed by operations that contained small circular holes. He thought these holes might be cupule petroglyphs, which would represent a highly significant archaeological discovery. Project operations were brought to a halt awaiting expert consultation. The CDF archaeologist was needed immediately, but was too far away to drive to the project area in a timely manner. A flight was available from Sacramento to Redding on a commuter airline, so off went the intrepid archaeologist. On arrival in Redding, the only rental car available was a red Pontiac Firebird with approximately three inches of ground clearance. CDF Forester Bob Brown provided directions and flagging at the turnoff point. Access to the project area was on a newly created dozer track over extremely rocky ground. Inching along at a snail's pace, every rock a potentially lethal blow to the low-slung sports car, the project area finally came into view in a broad open meadow area. The project manager, equipment operators, and inmate crews were all anxiously awaiting the arrival of the CDF archaeologist. Their incredulous expressions were more befitting the visitation of an extraterrestrial than a functionary from Headquarters. Fortunately the rocks in question contained only natural depressions and no archaeological disturbance had occurred. The project was able to proceed unabated to the great relief of everyone involved. Field personnel often view officials from Sacramento with contempt, not believing that they have the common sense or practical knowledge to get things done. Their suspicions were confirmed by the selection of transportation on this particular occasion.

Many additional cases shed light on difficulties encountered during early project reviews. Ever since its creation, Redwood National Park had been surrounded by controversy. Proposed expansion of the park led to increased logging of the Redwood Creek watershed. A 1982 THP adjacent to the park boundary raised several difficult issues. A portion of a highly significant archaeological site (CA-HUM-441) was located within this plan. National Park Service Archaeologist Ann Smith recommended mitigation measures to protect the site, but a dispute arose with the landowner, Mr. Henry Harding of the Orick Lumber Company. Mr. Harding asserted that the mitigation measures stipulated by Smith constituted a taking of private property for public use without compensation for this use. The CDF staff archaeologist conducted a field inspection of the project and successfully negotiated a level of site protection agreeable to the landowner. This large and very rich site held considerable research potential. An archaeological investigation was proposed as mitigation and an arrangement was worked out with Sonoma State University for a limited test excavation. This project was cancelled at the last minute due to liability concerns raised by the landowner's legal council. This incident demonstrated the extremely limited authority of CDF to require any site protection and the difficulties encountered trying to facilitate any sort of archaeological investigation on private property.

A less contentious project carried out by the CDF archaeologist in 1982 was the survey of a 164-acre parcel of undeveloped land in South Lake Tahoe that was the proposed site of a new community college campus. This project was a coordinated effort between CDF, college officials, and the Tahoe Regional Planning Agency to show that a large construction project could be compatible with resource protection in a forest setting. The survey identified three

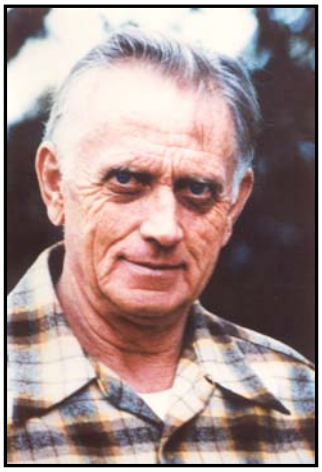
archaeological sites and three isolated artifacts. Management recommendations were formulated to protect the archaeological sites (Foster 1982).

In 1984, logging operations in San Mateo County on the property of Mr. George Pope resulted in serious damage at two archaeological sites. One of these sites was considered to be highly significant. The operations were being conducted under a Section 1038 Exemption which allowed harvesting of dead, dying, or diseased trees in amounts less than 10 percent of the volume per acre, where it will have only a minimum impact on the timberland resources. The CDF archaeologist determined that the damage to the previously recorded and highly significant site constituted a major impact. He urged that all logging operations be halted and a THP be submitted. This beautiful property was being heavily logged, including the harvest of numerous healthy redwood trees exceeding six feet in diameter. This was clearly a misuse of a Section 1038 Exemption which is limited to dead and dying trees. This Exemption covered over 2,000 acres of green timberland and bypassed the involvement of an RPF or development of a THP. Although CDF eventually halted these timber operations and required the landowner to file a THP, this action came far too late for the significant archaeological site on the property that was horribly mangled during these unsupervised timber operations. This incident serves as an example of the inadequacy of certain segments of the Forest Practice Rules, especially Exemptions. Preparation of a THP would have required the involvement of an RPF and more stringent CDF review. Under Exemptions there is very little opportunity for pre-project oversight and limited enforcement action. Exemptions continue to be one of the most serious inadequacies in the Forest Practice Rules regarding archaeological protection. CDF has pursued a nonregulatory solution to this problem by using persuasion and cooperation to achieve compliance. Attempts to educate logging operators and landowners about their responsibilities and obligations have been made through publications and video presentations given at initial LTO environmental training sessions.

The effectiveness of the persuasion technique was demonstrated during an inspection on a CFIP project on the Prather property in Siskiyou County. The consulting RPF described the various treatments that were planned for the property. During the inspection, the CDF archaeologist identified a small but well-preserved prehistoric campsite. The RPF was completely opposed to providing any form of protection for this site. The landowner, who was the founder of the Ralph's Supermarket chain, was also present during the inspection. When the archaeological site was brought to the landowner's attention, he showed considerable interest and insisted that it be fully protected, in spite of the protestations of the RPF.

During these early years, the authority to conduct archaeological work, or enforce archaeological protection, was extremely limited. It was a continuous struggle to implement even the most basic archaeological investigation. CDF was strongly committed to protecting property rights, and any issue that could result in economic loss to a landowner was construed as a taking of private property. The profound weakness of enforcing archaeological protection manifested itself on several revealing issues in terms of the constraints placed on archaeological efforts. One of these issues was the recording of archaeological sites. CDF believed that landowner permission was necessary in order to conduct any site recording. During inspections, if sites were found, the CDF archaeologist would take out his or her notebook to begin compiling information to prepare a site record. Oftentimes, foresters would admonish the archaeologist that

this activity was not going to be allowed. They would typically be supported by the CDF inspector. Complaints from foresters and landowners made their way back to CDF Headquarters and the CDF archaeologist was instructed by the program supervisor (Tom Randolph) that he was not to attempt site recording without landowner approval, and CDF really didn't want to spend limited staff archaeologist time filling out site record forms. This directive was tacitly overruled by Randolph's supervisor, CDF Staff Chief Audley Davidson who advised the archaeologist to continue to record sites if such activities were expected by the public as part of completing professional work.



Audley Davidson, Staff Chief over Archaeology during the early years of the program.

A controversial issue arose in 1980 over the use of cameras during preharvest inspections. A member of the multiagency THP Review Team representing the Regional Water Quality Control Board was refused permission to use a camera during a preharvest inspection by the plan submitter, Masonite Corporation. The Review Team member insisted that the photographs were necessary in conferring with others in his agency about the THP. Masonite argued that such photos had been used in a pejorative manner in the past and that they could be employed in future law enforcement actions in violation of unlawful search and seizure statutes. CDF Director David Pesonen denied the THP and the Board of Forestry upheld his decision. Masonite took the case to court and received a favorable ruling on a technicality. The court found that the Board of Forestry had failed to show specifically how the lack of photographs had prejudiced their ability to make an informed judgment and ordered the approval of the plan (Martin 1989:8-10). In the early years of the CDF Archaeology Program, permission to bring a camera during archaeological inspections was denied on many occasions. The CDF archaeologist eventually refused to participate on inspections or submit plan approvals without the aid of a camera, and without the ability to record site discoveries as stipulated by state policy.

Another area where the CDF archaeologist struggled to gain professional credibility was in the effort to acquire a CDF uniform. In the course of many early meetings, it was recognized that the lack of a uniform was a handicap in presenting a professional and authoritative image for the Archaeology Program. At least one CDF official was incredulous that the Department even employed an archaeologist. During an inspection on the Lassen-Modoc Ranger Unit in 1983, the CDF archaeologist was invited to meet Unit Chief Lloyd Keefer. In the course of a thorough interrogation, it became apparent that Chief Keefer did not recognize the CDF archaeologist as an official member the CDF's staff, inquiring if he was actually a DPR employee because he was not wearing a CDF uniform. It became apparent that, in many situations, it would be preferable to have a CDF uniform in order to present the appropriate image necessary to accomplish the goals of the newly established Archaeology Program. Consultation amongst CDF officials supported the contention that a uniform would be beneficial to presenting the image of an official CDF representative, and all CDF staff archaeologists are now official uniform wearers.

Over the years, CDF, due to a perceived lack of authority, public pressure to reduce regulatory burden to private landowners, or inadequate assessment of potentially destructive impacts, has

occasionally shortchanged cultural resources. Many ground-disturbing projects were approved without adequate archaeological review, sometimes resulting in significant resource damage. These incidents of resource damage resulted in embarrassment for the Department and the diminishment of credibility for the Archaeology Program. One of the objectives of the CDF Archaeology Program has been to reduce the number of these poorly planned projects that resulted in resource damage. The preceding incidents do not begin to cover the full spectrum of situations encountered during the early years of the CDF Archaeology Program. They only serve to highlight a few of the controversial events and problematic issues that have been confronted along the way.

Archaeological Training

One of the most important components of the CDF Archaeology Program is archaeological training given to RPFs and other resource professionals responsible for environmental review work supporting CDF projects. A substantial commitment of time and energy has been given to the development and delivery of this archaeological training program. The purpose of the training program is to provide archaeological resource recognition and management abilities to CDF staff, private sector RPFs, and other resource professionals that are responsible for conducting environmental impact assessments for projects as required by CEQA. This program has been certified by the California Board of Forestry and Fire Protection and incorporated into the California Code of Regulations. Archaeological training was initially developed in response to Forest Practice requirements but has come to have broader applicability for the full range of managers with cultural resource management responsibilities.

The archaeological training program is currently delivered in partnership with the California Licensed Foresters Association (CLFA) and has been for the past 15 years. CDF is not adequately staffed or budgeted to provide this training, so the costs for delivery of these courses is funded through the collection of registration fees paid to CLFA by the students. Course costs include speaker fees, travel expense for instructors, printing costs, facility and equipment rentals, lunches, and refreshments. At the present time, Hazel Jackson of CLFA administers the participant registration and logistics for the training program, while CDF develops course curriculum and delivers the training.

Through this training, students learn to recognize, record, and devise adequate protection measures for prehistoric and historic sites located throughout California, with emphasis on the specific types of cultural resources found within forest and rangeland environments under CDF's jurisdiction. Students that satisfactorily complete this training are considered qualified to conduct basic archaeological surveys for CDF projects, supported by professional archaeologists on staff at CDF, and provide assistance to CDF in meeting its responsibility to identify and protect significant cultural resources. The archaeological surveys, reports, records, and protection measures submitted by these archaeologically trained resource professionals are reviewed by CDF staff archaeologists to ensure compliance with regulations, conformance with professional standards, and adequacy of protection measures.

The advent of concern for the protection of archaeological and historical resources necessitated that foresters and other resource professionals acquire an ability to recognize cultural resources

and an understanding of issues regarding their preservation. A program developed by the USFS to train nonarchaeological personnel in cultural resource management activities may have provided the initial inspiration for the training implemented by CDF, but its implementation was guided by the need to achieve a balance between the cost to landowners and CDF's limited archaeological resources on staff. A program to provide archaeological education to timber operators by DPR personnel was being discussed within CDF as early as 1976 (Brian Barrette to Frank Goodson, Memorandum, May 27, 1976, CDF, Sacramento).

Classroom session at the four-day archaeological training course.

The CDF archaeological training program was inaugurated in 1979 when DPR Archaeologist John Foster, under contract to CDF, provided three training classes to CDF foresters. The next three classes were given during 1982 by CDF Archaeologist Dan Foster at the CDF Siskiyou Ranger Unit in Yreka, the CDF Tehama-Glenn Ranger Unit in Red Bluff, and Sierra College in Rocklin. These one-day classes were attended mainly by CDF foresters with a few RPFs sitting in if they had happened to hear about the classes. In the late 1980s the training sessions became very popular and many RPFs made a deliberate effort to participate. Attendance was voluntary at that time but almost every hall was filled to capacity. One huge class in Redding had over 200 students. Nearly all RPFs that wrote or reviewed plans attended one of these sessions. By the end of 1987, CDF archaeologists had conducted a total of eight training sessions. Only one class a year was provided for the next several years until the adoption of the Forest Practice Rules requiring archaeological training.

Artifact recognition workshop at CDF training class.

The archaeological training program has gradually evolved over the years. Initially it was directed primarily towards CDF staff, but soon expanded to include RPFs on a voluntary basis. Eventually, training became a requirement for anyone conducting archaeological investigations on CDF projects. The current format and curriculum of the archaeological training program was established in 1990. In 1991, the Board of Forestry approved a comprehensive set of archaeological rules that included provisions requiring archaeological training for persons preparing THPs. Following the adoption of these regulations, the demand for training sessions greatly increased. From three to seven classes were provided each year between 1991 and 1995. Six classes were given each year from 1996 to 2001. Class size is now limited to 46 students for the four day class and 32 students during the one day refresher class. These class limits ensure

the effectiveness of the instruction and enable CDF to carefully review student's abilities to identify and protect heritage resources prior to issuing certification.

Cadre for CDF Archaeological Training Course #71, Redding 2001.

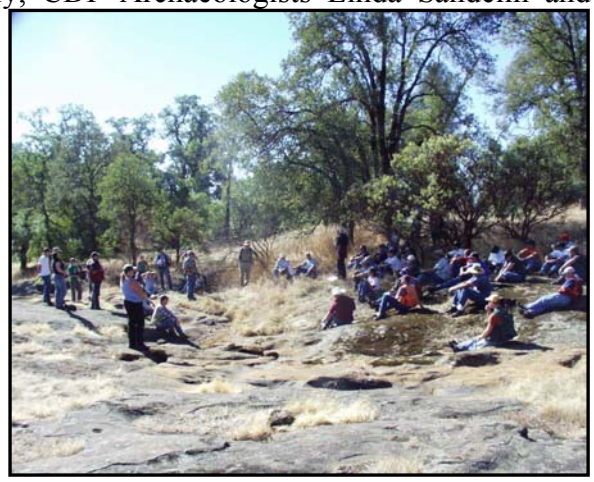
Presently, the CDF archaeological training program is presented in two stages. Students must first complete an intensive four-day training course. Then they must attend a one-day refresher course every five years to renew their certification. The initial course is a full four-day program offered to those who have not previously received archaeological training, or who attended a course before 1990 when the current curriculum was implemented. This course consists of illustrated slide lectures, group discussions and workshops, assigned reading, and archaeological field surveying exercises. These activities 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 state cultural resource protection laws and regulations.

For those who have completed the initial four-day course, a one- day refresher course is offered. This course is held entirely in the field where students work in small group settings to renew artifact recognition skills and develop appropriate management strategies for sites located in mock project areas. In addition to refresher training, this course also serves as a performance evaluation. In small group settings, professional archaeologists evaluate each student's skills, knowledge, and ability to conduct the archaeological tasks required by the Forest Practice Rules. Students must also complete a homework assignment consisting of the preparation of an archaeological site record that meets current professional standards. Students who satisfactorily complete the training courses receive an archaeological training certificate that entitles graduates to conduct archaeological survey work for CDF projects. The certificate is valid for five years. Every five years another refresher course must be taken. Graduates also receive credit towards continuing education requirements recognized by the Society of American Foresters.

Training class conducting site mapping exercises at Flat Iron Ranch near Ukiah.

Instructors for the archaeological training program include state, consulting, and research archaeologists, RPFs, and Native American representatives. Over the years, some of California's most distinguished archaeologists have served as instructors. Francis A. Riddell, the first State Archaeologist, was an instructor from 1986 to 2002. Professor Thomas N. Layton of San Jose State University provided instruction over the course of a decade. Brian D. Dillon has been an instructor since 1990, participating in over 70 classes. Other prominent archaeologists that have provided instruction include Eric Ritter, Franklin Fenenga, Dave Fredrickson, Mark Kowta, Mark Raab, Roy

Sahls, and William Wallace. Dan Foster has organized or supervised all of the training classes since 1982. CDF staff and other individuals that have taught classes include Ron Berryman, Patricia Murphy Brattland, Mark Fleming, Dan Foster, Mark Gary, Lucky Gillett, Blossom Hamusek, Mark Hylkema, Ted James, Richard Jenkins, Jim Purcell, Bob Rynearson, and Kathleen Schori and Chuck Whatford. Currently, CDF Archaeologists Linda Sandelin and Gerrit Fenenga serve as lead instructors.



Brian Dillon instructing students at Church Rock Site near Redding.

The archaeological training program includes educational materials that are approved by the CDF Director. These materials are provided in the *Reference Manual and Study Guide for the California Department of Forestry and Fire Protection Archaeological Training Program* (Foster, ed. 2003). This manual started out as a few stapled copies of relevant articles, but has now grown to a hefty two-volume set of over 1,400 pages. These volumes contain an extensive compilation of information that may be useful to anyone conducting investigations for CDF projects including pertinent articles on the ethics of archaeological preservation; California prehistory, historical archaeology, and ethnography; extracts of legal requirements and regulations; procedural requirements; site impact evaluation and protection measures; survey and site recording techniques; artifact recognition information; and many additional reference materials.

One part of the curriculum consists of field trips to representative archaeological sites in the vicinity of the class that is being given to conduct survey, site management, and site recording exercises. The first two classes organized by John Foster included field trips to JDSF and the Forest Experimental Station in Tulare County. Some of the sites that were visited during Dan Foster's earliest years of archaeological training courses include a housepit village site on Orel Lewis's property (SIS-184), sites near Redding (Pine Grove, Oasis Road #1, and Church Rock), fours sites on JDSF (MEN-790, 1362, 365, and 1371), sites near CDF's Whiterock Fire Station (MRP-1, 2, 275, and 898), and sites along the shore of Bass Lake. In the middle years the following sites were visited: PLU-668, SIE-391, sites on the Holstrom property, in Scott Valley, the Pope property, Ano Nuevo State Park, and sites in Thousand Oaks, Topanga Canyon, and Malibu. Since 1991 the following sites have been utilized for field exercises at CDF archaeological training courses: DNO-20, HUM-461, Harding Site, MEN-1946, -1914, Layton's

Brian Dillon and Linda Sandelin leading site recording exercises at the Salt Creek Site near Redding.

sites at Albion, PLA-689, -694, -706, sites at the Hopland Field Station, MEN-2859 (Indian Huts), Church Rock, Salt Creek Village, sites near Burney Valley (SHA-404, -2202, -2219), MEN-610, -2203, Sugar Pine Conservation Camp, Carlson Site, Jack June Site, Pond Site, Salt Creek, Tuolumne Camp 9, Chuck's Chert Quarry, Glittering Rock, Indian Huts, Grass Lake, Keystone, Flat Iron Ranch, Two Barn, Ukiah area, and several sites in Cuyamaca Rancho State Park.

The archaeological training classes are offered to three main groups: CDF staff with archaeological review responsibilities required by CEQA; CDF fire protection personnel; and private sector personnel who are responsible for completing archaeological surveys, impact evaluations, and site recording requirements as specified in the Forest Practice Rules. CDF staff that are offered the training include Forest Practice inspectors, environmental coordinators, state forest managers, forestry assistance specialists, VMP coordinators, prefire engineers, project planners, and others with responsibilities for archaeological review work supporting CDF projects. Fire protection personnel that are encouraged to attend the training include Battalion Chiefs, Station Captains, Crew Captains, Strike Team Leaders, Heavy Equipment Operators, Field Observers, Fire Suppression Repair Team Members, and personnel working in the Planning Section. Private sector personnel who are expected to complete the training include RPFs who prepare THPs and their supervised designees, forest technicians, timber operators, and others who participate in cultural resource survey and reporting work supporting THPs. The training courses are also open to private timberland owners, Native Americans, and other resource professionals who work on or review CDF projects. Members of the general public are allowed to attend when space is available. The personnel that have received this training provide a large work force to assist CDF in accomplishing its mandated cultural resource responsibilities.

The CDF archaeological training program has become recognized as one of the most successful programs of its type in the country. Foresters from other states such as Nevada, Washington, and Montana have sought to attend these classes for the introduction it provides to cultural resource management. In particular, at least 13 employees of the Nevada Division of Forestry (NDF) have attended these CDF-sponsored training sessions. Many NDF projects receive federal funding and require compliance with federal cultural resource protection regulations. The training received from the CDF program helps NDF employees recognize and protect cultural resources during the implementation of these projects.

The archaeological training provided by CDF has proven to have wider application than strictly to achieve compliance with mandated archaeological and historical resource protection requirements. Individuals from professions as diverse as a county planning department and the director of a local museum have benefited from this program. The CDF archaeological training has given them the ability to identify sites, better understand archaeological issues, and provide site protection during project development, demonstrating how cultural resource protection can be enhanced beyond the basic needs of regulatory compliance.

The CDF Archaeology Program has been criticized for its efforts to train and utilize foresters and other resource professionals for archaeological investigations. When the archaeological training program was initially developed, it was not intended to replace professional archaeologists with foresters, but was designed as an educational tool to train foresters in site recognition, use of the

state archaeological inventory system, and to recognize when a professional archaeologist was needed. The training course was never intended to turn foresters into professional archaeologists.

Criticism of the archaeological training program may have been partially motivated by a perceived loss of economic benefit to the archaeology community. At the inception of this program, consideration was given to the possibility of requiring professional archaeological involvement in THP preparation. However, several important drawbacks to this approach were identified. One problem is the highly variable size of THP areas which can range from only a few acres to thousands of acres in size. On very small plans, there is often not enough economic benefit to pay for a professional archaeological study. Another consideration is the fairness doctrine which dictates that various industries be treated equally. Some agricultural industries, such the farming of vegetable crops, are usually not required to perform archaeological surveys or protect sites. There was also concern that the archaeological community would not be able to provide the numbers of qualified personnel necessary to respond to the extent of the forestry-related surveys that were needed at the time.

Another factor leading to criticism of archaeological training may be a lack of awareness of the level of professional oversight that is an important component of the CDF Archaeology Program. All findings that result from investigations conducted by participants in the CDF archaeological training program are carefully reviewed by professional archaeologists on the CDF staff to ensure that the analysis and conclusions made by a nonarchaeologist are in compliance with regulations and conformance with professional standards. CDF utilizes recognized criteria for evaluating the qualifications of archaeological review personnel, such as state archaeologist civil service classifications, the guidelines of the Society of Professional Archaeologists, and the Secretary of the Interior's Professional Qualifications Standards. An assumption that archaeological investigations conducted for CDF projects are not subjected to thorough professional oversight would be an inappropriate characterization of the program.

Archaeologists have long been concerned about the level of professionalism within their own discipline. Questions regarding educational credentials, experience, competency, and ethical standards have a long history in archaeology and continue up to the present day (King and Lyneis 1978; Lynott and Wylie 2000). These considerations have led to the formation of organizations such as the SCA, the Society of Professional Archaeologists, and the Registry of Professional Archaeologists. One purpose of these organizations has been to provide a level of oversight for the discipline, but these efforts have had limited effectiveness. It has recently been suggested that a state-administered licensing program be implemented for the archaeology profession (Sutton 2003a, 2003b).

It is interesting to recognize that the procedures employed by the CDF Archaeology Program provide just the form of professional licensing and oversight that has been called for. The majority of the participants of the archaeological training program and the personnel most likely to be performing archaeological investigations under the jurisdiction of CDF consist of RPFs who are licensed by the State of California. RPFs are subject to disciplinary action for unacceptable conduct and may have their licenses suspended or revoked for deceit, gross negligence, incompetence, and material misstatement of facts (Martin 1989:65). CDF also has

several law enforcement options at its disposal including criminal, civil, and administrative actions to ensure compliance with cultural resource protection statutes.

Ultimately, it is not the credentials a person has, but the quality of the work they perform, that matters. Anyone conducting archaeological studies should follow the commonly accepted methods and ethical standards of the discipline. It is the responsibility of the lead agency to verify the capabilities and expertise of the persons conducting archaeological investigations and the quality of the work produced. CDF relies on the observations of these professional resource managers that have received archaeological training to identify and evaluate impacts to archaeological resources in order to meet its cultural resource protection responsibilities.

During the 1990s, a system of course evaluation was established for the archaeological training program. Questionnaires were provided to participants at the conclusion of each class. These questionnaires solicit comments on the quality of the information presented, the performance and expertise of the instructors, an overall course rating and evaluation, and suggestions for improvement. Comments are compiled by CDF staff into a comprehensive report that is submitted to the Board of Forestry, the CDF Director, and CLFA. The information received from these questionnaires is used in the planning and development of subsequent training sessions. For the most part, the comments received have been positive, and the critical comments have been extremely helpful in designing improvements to the program. Despite the best efforts of those who organize and deliver the archaeological training program, a few RPFs fail to appreciate the value of archaeology and steadfastly cling to negative attitudes. While these foresters may recognize their legal obligations towards cultural resource identification and protection, they refuse to do any more than is absolutely necessary to comply with the regulations.

CDF maintains a list of all training classes that have been given and a roster of all students that have satisfactorily completed the training. As of 2003, eighty-two classes had been provided with over 2,700 students completing the program since 1982. In 2003, over 400 CDF employees received archaeological training through the CDF Academy in Ione. Recently, it has been recognized that the training program might be more successful if it was segregated into separate sessions so that instructors could focus on issues that are most relevant to target audiences. Training directed at private sector RPFs could emphasize site identification, recording, protection, and other issues related to THP preparation. Training for CDF fire personnel could concentrate on developing site recognition skills so that sites could be avoided during fire suppression efforts whenever possible. Sessions tailored for CDF staff could address certain archaeological issues in greater detail than is possible within the current format. The delivery of the one-day refresher course entirely in a classroom setting has also been considered.

Graduates of the CDF archaeological training program are required to demonstrate their ability to identify archaeological sites in the field. As a result of this program, hundreds of foresters are now actively searching for and documenting archaeological and historical resources that previously might not have been found. Typically these efforts are on private lands that would ordinarily not be readily accessible to academic archaeologists. This training program has demonstrated that when given adequate guidance, the professional forestry community can make a highly beneficial contribution to archaeological and historical resource protection and

management activities. The training program has also noticeably improved the quality and reliability of archaeological surveys, project reviews, and inspections made by CDF personnel. The skepticism expressed over whether forestry professionals could adequately address cultural resource issues has been answered by the hundreds of sites that are identified and protected each year as a result of this program.

Survey Procedures

One facet of the archaeological training program that receives particular emphasis is cultural resource survey procedures. Archaeological sites are extremely vulnerable to damage from logging operations, fire suppression, construction projects, and other forestry-related land management activities. These resources are both fragile and easily overlooked during project planning. A cultural resource survey must be conducted to determine if sites are located within a project area. The vast forest and range regions of California contain untold numbers of undiscovered prehistoric and historic archaeological sites. In fact, they represent a significant repository of archaeological information because so much has been destroyed in heavily developed urban areas.

A major problem in implementing a successful cultural resource protection program is that archaeological sites can be easily missed during resource inventories. Many sites and features can only be identified and their significance recognized after the completion of background research on a project area. Careful surveys must then be made by individuals trained to recognize these resources in the field. California law stipulates that significant cultural resources must be protected whenever possible. It is imperative to know what resources are located within a project area before potential effects can be evaluated.

Cultural resource surveys are accomplished through a series of steps. These tasks include an Information Center records check, background research, consultation with knowledgeable individuals, notification of Native Americans, on-the-ground survey, development of protection measures, site recording, and report preparation. The first step in performing background research usually consists of a current archaeological records check at the appropriate CHRIS Information Center. The procedures for conducting a records check are specified in a Memorandum of Agreement (MOA) between CDF, the Board of Forestry, OHP, and the CHRIS Information Centers (Foster, ed. 2003).

In conjunction with the records check, the investigator working on a cultural resource survey conducts appropriate levels of background research. This research includes the review of archaeological, ethnographic, and historical literature; archaeological records and reports; and current and historic maps relevant to the study area. Consultation with knowledgeable individuals such as Native Americans, historical societies, previous landowners, and neighbors can also provide important information. The purpose of this research is to prepare for an on-the-ground survey by becoming aware of the resources known to exist within an area; to become familiar with the types of resources likely to be encountered; and to be ready to record, interpret, and evaluate these findings within the context of local history and prehistory. For CDF projects, staff archaeologists are available to review findings and help determine appropriate survey strategies.

Another component of prefield investigations is to provide written notification of the proposed project to the appropriate Native Americans listed on the current Native American Contact List. This notification is intended to solicit information on the existence of any resources of concern to Native Americans that may be located within the project area. In the event that Native American archaeological or cultural sites are identified within a project area, notification of these findings and the proposed protection measures must also be submitted to these Native American contacts.

Once prefield investigations have been completed, an intensive on-the-ground cultural resource survey is conducted of the project area. This survey is performed by either a professional archaeologist or persons that are certified to perform investigations through the CDF archaeological training program. The objective of this survey is to identify the specific locations of all cultural resources located within a project area including prehistoric and historic archaeological sites, features, and artifacts; historic landscapes, buildings or structures; and traditional cultural properties such as cemeteries, gathering areas, and sacred sites.

CDF Archaeologist Richard Jenkins demonstrating technique for intensive archaeological survey.

Survey methods and techniques employed to achieve adequate coverage can vary depending on the results of the prefield research and the physical characteristics of the property, such as environmental attributes and topography. The four levels of archaeological survey coverage intensity are complete, general, intuitive, and cursory. Complete coverage consists of individuals systematically traversing an area at intervals of 10 meters or less while looking carefully for all evidence of prior human activity. General coverage is similar to complete coverage but with transect intervals spaced up to 30 meters apart because of observational constraints such as heavy brush, forest debris, or steep slopes. Under intuitive coverage, inspection is given primarily to areas that exhibit previously identified characteristics that serve as indicators for the potential occurrence of cultural resources. Transects can be spaced from 30 to 50 meters apart with more intensive inspection given to selected landscape features such as watercourses, springs, benches, ridges, or low rises within flat plains. Cursory coverage consists of the surveyor walking quickly through a project area checking locations where cultural resources are likely to occur.

When the cultural resources within a project area have been identified, specific protection measures are developed for each site. Protection measures are designed to avoid or prevent substantial adverse change to significant archaeological sites within the site area and within 100 feet of the site boundary. These measures must be written in clear, enforceable language and can include adjustments of project location, changes to project design, or modifications of project activities so that damaging effects do not occur.

With the completion of the cultural resource survey, site recording and report preparation are the next responsibility. All archaeological or historical sites identified within a project area during the survey are recorded in accordance with the policies specified by OHP (1995). Although the

current Forest Practice Rules only require the CDF to ensure that all archaeological or historical sites determined to be significant and located within the site survey area on THPs and Emergency Notices, are recorded, CDF has implemented policies and procedures which result in more widespread recording. In most instances, all archaeological and historical sites located within any type of timber operation or CDF project are recorded and protected, and research investigations necessary to determining significance are usually bypassed. Additional guidance for the preparation of site records has been developed for CDF (Betts 2001). An archaeological survey report must be completed for every cultural resource survey conducted for CDF projects. This report is prepared using the *Archaeological Survey Report Form for CDF Projects* or an equivalent format that must meet professional reporting standards (OHP 1989). A complete copy of this report is then submitted to the appropriate CHRIS Information Center for permanent retention. This information is added to the state's database of cultural resources for use during future management activities or research on the property.

Project Review

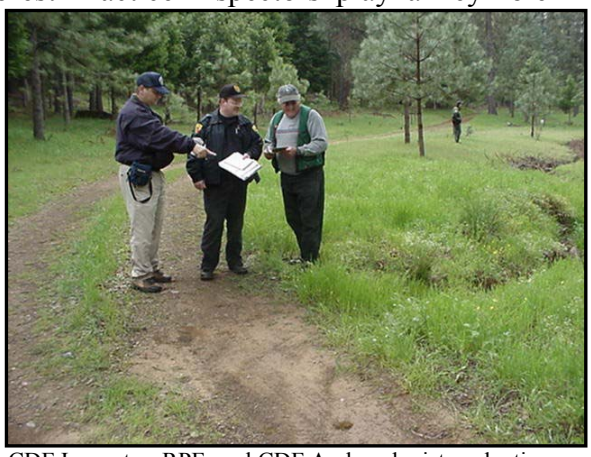
CDF staff archaeologists review all archaeological survey reports prepared for CDF projects that have the potential to impact cultural resources. This includes the Confidential Archaeological Addendum (CAA) that is part of the THP preparation process. CDF projects include any type of activity where CDF acts as lead agency pursuant to CEQA. CDF projects include forest management activities under CFIP, VMP, FLEP, Forest Stewardship, Urban Forestry, and other programs; state forest management; capital outlay, engineering, and facility improvement projects on CDF properties; purchase of conservation easements; and all commercial timber operations.

The CDF archaeological reviewer evaluates the adequacy of the work that has been performed including survey results, site impact assessments, and site protection measures. This review addresses elements of completeness, accuracy, content, and professional adequacy. The reviewer then makes specific recommendations to correct any deficiencies. If necessary, a field inspection is conducted to examine cultural resource discoveries, spot-check areas to test adequacy of survey coverage, review site records in field settings, and make recommendations for follow-up work, if needed. Most importantly, this review includes a careful evaluation of the proposed protection measures to ensure that the project has been designed to be in conformance with applicable state laws and regulations.

An important provision of CEQA is the multidisciplinary review process. For commercial timber operations, this is accomplished through a multiagency review team. THPs are subject to a review and evaluation process by a regional review team consisting of representatives of CDF, DFG, the Regional Water Quality Control Board, and the California Geological Survey. Members of other government agencies and commissions are also represented under certain circumstances. Specialists such as geologists, hydrologists, and archaeologists participate in review team meetings, but only as advisors. Review teams are presented with findings by the CDF staff archaeologist on each THP regarding professional adequacy of archaeological investigations, site protection measures, and conformance with state regulations.

At an initial review team meeting, a decision is made about whether a preharvest inspection is

necessary to examine possible problems in the field because not all archaeological sites are discovered by THP applicants during plan preparation. Some sites are found during preharvest inspections. These inspections provide CDF with an opportunity to check selected areas to evaluate the adequacy of archaeological survey coverage and proposed protection measures prior to project approval. CDF archaeologists and Forest Practice inspectors play a key role in determining if projects conform to archaeological protection mandates. Field inspections are conducted on at least ten percent of projects surveyed by resource professionals with archaeological training to ensure that cultural resources have been successfully identified on these projects.



CDF Inspector, RPF, and CDF Archaeologist evaluating road reconstruction across an archaeological site.

The role of CDF archaeologists in overseeing the work conducted by archaeologically trained resource professionals is specified in a series of Memoranda of Understanding and Programmatic Agreements that bind CDF to these procedures. These commitments are crucial to the acceptance of the CDF Archaeology Program as an adequate supplement to the use of professional archaeologists in the survey of every THP. CDF is the only state agency in California to use archaeologically trained resource professionals to conduct cultural resource management work. The fact that all projects are reviewed by a professional archaeologist on the CDF staff is a fundamental element contributing to the success of this program.

On all CDF projects, the project manager is responsible to ensure that archaeological review procedures have been satisfactorily completed before project initiation. A key component of these procedures is direct coordination between the CDF staff developing the project and the appropriate CDF archaeologist responsible for support and assistance. The project manager is also responsible to monitor and evaluate the effectiveness of any plan used to protect cultural resources upon completion of the project by inspecting sensitive areas to determine if desired objectives have been met.

The first step in the process of conducting an archaeological review of a CDF project is the completion of a Preliminary Study. The purpose of the Preliminary Study is to determine if impacts to cultural resources are possible. If the Preliminary Study reveals the potential to affect cultural resources, an intensive cultural resource survey must be conducted. In general, any project that includes ground-disturbing practices is considered to have the potential to affect cultural resources and, consequently, requires an archaeological survey. A comprehensive list of exempt practices has been developed to assist project managers in the preparation of their Preliminary Study and to expedite the review process (Foster 2003).

Archaeological review of CDF projects under the CFIP and VMP programs has been well established since the beginning of the CDF Archaeology Program. Personnel conducting these projects are accustomed to regular consultation with staff archaeologists. These relationships are

not as well developed in other programs such as state forest management, engineering, or prefire. Efforts are underway to reach out to these branches of the Department to enhance awareness of their cultural resource protection responsibilities.

In the late 1990s, CDF began to experience problems in two CDF units in the southern portion of the Northern Region. The regional archaeologist at Santa Rosa was unable to make regular inspections south of the San Francisco Bay area. The unit foresters would usually conduct archaeological reviews without the assistance of a professional archaeologist. Several projects were approved by CDF that failed to identify important sites. These failures were noticed by local agencies and the general public, causing a loss of confidence in the archaeological review process. For a period of two years, the CDF archaeologist from Fresno was assigned to support these two units and made more frequent inspections resulting in a greatly improved level of archaeological review. Recently, this workload was reassigned to the archaeologist position in Santa Rosa.

Currently, the typical annual project workload assigned to the CDF Archaeology Program includes review of approximately 800 THPs, 200 projects on CDF managed lands and 250 cost-share projects on private lands. CDF staff archaeologists review the archaeological reports supporting these 1,250 projects and conduct field inspections or participate in the actually filed survey on about half, which results in approximately 600 field inspections per year. The team assists project personnel in the completion of archaeological site records for all new discoveries – numbering about 1000 each year. All members of the team are fire-trained and regularly get called out on major wildland fires to help protect cultural resources, an activity which recently has become a significant portion of the workload. In 2002, for example, CDF staff archaeologists spent a total of 49 person days on firelines. Another major element is the delivery of training. CDF staff delivers Board-certified archaeological site recognition training to RPFs, CDF staff, and other resource professionals in the form of about 4-6 classes per year. CDF archaeologists also deliver archaeological awareness training to fire protection personnel at courses at the CDF Academy and in field locations throughout the state. Activities for the Board of Forestry, such as the Golden Trowel Award and review of rule and policy development, maintenance of the web site, administration of the Native American Advisory Committee and the CDF Native American Contact List. And several public outreach efforts round out the annual workload assigned to the program.

CDF currently has established a comprehensive set of policies and procedures for cultural resource review on all CDF projects which are described in the document entitled *Archaeological Review Procedures for CDF Projects* (Foster 2003).

Golden Trowel Award

In 1990, CDF and the State Board of Forestry and Fire Protection established the Golden Trowel Award to recognize outstanding achievements in the identification, documentation, and protection of cultural resources and to call attention to CDF's Board-certified archaeological training program for resource professionals. This award was created in the tradition of the Francis H. Raymond Award which honors individuals and groups that have made outstanding contributions to forestry (Martin 1989:63).

Perpetual Golden Trowel Award at the Board of Forestry and Fire Protection office in Sacramento.

Each year, nominations for the Golden Trowel Award are provided to a selection committee consisting of the CDF Archaeology Program Manager and the Executive Officer of the Board of Forestry. These nominations are recruited from the CDF archaeology staff and the forestry community. A selection is made by the Board of Forestry with the assistance of the CDF Archaeology Office. Persons eligible to receive the Golden Trowel Award include foresters, timber operators, timberland owners, biologists, soils scientists, firefighters, and other forestry personnel. In some years, multiple nominations of worthy individuals have resulted in more than one recipient of the award. Once recipients are named, CDF prepares a report to the Board of Forestry to justify the selection which includes biographical information and a detailed description of the accomplishments leading to the award. This information is included in an award presentation ceremony. Presentation of the award is made during a public meeting of the Board of Forestry. Recipients are given an engraved plaque with a mounted Marshalltown trowel, while a perpetual plaque bearing the name of all previous award recipients is displayed at the Board of Forestry office in Sacramento. The State Historic Preservation Officer has recognized the contributions of the recipients at several of these award ceremonies.

Since its inception, over 20 individuals have received the Golden Trowel Award in recognition of their outstanding efforts in cultural resource management. Recipients have included CDF foresters, private sector RPFs, fire officials, and other resource professionals. Information about the recipients of the Golden Trowel Award and their accomplishments is summarized below.

In 1990, CDF Battalion Chief Bill Johnson was the first recipient of the Golden Trowel Award in recognition of his efforts to identify and protect archaeological sites in the Coalinga area of western Fresno County. Bill was also instrumental in the formation of the Coalinga Archaeological Research Group (Betts and Foster 2001). Dan Ward received the award in 1991 for his work as a Forest Practice inspector. During inspections, he routinely identified archaeological sites that had been overlooked by RPFs. He was also successful at negotiating site protection measures even before they were required by the Forest Practice Rules. CDF Forester Leonard Gwinn received the award in 1992 for identifying a highly significant housepit village during an inspection, saving the site from certain destruction.

Brian Bishop, an RPF working in northwestern California, received the award in 1993 for the discovery and recording of an important Coast Yuki village site on Lincoln Ridge near Westport. He also facilitated an archaeological excavation by serving as an intermediary between Louisiana-Pacific Corporation and San Jose State University which conducted an archaeological field school at this site in 1992. Larrie Mason, an RPF from Burney, also received the award in 1993 for the consistent high quality of his survey reports and site records. His discovery of prehistoric village sites, housepits, rock rings, midden, and surface artifacts in previously surveyed areas demonstrated the level of effort put forth on his THPs. In 1994, CDF Forester Dave Drennan received the award for his survey efforts that resulted in the relocation of CA-

TRI-1, Slakaiya Rock, a spectacular petroglyph site along the Eel River (Foster and Foster 2002).

Four separate individuals received the award in 1995. Private RPF, Steven Heckman, was recognized for his archaeological investigations that resulted in the identification of an extensive complex of historic sites and features including the townsite of Moody. His archival research and interpretations provided a valuable contribution to the history of the Mendocino County coast. Lee Susan, a consulting forester from Fort Bragg, discovered and recorded an impressive number of both prehistoric and historic sites on the THPs he prepared. Thomas Shorey, an RPF employed by Fruit Growers Supply Company, was recognized for his outstanding work in archaeological site identification and management. Becky Robertson was given an award for her work as a CDF Forest Practice inspector and VMP coordinator. Her ability to influence others regarding the importance of archaeological resources has resulted in heightened awareness of cultural resource issues throughout the Sierra Nevada and Central California regions.

Dave Dulitz, forest manager at Mountain Home Demonstration State Forest, received the award in 1996 for his outstanding efforts to inventory, protect, and interpret the prehistoric and historic resources on the forest. His ability to obtain funding for archaeological research was particularly noteworthy.

In 1997, the award was presented to the members of a forestry consulting firm and two additional individuals. David Levy Forestry was recognized for their combined contributions to archaeology through the large number of sites identified and the high quality of their survey reports and site records. Staff members David Levy, Jeff Calvert, and Lucky Gillett worked together as a team during THP preparation. Mark Stewart was recognized for his exceptional survey skills which resulted in the discovery and recording of over 100 sites on THPs throughout California. James Gamble, a private RPF working in northwestern California, was given the award for his many years of significant findings in that region.

Two individuals were given the award in 1998. Nicholas Kent operates a private consulting firm serving timberland owners primarily in Mendocino and Sonoma Counties. He received the award in recognition of his archaeological advocacy with his clients and fellow foresters. His ability to demonstrate effective site stewardship techniques has resulted in the identification and protection of many highly significant sites. Gordon Ponting, a professional biologist from Susanville, received the award for his efforts to identify and document cultural resources while conducting biological investigations during THP preparation.

Board Chairman Stan Dixon presents the Golden Trowel Award to RPF Ted James in 2000.

Tom Francis, a CDF forester in Tuolumne County, received the award in 1999 for his ability to negotiate solutions to archaeological problems and his diligence in conducting background research, survey, site recording, and protection during project review and impact evaluation. RPF Ted James received the award in 2000 while working for Sierra Pacific Industries where he prepared THPs in Shasta and Tehama Counties. Ted was recognized for his personal interest in the

past that was demonstrated by his field methods, background research, and the high quality of his site documentation, particularly his efforts to record historic linear resources. CDF Forest Practice Inspector Jim Purcell received the award in 2001 for his ability to locate unrecorded sites during THP inspections and his advocacy of archaeology with RPFs and landowners. He has also helped to facilitate archaeological investigations on private lands in Mendocino County.

Kern County Fire Department Captain Jack Ringer received the Golden Trowel Award in 2002.

Jack Ringer of the Kern County Fire Department received the award in 2002 in recognition of his archaeological survey work to support VMP projects. Jack has found over 100 archaeological sites including bedrock mortars, midden deposits, lithic scatters, burials, historic foundations and mining sites, and numerous spectacular pictograph sites. He was also recognized for his advocacy of archaeology with private landowners and his efforts to protect archaeological sites from vandals and looters engaged in illicit excavations. The presentation of the award to Jack featured a series of power point images shown through an audiovisual system recently installed in the Resources Building Auditorium in Sacramento.

One of the spectacular pictograph sites discovered by Jack Ringer.

Rich Wade, an RPF with Sierra Pacific Industries, received the award in 2003 for the consistent high quality of the archaeological work that he has completed. Rich confronted many challenging and controversial issues in the plans that he prepared and continuously demonstrated a high degree of competence and professionalism.

The presentation of the Golden Trowel Award to these individuals is a well-deserved recognition of their outstanding contributions to archaeological site stewardship in the course of forestry. Through their work, CDF is able to demonstrate how significant archaeological and historical resources can be identified and protected during forest management without major changes in project activities or undue costs to landowners. This award provides an opportunity to give positive recognition and publicity to archaeological protection efforts and symbolizes the effective integration of cultural resource management into the practice of professional forestry.

Fire Suppression and Archaeology

Fire is an extremely destructive force in California, killing vegetation, damaging soil and watershed values, destroying property, and threatening the lives of people. Over 90 percent of fires are human caused, primarily through carelessness with smoking and the use of fire (Arvola 1978:107). CDF is responsible for the control of wildland fires over what is classified as the State Responsibility Area (SRA) which encompasses 31 million acres of privately owned wildlands, or nearly one-third of California. During emergency response, the primary mission is to protect human lives, property, and forest resources. In the course of fire suppression activities, CDF also has a responsibility to protect resources such as archaeological sites,

whenever such protection is possible. Archaeological sites are extremely vulnerable to damage from firefighting operations, particularly ground-disturbing activities. In the past, since emergency situations are exempt from the provisions of CEQA, little emphasis was placed on protecting archaeological sites during fire suppression.

CDF first began statewide wildland fire protection in 1943, and has since grown into one of the largest firefighting agencies in the world. The Department is divided into two regions with 21 administrative units statewide. Within these units, CDF operates 806 fire stations (229 state and 575 local government), and 41 conservation camps. The Department has responsibility for the protection of over 31 million acres of California's privately-owned wildlands, and for emergency services of all kinds in 35 of California's 58 counties through contracts with local governments. The heart of CDF's emergency response capability is a force of approximately 3,800 full-time fire professionals, resource management personnel, and administrative employees; 1,400 seasonal firefighters; 5,600 local government volunteer firefighters; 2,600 Volunteers in Prevention; and 4,300 inmates, wards that currently provide 198 fire crews. Equipment includes 1,095 fire engines (336 state and 759 local government), 215 rescue squads, 63 paramedic units, 12 Hazmat units, 38 aerial ladder trucks, 58 bulldozers, five mobile communication centers, and 11 mobile kitchen units. The Department funds, via contract, an additional 82 engines, and 12 bulldozers used in six counties – Kern, Los Angeles, Marin, Orange, Santa Barbara, and Ventura. From the air CDF operates nineteen 1,200-gallon airtankers, four 800-gallon airtankers, 9 Super Huey helicopters, and 13 airtactical planes out of 13 air attack bases and 9 helitack bases, allowing aircraft to reach any fire within 20 minutes. CDF responds to an average of 6,700 wildland fires each year. In 2002, this figure rose to over 7,600 fires that burned nearly 118,000 acres.

A resource at considerable risk from wildfire is the recreation value of forests and rangelands. Nature appreciation has been identified as one of the most popular recreation activities and research suggests that visitor use in burned areas is diminished, probably due to the degradation of the aesthetic qualities of the landscape. Recreation use is also affected by wildfires due to damage and closure of facilities, resulting in lost revenues. Direct costs can include the repair and replacement of facilities, removal of hazard trees, and the cleanup and rehabilitation of campgrounds and trails. The potential economic value of recreation lost each year to wildfires has been estimated to be over seven million dollars (Foster 1995).

Archaeological and historical sites also contain values that are particularly vulnerable to damage from wildfires and the suppression activities necessary to contain them. One unique aspect of this vulnerability is that cultural resources are sometimes more at risk from fire suppression activities than from the fire itself. As of 1995, there were over 100,000 recorded archaeological sites in California, and it has been estimated that at least that many more sites remain undiscovered. California also has approximately 85,000 recorded historic buildings situated in rural areas that are at risk from escaped wildfires. The destruction of these archaeological and historical sites during wildfires represents a significant depletion of scientific, educational, and aesthetic values. For Native Americans and other ethnic communities, cultural resources possess traditional, religious, and spiritual qualities that can be lost due to fire (Foster 1995).

The CDF Archaeology Program provides assistance in the protection and management of

cultural resources which may be affected by wildfires within the SRA. Staff archaeologists are periodically requested through the Incident Command System (ICS) to respond to fire incidents in order to review the environmental effects of wildfire and suppression activities on archaeological resources. The first priority is the identification of known sites so they can be avoided during fireline construction and other ground-disturbing activities. More typically, however, the Archaeology Program gets involved in assessing damage to archaeological sites after a wildfire is extinguished or contained. This can include recording sites revealed or affected by the fire, and the development of appropriate stabilization or data-recovery plans during the suppression repair activities. Due to the perception that archaeological site protection was not required during emergencies, the Archaeology Program had limited interaction with the fire protection branch of the Department in the past, but this has begun to change in recent years.

One method used to prevent wildfires is to reduce the amount of accumulated fuels through prescribed burning, mechanical fuels reduction, and other forms of fuels reduction treatments. By conducting prescribed fires in restricted areas with favorable weather conditions, firefighters can control the size, intensity, and movement of the fire to protect surrounding trees, structures, and wildlife. During a controlled burn near Jackson in Amador County, CDF conducted an experiment to determine the effects of prescribed fire on archaeological artifacts. An archaeological site containing bedrock mortars, a flaked stone artifact scatter, and several historic features was selected for the study. The site was situated in a grassy area surrounded by oak trees along a small creek. After a survey of the site, two artifacts were photographed and marked with pin-flags. The burn strategy resulted in the fire burning at various intensities over the site area. Following the fire, the two marked artifacts were relocated and photographed again. One of the artifacts was burned almost beyond recognition while the other was not visibly changed. The undamaged artifact was located in an area that burned very hot but the fire passed over quickly. The heavily damaged artifact was in an area where the fire burned less intensely, but for a longer period of time. This study demonstrated that both duration and intensity are important factors in the damage caused to archaeological specimens from fire (Waechter 2003b).

In August 2001, a small fire burned 20 acres along State Route 88 near the town of Ione in Amador County. Following the fire, CDF Forester Phyllis Banducci and Fire Captain Dave McLean located a previously unrecorded archaeological site that had been damaged by fireline construction. The site contained several large boulders containing bedrock mortars that had been displaced by dozer operations. Far Western Anthropological Research Group, an archaeological consulting firm, was hired by CDF to investigate this finding to determine the extent of site damage. In addition to eight boulders with bedrock mortars, the site was found to contain a large and deep cultural depression representing the location of a ceremonial "round house." The site was carefully surveyed, mapped, and recorded as partial mitigation for the damage that had

A CDF dozerline was cut through a bedrock mortar and midden site on the Highway 88 fire.

occurred. Additional research was proposed in the form of a limited test excavation, but legal stipulations by the landowner for access to the property proved to be unacceptable, eliminating the possibility of further investigations (Waechter 2002).

Archaeologist stands inside a ceremonial roundhouse depression discovered on the Highway 88 fire.

Many CDF activities constitute projects as defined in CEQA, and therefore, require mitigation for negative impacts to cultural resources. Emergencies, such as wildfire response, are exempt from CEQA because public safety is a recognized agency priority over environmental protection. That exemption, however, does not release CDF from the professional obligation to protect wildland resources whenever possible. Although CDF may not be always be required to do so by law, the wise management of cultural resources is expected by the public and avoidable damage can be costly and embarrassing to the Department (Foster et al. 2003).

The Pines Fire of 2002 burned nearly 100 square miles of eastern San Diego County. CDF Archaeologists Richard Jenkins, Steve Grantham, and Linda Sandelin responded to this incident conducting site protection and recording work during rehabilitation after the fire. Of 49 sites inspected by CDF archaeologists, 8 sites were burned over and damaged by bulldozer operations, 8 sites were damaged by bulldozers but not burned, 8 sites were burned over but not damaged by bulldozers, and 25 sites were not impacted by the fire. CDF also hired Far Western Anthropological Research Group to inventory portions of the burned area for cultural resources. Through a review of previous surveys and records, and a cursory survey of portions of the burned area, 299 cultural sites were identified including 249 sites within or adjacent to the fire, and 50 sites outside the fire zone but within the area of bulldozer activity. Of the 61,690 acres burned, 570 acres were surveyed, resulting in the discovery of eleven new sites. Seven previously known sites were also revisited. Site types included prehistoric villages, hunting camps, milling features, artifact scatters, rock shelters, rock art, historic can dumps, homesteads, trails, and a gold mine. Of the 18 sites investigated by Far Western, 6 sites sustained serious damage from the effects of the fire including damage from bulldozing. Twelve sites were burned over but not significantly damaged (Berg 2003; Waechter 2003a).

CDF Archaeologist Steve Grantham discusses site damage on the Pines fire with a member of the local Native American community.

Archaeological site damage from fire suppression activities on the Pines Fire was recognized by a number of people including members of the local Native American community who observed that CDF contract bulldozers had cut firelines through many sites miles ahead of the fire. CDF began a major effort to assess the extent of

damage and to reevaluate its approach to archaeological site protection during fire suppression activities. Effective procedures and actions to protect cultural resources are expected by the public who view CDF as a steward of California's natural and cultural resources (Foster et al. 2003).

The CDF Archaeology Program has begun to develop and implement procedures to protect cultural resources during wildland fire suppression. CDF archaeologists, provided with Firefighter I Academy and Basic ICS training, are taking a more active role in firefighting operations and suppression repair work. The systematic documentation of the types of damaging impacts that can occur during fire suppression has provided the information to make proposals to avoid these impacts. Opportunities exist to identify and protect cultural resources during wildland fire suppression efforts within the ICS structure, particularly during major campaigns that extend over a period of time. In these types of situations, CDF may have opportunities to collect information about known cultural resources, survey for additional resources, and give consideration to site protection measures.

The CDF Archaeology Program has recently proposed a set of recommendations for cultural resource protection during wildland fire suppression operations. This proposal has been distributed to the fire protection program for review and feedback. Specific procedures have been developed for initial attack, extended attack, major wildland fires, and suppression repair efforts. Recommendations in this proposal include procedures for intensive cultural resource surveys in areas subjected to ground disturbance such as dozer lines, bladed safety areas, helipads, and new roads, which can be particularly destructive to archaeological sites. Other facility locations that can damage cultural resources include incident command posts, incident base camps, staging areas, and portable water tank locations. The goal of these protection proposals is to avoid the damaging impacts of construction to cultural resources whenever possible (Foster et al. 2003).

One aspect of these fire-related proposals that has already been put into practice is the education of firefighters to recognize and report archaeological sites encountered during fire suppression activities. CDF has begun an active program of providing archaeological training to the firefighting personnel that are in the best position to protect cultural resources during emergency situations. Key staff in fire protection and resource management capacities have been encouraged to complete the archaeological training courses offered by the Department in order to heighten awareness of cultural resources and to facilitate the implementation of protection procedures.

When responding to wildland fires, CDF is committed to the protection of cultural resources, if such efforts can be accomplished without delay or hindrance to emergency response operations. The Pines Fire represents a significant event in the development of the CDF Archaeology Program. A formalized relationship is now being developed that will facilitate archaeological input on all major fire incidents. Before the Pines Fire, CDF did not have systematic procedures for the identification and protection of cultural resources during major emergencies. Because of this incident, CDF is beginning to develop a more comprehensive system for protecting cultural resources during wildland fires. Another positive outcome of the Pines Fire is an increased interest and awareness of cultural resources by CDF firefighting units in southern California.

These recent attempts to reduce the damage caused by fire suppression are just one example of the continuing efforts to improve the CDF Archaeology Program.

Public Outreach

It has long been recognized that successful cultural resource management ultimately depends on public advocacy and outreach to accomplish long-term goals. These efforts are necessary to educate the public on the importance of archaeology, provide interpretation through the dissemination of information, and build a constituency that will provide continuing political support. The CDF Archaeology Program has engaged in a variety of public outreach efforts that include education, interpretation, and advocacy.

CDF archaeology staff members have participated in numerous public presentations throughout the state. They regularly attend professional conferences such as the annual SCA meetings, and have made contributions through articles and research papers. This participation supports CDF's standing in the professional community through the establishment and continuance of contacts with other archaeologists and cultural resource managers. Since 1995, CDF archaeologists have periodically provided training and information to the staff and docents of the Maidu Historic Site Interpretive Center in Roseville. CDF Archaeologist Richard Jenkins has been particularly active in his region through programs such as Project Learning Tree, school and historical society presentations, and California Archaeology Month.

A major form of public outreach of the CDF Archaeology Program has been through publications. The CDF Archaeological Reports series represents a major contribution to archaeological research. The individual volumes in this series will be described in a subsequent chapter. In addition to these reports, a number of papers and pamphlets have been prepared to disseminate results of investigations and provide technical information to specific interest groups. One example is a pamphlet directed at private landowners and Licensed Timber Operators to apprise them of their responsibilities and obligations towards cultural resource protection (Foster 2000).

Over the years, CDF has approached many of its regulatory functions from a position of landowner assistance, persuasion, and cooperation, rather than through punitive measures. Particular emphasis has been placed on archaeological advocacy with private landowners and timber operators. An attempt has been made to demonstrate that through careful planning and well thought-out project design, archaeological and historical resources can be protected while allowing industry to achieve management objectives without an excessive burden on landowners. There are specific skills necessary to communicate challenging archaeological issues to apprehensive landowners. Successful archaeology can depend on a degree of salesmanship to persuade landowners of the value and importance of the cultural resources on their property. When approached in the right way, landowners can become allies, instead of adversaries, in the effort to protect cultural resources. If a landowner considers the archaeological resources on their property an asset, rather than an impediment, they are much more likely to ensure their preservation. This approach can result in the most effective form of resource protection, protection that is initiated by the landowners themselves, not enforced by government

regulations. Enlightened landowners will give consideration to cultural resources during all types of land management activities over the long term, and not simply on projects with agency oversight.

One form of public outreach implemented by CDF is a series of training videos designed to inform timber operators about the Forest Practice Rules. These films combine practical on-the-ground instruction with a positive message (Martin 1989:62). In 1999, an archaeology video was added to this series. This program features CDF archaeology staff and logging industry personnel presenting information on the identification and protection of archaeological sites during logging operations.

One public outreach effort initiated by the CDF Archaeology Program was the formation of the Coalinga Archaeological Research Group (COALARG). In the late 1980s, CDF was engaged in an active controlled burn program in western Fresno County. During one of these projects, an archaeological site was damaged by fireline construction. An archaeological excavation sponsored by CDF at this site stimulated considerable local interest. Several individuals including CDF Battalion Chief Bill Johnson, CDF Archaeologists Dan Foster and Richard Jenkins, and a number of volunteers and local residents formed an organization to promote the identification, study, and protection of the archaeological resources of the region. During its existence, COALARG made a substantial contribution to archaeological research by documenting nearly 100 archaeological sites, conducting test excavations at the Corral Site, facilitating the transfer of private collections to a local museum, providing a variety of public presentations, publishing several research papers, and encouraging an appreciation for the archaeological resources of the Coalinga region. These accomplishments have been compiled in a report published by CDF (Betts and Foster 2001).

Another form of public outreach is the CDF Archaeology Program website. This website serves as a convenient means to provide information to the public about CDF's commitment to protecting cultural resources. It provides news on recent discoveries and events, and makes available current information and other assistance to CDF staff, private sector RPFs, and other personnel involved with the program. Information provided on the website includes the current Native American Contact List, a list of the CHRIS Information Centers, the policies and procedures governing records checks, a schedule and enrollment instructions for archaeological training courses, survey and site recording forms, instructions for site recording, and the CDF Management Plan for Historic Buildings and Archaeological Sites. The CDF Archaeology Program website has been developed and maintained since 1997 through a contract with the Underwater Science Program at Indiana University. Anyone interested in the Archaeology Program can go to http://www.fire.ca.gov, Resource Management, and Archaeology.

The CDF archaeology staff is continuously exploring ways to reach out to the public. The intent of these outreach efforts is to hopefully instill a greater awareness and appreciation for cultural resources that will lead to support for preservation efforts in the future.