9. HERITAGE RESOURCES

This chapter discusses heritage resources within JDSF. It provides an analysis of potentially significant impacts to such resources that could occur following approval and implementation of the DFMP, and provides mitigation measures discussing how such impacts could be avoided or minimized to a less than significant level. In the first part the setting is described, followed by a discussion of the framework of laws, regulations, standards and guidelines that apply to the management of heritage resources at JDSF. The third part of this section includes a description of those actions of the JDSF May 2002 Draft Forest Management Plan (DFMP) that pertain to heritage resources management. The legal thresholds for determining significant impacts to heritage resources are outlined in Part 4. The final part contains a discussion of the potential impacts on heritage resources from implementation of the DFMP as well as proposed mitigation and monitoring measures.

9.1 Definitions and Criteria

The text below supplements information provided in Chapter 2 (Heritage Resources) of the DFMP. First, heritage resources are defined. Second, criteria for evaluating the significance of JDSF heritage resources per applicable statutes and regulations are presented.

9.1.1 Heritage Resources Defined

“Heritage resource” is the term used in the following discussions to describe several different types of properties known or expected to exist within JDSF such as:

- Prehistoric Native American archaeological sites predating sustained Euro-American settlement in 1850, such as habitation sites marked by house pit depressions and temporary camps containing scatters of flaked and groundstone artifacts.

- Historic districts as defined in Public Resources Code Section 5020.1(h), “a definable unified geographic entity that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.”

- Historic archaeological sites typically dating from the period 1850-1954 (50 years of age is the general threshold for recognition of historic period resources) such as logging camps marked by collapsed structural remains and refuse dumps;

- Historic period architectural features older than 50 years, such as buildings (e.g., the Little Red Schoolhouse) and structures (e.g., railroad trestles and railroad grades); and

- Traditional cultural places important to contemporary Native Americans who have heritage ties to the land now part of JDSF, such as sacred sites, burial grounds, areas where native plants have been traditionally gathered for use in making regalia, baskets, and/or as traditional foods or medicines.

Heritage resources also include existing archaeological collections and archives, such as artifacts previously collected from sites within JDSF, historic maps and records documenting past uses—particularly activities of the Caspar Lumber Company—and records pertaining to the State's administrative history of the Forest since acquisition by the State in 1947.

9.1.2 Heritage Resources Significance Criteria

Certain sections found within the California Public Resources Code (PRC), California Forest Practice Rules, and federal laws and regulations define criteria for determining the legal significance of heritage resources. The California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) recognize that only those heritage resources determined per the respective state or federal criteria to be "significant" qualify for consideration of impacts in environmental impact analyses.

CDF is responsible for managing all heritage resources within JDSF unless and until such time as CDF and the California State Historic Preservation Officer (SHPO) concur that individual resources do not qualify for listing on the California Register of Historical Resources (CRHR). To date, no formal significance determinations have been documented for any JDSF heritage resources (Foster and Thornton 2001).

CEQA defines a significant heritage resource as "a resource listed or eligible for listing on the California Register of Historical Resources" (PRC §15064.5(a)(1)). For a heritage resource to be eligible for listing in the CRHR, it must meet one or more of the following criteria (PRC 5024.1(c)):

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history or cultural heritage;

(2) Is associated with the lives of persons important in our past;

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

(4) Has yielded, or has the potential to yield, information important in prehistory or history.

Heritage resources determined eligible for or listed on the National Register of Historic Places (NRHP) are automatically included on the CRHR. The CRHR criteria presented above mirror those of the NRHP (36 CFR 60.4), presented below.

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that:

(A) are associated with events that have made a significant contribution to the broad patterns of our history;

(B) are associated with the lives of persons significant in our past;

(C) embody the distinctive characteristics of a type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(D) have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the above criteria, the resource must be at least 50 years of age. A resource less than 50 years of age may qualify for the National Register if it is exceptionally important to understanding our more recent history.

A significant resource that meets one or more of the above criteria must also retain at least two types of integrity, among those defined below in *National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation* (National Park Service 1998).

Location is the place where the historic property was constructed or the place where the historic event occurred;

Design is the combination of elements that create the form, plan, space, structure, and style of a property;

Setting is the physical environment of a historic property;

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property;

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time; and

Association is the direct link between an important historic event or person and a historic property.

The California Forest Practice Rules (14 CCR 895.1, Definitions) reflect the criteria defined for the CRHP and the NRHP, as follows:

> "Significant archaeological or historic site" means a specific location that may contain artifacts or objects, and where evidence clearly demonstrates a high probability that the site meets one or more of the following criteria:
>
> (a) Contains information needed to answer important scientific research questions.
> (b) Has a special and particular quality such as the oldest of its type or best available example of its type.
> (c) Is directly associated with a scientifically recognized important prehistoric or historic event or person.
> (d) Involves important research questions that historical research has shown can be answered only with archaeological methods.
> (e) Has significant cultural or religious importance to Native Americans as defined in 14CCR Section 895.1.

The potential value of heritage resources for interpretation and other public benefits is another factor that state agencies must consider during the development of plans and policies for their management. Typically, a resource of high interpretive value that also meets one or more of the above criteria qualifies for inclusion in the CRHR and/or the NRHP.

9.2 Information Sources for Heritage Resources on JDSF

Research for the preparation of this DEIR chapter included a review of appropriate archaeological, historical, and ethnographic literature as well as documents on file at CDF; field inspections of selected heritage resources and surveys of areas where anticipated future impact areas related to timber harvesting, roads, and other proposed developments on JDSF are being considered. It also included consultation with the Native American Heritage Commission, CDF's Native American Advisory Council, and local tribal groups listed on CDF's Native American Contact List including the Sherwood Valley Band of Pomo Indians and the Coyote Valley Band of Pomo Indians. Reports, maps, documents and files at three locations were reviewed at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) located at Sonoma State University in Rohnert Park and at several offices within CDF where archaeological records for JDSF are kept including the CDF Archaeology Offices at the Northern Region Headquarters in Santa Rosa and Sacramento Headquarters and at the JDSF Office in Fort Bragg.

Background research indicated that CDF has completed approximately 48 heritage resource studies within JDSF (Foster and Thornton 2001:66-67). The majority of these studies are archaeological survey reports supporting Timber Harvesting Plans (THPs). In addition, two reports describe the results of archaeological excavations at two important sites on JDSF: Three Chop Village (Layton 1990) and Misery Whip Camp (Hylkema 1995). Other reports document historic land uses within present-day JDSF.

There also exist a few major comprehensive reports that document the known prehistoric and historic archaeological sties at JDSF (Levulett and Bingham 1978; Gary and Hines 1993; Betts 1999). These three reports provided much of the basis for the heritage resources inventory discussed and evaluated in this chapter. Although Foster and Thornton (2001) estimated that 75 percent of the total 48,652-acre JDSF has been surveyed at least once for archaeological resources, research conducted at the NWIC for this EIR determined that previous estimate was too high and that coverage is closer to 50 percent. This difference is probably due to overlapping timber harvest plan boundaries. Nevertheless, a fair amount of survey coverage has been completed by CDF at JDSF, which generally exceeds coverage completed for most similar tracts of state or private forest lands within this region. This work has made a significant contribution towards better understanding of our knowledge about heritage resources within California's North Coast region.

An updated discussion of the inventory and condition of 19 prehistoric archaeological sites and one traditional Native American heritage resource recorded on the Forest was recently reported by Betts (1999) in *The Current Status of Prehistoric Resources on Jackson Demonstration State Forest, Mendocino County, California*. Betts field checked each site, prepared updated site records to current standards; documented site conditions based on visual observations, and made recommendations for the management of the known prehistoric sites. This survey by Betts was the first comprehensive look at the prehistoric sites located within JDSF since that by Levulett and Bingham (1978) in their *Cultural Resource Overview of Jackson State Forest*.

Conducted in 1978, Levulett and Bingham, working under a contract between CDF and California Department of Parks and Recreation, undertook archaeological survey work within approximately 1400 acres of predicted zones of high archaeological sensitivity of JDSF, which resulted in the identification and formal recording of 16 prehistoric archaeological sites. The Levulett and Bingham report included brief information on the environmental setting, regional archaeology and local history of JDSF, detailed ethnographic information concerning those Native American groups that occupied JDSF and its vicinity prior to European Contact, a discussion of the potential significance of the prehistoric resources on the Forest, as well as management recommendations for the preservation of heritage resources.

In addition, Levulett and Bingham (1978) consulted with local Pomo elder Clyde Stanley about traditional lifeways and places of importance within JDSF. This led to the identification of a possible sacred site thought to be important to contemporary Pomo descendants. The Pomo consultant provided recommendations for the treatment of both the ethnographic site and for additional cultural sites and resources of concern within the Forest.

Historic period heritage resources are the subject of one CDF comprehensive report and a Master of Arts (M.A.) thesis in Cultural Resources Management at Sonoma State University. *An Inventory of Historical Resources within Jackson Demonstration State Forest, Mendocino County, California* (Gary and Hines 1993) is the result of a two-

phase study. The researchers first conducted archival research and oral interviews to identify possible locations of historic resources, and then field checked a number of the identified locations to document the presence or absence of observed cultural materials and their present physical condition. The report presented information about each historical resource in tabular form, including the presence or absence of cultural remains, potential significance, applicable significance criteria, and management recommendations. It concluded by stating that the study was a preliminary one, and that more detailed investigations, including formal site recordation, should follow.

In her 1994 M.A. thesis, *A Research Design for Determining Legal Significance of Logging Related Historic Properties in Jackson Demonstration State Forest*, Anmarie Medin continued the work initiated by Gary and Hines (1993). She presents a detailed history of the Caspar Lumber Company and logging in JDSF, describes and establishes a typology for classifying the physical remains from this logging, establishes a research context for interpreting and for evaluating the significance of these remains, and suggests evaluation criteria to be used for determining management alternatives for historic resources.

In 2001, CDF completed a comprehensive *Management Plan for CDF's Historic Buildings and Archaeological Sites* (Foster and Thornton 2001) and an accompanying *Environmental Impact Report* (Foster and Sosa 2001). This extensive work describes all the known historic buildings and archaeological sites at each CDF property across the State and prescribes the appropriate treatment of these resources. The environmental impact report documents CEQA compliance for the management plan. An appendix includes pertinent texts of the legal requirements for this action.

9.3 Description of Known Heritage Resources in Region and on JDSF

In this section, the past history of heritage resource protection on JDSF is discussed. Next, the section discusses the present inventory of prehistoric archaeological, traditional Native American, and historic period heritage resources at JDSF are described, along with a discussion of their potential legal significance and physical condition. Lastly, the archaeological collections and archival records pertaining to JDSF are summarized.

9.3.1 Past Impacts on Heritage Resources of the Region and JDSF

A wide range of land use practices throughout the North Coast Region, including timber management, has caused impacts to heritage resources over the past 150 years. Early homesteads, for example, were often situated within interior valleys and farming and grazing operations are known to have destroyed prehistoric sites located within these same areas. Oftentimes these early homesteaders built ranch houses and facilities on topographic rises adjacent to the most reliable spring, in the same locations preferred by Native peoples, and destroyed sites in this process. Population growth has led to increases to the aerial extent of urbanized areas throughout the region, and these

changes had significant impacts to cultural resources. Harbors built for the fishing industry have impacted sites located among areas with a diversity of fish and wildlife habitats. Most recently vineyards have made a major impact to heritage resources by virtually stripping the land of all vegetation then deep plowing. This viticulture conversion not only destroyed oaks and other native vegetation utilized by the Native peoples but also heritage resources, both recent sites and those of greater antiquity. Major public works projects such as the construction of the state highway system, reservoirs, airports, energy plants, and many other developments associated with modern society have further impacted the surviving relics of the region's historic and prehistoric past. The accumulation of these impacts must be taken into account, because those heritage resources that have survived on JDSF have increased values since this location represents one of a dwindling number of parcels where numerous heritage resources still exist.

The western two-thirds of JDSF timbered areas were harvested prior to the early 1940s and prior to any laws or established practices for recording and protecting heritage resources. The remaining one-third, primarily in the upper North Fork Big River watershed and its Chamberlain Creek and James Creek tributaries, were first harvested in the 1950s and 1960s. Historic harvesting activities were generally significantly more disturbing of ground conditions--and hence many kinds of heritage resources were undoubtedly damaged and destroyed during these early logging practices. Unlike under current harvesting regulations, protection of heritage resources was not required and probably not often conducted prior to 1975. The history of the development of policies requiring consideration for heritage resource impacts during timber operations in California has been chronicled in a recent publication by CDF (Foster and Betts 2004). We have no specific information as to the impacts these past activities had on heritage resources, however the impacts were likely significant.

Further, as a result of private timber harvesting activities initiated in the late 1800s, subsequent harvesting and other management activities by the State after the acquisition of JDSF in the late 1940s, and access to the area by timer harvesting crews, road management crews, and the recreating public, an unknown but potentially substantial amount of archaeological resources may have been removed from JDSF.

Taken together, these past impacts over a long period of time may have resulted in a significant adverse cumulative impact on the heritage resources of JDSF. Because of the nature of heritage resources, there is generally no opportunity for mitigation of or recovery from past impacts. Given these considerations, current and future management activities need to be carefully designed to minimize any further level of adverse impacts to heritage resources on the Forest.

9.3.2 Identified Heritage Sites Summary

A total of 192 heritage resources have been identified on JDSF, including 19 recorded prehistoric archaeological sites (five of which also have historic era components), one recorded Native American traditional cultural property, one recorded prehistoric isolate,

40 recorded historic sites (five of which also have prehistoric components), nine recorded historic era isolates and 127 historic sites that were identified from historic map research and oral interviews conducted by Gary and Hines (1993) (Table VII.9.1). Of the 127 identified historic period sites, some were field checked and cultural remains noted at these locations, some were field checked but no remains were found, some were not field checked at all. None of the artifacts/sites found during field checking were formally recorded at that time.

Table VII.9.1 Summary of Known Heritage Resources At JDSF.

Recorded prehistoric sites	19
Recorded traditional cultural property	1
Recorded prehistoric isolate	1
Recorded historic sites	40
Recorded historic isolates	9
Unrecorded historic sites*	127
TOTAL	192**

* Gary and Hines (1993), based on archival research and oral interviews, mapped and tallied a large number of historic sites. Some of these were located and recorded; some were located but not recorded; some could not be relocated; some were not field checked.

** Of the 60 recorded prehistoric and historic sites, five have both prehistoric and historic components and are therefore counted twice; therefore the correct total is 192

A confidential, comprehensive database of heritage resource information for JDSF is presently kept and maintained by CDF. The primary vehicle housing this database is two sets of maps—the USGS topographic quadrangles that depict the lands of JDSF and the JDSF Forest Map. These maps display the precise location of all known historical resources located within and directly adjacent to JDSF, as well as all documented archaeological surveys. In the future, JDSF plans to convert this information into GIS layers for more efficient use in JDSF operations, but for now the base maps and hardcopies of reports and heritage resources records are maintained and updated by hand on a regular basis. A set of three-ring binders containing archaeological site records, survey reports, and other pertinent information for JDSF, that accompanies the information displayed on the base maps, is kept and maintained at the CDF Archaeology Office in Santa Rosa. A duplicate set of these maps and records is kept and maintained at the JDSF Headquarters in Fort Bragg. At both CDF offices this database is kept in a secure location where access to it is restricted to key personnel (e.g., the Forest Manager, CDF staff archaeologists and CDF contract archaeologists). As new discoveries are made and as new surveys are completed, the database is updated. Every five years, in accordance with the Forest Practice Rules, a

CDF Archaeologist will compare the JDSF database with the official records at the NWIC. The next such update is due by June 1, 2007.

However, even though the JDSF database contains information on all known archaeological and historical sites and archaeological survey coverage areas, to be truly comprehensive it needs to include another important category of heritage resource—Native American traditional cultural places such as sacred sites, traditional gathering areas, and other locations of cultural and/or religious importance to individual Tribes. Due to the nature of those types of resources, it is very unlikely that they would be discovered during archaeological field surveys. Because a comprehensive inventory of these traditional cultural places on JDSF has not yet been completed, measures aimed at initiating consultation between appropriate JDSF staff and the Native American Heritage Commission and local Native American groups and individuals included in the Mendocino County portion of the current version of the CDF Native American Contact List are included in a later part of this section.

The known heritage resources of JDSF are described below.

9.3.3 Traditional Native American Heritage Resources

Regional Setting

In addition to prehistoric and historic archaeological sites, heritage resources also include traditional sites, which are part of a category of heritage resources defined by the National Park Service (National Register Bulletin Number 38) as “Traditional Cultural Properties” or TCPs. As part of this definition for a TCP, the term “traditional” refers to those beliefs, customs, and practices of a living community of people that have been passed down through generations, usually orally, or through practice. The term “cultural” refers to those attributes that are important to support the traditions, practices, lifeways, arts, crafts, or social institutions of a community, Indian Tribe or other local ethnic group. The traditional cultural significance of a historic resource, then, is its significance derived from the role the site plays in a community’s historically rooted beliefs, customs, and practices. Examples of possible TCP sites within the North Coast Region possessing such significance include:

- Locations which are associated with the traditional beliefs of local Native American communities about their origin, cultural history, or the nature of the world;

- Locations where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; or

- Locations where Native Americans have traditionally carried-out economic, artistic, or other cultural practices important in maintaining their historical identity.

Numerous TCP sites have been identified within the North Coast region, particularly during CDF's review of THPs that could adversely affect them. Examples include cemeteries (containing individuals connected to tribes), archaeological sites which are named, or which were places where tribal members' families once lived, "guardian" trees, spruce-root gathering localities, and unusual landforms with mythological significance. The California Indian Basketweavers Association is concerned with the protection of locations used by Native American gatherers throughout California. Typical kinds of resources they hold important include sedges, bear grass, and narrow shoots of redbud and willow.

Within JDSF, two potential TCP sites have been identified. One of these sites, identified by Pomo consultant Clyde Stanley during the 1970s, has been interpreted as a "sacred waterfall" (recorded as CA-MEN-1373). The second possible TCP site in JDSF was reported in 2002 by Javier Silva of the Sherwood Valley Rancheria. He told CDF consultants Janet Eidsness and Ann King Smith that he thought Northern Pomo people might continue to engage in traditional gathering within JDSF but he was unable to identify a specific place on the Forest where this traditional gathering might be occurring.

To evaluate the possibility of identifying TCPs with JDSF, a discussion of the local Native American tribal groups that lived in this area is provided. This discussion is based on information garnered from Levulett and Bingham (1978) and Betts (1999). The brief information provided here focuses on those aspects of Native American culture history that are likely to be reflected in the archaeological or environmental record. JDSF lies within the ethnographic territory of the Northern Pomo, one of seven Pomo divisions that shared a common language family. Specifically, JDSF is located in the northern portion of area occupied by Northern Pomo speakers, which extended 35 kilometers along the coast from just north of Fort Bragg to the south, and inland 85 kilometers to the northwestern shores of Clear Lake. The Northern Pomo were divided into several distinct groups, two of which--the Mato Pomo and the Mitom Pomo--were associated with lands now within the JDSF (McClendon and Oswalt 1978).

Just to the north of ethnographic Northern Pomo territory and north of JDSF was the ethnographic territory of the Coast Yuki. The ethnographic record for the Coast Yuki is very limited (Betts 1999). It has been hypothesized that Pomoan occupation of the JDSF occurred relatively recently in the archaeological record, approximately 800 years ago, and that prior to this time, the area was occupied by the Yukian peoples (Layton 1990:190-191). If this hypothesis is correct, the ethnographic record for the Coast Yuki may have important implications for understanding the prehistory of the JDSF.

At the time of sustained Euro American contact (ca. 1850), the majority of Northern Pomo permanent villages were located in the interior, along the Russian and Eel Rivers; some permanent villages also may have been located at the coast (Levulett

and Bingham 1978). Seasonal camps were established both along the coast near rivers and creek mouths, and in favorable areas in the redwood forests, such as places along trails, without dense vegetation, or close to certain utilized resources (Bean and Theodoratus 1978:289). These camps were occupied at times during the spring, summer and fall, in conjunction with the seasonal availability of specific plant and animal subsistence resources. The coastal redwood forest was the least favored habitat used by the Northern Pomo and, according to some ethnographers, was rarely occupied for long periods of time. It is assumed by researchers that the seasonal camps were used repeatedly and revisited over the years. Resources found in the forest and obtained by the Pomo include a wide variety of plants and animals used for food, medicine, ceremonies and technology.

Based on the above, and on general ethnographic information about northwest California Native Americans, it is expected that a variety of Native American archaeological sites exist in JDSF, including seasonal camps specific resource procurement sites, perhaps located near known resources of importance to the Pomo; sacred or ceremonial sites; refuge sites or places where Native Americans lived after they were displaced by Euro Americans; and aboriginal trails between the coast and the inland settlements.

Today, the Pomo are members of numerous rancherias in Mendocino, Sonoma and Lake counties, some living on reservation lands and some living off the reservation, both near and far. In Mendocino County, eleven Native American communities have members with Pomo ancestry (Native American Contacts List for CDF Projects, June 2004). The Sherwood Valley Band of Pomo Indians tribal lands lie within the traditional territory of the Northern Pomo; the Coyote Valley Band of Pomo Indians tribal lands lie just to the south.

Inventory

Levulett and Bingham (1978) worked with a Northern Pomo consultant, but since that time few direct contacts have been established with local Indians who have ties to the Forest. Levulett and Bingham's consultation with a Northern Pomo consultant resulted in the identification of one ethnographic site Native American heritage resource, CA- MEN-1373, a natural waterfall with three pools. According to the consultant, this site is considered a sacred area, used in the past for religious and purification purposes, and he learned about the place from his grandparents, who were Native consultants for early 1900s ethnographers. Betts (1999) updated the site record for CA-MEN-1373. Additional, unrecorded Native American heritage resources may be located within JDSF, including sites that are significant as traditional cultural properties, as described in *National Register Bulletin 38, Identification and Documentation of Traditional Cultural Properties*, and other places where native plant resources may be collected by contemporary Pomo people for on-going traditional uses and purposes.

Condition

Levulett and Bingham (1978) noted that the three pools at CA-MEN-1373 were partially filled with slide debris. Later, when CDF staff inspected the site in the 1990s in conjunction with the replacement of a downstream culvert, it was noted that the pools were not filled with debris. Prior to the nearby culvert replacement project, CDF archaeologist Mark Gary and CDF Forester Bill Baxter consulted representatives of the Pomo, who indicated that tribes had no objections or concerns with implementing this project. Betts (1999) described the setting of this heritage resource as poor and heavily impacted by heavy equipment operation and logging on the surrounding slopes.

Significance

Although impacted by past logging, CA-MEN-1373 is significant because it is the only recorded traditional Native American cultural resource in the Forest. The site is a rare example of a certain type of use, and may retain sufficient integrity to be significant to local Native Americans as a traditional cultural property as defined in *National Register Bulletin 38*.

9.3.4 Prehistoric Archaeological Sites

Regional Setting

The North Coast Range region has played a prominent role in the development of archaeological research in California. From the early investigations at Borax Lake (Harrington 1948), to the refinement of the California Taxonomic Sequence (Fredrickson 1974, 1984) the rich prehistoric resources of this region have provided significant information towards the understanding of California prehistory. The history of archaeological research in the North Coast Range has been summarized by Fredrickson (1984), Hildebrandt (McCarthy et al. 1985:88-114), and Levulett (1985:67-68). Major research topics have included the establishment of site typologies (Levulett and Bingham 1978:66-71; McCarthy et al. 1985:120-139), the development of cultural chronologies and dating techniques, paleoclimatic reconstructions, prehistoric exchange systems, settlement-subsistence patterns, and demographic relationships (Fredrickson 1984:527). The majority of these studies, however, have dealt with inland localities (Betts 1999:5).

Early Northwest California archaeological research was focused on identifying Native American assemblages and deciphering the prehistoric chronology (Loud 1918; Heizer and Elsasser 1964; Elsasser and Heizer 1966; Fredrickson 1984). More recent studies have broadened their view to address such issues as paleoenvironmental reconstructions (West, in Hildebrandt and Hayes 1993), site catchment analysis (Simons, in Hildebrandt and Hayes 1983), technology and adaptive responses to environment (Hildebrandt 1984; Levulett and Hildebrandt 1984; Hildebrandt and Hayes 1993; Hildebrandt and Swensen 1985), and trade

(Hughes 1978; Levulett and Hildebrandt 1987). These studies have provided insights into some of the major environmental and archaeological trends within the region spanning the past 8000 years of human habitation.

Because much of the archaeological research in northwestern California has been focused in inland locations, the archaeology of the coastal and near-coastal portions of Mendocino County is not well known. However, a number of projects have been conducted in JDSF and the nearby vicinity, resulting in some information about the distribution of prehistoric sites, the time depth, population migrations, and obsidian exchange systems. Levulett and Bingham's (1978) survey results indicated that prehistoric sites in JDSF occur along major trending ridges, at the junction of adjoining ridges, and on gentle slopes near primary water sources. The prehistoric sites recorded in the JDSF since the 1978 work conform to the distribution noted by Levulett and Bingham (1978), and this pattern is also evident in more recent studies in northwestern California. Based on materials collected from the sites recorded in 1978, analyzed in a later study, Levulett (1985) found that the majority of the obsidian tool-stone at JDSF sites came from Lake County sources via prehistoric trade and exchange systems. Levulett and Bingham (1978:66-71) also identified prehistoric site types within JDSF including: procurement sites (limited activity areas reflecting short periods of occupation and task specific resource procurement activities); temporary seasonal camps (base camps where activities were not limited to the procurement of specific resources); permanent occupation sites (winter villages that housed a portion of the population year round, and possible contact period “refuge sites”); and sacred ceremonial areas.

Data from the archaeological excavation conducted at a prehistoric site within JDSF and from the excavation of a coastal archaeological site (Layton 1990) indicate that the time depth of the JDSF prehistory extends back in time some 700 years, possibly predating the arrival of the Pomo to this area**.** The time-sensitive projectile point forms and artifacts collected from JDSF sites by Levulett and Bingham (1978) and by Betts (1999) can be compared to the chronological typology for northwestern California (Hayes 1985), which has undergone a recent age refinement for the older styles based on new data. This comparison indicates that JDSF sites contain artifact types cross-dated to the Early, Middle and Late Prehistoric Periods in northwest California, which covers approximately 8,000 years before the present.

Inventory

A total of 19 prehistoric archaeological sites have been recorded in JDSF, the majority by Levulett and Bingham (1978) and the rest through archaeological surveys in preparation for timber harvest plans. All but two sites that were not relocated by Betts (1999) have been recorded to contemporary standards with current descriptions of site constituents and conditions. Table 9-1 in Appendix 9

presents an overview of the types, physical condition and potential significance of prehistoric archeological sites identified to date on JDSF.

Condition

In 1978 when Levulett and Bingham recorded most of the prehistoric sites, their conditions were noted as well. Although most of those sites had been impacted by logging and camps prior to state ownership only four were described as "severely disturbed." Betts (1999) rerecorded and assessed the condition of all of the known prehistoric sites, including those recorded since 1978. Regarding site conditions, he observed, "Impacts appear to have resulted from a variety of land use practices and activities, some of which are outside the scope of timber harvest planning. Some of these activities include road maintenance, construction projects, forest improvement projects, fires, and recreational activities."

Significance

Archaeologists who have worked with prehistoric data from the Forest all agree that these heritage resources are potentially significant. Although the sites have been disturbed, they retain data, and if sufficient integrity exists, they therefore meet the significance criteria listed above: "contains information needed to answer important scientific research questions" and "has yielded, or is likely to yield, information important to history and prehistory." As observed by Betts,

> The further investigation of these resources could provide a more complete understanding of the settlement-subsistence patterns of the Northern Pomo, as well as the larger pattern of prehistoric land use of the North Coast Range, by examining a variety of site types within a specific physiographic zone. (Betts 1999:26-27)

9.3.5 Historic Period Heritage Resources

Regional Setting

The history and historic resources of the JDSF are briefly described in the DFMP in Chapter 1 and in the Heritage Resources section of Chapter 2. The history of the Forest is, for the most part, a reflection of the history of the Caspar Lumber Company, whose holdings, with some additions, comprise JDSF. Prior to intensive, sustained commercial logging, there were several homesteads on lands now within the Forest and some limited cattle grazing occurred. Based on examination of historic maps, eight homesteads have been identified in the Forest to date (Medin 1994:87-88). A brief description of JDSF, the surrounding area, and the Caspar Lumber Company is included in Levulett and Bingham (1978:30-34). A thorough, well-organized and detailed description of Caspar Lumber Company history and associated heritage resources at JDSF is provided by Medin (1994).

Mendocino Woodlands is a historic property that has particular relevance to the discussion of heritage resources within JDSF. It was one of 46 Recreational Demonstration Areas (RDAs) in the United States whose purpose was to retire certain lands and develop them for recreational use. Mendocino Woodlands was the only RDA established in California, and therefore the only one located within a redwood forest setting. The primary camp locations, including all of the standing historic buildings, are within the 720-acre Mendocino Woodlands State Park. The Mendocino Woodlands was built by the U.S. Department of Interior in the 1930s and was gifted to the State of California with a mandate indicating the property would be used exclusively for public park, recreation, and conservation purposes. In 1976, the Mendocino Woodlands was divided into a 720-acre State Park and a 2550-acre "Special Treatment Area" (STA) located within JDSF.

In 1997, the Mendocino Woodlands property was designated by the National Park Service (NPS) as a National Historic Landmark (NHL). In 2001, a request to expand the boundaries of the NHL to include a sizeable portion of the STA within JDSF was introduced via a nomination submitted to NPS. Upon review of that nomination by staff at NPS and the California State Office of Historic Preservation, it was determined that the identification of historic resources that contribute to the significance of the property was not sufficiently demonstrated. This review of the 2001 NHL nomination determined that some historic features listed as potentially contributing elements proved to be unrelated to the Woodlands, having instead been build relatively recently (during the 1960s and 1970s), rather part of the 1930s-period historic landscape. Justification for boundary expansion was insufficiently demonstrated, and that proposal, at least for the time being, has been put on hold by NPS pending possible future studies. DPR and CDF have met to discuss the possibility of a joint DPR-CDF collaborative effort to conduct a heritage resource survey throughout the entire Woodlands property to provide a comprehensive assessment of the NHL designation and to determine the appropriate boundary for the NHL. Such work may be completed in the future, if sufficient funding and staff resources can be secured. In the mean time, for the purpose of evaluating potential impacts to heritage resources associated with Mendocino Woodlands, the JDSF Forest Management Plan and this EIR include mitigations to ensure resource protection through the implementation of a comprehensive set of procedures which will be followed prior to commencement of any CDF project that could impact heritage resources.

In conclusion, the Mendocino Woodlands property represents an important heritage resource that will be carefully considered by CDF during project planning. It is possible that unidentified historic features within the STA might proved to be associated with this important historic property. These resources are among the collection of historic sites and features within JDSF that will be carefully managed by CDF in accordance with the procedures specified in the plan and this EIR.

Inventory

As described above, a preliminary inventory of the JDSF historic resources, based on archival and field research, was reported by Gary and Hines (1993). Their report table listed five prehistoric archaeological sites that contain historic components, 15 recorded historic sites, five recorded historic isolates, and 132 sites documented through historic records research. Research conducted for the DEIR indicated the existence of an additional 20 recorded historic archaeological sites, four additional recorded historic isolates, and site records for five of the historic resources listed on the Gary and Hines (1993) JDSF inventory of historic resources. As shown in Table VII.9.1, 127 historic sites listed by Gary and Hines remain to be verified and recorded.

A summary of the recorded and noted historic period heritage resources in JDSF is provided in Table 9-2 in Appendix 9.

In order to facilitate the systematic treatment and significance evaluation of the historic period resources at JDSF, Medin (1994) sorted the resources, using a site typology with categories found in National Register of Historic Places guidance on how to apply significance criteria. Pertinent categories for the Forest historic resources include sites, buildings, structures, objects and “other.” For each site category, the types of Forest historic resources are discussed, the remains expected to be found are described, the specific Forest historic resources that fit into the type are listed, and the total number of Forest resources in each type are tallied. Her results are shown in Table VII.9.2.

TABLE VII.9.2 Summary of Recorded and Known Historic Sites, Structures, and Objects by Type.

Property Type	Expected Remains	IHR # Assigned by CDF	Total Sites Known and Recorded
SITES			
Logging Camps	refuse deposits, architectural remains, tent pads, railroad grades, machinery	1, 4, 5, 6, 7, 10, 12, 14, 17, 24-40, 43-58, 65, 80, 104, 106, 143, 144, 146, 156	50
Homesteads	refuse deposits, architectural remains	8, 59, 60, 61, 63, 64, 70, 87	8
Refuse Scatters	glass, ceramic, tin, no structural remains	81-84, 108, 109	6
Gravesites	headboard, human remains	67, 68	2
BUILDINGS			
Schoolhouse	red, wood frame, shiplap siding	41	1
Cat Barn	wood frame, shiplap siding, shake shingles	11	1
Sheds	wood framing, wood lined pit	77, 78	2
STRUCTURES			
Trestles	timbers, milled wood, collapsed or standing, cribbing	2, 9, 18, 19, 73-76, 110-142, 145, 149-153, 155, 157	49
Railroad Grades	ties, "ribbing," road cut, linear depression	147	1
Incline Tramways	linear depression, road cut, wood ties	16, 95-103, 148	11
Skid Roads	ties, road cut, linear depression		0
Tank	redwood oil tank	69	1
Donkey Platforms	wire, cable around stumps, skid roads, ground modification	42, 79, 154	3
Tunnel	(collapsed)	72	1
Dams	wooden cribbing	91, 92, 93	3
Lakes	catchment basin	89,90	2
Fences	posts, wires	105	1
Cairns	rocks, no refuse	15	1
Rock Quarries	small collapsed shaft	62	1
OBJECTS			
Isolated Artifact	Individual bottles, logging tools, and/or equipment	13, 20-23, 107	6
OTHER*			
Orchards	apple trees	3, 66	2
Springs	natural spring	65, 86, 88	3
Trails	remnant path	94	1
Unknown	unknown function or no remains present	71	1
		TOTAL	157

***"Other" is a catch-all category and includes properties that do not fit under the specific types.
(Source: Medin 1994: Table 3.1)

Condition

Similar to the prehistoric archaeological resources, various agents also have impacted the integrity of the historic period resources at JDSF. According to Medin (1994) and Gary and Hines (1993), some historic period resources were removed by CDF prior to the existence and implementation of heritage resources protection laws and policies, others were removed by CDF for safety reasons or to “clean up” areas, and many have been impacted by illegal artifact collecting by the public and others. Additional impacts include logging, construction and maintenance of roads, construction and maintenance of recreational facilities, erosion, and natural deterioration and decay of perishable structural elements and artifacts. One important component of this situation is that very few of the historic period resources have been professionally recorded. Current State of California historical resource records (DPR 523 forms) do not exist for the majority of the located historic period heritage resources. The condition, treatment and location of the two historic structures (red schoolhouse, cat barn), two steam donkeys, and one locomotive are described in Chapter 2 (Heritage Resources) of the DFMP.

Significance

As demonstrated by site data in Table 9-2 in Appendix 9, hundreds of historic period resources are present at JDSF. Although some of these resources, if evaluated individually, might not be significant, Medin (1994) argues that collectively, many comprise a potentially significant historic district (defined above) associated with the Caspar Lumber Company. While the Caspar Lumber Company was only one of several family owned timber businesses that operated for several generations in northwest California (others include Union, PALCO, Crawford, and Mendocino), the tangible remains of the historic Caspar operations within JDSF are relatively well preserved, in large part because they have been under CDF stewardship.

As Medin (1994) suggested, a number of the historic period resources on JDSF may constitute a potentially significant historic district (as defined above in Section 9.1.1). Identifying such a district would require preparation of an historic context (i.e., a body of thematically, geographically and temporally linked information that provides for an understanding of a property’s place or role in history) as well as identification of the contributing and noncontributing resources within the district’s boundaries. A contributing site, building, structure or object is one that adds to the historical associations or archaeological values for which the district is significant; a noncontributing site, building, structure or object does not. A contributing resource must 1) have been present during the period of time that the property achieved its significance; 2) relate to the documented significance of the property; and 3) possess historical integrity or be capable of yielding important information relevant to the significance of the property.

As summarized in Table 9-2 in Appendix 9, some of the historic resources of JDSF are potentially significant under California Register of Historical Resources criteria 1, 3 and 4 (defined above). Some are associated with important historic logging developments, others are architecturally distinctive, and a number have the potential to yield important historic data not reflected in the archival record. Medin (1994:114-127) illustrates the significance potential of the JDSF historic period resources by detailing their relevance, through examples of specific artifacts and features, to major themes in historic research such as land use, industrialization/technological innovation, social/cultural and economics.

The National Register eligibility status of CDF's historic buildings statewide, completed in consultation with the California Office of Historic Preservation (OHP), was recently published by CDF (Foster and Thornton 2001: Table 1). It indicates that the Red Schoolhouse "appears eligible as separate property" and notes that it is slated for preservation. The management directive for the Red Schoolhouse, codified by the accompanying EIR (Foster and Sosa 2001) indicates that CDF shall carry out a treatment program to restore this historic building. A specific plan to carry out needed improvements to the building was completed in September 2000 by a consultant to CDF. This plan has been developed in consultation with the OHP, as required by PRC Sections 5024 and 5024.5. CDF plans to initiate Phase I of the Treatment Plan as soon as possible and was hoping to have it completed by December 2003, (Foster and Thornton 2001:37) but has not yet been successful in the effort to secure the funding needed to complete the work.

With regard to the historic period Cat Barn at JDSF, its National Register status reads "not evaluated," and it is "not slated for preservation," because a 1989 analysis of its condition determined that restoration was not feasible (Foster and Thornton 2001: Table 1, 68). Archaeologist Mark Gary completed a detailed recording of the structure in 1990. CDF has determined that it will manage it as a "standing ruin," or possibly tear it down after appropriate approvals (Foster and Thornton 2001:68).

9.3.6 Museum Collections and Archives

Background

Artifact collections from JDSF are derived from various sources: the archaeological excavations conducted on the Forest; heritage resources surveys; and objects occasionally collected over the past 30 years by JDSF staff or Forest visitors (see Table VII.9.3). The collections contain a variety of prehistoric and historic artifacts such as flaked chert and obsidian tools and discarded tool-making debris (cores and flakes), ground stone tools such as pestles and mortars, glass bottles, ceramic items, metal cans, items constructed of wood, and a range of tools and equipment associated with logging. The collections also include three major accessions: two steam donkeys and one locomotive. No Native American human remains, associated grave goods, sacred items or objects of cultural patrimony (as defined by the Native American Graves Protection and Repatriation Act) are included in the present collections for JDSF (Foster and Thornton 2001:47-49, 69).

Table VII.9.3 Summary of Archaeological and Archival Collections for JDSF.

Archaeological Collections

Repository	Type of Collection	Site Provenience	Notes	References
Mendocino County Museum, "Roots of Motive Power" exhibit, Willits	Steam donkey	N/A (JDSF)	On loan from CDF	Foster and Thornton 2001:69
City of Fort Bragg	"Daisy," an original steam locomotive of Caspar Lumber Company	N/A (JDSF)	On loan from CDF	Foster and Thornton 2001:69
JDSF Head-quarters, Ft. Bragg	Glass bottles, ceramics, hardware, logging equipment, prehistoric artifacts?	Undocumented (JDSF)	No catalog or provenience data, collected by CDF staff, contractors and visitors over time, on display	
CDF Northern Region Office, Santa Rosa	Logging camp items, prehistoric artifacts	CA-MEN-790/H, -1367, -1371	Items #515, #518, #519 in inventory by Foster (2001)	Foster 2001
CDF Archaeology Office, Sacramento	Chert and obsidian flakes and tools, stone plummet	CA-MEN-790/H, -1360, -1361, -1362, -1365, -1367, -1370, -1371, -1693, -2893, -3017, -3019	Items # 63-#74, #88 in inventory by Foster (2001)	Betts 1999; Foster 2001
California Department of Parks & Recreation, Archaeology Lab, Sacramento	Undetermined			
San Jose State University	Approx. 10 groundstone artifacts, 36 flaked stone artifacts, 1 clay/rock artifact, 4 lbs. Chipping debris, 200 historic/ modern items, <10 organic materials	CA-MEN-790/H (Three Chop Village)	Item #664 in inventory by Foster (2001); collections from excavations	Layton 1990; Foster 2001

Archival Records

Repository	Type of Records	Notes
JDSF Headquarters, Fort Bragg	Administrative files	Older records boxed but not systematically organized or catalogued.
CDF Lands Office, Sacramento	Administrative files	Status unknown
Caspar Lumber Company, Fort Bragg	Corporate records	Status unknown

Currently, the artifact collections are dispersed between several facilities: San Jose State University; State of California Department of Parks and Recreation (DPR) Archaeology Laboratory in Sacramento; CDF Regional Office in Santa Rosa; CDF Archaeology Office at Sacramento Headquarters; and JDSF Headquarters in Fort Bragg. In addition, at least two large items in the collection are on public display through loans by CDF to the Mendocino County Museum (steam donkey) for their "Roots of Motive Power" exhibit in Willits, and to the City of Fort Bragg ("Daisy," one of the original steam locomotives of the Caspar Lumber Company) (Foster and Thornton 2001:69). Another steam donkey is displayed at a popular visitor stop (Camp 20) in JDSF along State Highway 20.

Archival materials should be a component of the collections (Table VII.9.2). Such materials include archaeological excavation written and photographic records, historic maps and corporate records of the Caspar Lumber Company, and records that document the State's administrative history of the Forest since 1947.

Condition

The condition of the collections varies. The steam donkey on loan to the Mendocino County Museum and the locomotive on loan to the City of Fort Bragg are being kept in good condition. The steam donkey on display at the rest area on State Highway 20 has been partially restored and re-painted. The collections at the JDSF Headquarters in Fort Bragg, although not cataloged and possessing little, if any information on their provenience, are on display and protected. The collections at the CDF Archaeology Office in Santa Rosa are in the process of being cataloged. Once cataloging and re-packaging of the artifacts comprising the collection have been completed, it will be transferred to a secure location at the JDSF Headquarters. Likewise, the collections at CDF Headquarters in Sacramento are stored in a secure location. The collections at the DPR Archaeology Laboratory in Sacramento were recently inventoried in compliance with the Native American Graves Protection and Repatriation Act (Foster 2001). It is assumed that the collections generated by professional archaeologists are organized, documented, and appropriately stored and housed, for example those at San Jose State University.

Significance

Collections are an important component of a heritage resources management program. The collections from the Forest are important because of their potential usefulness for additional scientific study, their relevance to future heritage resources investigations, and their value in interpreting the history and prehistory of JDSF, the largest demonstration forest in California under public ownership.

9.4 Regulatory Framework

California State and Federal laws and policies prescribe standards, policies and processes for adequately identifying, evaluating the significance, assessing potential project impacts, and resolving adverse effects to significant resources in a manner subject to various levels of professional oversight and public disclosure. This section identifies those key laws, regulations, standards and guidelines that apply to management of heritage resources at JDSF.

9.4.1 State Laws, Regulations, Standards and Guidelines

Public Resources Code Sections 5020 through 5024 (Historical Resources)

California Public Resources Code (PRC) Sections 5020 through 5024 (Historical Resources) provide authority and responsibilities for all state agencies, including CDF, for the protection of heritage resources. It establishes the powers and duties of the State Historical Resources Commission and the SHPO, defines important terms, and provides state policy for inventories and preservation programs. These sections of the PRC provide direction beyond project-related impacts and speak to broader state agency responsibilities concerning historical resources. It requires state agencies to implement plans and protection programs, and to consult with the SHPO prior to any project that could result in substantial adverse change to the significance of a state-owned cultural resource. The 1992 amendment established the California Register of Historical Resources and its implementing regulations.

Public Resources Code Sections 5097 through 5097.6 (Archaeological, Paleontological, and Historical Resources)

This statute pertains to archaeological surveys on state lands preceding major public works projects and the role of the Department of Parks and Recreation. Section 5097.5 discusses elements of a misdemeanor for willful damage, illicit excavations, etc., upon an archaeological site. Section 5097.995 passed in 2002 expands upon those penalties and has broader application.

Public Resources Code Section 5097.9 (Native American Historical, Cultural and Sacred Sites)

PRC Section 5097.9) authorizes creation of the Native American Heritage Commission, establishes its powers and duties, requires state agency cooperation, prohibits impacts to Native American graves, sacred and religious sites located on state lands, promotes access by Native Americans to such places on state lands, and establishes notification procedures following inadvertent discovery of Native American remains on state or private lands. It also prohibits

unauthorized possession of Native American skeletal remains and associated grave goods, punishable under a felony offense, and sets forth policy for repatriation of said remains and goods to the Most Likely Indian Descendent. This PRC Section provides statutory authority for Native American Notification procedures in the Forest Practice Rules, and the direction for notification policy for CDF projects during cultural resource impacts analyses conducted by CDF.

Public Resources Code Sections 5097.995-5097.996 (Native American Historical Resource Protection Act)

This statute was passed in 2002 (SB 1816) to provide stiffer penalties for malicious and intentional destruction, looting, and other damage to archaeological sites. It replaces Penal Code Section 622 ½ which was not only ineffective but stipulated that violations of it only constituted a misdemeanor. This law now includes provisions for civil penalties.

Public Resources Code Sections 21083.9 and 21084.1 (CEQA Statutes)

These two sections of the California Environmental Quality Act (CEQA) statutes specifically address the protection of historical resources (i.e., a resource listed or eligible for listing in the California Register of Historical Resources), requiring lead agencies to determine whether projects may cause a substantial adverse change in the significance of a historical resource in the environmental review process.

14 CCR Sections 15064.5 and 15331 (CEQA Guidelines)

These sections of the current CEQA guidelines provide specific reference and direction for the protection of archaeological and historical resources. The CEQA Guidelines are the implementing regulations for the CEQA statutes and are codified in Title 14 of the California Code of Regulations (CCR). These sections include the extensive set of revisions adopted by the Resources Agency in October 1998 that became effective January 1, 1999. Note that the former Appendix K has been deleted. The still relevant guidance it contained was moved into the body of the Guidelines in new sections 15064.5 and 15126.4(b). The applicable portion of Appendix G (The Environmental Checklist Form) is also included therein.

Health and Safety Code Sections 8010-8030 (California Native American Graves Protection and Repatriation Act of 2001)

This is the state version of a federal law whose acronym is NAGPRA, the Native American Graves Protection Act. Codified as Health and Safety Code Sections 8010-8030, it requires all state agencies to

conduct inventories of its artifact collections for sensitive items subject to the provisions of the act. These items include human remains, grave-associated artifacts, sacred objects, and objects of cultural patrimony. It further requires agencies to disclose the existence of such items to local tribes providing them an opportunity to request repatriation. Disputes are to be resolved by ten-member Repatriation Oversight Commission, also created by this act.

Health and Safety Code Sections 18950-18961
(State Historical Building Code)

These sections of the Health and Safety Code contain the statutes for the State Historical Building Code that provides alternative standards for the repair, restoration and management of historic buildings. State agencies are required to use this code for significant historic buildings, or historical resources as defined in PRC 5024. The regulations implementing these statutes are set forth in Title 14, California Code of Regulations Part 8.

Government Code Section 6254.10
(Exception to the California Public Records Act)

This section of the Government Code is related to the protection of archaeological, historical and cultural resources. It exempts archaeological site information from the California Public Records Act, and provides authority for widespread state policy (not just within CDF) to keep archaeological site information confidential. This exception to the Public Records Act recognizes that providing site location information to the general public may put such resources at risk from illicit relic hunting, excavations or vandalism.

California Executive Order W-26-92 (State Policy for Heritage Resources)

California Executive Order W-26-92 directs all state agencies (including CDF) to implement programs, policies, and management plans for the protection and management of California's "significant heritage resources" (a term that includes significant historic buildings and archaeological sites) under the agency's jurisdiction or control. This Executive Order also requires all state agencies, including CDF, to consult with the State Historic Preservation Officer (SHPO), and to appoint an Agency Preservation Officer.

Curation of Archaeological Collections

Guidelines for the Curation of Archaeological Collections is set of recommended procedures developed by the California Historical Resources Commission pursuant to PRC Section 5020.5(b) for use by State agencies.

Standards for Documenting Heritage Resources

Instructions for Recording Historical Resources, with the corresponding record forms (DPR 523 series), comprise the current required format for formally recording heritage resources in California (OHP 1995), with the records housed at the regional Information Centers of the California Historical Resources Information System (CHRIS). CDF's professional archaeologists and certified RPFs consistently use these forms to formally record sites.

Standards for Reporting Heritage Resource Studies

Archaeological Resources Management Reports (ARMR): Recommended Contents and Format, Preservation Planning Bulletin Number 4(a), provides guidance for the preparation and review of archaeological reports (OHP 1989).

Preparation of Archaeological Research Designs

Guidelines for Archaeological Research Designs, Preservation Planning Bulletin Number 5, offers recommended standards from OHP (1991) for preparing archaeological research designs to guide studies (especially excavation projects) designed to evaluate site significance or to mitigate impacts where site avoidance is not feasible.

Programmatic Approaches to Managing Certain Archaeological Site Types

California Archaeological Resource Identification and Data Acquisition Program [CARIDAP]: Sparse Lithic Scatters (Jackson et al. 1988) was adopted by the OHP as a programmatic approach to defining, recording and managing this specific archaeological resource type. The CARIDAP program for Sparse Lithic Scatters is designed to provide documentation to satisfy reviewing agencies that sparse scatters have been defined through prescribed field identification methods. These field methods provide sufficient information to ensure accurate site classification and evaluation of research potential... The program recognizes that lithic scatters contain limited but useful data and establishes guidelines to efficiently recover that information.

For a resource to be classified appropriately as a sparse lithic scatter, an archaeological flaked-stone deposit must: (1) contain only flaked-stone and lack other classes of archaeological materials (e.g., groundstone, fire-affected rock, bone or shellfish remains, pottery); (2) lack a substantial subsurface deposit; and (3) exhibit surface densities equal to or less than three flaked-stone items per square meter (Jackson et al. 1988:1). This approach, or refinements thereof,

should be considered for JDSF where on-going site impacts have been documented and are expected to be unavoidable in the future (e.g., sites located at major road junctions).

9.4.2 Federal Laws, Regulations, Standards and Guidelines

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) (1966, as revised through 1992) and its Implementing Regulations at 36 CFR 800 (Protection of Historic Properties) requires Federal agencies take into account the effects of their actions on “historic properties” (defined as "… any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion on the National Register of Historic Places, including artifacts, records, and material remains related to such a property…" (NHPA Section 301[5]), and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. Federal "actions" are defined under the statute as: a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or behalf of a Federal agency; those carried out with Federal financial assistance; those requiring a Federal permit, license or approval; and those subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency.

A recent undertaking on JDSF that involved the use of federal funds was the construction of the Forest Learning Center (discussed in Chapter 4 of the DFMP). This project was completed in cooperation with the USDA Forest Service and is an example of a project on the Forest that is subject to the requirements of Section 106 of the NHPA. The applicability of this federal mandate is linked to the use of federal funds, which enable the project to meet the definition of an “undertaking” as defined in federal regulations. Steps with which the federal agency and CDF must comply include: establish whether or not a proposed action is an "undertaking"; determine the area of potential effects (APE); identify the appropriate SHPO and other consulting parties (especially Native American Tribes within whose ancestral territory the undertaking falls); plan to involve the public (e.g., local historical societies); determine the scope of the undertaking; and carry out reasonable efforts to identify and evaluate “historic properties” as defined by the regulations (i.e., identify which heritage resources are listed on or eligible for inclusion in the National Register of Historic Places within the APE; assess adverse effects of the undertaking on historic properties; and in consultation with appropriate parties, develop and implement measures to resolve adverse effects on historic properties.

National Environmental Policy Act (NEPA)

The National Environmental Policy Act of 1969 (NEPA) requires Federal agencies to consider all impacts on all aspects of the environment before decisions are made about projects that may significantly affect the quality of the human environment. Generally, analysis of impacts to heritage resources involves coordination with the NHPA Section 106 process.

Native American Graves Protection and Repatriation Act of 1990

This Federal law and its implementing regulations apply to CDF because the agency meets the statutory definition of a "museum" (entity that has received Federal funds) (Foster and Thornton 2001:47). NAGPRA requires that "museums" search their collections to inventory human remains, grave goods, sacred items and objects of cultural patrimony, notify potential culturally affiliated Federally Recognized Tribes, and repatriate cultural items where the legal mandates are met.

Comprehensive Standards and Guidelines for Heritage Resources Management

Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (NPS 1983) provide technical advice to Federal, State and local agencies in conducting a comprehensive approach to identifying, evaluating, registering, and treating heritage resources across the nation. This fundamental reference addresses preservation planning, professional qualifications, and identification, evaluation, registration and documentation of archaeological, historical and historic architectural resources.

9.5 Proposed JDSF Management Measures

This section summarizes measures recently adopted for management of heritage resources on CDF lands statewide, including specific measures prescribed for JDSF (Foster and Thornton 2001; Foster and Sosa 2001). Also presented are those heritage resources management actions proposed for JDSF in the DFMP, including compliance with the *California Forest Practice Rules* (implementing regulations for the *Z'Berg-Nejedly Forest Practice Act of 1973*).

The following goal and objective of the DFMP is pertinent to heritage resources:

> <u>Goal #7. Protection:</u> Protect the Forest from damage and preserve the peace within.

> Objective 7-4. Inventory and protect historic and prehistoric archaeological resources. Identify and prioritize archaeological sites that are susceptible to disturbance and schedule data collection prior to planned activities.

CDF's statewide Management Plan for Historic Buildings and Archaeological Sites (plan) (Foster and Thornton 2001) and its accompanying EIR (Foster and Sosa 2001) prescribe general measures for identifying, evaluating and managing heritage resources on CDF lands statewide including some specific management strategies for heritage resources located within JDSF. This management plan was initiated in 1991 pursuant to Executive Order W-26-92, CEQA and PRC Section 5020 et seq., in coordination with the SHPO and in consideration of comments from the interested public and Native American Tribes and organizations. For each of CDF's properties, including JDSF, the plan summarizes the inventory of recorded historic buildings and prehistoric and historic archaeological sites; identifies those buildings and sites determined to be significant per National and State Registers criteria in consultation with SHPO (incomplete for JDSF, among other places); establishes decision making criteria for managing its historic buildings and identifies those targeted for preservation; describes CDF's archaeology program, role in fire protection, Native American gathering policy, and artifact collections; and establishes specific management objectives and measures for each of its holdings including JDSF. It is CDF's intent to update the statewide management plan every ten years beginning in the year 2010 (Foster and Thornton 2001).

9.5.1 Preferred Management Approach: Preservation in Place

CDF's primary approach to managing significant heritage resources is to preserve them through avoidance of project-related impacts. The DFMP adopts this philosophy as the preferred management measure for heritage resources, as follows:

> JDSF will, whenever feasible, avoid damaging effects on any historical resources of an archaeological nature. Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context and may also avoid conflict with religious or cultural values of groups associated with the site (DFMP, Section 3, Heritage Resources).

Avoidance of impacts through project design is the management approach specified for JDSF in the statewide management plan:

> Where possible, resources will be protected by altering projects to avoid impacts on the resource. (Action #5 in Foster and Thornton 2001:68)

With regard to managing certain heritage resources at JDSF, the statewide management plan states that:

Old railroad trestles will be protected from impacts of management activities, but there will be no efforts to maintain them. (Action #6 in Foster and Thornton 2001:68)

(Note: Many railroad trestles at JDSF have not been fully recorded to current standards, nor formally evaluated for significance. Constructed of wood, these features are rapidly decaying in this forest setting.)

Old railroad grades (many converted to roads) will not be protected unless a portion of the grade demonstrates some unusual feature. (Action #7 in Foster and Thornton 2001:68)[1]

The 1915 Little Red Schoolhouse at Camp 20 is slated for long-term preservation and will be rehabilitated and opened to the public, in consultation with the SHPO. (Action #8 in Foster and Thornton 2001:68)

The 1940 Cat Barn at Camp 20 will be managed as a standing ruin or possibly torn down after appropriate approvals, since its deterioration is extensive and restoration costly and impractical (Action #8 in Foster and Thornton 2001:68).[2]

9.5.2 Timber Harvesting and California Forest Practice Rules

The record of Confidential Archaeological Addenda and THP-specific survey reports for JDSF demonstrates that the impacts of proposed timber harvesting on heritage resources have been regularly considered by CDF, with impacts avoided through final plan design. The one exception to impact avoidance through plan design was mitigation by archaeological excavation/data recovery of the Misery Whip Camp (CA-MEN-2296/H) by Hylkema (1995) (cf DFMP, Section 2, Heritage Resources; Foster and Thornton 2001:66-67; NWIC files).

CDF's statewide management plan (Foster and Thornton 2001:68) and the JDSF DFMP both adopt the following management procedures designed to assess and avoid impacts from timber harvesting on significant heritage resources.

California's current Forest Practice Rules for the protection of heritage resources (found in 14 CCR Sections 895, 929, 949, 969, 1035, 1038, 1052 and 1104) establish procedures for identifying and protecting significant heritage resources that may be

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[1] Many railroad grades at JDSF have not been fully recorded to current standards, nor formally evaluated for significance. Medin's 1995 master's thesis may provide contextual information useful for determining which features are "unusual."

[2] CDF acknowledges that the Cat Barn is "significant due to the rarity of standing structures at JDSF" [Foster and Thornton 2001:68] and because it is the only known preserved structure of its kind [Gary and Hines 1993]. Although this structure has not been formally evaluated by CDF in consultation with the SHPO [Foster and Thornton 2001:30], it was recorded in detail by Archaeologist Mark Gary in 1990.

impacted by commercial timber operations reviewed by CDF. This work is carried out by professional archaeologists or by Registered Professional Foresters or other resource professionals who have completed a rigorous 4-day training session in identification of archaeological resources. Such trained personnel must also satisfactorily complete a one-day refresher training course and performance evaluation at least once every five years. These procedures require such personnel to:

1. Conduct prefield research and complete a current archaeological records check for the proposed THP area. The records check is conducted at the appropriate Information Center of the California Historical Resource Information System.
2. Provide written notification to local Native American tribes and the Native American Heritage Commission providing opportunities for identification and protection of important tribal resources that may otherwise be overlooked during archaeological survey (e.g., sacred places, areas where traditional plants are collected).
3. Conduct a field survey for prehistoric and historic archaeological resources.
4. Record heritage resources discovered within the THP area.
5. Develop strategies to avoid impacts to heritage resources through project redesign and/or implantation of appropriate, enforceable protection measures.
6. Prepare a *Confidential Archaeological Addendum* (CAA) to the THP, which summarizes methods, findings, and recommendations for protection of heritage resources. The required contents of this report are outlined in the Forest Practice Rules and instructions for completion are published by CDF (2003). A CDF staff archaeologist reviews the CAA for professional adequacy. Once the THP is approved, the CAA is submitted to the appropriate Information Center of California Historical Resource Information System for entry in the State's database.
7. Field monitoring by CDF Inspectors for conformance with the approved site protection measures, and enforcement actions if violations are identified.

Related management actions adopted for JDSF under the statewide management plan and EIR (Foster and Thornton 2001:68; Foster and Sosa 2001) include:

All significant sites will be identified in THPs and protected in accordance with the *Forest Practice Rules* (see above) (Action #1 in Foster and Thornton 2001:68);

An archaeological survey and records check will be conducted for all projects (Action #2 in Foster and Thornton 2001:68); and

> When new sites are identified, they will be fully recorded to professional standards (Action #3 in Foster and Thornton 2001:68).

The DFMP (Section 3, Heritage Resources) makes several observations and identifies strategies to improve the effectiveness of the above program at JDSF.

> Survey Methods: Additional, as yet unidentified heritage resources are expected to be present at JDSF. Forest conditions (e.g., duff, slash, thick understory vegetation) hamper site discovery and definition of site boundaries. Traditional archaeological pedestrian survey techniques employed in the past at JDSF are inadequate where surface visibility is limited and archaeological sites are sparse. CDF recognizes that site discovery may be improved by employing more intensive survey techniques, including but not limited to: periodic surface raking; mechanical vegetation removal; soil chemical surveys; other remote sensing techniques; geoarchaeological studies designed to identify areas sensitive for buried archaeological sites (page 78).
>
> Site Recording: CDF will formally record all newly discovered archaeological sites on JDSF per current California standards (OHP 1995). In addition, it is committed to seek resources to formally record the known but undocumented historic period sites (see Tables VII.9.1 and VII.9.3) and update records for those sites not documented to current standards (page 78).
>
> Significance Evaluations and Research Designs: CDF will evaluate the significance of all newly discovered heritage resources at JDSF. Detailed site evaluations will be considered as potential research and demonstration projects. CDF will consider review and update of the research design and questions originally formulated for JDSF sites by Levulett and Bingham (1978), plus new data from more recent regional archaeological studies. Updating this research design will help clarify the information potential of prehistoric archaeological sites with reference to their eligibility for the California Register of Historical Resources under criterion (4). CDF also recognizes that some historic period sites have the potential to answer important scientific research questions (pages 78-80).

9.5.3 Fire Protection and Prescribed Burn Programs

The primary goal of CDF's wildfire suppression activities on non-Federal lands within California is to protect human lives, property and the forest. During wildfires, most environmental protection provisions of CEQA are suspended. It is common practice for CDF staff archaeologists to be assigned to assist suppression teams so that impacts to known heritage resources from fire lines, fire camps and other related activities might be minimized or avoided, to the extent practical. After fires have been extinguished, CDF Archaeologists are often then tasked to perform site damage assessments and to assist

in site stabilization, data recovery or rehabilitation efforts (Foster and Thornton 2001:47).

The DFMP (Chapter 3, Forest Protection) tasks the CDF Fort Bragg Battalion Chief, JDSF Manager and Mendocino Unit Fire Prevention Battalion Chief to update and make more comprehensive the current *Pre-Suppression Plan* for JDSF. In particular, this plan for fighting fires at JDSF will identify locations for fire defense improvements (e.g., fire breaks, helispot locations, water tanks, adequate road and trail access) and potential locations of incident camps, all of which pose a potential impact threat to heritage resources if such facilities are constructed in their vicinities. Discussion of fire suppression and the *Pre-Suppression Plan* recognizes one related activity (below) that can impact heritage resources:

> A program to locate archaeological and other sites requiring special protection measures will be established for <u>shaded fuel-break areas</u> [emphasis added] since these areas will likely be subject to heavy equipment operations during an emergency wildfire situation. (DFMP, Chapter 3, Forest Protection)

9.5.4 Transportation Systems (Road Maintenance, Construction and Abandonment)

Impacts to heritage resources from roads (maintenance and construction) are the most commonly cited problem at JDSF by archaeologists, CDF managers and staff (cf. Betts 1999; Medin 1994; Levulett and Bingham 1978).

The CEQA Guidelines identify classes of projects, including routine road maintenance, that do not have a significant effect on the environment and are declared to be "categorically exempt" from the requirements for preparation of environmental documents. However, a standard Categorical Exemption does not apply when (1) the cumulative impact of successive projects of the same type in the same place, over time is significant, and/or (2) when a project may cause a substantial change in the significance of a historical resource (i.e., eligible for or listed in the California Register of Historical Resources) (Title 14, CCR, Chapter 3, Article 19, Section 15300.2(b)(f)).

Presently, routine road maintenance activities that have the potential to impact known archaeological sites have been suspended by CDF in accordance with a CEQA Categorical Exemption (Number 15301, Existing Facilities) submitted by JDSF and received by the State Clearinghouse on February 23, 2001. This Notice of Exemption states, "Project involves the operation and maintenance of existing facilities involving negligible or no expansion of existing use. 'Maintenance activities will be scheduled and conducted so as to avoid impacts to cultural … resources." A systematic archaeological survey of all roads subject to routine maintenance on JDSF in order to identify those sites that may be affected by maintenance activities has not been completed. Therefore, routine road maintenance at JDSF has the potential to impact undiscovered, potentially significant archaeological sites. In practice under the present Categorical Exemption, routine road maintenance activities are suspended in the areas of recorded sites by JDSF staff that relies on existing site records that typically provide estimated

site boundaries based on survey (not excavation) data. In addition, deferring routine maintenance along roads that bisect sites may lead to greater road maintenance problems and/or result in indirect impacts to heritage resources and other aspects of the environment.

The statewide management plan and EIR (Foster and Thornton 2001:68; Foster and Sosa 2001) asserts the following will be carried out for JDSF:

> CDF shall develop a plan to manage archaeological sites bisected by regularly maintained roads, to mitigate impacts to sites caused by regular road grading and maintenance (Action #12 in Foster and Thornton 2001:68).

The proposed *Road Management Plan* for JDSF (DFMP Appendix VI) outlines a process for inventorying existing roads and stream crossings, improving road segments that will remain in the permanent transportation network, and abandoning (decommissioning) high sediment producing roads where possible. It also provides guidelines for new road construction.

In order to avoid or minimize impacts to heritage resources, the *Road Management Plan* specifies,

> The JDSF archaeological database will be checked to determine the location of known archaeological sites before construction and maintenance work is started. These sites will be protected and left undamaged (DFMP, Appendix VI, Road Construction and Reconstruction).

However, the above management prescription does not take into account the following factors:

(1) systematic cultural resource surveys have not been completed for the Forest including many road corridors;
(2) impacts to heritage resources from road maintenance or new construction may be unavoidable, necessitating redesign or data recovery as alternative mitigation measures;
(3) ground disturbing activities involved in abandoning roads pose another potential impact to heritage resources;
(4) certain road segments which may become designated public trails for hikers, bicyclists or equestrians are likely to be especially sensitive for heritage resources, such that increased visitor use may lead to impacts from illicit artifact collecting or vandalism.

9.5.5 Watershed Restoration and Wetlands Management

The goal of watershed restoration and wetlands management prescriptions is to maintain or enhance healthy and sustainable aquatic ecosystems in JDSF (DFMP Section 3, Watersheds). Wetland habitats associated with creeks, springs, seeps and bogs are generally considered highly sensitive for prehistoric and historic period heritage resources.

> Where forest management activities have the potential to destabilize slopes and/or damage aquatic habitats, specific mitigation measures will be developed and implemented under the THP process or in road planning, both of which activities consider impacts on heritage resources. (DFMP Section 3, Watersheds)

9.5.6 Recreation and Public Uses, and Maintenance of Existing Facilities

JDSF currently has 14 developed campgrounds situated along or near creeks, which are among the most sensitive places for occurrence of historic and prehistoric heritage resources. Most of these campgrounds are generally closed during the winter. Recreation use statistics collected during 1999 revealed that 12,200-camp-user-days were logged. In addition, CDF estimates an annual visitor day-use population of 50,000. JDSF offers a wider array of recreational activities (camping, hiking, swimming/wading, picnicking, horseback riding, hunting, fishing) than nearby public parks. Off-road-vehicle use is prohibited at JDSF (DFMP Section 1, Regional Economic Role of JDSF). Five multiple-use trails are currently shown on the free handout map provided to the public. The public has expressed desires for more camp sites, expanding the Forest trail system for hikers, horseback riders and bicyclists, and to establish formal target shooting ranges (DFMP Section 1, Public Concerns and Their Effect on Management).

Planned management (on-going and future) described in the DFMP (Section 3, Recreation, Aesthetics, and Public Use) includes: improvements to Camp Host Sites (e.g., installing showers); establishing new trails for hiking and bicycling; improving existing camp sites (e.g., installing vault toilets, barbeque pits, planting native vegetation screens); restoring the historic Little Red Schoolhouse for public visitation; and regular maintenance of all existing recreational facilities, among others. These ground-disturbing activities have the potential to directly impact heritage resources if located in their vicinities. Further, high public use in archaeologically sensitive areas poses the threat of indirect impacts from illicit artifact collecting and vandalism. However, the DFMP does not propose any specific heritage resources management actions related to maintenance of and improvements to existing facilities at JDSF.

In addition, under its Non-timber Forest Products Program, JDSF issues personal and small-scale commercial collecting permits for mushrooms (average of 165 permits/year 1998-2002), firewood (average of 376 permits/year 1998-2002), forest greens (average of 41 permits/year 1998-2002), and other specialty wood products. Collecting Permits issued by JDSF do not inform users about prohibitions on collecting artifacts or

vandalizing heritage resources that may be encountered in the Forest. Non-permit collecting on the Forest may be practiced by local Native Americans wishing to gather materials for traditional purposes. CDF is currently developing a permit policy for such use to ensure that such traditional gathering can be safely accomplished and without causing significant environments impacts to Forest resources.

9.5.7 Pesticide Use and Access for Native American Gathering

The CDF statewide management plan includes CDF's current statewide policy for Native American gathering on CDF properties:

> CDF shall institute a policy that allows for the gathering of certain materials by local Native Americans if conducted in accordance with all applicable rules and forest policies. The Native American groups wishing to gather on CDF parcels shall submit a written request to CDF for review and approval. (Foster and Thornton 2001:47)

Heritage resources at JDSF may include a variety of native plant resources collected by local Native Americans for traditional uses, such as making of baskets and regalia, and for foods and medicinal purposes. To-date, on a project-by-project basis tied to THP review, CDF has provided opportunities for Native American Tribes to comment on and identify such plant collecting areas in response to the required THP notification letter. The limited or non-response from Tribes who have received notification letters for timber harvesting at JDSF does not necessarily mean that there are no plant resources or collecting areas in the Forest of interest to Native Americans. One tribal representative from the Sherwood Valley Rancheria reported that native plant resources have been and continue to be collected from JDSF for traditional uses by local Native Americans, and access to such resources is very important to local Tribes.

Consultation with local, interested Tribes by JDSF staff would likely be productive in identifying key plants of interest, where such plants occur in the Forest, how such plants might be managed to be most desirable for traditional uses (e.g., periodic burning of bear grass, trimming and burning of hazel patches) and for establishing protocols for Native American access to gather native plants.

Health risks from herbicide use on Native Americans who collect and/or use native plant resources have received considerable attention in recent years, especially from the California Indian Basketweavers Association, which performed research using grants from the Environmental Protection Agency, among other sources (cf Kalt and Harder 2001). The California Department of Pesticide Regulation and U.S. EPA and the USDA Forest service also have compiled information and conducted research to help address these concerns (O'Malley 2002, Wofford et al. 2003, and Ando et al. 2002).

The DFMP (Chapter 2, Public Concerns and Their Effect on Management, Herbicides) notes there have been many requests from the public to eliminate herbicide use at JDSF and seek other alternatives to controlling growth of exotic species and pest

plants. The JDSF policy is to encourage growth of vegetation that is native to the area and genetically suited for the site, in support of their Integrated Weed Management (IWM) approach to control vegetation. Among the tools employed by IWM at JDSF is use of herbicides, among various other approaches (e.g., fire, biological agents, mechanical removal) (DFMP Chapter 3, Exotic Species). CDF's response to public concerns about pesticide use has been (1) to reduce herbicide application at JDSF below the levels used in the mid-1990s, and (2) in the future, to use a combination of control methods in carrying out its IWM program (DFMP Chapter 2, Public Concerns and Their Effect on Management, Herbicides).

Consultation between JDSF staff and Native American plant gatherers and implementation of the gathering permit process would reduce the potential for pesticide exposure and potential health risks to gatherers on JDSF. In section IV-8.2.2 there is information on the types of herbicide applications anticipated. These applications will be limited to specific goals and have a low potential to affect most plants with a known cultural use by Native Americans.

9.5.8 Interpretation, Demonstration and Research Programs

JDSF is the largest State Forest in California with a research and demonstration mandate. The objectives of the research and demonstration program are to improve the amount and quality of information about how economic timber management practices can support maximum sustained production, in light of the level of mitigation needed to protect and enhance watersheds, wildlife habitat and heritage resources, among other environmental concerns.

The DFMP (Section 3, Heritage Resources) recognizes:

> JDSF Role as Demonstration Forest: In its role as a demonstration forest, JDSF can serve as a proving ground for the development and implementation of effective heritage resource management strategies and techniques. JDSF will continue to serve as an essential location for demonstrating viable heritage resource management strategies (page 79).

The DFMP (Section 4, Current Research and Demonstration Projects) describes numerous related on going and planned demonstration and research programs. There is the potential for integrating heritage resources management into plans for future research and demonstration, such as cost-effectively improving cultural resource management strategies and techniques related to forest management practices. Similarly, the recently completed "Multi-Scaled Analysis of Fire History" study may provide data important to heritage resources, e.g., related to understanding the role of pre-contact Native American burning practices, the effects of fire on cultural resource preservation, and reconstructing paleoenvironmental conditions which affected Native Americans in prehistory.

9.5.9 Coordination with Other Agencies and Entities

JDSF staff coordinates with a number of other public agencies and entities whose actions may have an effect on the Forest's heritage resources. These include, but are not limited to, the following:

> California Department of Parks and Recreation (DPR), which manages several State Park units in the vicinity (including the adjacent Mendocino Woodlands Outdoor Center, a designated National Historic Landmark);
>
> California Department of Transportation (Caltrans), which maintains State Highway 20, the primary thoroughfare through JDSF between Willits and Fort Bragg;
>
> Pacific Gas & Electric Company (PG&E), which maintains a major transmission line bisecting the Forest that parallels portions of Highway 20; and
>
> Neighboring property owners, including commercial entities that promote tourism or harvest timber from private timberlands, and local residents who recreate on JDSF, frequently gaining access through adjoining lands rather than from the established approaches from Highway 20.

As the DFMP (Section 3, Heritage Resources) states:

> Seek Opportunities for Research. CDF shall seek opportunities with outside entities (e.g., State Universities), as part of project planning or through research grants to conduct additional archaeological and historical research on the Forest. (Action #4 in Foster and Thornton 2001:68)

(Note: Limited archaeological excavation at Three Chop Village at JDSF was conducted by San Jose State University for research purposes only. Data recovery excavations at Misery Whip Camp were performed as part of project compliance.)

9.5.10 Management of Archaeological Collections and Archives

According to the statewide management plan and EIR (Foster and Thornton 2001:69; Foster and Sosa 2001) the following actions will be carried out on JDSF:

> CDF shall initiate a plan to manage the artifacts collected on the Forest. This will include an effort to gather all previous collections currently stored at several curatorial facilities… [see Table VII.9.2], and to curate the entire collection at an appropriate facility at CDF. These collections will then be made available for interpretive programs on the Forest and for continued scientific study. If human [Native American] remains are ever encountered at JDSF, a plan for

repatriation shall be developed in consultation with local Native Americans as required by applicable law.

9.6 Thresholds for Determining Significant Impacts to Heritage Resources

The criteria for determining whether or not a project would have a significant adverse impact on heritage resources are set forth in the CEQA Guidelines (14 CCR § 105064.5(b)). The pertinent guidance found in this law is provided below:

A project with an effect that may cause a substantial adverse change in the significance of an historical resource [eligible for or listed in the California Register of Historical Resources] is a project that may have a significant effect on the environment.

(1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historic resource would be materially impaired.

(2) The significance of an historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(B) Demolishes or materially alters in an adverse manner those characteristics that account for its inclusion in a local register of historical resources…, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by the lead agency for the purposes of CEQA.

14 CCR §15126.4(b)) of the CEQA Guidelines addresses consideration of mitigation measures designed to minimize adverse effects on significant heritage resources, as follows.

(1) Where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of the historical resource [eligible for or listed in the California Register of Historical Resources] will be conducted in a manner consistent with the Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties…, the project's impacts on the historical resource shall generally be considered mitigated below a level of significance and thus is not significant.

(2) In some circumstances, documentation of an historical resource, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

(3) Public agencies should, whenever feasible, seek to avoid damaging effects to any historical resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:

(A) Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

(B) Preservation in place may be accomplished by, but is not limited to, the following:

1. Planning construction to avoid archaeological sites;
2. Incorporation of sites within parks, green space, or other open space;
3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site;
4. Deeding the site into a permanent conservation easement.

(C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 of the Health and Safety Code.

(D) Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center. (14 CCR Section 15126.4)

9.7 Analysis and Proposed Mitigation and Monitoring Measures for Individual and Cumulative Impacts

The following discussion identifies potential impacts (less than significant, significant and adverse or beneficial; plus direct, indirect and cumulative) on heritage resources related to implementation of the proposed alternative (C1) described in the DFMP for

JDSF. Identification of impacts from DFMP implementation takes into account the above described, known and anticipated inventory of potentially significant heritage resources for JDSF, the regulatory framework, and thresholds for determining significant impacts to heritage resources. Mitigation measures are then discussed with reference to those heritage resources management actions prescribed by CDF in the DFMP and in the recently adopted statewide management plan (Foster and Thornton 2001), plus other measures deemed appropriate to mitigate potential individual and cumulative impacts from various JDSF program activities to a less than significant level.

Programmatic activities described in the DFMP that are more fully considered in this impact analysis relate to the following: (1) future timber harvesting; (2) fire protection and prescribed burn programs; (3) maintenance, construction and abandonment of roads; (4) management of Special Concern Areas (SCAs); (5) watershed restoration activities; (6) recreation and public uses, and maintenance of existing facilities; (7) use of pesticides and Native American access for gathering; (8) interpretation and research; (9) management of archaeological collections and archives; and (10) coordination with other agencies and entities.

Examples of recent and future actions or undertakings that are expected to be addressed subsequently in conformance with requirements of CEQA and/or Section 106 of the National Historic Preservation Act include construction of the Forest Learning Center discussed in the DFMP (Chapter 4, Research and Demonstration, Planning for Future Research and Demonstration), which involved the use of Federal funds provided by the USDA Forest Service; activities (watershed restoration, erosion control) that may affect navigable waters of the United States and require approval and issuance by the US Army Corps of Engineers of a permit pursuant to Section 404 of the Clean Water Act; and road maintenance or improvements along State Highway 20 by the California Department of Transportation (Caltrans), involving use of Federal funds provided by the Federal Highways Administration.

Per the DFMP (May 2002 Draft), with some subsequent modification and the addition of Management Goals 9 and 10, the following goals have been established for all Program alternatives addressed by this EIR.

Management Goal 1: Maintain the existing comprehensive, confidential heritage resources database for JDSF lands for use by designated on-site managers, including systematic mapping of prior archaeological survey coverages, and locations of formally recorded and noted heritage resources; concurrent with this, establish a single systematic numbering system for sites assigned various designations (primary numbers, trinomials, IHR numbers, field numbers, etc.) and for bibliographic references; compile copies of all heritage resources reports pertaining to JDSF, and establish a numeric system for retrieving these references; establish a reference library of pertinent regulations and laws, and relevant ethnographic, historical and archaeological publications (cf Government Code Section 6254.10).

Management Goal 2: Assign responsibility for managing heritage resources to an on-site staff person who will maintain the above database and interface with professionals as needed, and serve as the point-of-contact for Native Americans who have heritage ties to the Forest and other interested parties such as local historical societies (cf. PRC Section 5097.9).

Management Goal 3: Formally record all historic period sites and features noted by Gary and Hines (1993) and Medin (1994) (cf. Foster and Thornton 2001:68; OHP 1989, 1995).

Management Goal 4: As needed during project review and in consultation with the SHPO, complete formal site significance evaluations per California Register of Historical Resources criteria for all recorded resources, relying on pertinent references, for contextual information about historic sites, buildings and structures and more recent regional studies of prehistoric resources (cf. PRC Sections 5020 through 5024; CEQA; OHP 1991).

Management Goal 5: Through the designated on-site heritage resources manager (Goal 2, above), consult directly with interested Tribes to identify traditional cultural properties, appropriately manage important traditional native plant collecting areas), establish protocols for Native American access for collecting, and provide opportunities for their participation in interpreting Native American history and prehistory at JDSF for public benefit (cf PRC Section 5097.9; CDF Native American collecting policy).

Management Goal 6: Identify and catalog existing archaeological collections and archival materials, to the extent practical consolidate collections in a secure place accessible for research and interpretation, establish a collecting policy for JDSF staff and contractors, and implement a curation plan that includes accessioning future collected artifacts and pertinent records (cf. Foster and Thornton 2001:69; *Guidelines for the Curation of Archaeological Collections*, per PRC Section 5020.5(b); California and Federal NAGPRA laws).

Management Goal 7: Monitor and periodically inspect heritage resources on JDSF to ensure that existing polices are providing effective protection (cf. Executive Order W-26-92; PRC Sections 5020 through 5024; CEQA).

Management Goal 8: Conduct heritage resources training for all permanent CDF field forestry staff working at JDSF, and obtain and maintain current certification in identification of archaeological sites for key staff to assist with heritage resources surveys, site recordation, monitoring of mitigation measures and site conditions, handling inadvertent discoveries, and educating contractors and the public about heritage resource protection laws and JDSF's heritage resources.

Management Goal 9: As funding and opportunities allow (e.g., competitive grants, interagency agreements with California State University anthropology programs), CDF will prioritize completion of a general (non-THP-specific) heritage resource inventory

(including formal recordation and significance evaluation) for road systems and for those areas of JDSF suitable for tractor logging and where the highest ranked, appropriately sized merchantable conifer timber (e.g., redwood and Douglas-fir) occurs**.**

Management Goal 10: In concert with the road inventory described in the *Road Management Plan* for JDSF (DFMP Appendix VI), make it a priority to complete within three years of the five year effort the heritage resources inventory for the existing road system (including rock borrow pits and related appurtenances) by employing standard procedures described in Archaeological *Review Procedures for CDF Projects* (Foster 2003). Consult with interested Tribes to determine if significant traditional cultural properties or other heritage resources such as plant collecting areas are present and may be affected. Planning for road improvements or abandonment needs to consider and implement measures to avoid or minimize potential impacts to significant heritage resources. Document heritage resources study findings using the CDF Archaeological Survey Report form or other report format consistent with OHP (1989) guidelines.

For all alternatives, Table VII.9.4 summarizes the heritage resource impacts analysis and identifies corresponding mitigation and monitoring measures.

9.7.1 Timber Harvesting

As noted above, historic timber harvest activities predating legal responsibilities for heritage resource protection had an unknown but likely significant impact on heritage resources on JDSF. Known and presently unidentified heritage resources are expected to exist within areas of future timber harvest plans (THPs) at JDSF. A substantial proportion of the Forest will be subject to timber harvesting over time to achieve desired future conditions (DFMP Section 3). For planning and management purposes, planning units have been delineated, affording the opportunity to address heritage resources management opportunities and constraints (e.g., high or low site sensitivity, proximity to high public use areas, or interpretive values) on a unit-by-unit basis.

All of the various harvesting and silvicultural methods discussed within the plan have the potential to cause significant impacts to heritage resources. While it is true that among the three yarding systems to be employed at JDSF, tractor yarding (skidding and dragging logs on the ground) has the highest potential for direct adverse impacts to archaeological sites, followed by cable yarding and helicopter yarding, all of these methods can be destructive unless preventative measures are followed. For example, helicopter logging tends to result in less ground disturbance than tractor logging in those areas where trees are felled, but helicopter log landings are larger, in greater number, and their construction and use may result in considerably more significant ground disturbance that typical log landings used for tractor operations.

Additional related direct adverse impacts to archaeological sites from ground disturbance are possible from construction and/or re-use of existing log landings and their access roads (used by all three yarding systems), and with use of stationary yarding equipment for cable logging.

Although direct short and long-term adverse impacts to Native American plant resources used for traditional purposes and/or traditional cultural properties as defined *by National Register Bulletin 38* may also result from timber harvesting at JDSF, the California Forest Practice Rules also require identification and protection of these resources as well.

Timber harvesting also can pose a cumulative impact to heritage resources, since these activities are distributed over space and time and because a given area may be harvested repeatedly over time. Cumulative impacts to heritage resources can be positive, where these resources are identified, recorded, removed and secured, or protected in place. Cumulative impacts can be adverse, where heritage resources are not identified and not afforded these kinds of protections.

Impact 1. ***Adoption of the DFMP has the potential for impacts, including cumulative impacts, to significant heritage resources from timber harvesting unless the following mitigation measures are incorporated into DFMP Section 3, Heritage Resources, and Section 3, Planned Management to Achieve Desired Future Conditions*** **(Less than significant with incorporation of mitigation).** ***Potential for impacts to significant heritage resources from timber harvesting*** **(Less than Significant after Mitigation).**

Mitigation Measure 1. Implement appropriate measures (project redesign and site avoidance, or mitigation such as data recovery or documentation of historic buildings in accordance with the Secretary of Interior's Standards) to avoid, minimize or mitigate adverse impacts from timber harvesting on significant heritage resources that may be impacted by THP activities. THP reviews will regularly consider potential impacts to significant heritage resources located along regularly used or main logging access roads, assess the potential for long-term site attrition, consider the appropriateness of CARIDAP: Sparse Lithic Scatters (Jackson et al. 1988) and, for other types of sites, consider data recovery excavations, site capping, and/or road realignment and proper abandonment where feasible and appropriate. To do this, the appurtenant roads need to be mapped and included in the archaeological survey for the THP. Road survey coverage shall be plotted on the JDSF archaeological survey database maps.

Monitoring 1. Timing: During the life of the JDSF Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

Mitigation Measure 2. THP-specific studies performed in accordance with Forest Practice Rules shall include (a) oversight and review of Confidential Archaeological Addendums by qualified professional archaeologist for studies conducted by certified RPFs, (b) a current archaeological records check as defined in 14 CCR Section 895.1 that would include review of identified but unrecorded historic resources listed in Gary

and Hines (1993), and (c) formal recordation to current standards of all identified heritage resources, among other standard procedures.

Monitoring 2. Timing: During the life of the JDSF Management Plan
Scope: Forest-wide
Implementation Responsibility: the Department
Monitoring Responsibility: the Department

Mitigation Measure 3. Conduct heritage resources training for all permanent forestry field staff at JDSF, and obtain and maintain current certification in identification of archaeological sites for key staff to assist with heritage resources surveys, site recordation, monitoring of mitigation measures and site conditions, handling inadvertent discoveries, and educating contractors and the public about heritage resource protection laws and JDSF's heritage resources.

Monitoring 3. Timing: Yearly, during the life of the JDSF Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

Mitigation Measure 4. The JDSF Forest Manager or his/her designee will initiate consultation with local Native American tribes regarding Native American gathering areas or other locations of cultural or religious importance. Confirmed locations shall be plotted on the JDSF heritage resource database. This database will be reviewed prior to each THP, and specific management of these locations will be developed.

Monitoring 4. Timing: Annually during the life of the JDSF Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

9.7.2 Fire Protection and Prescribed Burn Programs

Known and presently unidentified heritage resources are expected to be present within areas where wildfires may occur and in proposed prescribed burn areas.

Impact 2. ***Prefire defense improvements and wildfire suppression activities conducted without prior consideration of heritage resources may result in individual or cumulative impacts to significant heritage resources unless the following mitigation measures are incorporated into the DFMP Section 3, Heritage Resources, and Section 3, Forest Protection*** **(Less than significant with incorporation of mitigation).** ***Potential for impacts to significant heritage resources from establishment of pre-suppression facilities, and during emergency fire protection and post-fire mop-up and stabilization activities*** **(Less than Significant after Mitigation).**

Mitigation Measure 5. In concert with the Pre-Suppression Plan to be developed for JDSF, employ appropriate procedures prescribed in *Archaeological Review Procedures for CDF Projects (*Foster 2003) to avoid potential impacts to significant heritage resources where pre-fire defense improvements (e.g., fire breaks, fuel reduction treatments, helispot locations, water tanks, adequate road and trail access) and incident camps would be established. Document heritage resources study findings using the CDF Archaeological Survey Report form or other report format consistent with OHP (1989) guidelines.

Monitoring 5. Timing: During planning and implementation of the Pre-Suppression Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

Mitigation Measure 6. To the extent practical during emergency fire-fighting activities, rely on persons trained to identify archaeological sites (CDF Archaeologists, professional archaeologist-contractors and/or CDF staff with current archaeological training) to avoid or minimize heritage resource impacts from fire suppression and support activities (e.g., grading or hand-digging of fuel breaks, establishment of incident camps).

Monitoring 6. Timing: During the life of the JDSF Management Plan and Fire Protection/Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

Mitigation Measure 7. After a wildfire has been suppressed, request a CDF Archaeologist to oversee and document site damage assessments and as needed, develop and supervise site stabilization, data recovery or rehabilitation efforts, with assistance, to the extent possible, from CDF staff possessing current archaeological training.

Monitoring 7. Timing: During the life of the JDSF Management Plan and Fire Protection/Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

Impact 3*. Potential for impacts to significant prehistoric sites and historic structures, buildings and sites from prescribed burn program activities (Less than significant with incorporation of mitigation). Adoption of the DFMP has the potential for impacts to significant heritage resources from prescribed burns unless the following mitigation measures are incorporated into DFMP Section 3,*

Heritage Resources, and Section 3, Forest Protection **(Less than Significant after Mitigation).**

Mitigation Measure 8. To lessen the potential for significant impacts to heritage resources, CDF shall adhere to the procedures for the identification and protection of heritage resource established for prescribed burn projects located on private or state lands conducted under the Department's VMP program. These procedures are specified in *Archaeological Review Procedures for CDF Projects* (Foster 2003), which requires a Preliminary Study to determine if impacts to heritage resources are possible. If so determined, a heritage resource inventory will be required, including a records check, notification to Native Americans, prefield research, an on-the-ground field survey, development of protection measures, recording of sites, and the completion of an archaeological survey report meeting professional standards.[3]

Monitoring 8. Timing: During the life of the JDSF Management Plan and Fire Protection/Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

Impact 4*. Potential for impacts to important Native American plant collecting areas from prescribed burn program activities. In some cases, prescribed fire can have a positive effect on the quantity and quality of plant materials utilized by Native Americans.* (Less than significant after Mitigation).

Mitigation Measure 9. Potential adverse impacts to important Native American plant collecting areas from prescribed burns will be avoided by consulting with interested Tribes about potential effects of fire on plant collecting areas and modification of prescribed burn plans as necessary to avoid significant adverse effects.

Monitoring 9. Timing: During the life of the JDSF Management Plan and Fire Protection/Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

9.7.3 Transportation Systems (Road Maintenance, Construction, and Abandonment)

[3] This survey work may be conducted by an archaeologically-trained CDF Forester rather than a professional archaeologist, however, in such cases, a CDF staff archaeologist reviews the work for elements of completeness, accuracy, content, and professional adequacy. The reviewer also makes specific recommendations to correct any deficiencies, and if necessary, conducts a field inspection to examine heritage 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.

Road corridors may encompass significant heritage resources. Impacts from past road construction and their on-going maintenance are the most important impact type identified for JDSF heritage resources to date. Much of the existing road network was constructed between the 1950s and 1970s, before historic preservation laws were in force and with little consideration of impacts on significant heritage resources. Many roads in JDSF utilize or follow historic logging railroad grades established after the 1870s by the Caspar Lumber Company. Many of the known archaeological sites are located along roads. In general, CDF conducts ground-disturbing road maintenance activities on a regular basis. Because of the spatial and temporal extent of roads and road maintenance, and the fact that a given road segment will likely receive multiple maintenance treatments over time, road construction, maintenance, and abandonment have the potential to result in cumulative impacts to heritage resources.

Impact 5. ***Potential for individual or cumulative impacts to significant heritage resources from on-going maintenance of existing roads and related appurtenances (e.g., culverts, bridges)*** **(Less than significant with incorporation of mitigation).** ***Adoption of the DFMP has the potential for individual or cumulative impacts to significant heritage resources from regular maintenance of roads and related appurtenances (e.g., culverts, bridges), construction of new roads and related appurtenances, improvements to existing roads and related appurtenances, use of existing or establishment of new borrow pits, and road abandonment, unless the following mitigation measures are incorporated into DFMP Section 3, Heritage Resources, and the Road Management Plan in DFMP Appendix VI*** **(Less than Significant after Mitigation).**

Mitigation Measure 10. Prior to the conduct of potentially damaging project activity and in consultation with CDF professional archaeologists, apply appropriate research and survey methods to identify heritage resources along roads that have potential to be impacted by regular road maintenance and use of existing rock borrow pits and enact protection measures (e.g., avoid grading, cover with imported soils or asphalt, monitor operations) to minimize or avoid impacts to significant sites. Document heritage resources study findings using the CDF Archaeological Report Form or other report format consistent with OHP (1989) guidelines. In concert with the present practice of avoiding impacts to known heritage resources from regular road maintenance, apply the standard steps prescribed in *Archaeological Review Procedures for CDF Projects* (Foster 2003) to avoid impacts to known heritage resources from maintenance of related road appurtenances (e.g., culverts, bridges) and existing borrows pits. Prior to any road grading work, the current database of heritage resources shall be checked to determine if any known sites exist along the road segments to be treated, and an archaeological survey of the road segments shall be conducted by either a professional archaeologist or permanent forestry field staff with current archaeological training. The results of road segment surveys will be added to the heritage resources database and referred to for determining which road segments can undergo periodic road maintenance activities without additional archaeological considerations and which segments need ongoing monitoring. Specific mitigation measures to record and/or protect the site(s) will be developed.

Monitoring 10. Timing: During the life of the JDSF Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

Mitigation Measure 11. For new road construction or substantial improvements to existing roads and appurtenances (including development of new rock borrow pits), apply standard procedures described in *Archaeological Review Procedures for CDF Projects* (Foster 2003) to avoid potential impacts to significant heritage resources. Consider relocation of new roads as needed to avoid potential impacts to significant heritage resources. Where known site boundaries are not systematically defined or in question, establish reasonable buffer zones for heritage resources where ground disturbing maintenance activities will be avoided, and monitor for compliance. Document heritage resources study findings using the CDF Archaeological Survey Report form or other report format consistent with OHP (1989) guidelines.

Monitoring 11. Timing: During the life of the JDSF Management Plan; in conjunction with implementation of JDSF Road Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

Mitigation Measure 12. When planning for decomissioning of roads and/or related appurtenances, employ standard procedures described in *Archaeological Review Procedures for CDF Projects* (Foster 2003) to avoid potential impacts to significant heritage resources. Consult with interested Tribes whose aboriginal territories included all or part of JDSF to determine if significant traditional cultural properties or other heritage resources such as plant collecting areas are present and may be affected. Where impact avoidance is not feasible, consult with a CDF archaeologist to develop and implement alternative mitigation measures. Document heritage resources study findings using the CDF Archaeological Survey form or other report format consistent with OHP (1989) guidelines.

Monitoring 12. Timing: During the life of the JDSF Management Plan; in conjunction with implementation of JDSF Road Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department, SHPO

9.7.4 Recreation and Public Uses, and Maintenance of Existing Facilities

Campgrounds, and to a lesser extent administrative facilities (including staff housing), are concentrated in creek side settings considered highly sensitive for significant historic and prehistoric heritage resources. Improvements, maintenance, or development of

recreational features (campgrounds, trails) and administration facilities pose direct and indirect impact threats on various levels: through ground-disturbing actions, by attracting visitors and public users who might damage or remove heritage resources, by increasing the potential for wildfires that can destroy or adversely affect archaeological sites and wooden historic structures; and potentially, by introducing characteristics that may be incompatible with the important characteristics of setting of traditional Native American cultural resources, if such are located near public areas. Given the ongoing spatial and temporal nature of recreation use and recreation facilities maintenance, these activities have the potential to result in a cumulative adverse impact to heritage resources.

Impact 6. ***Potential for individual or cumulative impacts to significant heritage resources from ground-disturbing activities related to maintenance of, improvements to or abandonment of existing campgrounds, other existing recreational and visitor developments, and administrative facilities (Less than significant with incorporation of mitigation). Adoption of the DFMP has the potential for impacts to significant heritage resources from management activities related to maintenance of, improvements to, abandonment of, and construction or expansion of new or existing campgrounds, other recreational and visitor developments, and administrative facilities unless the following mitigation measures are incorporated into DFMP Section 3, Heritage Resources, and Section 3, Recreation, Aesthetics, and Public Use*** **(Less than Significant after Mitigation).**

Impact 7. ***Potential for impacts to significant heritage resources from construction of new recreational, visitor and administrative facilities*** **(Less than Significant after Mitigation).**

Mitigation Measure 13: Before substantial ground disturbing maintenance or planned improvements are carried out (DFMP Section 3, Recreation, Aesthetics, and Public Use), an archaeological survey shall be performed by a CDF staff archaeologist or a person with current CDF archaeological training. The survey shall follow the procedures outlined in *Archaeological Review Procedures for CDF Projects* (Foster 2003). Document heritage resources study findings in a format adapted from CDF's Archaeological Survey Form or other report format consistent with OHP (1989) guidelines.

Monitoring 13. Timing: During the life of the JDSF Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

Mitigation Measure 14: Identify known heritage resources in existing campgrounds, other high-use visitor areas (e.g., Camp 20), and in area of other administrative facilities that are being impacted by regular maintenance activities, and enact protection measures to minimize or avoid impacts to significant sites. Document heritage

resources study findings using the CDF Archaeological Survey Form or other report format consistent with OHP (1989) guidelines. Planning for regular maintenance of, development of new, improvements to and abandonment of facilities needs to consider and implement measures to avoid or minimize potential impacts to significant heritage resources. Document heritage resources study findings in a format adapted from CDF's Archaeological Survey Report form or other report format consistent with OHP (1989) guidelines.

Monitoring 14. Timing: Implement appropriate protection or treatment measures after heritage resources are inventoried and/or prior to carrying out activities
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department, SHPO

Impact 8*. **Adoption of the DFMP has the potential for individual or cumulative impacts to significant heritage resources from illicit artifact collecting or vandalism of significant heritage resources by contractors or the public who use or frequent recreational, visitor, and/or administrative facilities unless the following mitigation measures are incorporated in DFMP Section 3, Cultural Resources, and Section 3, Recreation, Aesthetics, and Public Use* (Less than Significant after Mitigation).**

Mitigation Measure 15. Develop new trails, recreational and visitor facilities to minimize potential for vandalism. Educate contractors and visitors about the proper procedures for protecting any artifacts that they may find on JDSF.

Monitoring 15. Timing: During life of the JDSF Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

Mitigation Measure 16. Revise the more widely distributed JDSF visitor brochures to include an advisory statement that the unauthorized collecting of artifacts and the looting or vandalism of sites is prohibited by State law, and provide direction on what the visitor should do in the event that prehistoric or historic artifacts are encountered on the Forest.

Monitoring 16.
Timing: Completion within the life of the JDSF Management Plan
Scope: Forest-wide
Implementation Responsibility: the Department
Monitoring Responsibility: the Department

9.7.5 Native American Collecting and Herbicide Use Programs

Collecting of plant resources on JDSF by local Native Americans for traditional uses was conducted historically, may have been conducted in recent past years, and may continue in the future. CDF is developing a Native American collecting permit policy to ensure that such gathering is done safely, away from any areas possibly treated with herbicides, and without causing significant environmental impacts to Forest resources. Herbicides have been used on JDSF and use would continue (under most of the alternatives) as part of the JDSF Integrated Weed Management program. Herbicide applications, if carried out without consideration for impacts on cultural plants, have the potential to have adverse effects on availability of these plants to Native American gatherers.

Impact 9. ***Potential for impacts on traditional Native American plant collecting resource areas from application of herbicides at JDSF*** **(Less than Significant after Mitigation).**

Adoption of the DFMP has the potential for impacts on traditional Native American plant collection resource areas, unless the following mitigation measure is incorporated into DFMP Section 3, Heritage Resources; and Section 3, Exotic Species (Less than significant with incorporation of mitigation).

Mitigation 17. Consult with interested Tribes to identify important traditional plant collecting areas. Minimize or avoid pesticide use in traditional collection areas where such action will reduce adverse impact on plant resources traditionally utilized by Native Americans. Develop a Native American gathering permit policy where such gathering can be permitted by the Forest Manager, and take steps to ensure that gathering does not take place in any areas that may have been treated with herbicides.

Monitoring 17. Timing: During life of the JDSF Management Plan; in conjunction with development and implementation of subsequent planning documents
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

9.7.6 Interpretation, Demonstration, and Research Programs

A Forest Learning Center complex and JDSF Interpretive Center at Camp 20 are planned for development over the next decade. These actions will be subject to separate, project-specific heritage resources review per CEQA and/or Section 106 of the NHPA, and are outside the scope of the current programmatic analysis.

Impact 10. ***Potential impacts (including cumulative impacts) to significant heritage resources from implementation of JDSF demonstration and research programs, including direct effects from ground disturbing actions and indirect, short and long-term effects from illicit artifact collecting and vandalism from***

increased user population, including visiting public, school and other groups, professionals, contractors and researchers, unless the following mitigation measures are incorporated into DFMP Section 3, Heritage Resources, and Section 4. **(Less than Significant after Mitigation).**

Mitigation Measure 18. When planning for or reviewing proposed demonstration and research projects that have the potential to disturb significant heritage resources, employ standard procedures described in *Archaeological Review Procedures for CDF Projects* (Foster 2003), and in the *Forest Practice Rules for the Protection of Archaeological and Historical, and Cultural Sites (CDF 2003)*, and include a check of the current JDSF heritage resource database to include review of historic period sites identified by Gary and Hines (1992) to avoid potential impacts to significant heritage resources. Document heritage resources study findings in the CDF archaeological Report form, or other report format consistent with OHP (1989) guidelines.

Monitoring 18. Timing: During life of the JDSF Management Plan
Scope: Forest-wide
Implementation: the Department
Monitoring Responsibility: the Department

9.8 Alternatives Analysis

For all alternatives, Table VII.9.4 summarizes the heritage resource impacts analysis and identifies corresponding mitigation and monitoring measures.

Table VII.9.4. Alternative Comparison for Heritage Resources.						
Alternatives						**Discussion**
Impact*	**1**	**2**	**3**	**4**	**5**	***Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant -Mitigation Not Feasible**
Timber Harvesting **Impact 1. Potential for individual or cumulative impacts to significant heritage resources from timber harvesting.**						
Alt. A						No timber harvest would occur under this alternative.
Alt. B						There is no substantial difference among the active management alternatives. Each alternative will involve timber harvests, though at varied intensities, resulting in potentially significant impacts and the need for identical mitigation measures as specified (see Management Goals 1-10; Mitigation Measures 1-4).
Alt. C1 May 200 DFMP						
Alt. C2 Nov. 2002 Plan						
Alt. D						
Alt. E						
Alt. F						
Fire Protection And Prescribed Burn Programs. **Impact 2. Potential for impacts to significant heritage resources from establishment of pre-suppression facilities, and during emergency fire protection and post-fire mop-up and stabilization activities.** **Impact 3. Potential for impacts to significant prehistoric sites and historic structures, buildings and sites from prescribed burn program activities** **Impact 4. Potential for impacts to important Native American plant collecting areas from prescribed burn program activities (in some cases, potentially beneficial).**						
Alt. A						This alternative would eliminate prescribed burns; however, natural fires would still occur and likely at greater intensities than on a managed Forest with prescribed burns and active fire suppression planning. Therefore, similar impacts would occur due to natural fires and measures to extinguish them. Mitigation measures would be needed as proposed for the alternatives below (see below).
Alt. B						There is no substantial difference among the active management alternatives. Each alternative will involve active prefire and fire suppression measures to some degree and the likelihood for naturally occurring fires. These activities will result in potentially significant impacts and the need for identical mitigation measures as specified (see Management Goals 1-10; Impact 2, Mitigation Measures 5-7; Impact 3, Mitigation Measure 8; Impact 4: Mitigation Measure 9).
Alt. C1 May 200 DFMP						
Alt. C2 Nov. 2002 Plan						
Alt. D						
Alt. E						

Table VII.9.4. Alternative Comparison for Heritage Resources.						
Alternatives						**Discussion**
Impact*	**1**	**2**	**3**	**4**	**5**	***Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant -Mitigation Not Feasible**
Alt. F						
Transportation Systems: Road Maintenance, Construction And Abandonment. **Impact 5. Potential for individual or cumulative impacts to significant heritage resources from regular maintenance of roads and related appurtenances (e.g., culverts, bridges), construction of new roads and related appurtenances, improvements to existing roads and related appurtenances, use of existing or establishment of new borrow pits, and road abandonment.**						
Alt. A						No new roads would be constructed and no existing roads would be decommissioned; however, maintenance to existing roads would continue resulting in potentially significant impacts and the need for Mitigation Measures 10-12 as specified.
Alt. B						No road management plan is proposed and no road decommissioning would occur; however, new roads would continue to be constructed resulting in potentially significant impacts and the need for Mitigation Measures 10-12 as specified.
Alt. C1 May 200 DFMP						There is no substantial difference among alternatives C1, C2, and D. Each alternative will involve construction of new roads (although fewer new roads under alternative D), and road decommissioning pursuant to the Road Management Plan. These activities will result in potentially significant impacts and the need for identical mitigation measures as specified (see Management Goals 1-10; Mitigation Measures 10-12).
Alt. C2 Nov. 2002 Plan						
Alt. D						
Alt. E						No new roads would be constructed; however, maintenance to existing roads and an aggressive road decommissioning program would occur resulting in potentially significant impacts and the need for Mitigation Measures 10-12 as specified.
Alt. F						Similar to C1, C2, and D, though more rapid implementation of Road Management Plan

Table VII.9.4. Alternative Comparison for Heritage Resources.						
Alternatives						**Discussion**
Impact*	**1**	**2**	**3**	**4**	**5**	***Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Significant - Mitigation Feasible (5) Significant -Mitigation Not Feasible**
Recreation And Public Uses, And Maintenance Of Existing Facilities. **Impact 6. Potential for individual and cumulative impacts to significant heritage resources from ground-disturbing activities related to maintenance of and improvements to or abandonment of existing campgrounds, other existing recreational and visitor developments, and administrative facilities.** **Impact 7. Potential for impacts to significant heritage resources from construction of new recreational, visitor and administrative facilities.** **Impact 8. Potential for individual or cumulative impacts from illicit artifact collecting or vandalism of significant heritage resources by the public, contractors and CDF staff and their families who use or frequent recreational, visitor and/or administrative facilities.**						
Alt. A						There is no substantial difference among the alternatives. All will involve recreational use and either maintenance of existing facilities or construction of limited new facilities to varying degrees resulting in potentially significant impacts and the need for similar mitigation measures as specified (see Management Goals 1-10; Impacts 6-7, Mitigation Measures 13-14; Impact 8, Mitigation Measures 15-16).
Alt. B						
Alt. C1 May 200 DFMP						
Alt. C2 Nov. 2002 Plan						
Alt. D						
Alt. E						
Alt. F						

Table VII.9.4. Alternative Comparison for Heritage Resources.						
Alternatives						**Discussion**
Impact*	**1**	**2**	**3**	**4**	**5**	***Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant -Mitigation Not Feasible**
Herbicide Use And Native American Collecting. **Impact 9. Potential for impacts on traditional Native American plant collecting resources areas and for increased health risks from application of herbicides at JDSF.**						
Alt. A						Herbicides would be used for road maintenance. Native plants would be reduced in number due to lack of an active program to control invasive non-native species. This impact would be less than significant since no native plant is likely to be eliminated from the site due to lack of control program. Where used, apply same mitigations as for Alt. C1
Alt. B						Highest potential herbicide use for timber management and project-by-project invasive weed control. Mitigation (see Alt C1, following) would reduce this impact to less than significant.
Alt. C1 May 200 DFMP						Moderate potential herbicide use as part of the IWM strategy for invasive plant control and limited use for reforestation. Mitigation (see Management Goals 2 and 5; Mitigation Measure 17) would reduce this impact to less than significant.
Alt. C2 Nov. 2002 Plan						Moderate potential herbicide use as part of the IWM strategy for invasive plant control and limited use for reforestation. Mitigation d and o (page 88 & 89 of JDSFMP-November 6, 2002) and similar mitigations for Alt C1 in this document and would reduce this impact to less than significant.
Alt. D						No herbicide use during three-year moratorium. Increased risk of invasive plant numbers increasing if alternative control methods are less than effective during moratorium. Where used, apply same mitigations as for Alt. C1.This alternative also calls for proactive coordination with local Tribes.
Alt. E						No herbicide use would occur. Vegetation would be managed with non-chemical means.
Alt F.						Herbicides will be used only if other approaches fail. Increased risk of invasive plant numbers increasing if alternative control methods are less than effective. Where used, apply same mitigations as for Alt. C1.

Table VII.9.4. Alternative Comparison for Heritage Resources.						
Alternatives						**Discussion**
Impact*	**1**	**2**	**3**	**4**	**5**	***Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant -Mitigation Not Feasible**
Interpretation, Demonstration And Research Programs. **Impact 10. Potential individual or cumulative impacts to significant heritage resources from JDSF demonstration and research programs, including direct effects from ground disturbing actions and indirect, short and long-term effects from illicit artifact collecting and vandalism from increased user population, including visiting public, school and other groups, professionals, contractors and researchers.**						
Alt. A						No research or demonstration activities would occur.
Alt. B						There is no substantial difference among the active management alternatives. Each will involve research and demonstration activities to varying degrees resulting in potentially significant impacts and the need for mitigation measures as specified (see Management Goals 1-10; Mitigation Measure 18).
Alt. C1 May 200 DFMP						
Alt. C2 Nov. 2002 Plan						
Alt. D						
Alt. E						
Alt. F						