

# LaTour Demonstration State Forest 2008 Management Plan INITIAL STUDY & ENVIRONMENTAL CHECKLIST

## Purpose of the Initial Study

The project being considered is the 2008 update of the 2003 management plan for LaTour Demonstration State Forest<sup>1</sup> (LDSF). California Department of Forestry and Fire Protection (CAL FIRE) has primary authority for management of LDSF. The Board of Forestry and Fire Protection (Board) is the lead agency under CEQA. The purpose of this initial study is to evaluate the potential environmental consequences of implementing the proposed project, in order to allow the Board to make a reasoned determination of the appropriate CEQA document to be prepared.

The Project gives guidance to LDSF staff on the management of LDSF. All management activities conducted on LDSF under the guidance of the Project are subject to further CEQA analysis at the project level.

PROJECT INFORMATION	
1. Project Title:	LaTour Demonstration State Forest Management Plan revised 2008
2. Lead Agency Name:	California Board of Forestry and Fire Protection
3. Contact Person and Phone Number:	George Gentry, Board Executive Officer (916) 653-8007
4. Project Location:	LaTour Demonstration State Forest, Shasta County
5. Project Sponsor's Name and Address:	California Department of Forestry and Fire Protection (CAL FIRE), LaTour Demonstration State Forest 875 Cypress Ave, Redding CA. 96001
6. General Plan Designation:	Public Land
7. Zoning:	TPZ - Timberland Production
8. Description of Project:	See Page 2 of Initial Study
9. Surrounding Land Uses and Setting:	Bordering LaTour Demonstration State Forest (LDSF) is private commercial and non-commercial timberlands on three sides. To the east of LDSF is Lassen National Forest. The vegetation surrounding LDSF is composed of Sierra Mixed Conifer and True Fir coniferous forests.

<sup>1</sup> Board of Forestry and Fire Protection policy states:

“Management Plans for Boggs Mountain, Jackson, LaTour, Mountain Home and Sequel Demonstration State Forests shall be prepared by the Department, with appropriate public review, for approval by the Board. The Department shall present to the Board a thorough review of each existing plan at least every five years. After each review, the Board may direct the Department either to continue management under the existing plan, to prepare amendments to the plan, or to prepare a new plan for public review and Board approval. The Department shall submit the requested amendments or plan to the Board within one year after each request. The Department shall continue management under existing plans with appropriate consideration for changes in law or regulation, until amendments or new plans are approved by the Board.”

10: Other public agencies whose approval may be required:  
**None required for the Management Plan.**

All projects conducted under the guidance of this Management Plan are subject to additional CEQA documentation and permits from some or all of the following agencies:

CAL FIRE  
 California Department of Fish and Game  
 Regional Water Quality Control Board  
 Shasta County Air Quality  
 Shasta County Public Health  
 Shasta County Agriculture Commissioner  
 California Department of Pesticide Regulation  
 Shasta County Sheriff Department

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**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below would be potentially affected by this project involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agriculture Resources	<input type="checkbox"/>	Air Quality
<input type="checkbox"/>	Biological Resources	<input type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Geology / Soils
<input type="checkbox"/>	Hazards & Hazardous Materials	<input type="checkbox"/>	Hydrology / Water Quality	<input type="checkbox"/>	Land Use / Planning
<input type="checkbox"/>	Mineral Resources	<input type="checkbox"/>	Noise	<input type="checkbox"/>	Population / Housing
<input type="checkbox"/>	Public Services	<input type="checkbox"/>	Recreation	<input type="checkbox"/>	Transportation / Traffic
<input type="checkbox"/>	Utilities / Service Systems	<input type="checkbox"/>	Mandatory Findings of Significance	<input checked="" type="checkbox"/>	None With Mitigation

8. Description of Project:

The Project is a revised Forest Management Plan for LDSF, a 9,033-acre state-owned forested landscape managed by CAL FIRE. The management plan provides direction and guidance for the management of forest resources with an emphasis on forest research, demonstration, and education (Public Resources Code 4631(c)) and the demonstration of economical forest management (Public Resources Code 4631(d)). LDSF has been managed by CAL FIRE since 1946 through the implementation of a series of management plans approved by the Board. The project is a minor revision of the 2003 LDSF Management Plan.

The revisions of the previous management plan are necessary because of the success of the management strategies and current inventory information. The Project revisions exhibit an increase timber inventory, increase growth, and the resulting increase in annual allowable harvest. Other revisions include guidance in plantation management, carbon sequestration, updates on research and demonstration projects, and updates to the Road Management Plan (RMP) activities.

The following is a list of management activities that may be conducted under the guidance of this Project: timber harvesting, road building, campground development and use, biomass harvesting, prescribed burning, pre-commercial thinning, nature trail construction, culvert replacement or removal, Christmas tree harvesting, fire wood cutting, etc. This list is not all inclusive as there may be additional activities as well as research and demonstration. Additionally LDSF has adopted the

following management measures and mitigations to ensure that individual projects conducted under the guidance of this management plan will have less than significant impact:

### **Management Measures**

1. LDSF has imposed a 75 foot “no cut” buffer along all fish bearing watercourses.
2. All harvest trees or leave trees will be marked. This management measure ensures that all trees will be evaluated for the presence of nesting structures, potential snag and LWD recruitment, and the existence of any other special habitat elements.
3. LDSF is conducting wildlife studies to obtain a current knowledge of wildlife species use, and for the detection of rare, threatened, or endangered species.
4. LDSF has a Road Management Plan
5. LDSF has restricted harvests conducted on Jiggs soil series to the use of single tree harvest silvicultures.
6. LDSF has restricted timber operations and roadwork near designated campgrounds to be conducted during the weekdays, to the extent feasible, to minimize the impact to forest visitors.

### **Mitigations**

1. To insure that all material is properly used, stored and transported, Material Safety Data Sheets (MSDS), material labels, and any additional handling and emergency instruction of the materials are kept on file at LDSF Headquarters
2. Any state employee handling these materials are made aware of the potential hazards, given proper training and instruction, and also made aware of the location of the MSDS, and any other documentation for the material.
3. All contractors used in the application or use of these hazardous materials shall have the appropriate licenses and be able to read and understand the MSDS, labels, appropriate recommendations and application instructions.
4. The storage of potentially hazardous materials on LDSF is in accordance to the MSDS and any buildings that are used for storage will display appropriate placards.

**DETERMINATION**

On the basis of this initial evaluation:

I find that the proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** would be prepared.

I find that although the proposed project **COULD** have a significant effect on the environment, there **WOULD NOT** be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** would be prepared.

I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

I find that the proposed project **MAY** have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.

I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

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George Gentry  
Executive Officer to the California Board of Forestry

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Date

**ANALYSIS OF POTENTIAL ENVIRONMENTAL IMPACTS**

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>I. Aesthetics. Would the project:</b>				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

LDSF has been subject to timber harvest and other associated activities by the State of California since 1951. The past management at LDSF has resulted in a landscape that has a mixture of different sizes and densities of trees in the timber stands. The principal road system is well developed, but there may be additional road clearing or building. The planned management of LDSF and the utilization of both uneven-aged and even-aged management will result in the continuation of the varied appearance of the forested landscape.

Individual projects conducted under the guidance of this management plan will have additional visual assessments done utilizing site specific information. Timber harvest activities are most likely to have adverse impacts to aesthetics resources. Prior to approval timber harvest plans goes through an interdisciplinary agency review and public comment period. The review process ensures that potential visual impacts which may result from timber harvest activities are minimized. Furthermore, visual effects are addressed by Title 14 of the California Code of Regulations, Forest Practice Rules (FPR), under “Board of Forestry Technical Rule Addendum No. 2, Appendix Technical Rule Addendum No. 2, Visual Resources”. The visual assessment area is generally the harvesting area that is readily visible to significant number of people who are no further than three miles from the timber operations.

**a) *Would the project have a substantial adverse effect on a scenic vista?***

LDSF has one scenic vista that is accessible to the public. Valley View Point is located along the Bateman Road and provides a scenic overlook back towards Redding and the Sacramento Valley. Only a small portion of the southwest side of the forest is visible from the overlook and the majority of the view being of commercial forestland, foothill ranchland and the Sacramento Valley. Valley View Point is also used as an emergency helispot, so the vista will be maintained to permit helicopter use. Vehicle access to LaTour Butte lookout is not open to the public, but in the event that the public hikes to the lookout the management on

LDSF has a consistent appearance with the surrounding land uses. Reflective of the individual landowners' objectives, the appearance on the surrounding land varies. Three of the four sides surrounding LDSF are private timberlands with varying levels of harvest. The east side of LDSF is managed by the Lassen National Forest on which no timber harvest has been undertaken in the vicinity of LDSF for years. LDSF utilization of both uneven-aged and even-aged management will maintain the current varied appearance of the forested landscape. Portions of LDSF are visible from State Highway 44, between Shingletown and Viola, and from several locations along the Whitmore road, including the intersection of Whitmore road and Bateman Road. The locations where LDSF is visible from these road ways are all greater than 3 miles away from LDSF. The planned management activities described within the Project are consistent with previous management practices and should have less than a significant impact on any scenic vistas.

**b) *Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?***

There are no designated state scenic highways in the project area or within the assessment area.

The planned management activities described within the project are not intensive and will have a less than significant effect on scenic resources. The appearance of LDSF will not be substantially altered, nor will the scenic resources be substantially impacted by this project.

**c) *Would the project substantially degrade the existing visual character or quality of the site and its surroundings?***

LDSF has been subject to timber harvest and associated activities by the State of California since 1951. The past management LDSF has resulted in a landscape that has a mixture of different sizes and densities of trees in the forest. The principal road system is well developed, but there may be additional road clearing or building. The planned management of LDSF and the utilization of both uneven-aged and even-aged management will result in the continuation of the varied appearance of the forested landscape. This appearance is consistent with the surrounding land use.

**d) *Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?***

There are no planned activities that would create a light source or create any glare.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>II. Agricultural Resources.</b>				
<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.</p>				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

- a) *Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?***  
 LDSF is not farmland.
- b) *Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?***  
 LDSF is zoned as Timberland Production (TPZ) and does not have a Williamson Act contract.
- c) *Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?***  
 LDSF is not farmland.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>III. Air Quality.</b>				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Discussion**

There are three management activities on LDSF, which may have an impact on air quality. They are open burning, road construction and maintenance, and dust created from logging truck traffic. Shasta County Air Quality Management District (AQMD) rules 2-6 through 2-8 correspond to open burning and rule 3-16 corresponds to dust created by road construction, maintenance and hauling.

**a) *Would the project conflict with or obstruct implementation of the applicable air quality plan?***

Project burns conducted on LDSF that are greater than 10 acres in size or the expected emissions are greater than one ton, are required to have an approved Smoke Management Plan (SMP). Upon AQMD approval of the SMP, LDSF shall obtain an open burning permit from Shasta County AQMD. Additionally burning shall only be conducted on “Burn Days” designated by Shasta County AQMD. Adherence to the SMP, burn permit and burning only on burn days reduces any potential impact to air quality to less than significant and is in compliance with the State Implementation Plan for air quality.

Use of the dust abatement activities described within the LDSF’s Road Management Plan during hauling, road construction and maintenance effectively controls dust generation from LDSF roads.

**b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

Shasta County does not approve “Burn Days” if open burning has the potential to decrease air quality to a level that would violate air quality standards. Adherence to the SMP, burn permit and permissive burning only on burn days reduces any potential impact to air quality to less than significant and is in compliance with the State Implementation Plan for air quality.

**c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

Shasta County does not approve “Burn Days” if open burning has the potential to decrease air quality to a level that would violate air quality standards. Adherence to the SMP, burn permit and burning only on permissive burn days reduces any potential impact to air quality to less than significant and is in compliance with the State Implementation Plan for air quality.

**d) Would the project expose sensitive receptors to substantial pollutant concentrations?**

LDSF is located approximately 10 miles east of the community of Whitmore, 11 miles northeast of Shingletown and 8 miles northwest of Viola. The Lassen Pines subdivision, located near Lake McCumber is the closest community to LDSF and is 4 miles south of the forest. Smoke impacts to these communities are addressed in the SMPs. Smoke impacts to these communities are minimized and adequate smoke dispersal is obtained by the adherence to the SMP, burn permit and permissive burning only on permissive burn days.

**e) Would the project create objectionable odors affecting a substantial number of people?**

LDSF is located approximately 10 miles east of the community of Whitmore, 11 miles northeast of Shingletown and 8 miles northwest of Viola. The Lassen Pines subdivision, located near Lake McCumber is the closest community to LDSF and is 4 miles south of the forest. Smoke impacts to these communities are addressed in the SMPs. Adequate smoke dispersal and smoke impacts to these communities are minimized by the adherence to the SMP, burn permit and burning only on burn days.

LDSF uses chemicals for dust abatement on LDSF roads. The chemicals that have been used in the past have been resins or hygroscopic salts. These chemicals have a slight or no odor. The curing time for these chemicals is 1-2 days depending on weather and any odor dissipates once the chemical has cured.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IV. Biological Resources. Would the project:</b>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Contribute to climate change and greenhouse gas emissions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

LDSF supports a wide variety of fish, wildlife, and botanical species and their associated habitats. Timber harvest activities and road building are the management activities on LDSF which have the highest potential to adversely impact biological resources. LDSF recognizes the importance of these biological resources and works to maintain restore and enhance the occurrence of special habitat elements and unique habitats to promote species diversity and habitat quality. Several measures included in the Project that achieve these goals are:

- 1) Retain and recruit large diameter snags.
- 2) Retain and recruit down logs and large woody debris as needed in aquatic and terrestrial environments,
- 3) Maintain and protect natural ponds and springs,
- 4) Protect riparian zones and restore where needed,
- 5) Retain late-successional forest characteristics in the near term, and consolidation of late successional forest characteristics in the long term.
- 6) Design forest management activities based on landscape perspectives. Components to consider will include horizontal and vertical forest structure, vegetation density, edge effect, corridor size, and biological diversity.
- 7) Maintain conifer and hardwood trees in buffer zones along all watercourses and around all springs in order to lower water temperature, or prevent increases in water temperature.
- 8) Allow for the natural recruitment of large woody debris to the stream channel to improve or maintain instream habitat quality and stream ecosystem function.
- 9) Minimize the number of temporary watercourse crossings.

Several management goals of LDSF describe the need to maintain the widest possible diversity of managed forest stands in different successional stages, maintain or increase functional wildlife habitat, and provide research and demonstration opportunities for various biological resources. LDSF balances sustained timber productivity with the long-term biological productivity of the timberland and protection of public trust resources. The forest management program under the guidance of this plan is expected to produce a moderate, perpetually sustainable harvest level. The planned harvest rates are somewhat lower than that of many private owners due to additional landscape and wildlife habitat constraints imposed on LDSF as a public forest, and the need to maintain the widest possible range of forest conditions in order to accommodate potential future research studies.

The allowable cut is based upon the long term sustainability analysis, modeled in the LDSF Option A plan. The long-term sustained yield (LTSY) is 5.51 million board feet per year, or 615 board feet per acre per year. The corresponding near term sustainable harvest level through 2014 is 4.1 million board feet per year, or 467 board feet per acre per year. This constitutes a harvest intensity of about 2.1 percent of inventory (CAL FIRE 2007). The annual harvest is less than the LTSY, due to the constraints on forest management activities imposed by other forest values on LDSF. In addition to the constraints placed on the calculation of the LTSY in the harvest schedule, LDSF also has discretionary commitments to planned management practices for non-timber resources. LDSF future harvest schedule is also guided by the LDSF Option A. The harvest schedule consists of an accumulation of stand level prescriptions and was accomplished using the Landscape Management System (LMS) (2006b). Stands were considered in terms of area control, appropriate silviculture given stand conditions, and even flow of harvest volume (volume control). Historic harvest patterns were used to develop a 20-year return interval for a given acre (CAL FIRE 2007).

Based on ground-truthing and forest inventory data, stands were assessed for meeting the Board of Forestry late-successional forest definition. No stands meeting all criteria of the definition were found on LDSF. There are stands that meet all criteria with the exception of the minimum acreage of twenty acres. Many areas throughout the ownership have functional characteristics; large down logs, large decadent trees, and snags. These attributes will be retained and recruited wherever feasible. Forest stands currently considered late successional but less than 20 acres in

size provide a valuable starting point for the recruitment of additional adjacent acreage to late successional conditions through management. In addition, late successional associated biological resources are enhanced and presents an important demonstration opportunity.

Currently LDSF has about six percent of the Forest in CWHR size classes 5 and 6<sup>(2)</sup>. The model projections indicate that within the next two decades, a large number of acres may move into CWHR size classes 5 and 6. At the end of the 100-year planning interval, almost half of the acreage on LDSF may be in CWHR size class 5 and 6. According to the model, it is reasonable to expect that a significant portion of this acreage may meet the BOF late successional definition.

LDSF has implemented a 75 feet “no-cut” buffer on all Class I watercourses (**management measure 1**). This buffer will assist in achieving the goals as well as several of the measures listed above. Additionally this buffer will provide a non-disturbed filter strip for sediment, and a migration corridor for wildlife.

LDSF individually marks all harvest or leave trees (**management measure 2**). LDSF maintains a marking guide to assist personnel in the marking of timber for timber sales. This **management measure** ensures that all trees will be evaluated for the presence of nesting structures, potential snag and LWD recruitment, and the existence of any other special habitat elements. It is also CAL FIRE policy that all harvest trees or leave trees are to be marked.

LDSF staff is also conducting various wildlife inventory studies to obtain a current knowledge of wildlife species use, and for the detection of rare, threatened or endangered species (**management measure 3**). All detections of rare, threatened or endangered species will be documented and assessed to determine if these biological resources are being impacted by any projects being conducted under the guidance of this management plan.

## **INITIAL BIOLOGICAL SCOPING**

The *Natural Diversity Data Base (NDDB)* was used as a scoping tool to check if any rare, threatened, endangered, or special concern species and/or their habitat are located on LDSF. A ten quadrangle query was conducted, which included Jacks Backbone 7.5 minute quad, its surrounding eight quads and the Lassen Peak quad. The following is a list of rare, threatened, endangered species, and/or their habitat that occurs on LDSF. There are no recorded occurrences of threatened or endangered species on LDSF.

**Bald Eagle:** Although Bald Eagles have been observed soaring over LDSF, they appear to be associated with Lake McCumber, 7.5 miles from the southern most area of the forest. LDSF does not contain the large bodies of water that is a key habitat element to the Bald Eagle.

**Sierra Red Fox:** LDSF does contain the vegetation types considered habitat for the Sierra Red Fox. Observations of the red fox have occurred within the scoping area and primarily around Lassen Volcanic National Park. The closest observation to LDSF is near Highway 44 and Scharch Meadow. LDSF staff has been conducting forest carnivore surveys the last three years

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<sup>2</sup>: CWHR 6 refers to multi-storied stands that contain a component of greater than 24 inches DBH trees, must contribute at least 25 percent to the canopy closure over CWHR size class 3 (6-11 inches DBH) trees and/or CWHR size class 4 (11-24 inches DBH) trees, with a canopy closure total of 60 percent or greater. CWHR size class 5 stands have a greater than 24 inches DBH on average (including all stems greater than 5 inches DBH, including hardwoods). CWHR “M” and “D” refers to moderate (40-59 percent) and dense (greater than 60 percent) canopy closure, respectively.

and the Sierra Red Fox has not been detected. The project will maintain habitat for the Sierra Red Fox.

**California Wolverine:** The California wolverine has been detected within the scoping area. LDSF has the vegetation types that are considered habitat for the wolverine. LDSF staff has been conducting forest carnivore surveys the last three years and the wolverine has not been detected. The project will maintain habitat for the California Wolverine.

**Pacific Fisher and Pine Martin:** LDSF contains habitats for both the Pacific Fishers and the Pine Martin. Both species were detected on LDSF in a 1990 furbearer presence survey. More recently the Pine Martin has been detected in the southeastern portions of the forest during the forest carnivore surveys being conducted by LDSF staff. No subsequent detections of the Pacific Fisher have occurred. The project will maintain habitat for both the Pine Martin and the Pacific Fisher.

**Western Pond Turtle:** Western Pond Turtles have not been observed on LDSF. The preferred habitat of the turtles is low gradient streams. LDSF does contain habitat for the Western Pond Turtles, but the low gradient stream reaches are located above 5000 feet elevation, and may be out of the range of the turtles. The Project will not impact the Western Pond Turtle and affords protection to all wetlands, including springs, creeks, meadows, and natural ponds.

**Cascade Frogs:** Have been observed in Cutter and Old Cow meadows, which are adjacent to the northern boundary of LDSF. Cascade frogs are located within and adjacent to various fresh water features. The Project will not impact the Cascade frog and affords protection to all wetlands, including springs, creeks, meadows, and natural ponds.

**Osprey:** Although Ospreys have been observed soaring over LDSF they appear to be associated with Lake McCumber, 7.5 miles from the southern most area of the forest. LDSF does not contain the large bodies of water that is a key habitat element to the Osprey.

**Northern Goshawk:** All of LDSF is habitat for the Northern Goshawk. There is one known active territory and nest site located on LDSF and one historical territory. In 2005 with cooperation with DFG, LDSF staff conducted a forest wide Northern Goshawk survey. The goshawks from the known active territory were the only birds detected. This territory is monitored annually. The Project maintains Northern Goshawk habitat.

**Steelhead:** LDSF is within the northern California ESU of the steelhead. Class I watercourses are protected within the Project.

#### BOTANICAL

The *NDDB* check results indicated that there are potentially 23 rare plant species. LDSF has habitat that would support 8 of the 23 plants scoped. The Project will not impact these botanical resources.

**Little hulsea:** Little hulsea is located within alpine boulder rock fields and subalpine coniferous forests. Little hulsea is typically found on rocky, gravelly sites above 6000 feet in elevation. There are several rock outcrops located on LDSF that have potential habitat for little hulsea. Habitat will be surveyed prior to potential disturbances.

**Northern Spleenwort:** LDSF has the general habitat types associated with the known occurrences of northern spleenwort. Northern spleenwort is found growing out of crevices in granite like rock outcrops and is usually found above 5000 feet in elevation. Habitat will be surveyed prior to potential disturbances.

**Vanilla grass:** LDSF has the general habitat types associated with the known occurrences of vanilla grass. Vanilla grass is located within wet meadows and seeps above 5400 feet in elevation. The Project provides protection for all meadows and seeps. Habitat will be surveyed prior to potential disturbances.

**Rattlesnake fern:** Rattlesnake fern is located along bogs, fens and other wet areas generally below 4000 feet. LDSF has potential habitat located along South Cow Creek on the southwestern side of the forest. The Project provides protection for all meadows and seeps. Habitat will be surveyed prior to potential disturbances.

**White-stemmed pondweed:** White-stemmed pondweed habitat is associated with deep water in marshes and swamps. It is typically found above 5400 feet. LDSF may have habitat around South Cow, Old Cow and near Cutter meadows. The Project provides protection for all meadows and seeps. Habitat will be surveyed prior to potential disturbances.

**Newberry's cinquefoil:** Newberry's cinquefoil is located along the drying edges of marshes and swamps. LDSF has habitat around South Cow, Old Cow and near Cutter meadows and several springs. The Project provides protection for all meadows, seeps and springs. Habitat will be surveyed prior to potential disturbances.

**Butte County morning-glory:** Butte County morning glory is found in dry open slopes within lower montane coniferous forests. They are typically located below 3900 feet in elevation. LDSF is located above 3900 feet in elevation, but there may be suitable habitat conditions located on the western side of LDSF, within the 1978 Whitmore burn. Habitat will be surveyed prior to potential disturbances.

**Rayless mountain ragwort:** Rayless mountain ragwort is located in meadows and seeps on mesic sites between 5200 and 6500 feet in elevation. LDSF has potential habitat along the watercourses, meadows, springs and seeps. Habitat will be surveyed prior to potential disturbances.

- a) ***Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?***

The past management of LDSF has resulted in forested landscape that is varied and has a mixture of various timberstand types and wildlife characteristics. The Project proposes no substantial changes to the management of LDSF that would result in the significant changes in the current forest structure or wildlife habitat. The planned utilization of both uneven-aged and even-aged management will continue to maintain a landscape that is varied and has a mixture of various wildlife habitats.

Table 1. Current and projected CWHR forest structure classes by planning interval. (CAL FIRE 2007)

WHR	2005	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100
BO3D	24	0	0	0	0	0	0	0	0	0	0
BO3S	16	16	0	0	0	0	0	0	0	0	0
BO4D	14	38	38	0	0	0	0	0	0	0	0
BO4P	0	0	16	16	0	0	0	0	0	0	0
BO6D	0	0	0	38	0	0	0	0	0	0	0
DF2D	0	0	0	407	0	0	0	0	0	0	0
DF2M	0	0	0	32	49	0	0	0	0	0	0
DF2P	0	0	439	49	0	0	0	0	0	0	0
DF3D	0	0	0	0	541	97	97	8	0	0	0
DF4D	0	0	0	0	0	541	434	81	72	0	0
DF4M	0	0	0	0	0	0	0	40	0	0	0
DF5D	0	0	0	0	0	0	0	9	118	46	52
DF5M	0	0	0	0	0	0	7	516	437	118	366
DF5P	0	0	0	0	0	0	0	8	15	477	230
DF5S	0	58	0	0	0	0	0	0	0	0	0
DF6D	0	0	0	0	0	0	116	7	57	57	57
IC3M	5	0	0	0	0	0	0	0	0	0	0
IC4D	0	0	5	5	5	5	0	0	0	0	0
IC4M	0	5	0	0	0	0	0	0	0	0	0
IC4P	7	7	0	0	0	14	14	14	14	0	0
IC5P	0	0	0	0	0	0	0	0	0	14	14
IC6D	0	0	0	0	0	0	5	5	0	0	0
KM2D	0	0	22	0	0	0	0	0	0	0	0
KM2M	0	0	0	17	0	0	0	0	0	0	0
KM2P	0	22	28	25	8	0	0	0	0	0	0
KM2S	0	0	25	0	0	0	0	0	0	0	0
KM3D	19	18	7	368	47	0	0	0	0	0	0
KM3M	35	10	0	11	0	0	0	0	0	0	0
KM4D	249	342	186	98	52	39	43	0	0	0	0
KM4M	257	228	291	159	166	119	27	165	136	136	0
KM4P	227	227	105	187	165	89	12	3	3	0	0
KM4S	40	73	66	34	0	66	66	0	0	0	0
KM5D	0	0	0	0	10	47	122	395	335	157	107
KM5M	0	5	5	20	20	51	166	194	248	514	642
KM5P	8	5	5	0	14	39	105	78	82	212	159
KM5S	0	0	0	0	0	50	55	112	97	88	158
KM6D	218	111	343	465	863	498	500	190	138	58	7
LP3P	2	0	0	0	0	0	0	0	0	0	0
LP3S	9	0	0	0	0	0	0	0	0	0	0
LP4D	0	0	0	0	11	2	2	0	0	0	0
LP4M	0	0	11	11	3	0	0	0	0	0	0
LP4P	0	2	0	0	0	2	2	0	0	0	0
LP4S	9	17	0	0	0	0	0	0	0	0	0
LP5D	0	0	0	0	0	0	0	2	13	3	0
LP5M	0	0	0	0	0	9	9	9	9	31	51

Table 1, cont. Current and projected CWHR forest structure classes by planning interval.

WHR	2005	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100
LP5P	0	0	0	0	0	5	5	8	8	4	4
LP5S	0	0	9	9	9	9	9	5	5	5	5
MH4M	0	0	0	0	22	0	31	23	8	0	0
MH4P	0	0	0	22	16	31	0	0	0	0	0
MH5D	0	0	0	0	0	0	0	38	38	38	24
MH5M	0	0	0	0	0	0	0	0	16	16	54
MH6D	0	0	0	0	38	38	24	0	0	0	0
PP1S	0	0	3	12	3	15	3	7	3	8	3
PP2D	0	0	0	232	481	220	314	215	326	216	159
PP2M	0	12	27	60	49	31	55	31	26	32	37
PP2P	0	483	36	6	33	6	33	2	31	4	27
PP2S	0	0	343	591	329	422	323	358	319	237	294
PP3D	0	0	368	160	480	789	526	606	444	542	455
PP3M	0	6	155	152	0	16	0	5	0	0	0
PP3P	22	16	0	0	0	0	0	0	0	0	0
PP3S	369	0	0	0	0	0	0	0	0	0	0
PP4D	58	52	65	45	182	335	885	753	811	690	779
PP4M	48	84	53	17	30	187	11	250	165	322	238
PP4P	32	11	0	13	0	10	0	5	0	78	0
PP4S	152	0	9	9	0	0	0	0	0	0	0
PP5D	0	0	0	0	0	0	24	40	24	97	86
PP5M	0	0	0	0	0	0	12	54	165	255	735
PP5P	0	0	0	0	0	356	361	72	35	103	102
PP5S	0	0	0	0	9	9	9	348	350	373	373
PP6D	0	12	0	81	114	96	140	323	718	689	682
RF3M	24	0	0	0	0	0	0	0	0	0	0
RF3P	0	19	0	0	0	0	0	0	0	0	0
RF3S	17	6	0	0	0	0	0	0	0	0	0
RF4D	22	26	31	18	0	1	0	0	0	0	0
RF4M	24	25	23	21	22	8	16	12	8	0	0
RF4P	24	38	50	141	95	32	26	4	0	8	0
RF4S	102	100	77	9	0	29	0	33	20	16	0
RF5D	0	0	0	0	0	6	10	10	8	7	13
RF5M	0	0	0	5	20	17	17	17	63	70	66
RF5P	0	0	0	2	15	88	83	70	84	72	130
RF5S	0	0	13	13	11	5	13	61	72	87	117
RF6D	5	0	5	18	29	23	17	17	8	8	0
SP4D	0	0	0	1	1	0	0	0	0	0	0
SP4M	0	0	0	0	0	0	0	11	0	11	11
SP4P	0	0	0	4	0	0	0	0	0	0	0
SP5D	0	0	0	0	0	0	1	1	0	10	0
SP5M	0	0	0	0	0	0	0	5	9	26	19
SP5P	0	0	0	8	12	6	11	1	22	0	30
SP5S	0	2	2	2	2	7	2	7	2	13	9
SP6D	0	0	0	0	0	1	11	0	13	0	0

Table 1, cont. Current and projected CWHR forest structure classes by planning interval.

WHR	2005	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100
WF2D	0	0	21	16	0	0	0	0	0	0	0
WF2M	0	0	0	85	16	0	0	0	0	0	0
WF2P	0	3	3	16	0	0	0	0	0	0	0
WF2S	0	5	121	11	0	0	0	0	0	0	3
WF3D	108	80	43	21	37	6	0	0	0	0	0
WF3M	53	63	25	6	0	0	0	0	0	0	0
WF3P	10	16	0	5	0	0	0	0	0	0	0
WF3S	17	0	5	3	0	0	0	0	0	0	0
WF4D	3,000	1,976	1,279	631	95	103	36	3	0	0	4
WF4M	1,996	2,058	1,397	1,106	1,020	319	416	191	88	84	48
WF4P	480	541	366	478	421	596	149	249	38	28	34
WF4S	283	178	93	5	0	20	0	0	0	4	4
WF5D	0	0	0	10	49	72	890	1,013	670	365	262
WF5M	11	12	23	48	85	377	314	418	752	1,075	911
WF5P	23	34	83	187	318	357	721	592	862	558	452
WF5S	15	26	43	86	95	113	113	194	227	216	380
WF6D	322	511	1,539	1,964	2,112	1,916	953	524	314	181	108
WP3D	4	0	0	0	0	0	0	0	0	0	0
WP3P	0	3	0	0	0	0	0	0	0	0	0
WP3S	3	0	0	0	0	0	0	0	0	0	0
WP4D	0	4	4	4	4	4	3	3	0	0	0
WP4M	0	7	7	15	15	8	12	0	0	0	0
WP4P	5	5	8	0	0	7	0	7	7	0	0
WP4S	0	7	7	15	7	7	7	0	0	0	0
WP5M	0	0	0	0	0	0	0	5	5	8	8
WP5P	0	0	0	0	0	0	0	0	0	7	13
WP5S	0	0	0	0	9	9	9	15	15	15	9
WP6D	7	0	0	0	0	0	4	4	8	0	0
XX4S	32	0	0	0	0	0	0	0	0	0	0
XX5P	0	0	0	0	0	0	0	0	4	0	0
XX5S	11	9	9	7	7	5	0	2	2	0	4
< 10% <sup>cc</sup>	553	1,357	1,035	660	728	588	592	522	409	486	437
Total	8,968	8,968	8,968	8,968	8,968	8,968	8,968	8,968	8,968	8,968	8,968

The current inventory and modeled harvest of LDSF show that there is a wide variety of California Wildlife Habitat Relationships (Mayer and Laudenslayer) types and size classes and through time LDSF will have substantially more size class 5 and 6 trees and timberstands. These WHR classes have the potential to develop late successional characteristics, which can provide important habitat values.

LDSF stands were assessed for meeting the Board of Forestry late-successional forest definition. No stands meeting all criteria of the definition were found on LDSF. There are stands that meet all criteria with the exception of the minimum acreage of twenty acres. Many areas throughout the ownership have functional characteristics; large down logs, large decadent trees, and snags. These attributes will be retained and recruited wherever feasible. Forest stands currently considered late successional but less than 20 acres in size provide a valuable

starting point for the recruitment of additional adjacent acreage to late successional conditions through management and an important research and demonstration opportunities.

LDSF's identification and goals to maintain restore and enhance the occurrence of special habitat elements and unique habitats to promote species diversity and habitat quality, and the implementation of **management measures 1, 2, and 3** the Project impacts will be less than significant on any species identified as a candidate, sensitive, or special-status species.

Individual projects conducted under the guidance of this management plan will require a separate biological assessment based upon site-specific conditions. If during the assessment, project layout, or surveys, species identified as a candidate, sensitive, or special-status species or their habitats are identified, protection measures and mitigations will be incorporated into the project. Protection measures and mitigations will be developed in cooperation with the California Department of Fish and Game (DFG).

**b) *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?***

The Project recognizes the importance of riparian habitats and other sensitive natural communities and it describes measures to maintain, restore and enhance the occurrence of special habitat elements and unique habitats. All projects conducted under the guidance of this management plan will have protection measures for all riparian areas.

With LDSF's identification and goals to maintain, restore, and enhance the occurrence of special habitat elements and unique habitats to promote species diversity and habitat quality, and the implementation of **management measure 1** the Project impacts will be less than significant on riparian habitat and other sensitive natural communities.

**c) *Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?***

The Project recognizes the importance of wetlands and the habitats associated with them. It describes measures to maintain all natural ponds and springs, and measures for riparian zone protection and restoration. All projects conducted under the guidance of this management plan will have protection measures for all wetlands, springs, creeks, meadows, and natural ponds.

**d) *Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?***

The past management of LDSF has resulted in forested landscape that is varied and has a mixture of various timberstand types and wildlife characteristics. The Project proposes no substantial changes to the management of LDSF that would result in significant changes to the current forest structure or wildlife habitat. Additionally, management activities are seasonal and generally occur on less than 10 percent of LDSF annually. **Management measure 1** will assist in the maintenance and enhancement of wildlife migration corridors. The Project will

have a less than significant impact on the movement of any native resident or migratory fish or wildlife species or wildlife corridors, or impede the use of native wildlife nursery sites

**e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

The Project does not conflict with any policies or ordinances protecting biological resources.

**f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

There is no known Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan in the vicinity of LDSF.

**g) Would the project exacerbate climate change or increase greenhouse gas emissions?**

This analysis evaluates whether climate change and greenhouse gas (GHG) issues related to management of LDSF have the potential to be a significant environmental effect, either on a project basis or cumulatively. Table 2 summarizes estimated net carbon dioxide sequestration levels under proposed management at LDSF over a 100-year planning interval<sup>3</sup>. The analysis shows substantial positive carbon sequestration benefits. Proposed management at LDSF will sequester a net CO<sub>2</sub> equivalent of 3,773 thousand tons of carbon at the end of 100 years.

Table 2. Estimated carbon sequestration at LDSF over the next 100 years.

1	2	3	4	5	6	7
Current standing inventory	CO <sub>2</sub> stored in current standing timber	Standing inventory at end of 100-year planning interval	CO <sub>2</sub> stored in standing timber at end of 100-year planning interval	Total harvest over 100-year planning interval	Total CO <sub>2</sub> sequestered in forest products at end of 100-year planning interval	Total net CO <sub>2</sub> sequestered at end of 100-year planning interval (4-2+6)
MBF*	M* tons	MBF	M tons	MBF	M tons	M tons
196,931	1,575	308,096	2,465	360,460	2,884	3,773

\* MBF is thousand board feet and M is thousand.

Accounting for emissions from the Forest includes vehicles and buildings used by the Department that are associated with management. It also includes emissions from harvesting and manufacturing. We chose to do the downstream accounting. This will be the most conservative accounting approach because we are not including the negative substitution effect that occurs when alternative higher-GHG-impact building materials such as steel and concrete are used instead of wood products. Emissions from vehicles and buildings are estimated as follows:

<sup>3</sup> A 100-year look-ahead period is necessary in forested ecosystems, where trees can take more than 50 years to reach maturity. The 100-year planning interval allows a minimum period necessary to evaluate long-term steady-state behavior of forested ecosystem while not exceeding the range of applicability of mathematical simulation models.

Vehicles: 0.02 thousand (M) tons per year x 100-year planning horizon = 2 M tons

Building: 0.00003 M tons per year x 100-year planning horizon = 0.003 M tons

This is a total of 2.003 M tons for the 100-year planning horizon.

Harvesting emissions include in-woods emissions from equipment and vehicles and transportation to a mill. Mill emissions estimates from processing are included because long-term storage of wood products is included in the analysis. Mill emissions include sawing, drying, energy generation, and planing. Also, transport to final destination is included. The entire life cycle for green-dried lumber is included (Puettmann and Wilson 2005). This results in a total emission estimate of 0.13 metric tons CO<sub>2</sub> equivalent per thousand board feet (MBF).

Given the total harvest of 360,460 MBF over the 100-year planning horizon in table 1, this equates to 46,859 tons of CO<sub>2</sub> equivalent from harvesting emissions. Including vehicle and building emissions, the total GHG emissions estimate for LDSF is 46,861 tons of CO<sub>2</sub> equivalents.

These emissions including full life-cycle of wood, vehicle, and building emissions, represent 1.24 percent of the total carbon sequestered (column 7 in Table 1). The conclusion from the above analysis is that there is a substantial positive carbon sequestration benefit and a net negative emission of GHGs at LDSF under the guidance of the Project. More biomass is being conserved than is being harvested. In other words, the management plan proposes to harvest less biomass (and to emit less CO<sub>2</sub>) than growth.

Climate change science is still in its infancy. There are likely wide error bars around the above estimates, given the general level of the analysis and the relatively new estimation equations in the literature. The result that positive sequestration benefits exceed emissions by orders of magnitude however, lends validity to the general conclusion that sequestration will be much greater than emissions. Our conclusion is also supported by estimates from the Air Resources Board web site, which indicate that forest land use in California results in a net decrease in atmospheric carbon, not an increase.

Since the net amount of carbon that would be sequestered under the Project is greatly higher than the amount of carbon that will be released by LDSF management activities, there are no potential significant adverse environmental impacts, single or cumulative. In fact, significant beneficial impacts of net carbon sequestration will occur.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>V. Cultural Resources. Would the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Discussion**

In the last 20 years there have been eight separate archaeological surveys conducted on LDSF. These surveys have been extensive and the forest has near complete coverage as a result of these surveys. Three archaeological sites and several isolated artifacts have been located from these surveys. The three sites have been recorded, and management measures are described in Foster and Thornton (2001). There are no known archaeological resources that would be impacted by LDSF management activities. Prior to any ground disturbing activities (timber harvest, road building, prescribed burns, construction of new campsites, etc), potentially affected areas will be surveyed for archaeological resources and information will be requested from local Native Americans. If any unrecorded sites are discovered during surveys or management activities, a CAL FIRE Archaeologist will be contacted to determine the appropriate protection measures. Archaeological surveys will be conducted by professional archaeologists or LDSF staff who are trained to conduct archaeological surveys (Foster, 2006).

LDSF’s cultural resources management procedures are based on CAL FIRE’s statewide Management Plan for Historic Buildings and Archaeological Sites (plan) (Foster and Thornton, 2001) and its accompanying EIR (Foster and Sosa, 2001) which prescribe general measures for identifying, evaluating and managing heritage resources on CAL FIRE lands statewide including LDSF. 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 CAL FIRE’s properties, including LDSF, 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; establishes decision making criteria for managing its historic buildings and identifies those targeted for preservation; describes CAL FIRE’s archaeology program, role in fire protection, Native American gathering policy, and artifact collections; and establishes specific management objectives and measures.

**a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?**

All known historic resources have been recorded and protection measures developed. CAL FIRE's primary approach to managing significant heritage resources is to preserve them through avoidance of project-related impacts. If any unrecorded sites are discovered during surveys or management activities, a CAL FIRE Archaeologist will be contacted to determine the appropriate protection measures. Procedures described in Foster (2006) will be used to avoid impacts.

**b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?**

All known archaeological resources have been recorded and protection measures developed. CAL FIRE's primary approach to managing significant heritage resources is to preserve them through avoidance of project-related impacts. If any unrecorded sites are discovered during surveys or management activities, a CAL FIRE Archaeologist will be contacted to determine the appropriate protection measures. Procedures described in Foster (2006) will be used to avoid impacts.

**c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

There are no known paleontological resources, site or unique geologic features existing on LDSF.

**d) Would the project disturb any human remains, including those interred outside of formal cemeteries?**

There are no known cemeteries or human remains existing on LDSF. No human remains or associated grave goods were encountered during the archaeological survey work on LDSF, and human remains or grave goods are not likely to be encountered during project activities.. None-the-less, the possibility exists for human remains to occur within the project area. If such human remains were unearthed, but not protected in accordance with procedures in state law (see below), this could be a potentially significant impact. LDSF will follow the California Health and Safety Code and California Public Resources Code Section 5097.

Procedures for Inadvertent Discovery of Human Remains: In accordance with the California Health and Safety Code (CHSC) 7050.5(b), if human remains are discovered during ground-disturbing activities, CAL FIRE and/or the project contractor(s) shall immediately halt potentially damaging excavation in the area of the burial and notify the Shasta County Coroner and the CAL FIRE Region archaeologist to determine the nature and significance of the remains. The coroner is required to examine all discoveries of human remains with 48 hours of receiving notice of a discovery on private or state lands. If the remains are determined by the coroner to be Native American, he or she must contact by telephone, within 24 hours, the Native American Heritage Commission (NAHC) per CHSC 7050.5(c). The NAHC will in turn immediately identify and notify the Most Likely Descendent (MLD) in accordance with Public Resources Code (PRC) 5097.98(a). CAL FIRE is obligated to continue to protect the discovery area from damage or disturbance, per PRC 5097.98(b), until staff has discussed and conferred with the MLD regarding their recommendations for treatment of the discovery.

- (1) The MLD preferences for treatment of the discovery may include the following:
  - (A) The nondestructive removal and analysis of human remains and items associated with Native American human remains.
  - (B) Preservation of Native American human remains and associated items in place.
  - (C) Relinquishment of native American human remains and associated items to the descendents for treatment.
  - (D) Other culturally appropriate treatment.
  
- (2) The parties may also mutually agree to extend discussions, taking into account the possibility that additional or multiple Native American human remains, as defined in PRC 5097, are located in the project area providing a basis for additional treatment measures

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VI. Geology and Soils. Would the project:</b>				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

**a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**

**i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)**

Review of California Geological Survey Special Publication 42 (Fault-rupture-Hazard zones in California) and Geologic Data Map #6 (Fault Activity Map of California and Adjacent Areas) found no active faults or faults with historic movement mapped within or immediately adjacent to LDSF. The closest faults with Holocene displacement are part of an unnamed southern

extension of the Hat Creek Fault that lie approximately 15 miles east of LDSF. No surface rupture from fault activity is expected to occur on LDSF.

**ii) Strong seismic ground shaking?**

Strong seismic shaking on LDSF is unlikely. California Geological Survey Map Sheet 48 (Seismic Shaking Hazard Maps of California) shows the LDSF and immediate vicinity to have a 10-percent probability of exceeding a maximum peak ground acceleration of 30 percent g\* (but not 40 % g) in 50 years. No areas in LDSF or immediate vicinity are known to have been damaged by historic earthquakes (historic = 1800 to present day)

\* The unit g is the acceleration of gravity.

**iii) Seismic-related ground failure, including liquefaction?**

Seismic-related ground failure is feasible. Such failure would most likely consist of rock-fall from steep outcrops that could be hazardous to people downslope of such outcrops. The combination of soil types, groundwater conditions, and seismic shaking intensity necessary for liquefaction does not appear present in LDSF, therefore the probability of seismic-induced liquefaction is very low.

**iv) Landslides?**

The Photo Reconnaissance Map of Geologic and Geomorphic Features Related to Landsliding, LDSF Sustained Yield Plan, Shasta County, California (Schlosser, 1994; Draft digital version produced by California Geological Survey in 2002) shows numerous debris-slide slopes and debris-flow/torrent tracks on steep slopes along both sides of South Cow Creek and Atkins Creek. Debris-flows/torrents move quickly and could threaten people on roads that cross the tracks. However, because such flows and torrent usually occur during winter, when LDSF is effectively closed by snow, the threat to people from debris-flows/torrents is small.

The few deep-seated landslides shown on the map move slowly and would be unlikely to expose people to potentially substantial adverse effects. Although the deep-seated landslides are capable of affecting buildings and infrastructure adversely, no buildings appear to be located in areas likely to be affected by the mapped deep-seated landslides. Proposed operations under the management plan would be unlikely to affect the natural potential for existing deep-seated landslides to adversely affect existing structures.

Individual projects conducted under the guidance of this management plan, which have the potential to affect soil stability (e.g. timber harvest, road building) are subject to multiagency review and comment. This review would minimize the likelihood of destabilizing operations being carried out. The California Geology Survey (CGS) is part of the multiagency review team that provides comments as well as expertise. CGS staff has a Certified Engineering Geologists (CEG) that participates in field review of individual projects.

**b) Would the project result in substantial soil erosion or the loss of topsoil?**

Forest roads are a source of soil erosion and are considered a major contributing source to stream sediment. Much of this sediment originates from points at or near watercourse crossings. The most serious erosion observed on LDSF is associated with the inside ditch

network draining the roads. Inside ditch erosion has been shown to be a significant source of sediment delivery into stream systems.

LDSF has had an approved Road Management Plan (RMP) on the forest since 2000. The intent of this RMP is to provide a systematic program to ensure that the design, construction, use, maintenance, and surfacing of LDSF's roads, road landings, and road crossings will avoid, minimize, or mitigate adverse impacts to the aquatic habitats supporting fish, amphibians, and other aquatic organisms. An additional benefit may be the long-term reduction in the costs of repairs as a result of problem avoidance. The initial inventory of LDSF roads occurred in 1995. A re-inventory was conducted between 2000 and 2003 that assessed the entire road system and watercourse crossings. The assessment identified 45 road segments and crossings that posed potential hazards associated with the road system. These 45 issues were prioritized and 34 of the 45 issues have been corrected as funding has become available. The assessment of LDSF roads is an ongoing process and since 2003 four new issues have developed. These new issues are scheduled for repair under an upcoming Timber Harvest Plan. Soil erosion from LDSF roads will be minimized and impacts to water quality will be reduced to less than significant with the implementation of the RMP (**management measure 4**).

Timber harvest activities are another potential source of soil erosion and sediment delivery to watercourses. The California Forest Practice Rules and Regulations (FPRs) provide several rules for the protection of water quality and reduction of soil erosion. These rules include; the implementation of Watercourse and Lake Protection Zones, the installation and maintenance of erosion control features, scattering and lopping of slash, appropriate stream crossing design and construction, and the implementation of a water-drafting plan.

All timber operations are required to adhere to a waiver of waste discharge that is obtained from the Regional Water Quality Control Board (WQ). Included in the waiver is the requirement for effectiveness monitoring. The monitoring will provide early detection of any erosion issues needing immediate correction. Where required LDSF obtains a 1600 permit from the DFG, for the installation or repair of watercourse crossings.

Additionally, LDSF has restricted harvests conducted on Jiggs soil series to the use of single tree harvest silvicultures (**management measure 5**). The Jiggs soils are formed from dacite rock and have a moderate to rapid runoff. These soils have the highest potential for surface erosion on LDSF. Management measure 5 maintains vegetative cover, rain drop interception, evapo-transpiration, and a source for needle cast, thus reducing the potential for soil erosion.

The adherence to the FPRs, WQ waiver, DFG permits and the implementation of **management measures 1, 4 and 5** ensure the potential Project impacts to soil erosion and topsoil loss are less than significant.

**c) *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?***

Although it is conceivable that operations carried out under the management plan could feasibly destabilize soils within LDSF, such projects are subject to multiagency review and comment that would minimize the likelihood of destabilizing operations being carried out.

- d) ***Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?***

Expansive soils as defined in the Uniform Building Code are not located on LDSF and no new structures are planned to be built.

- e) ***Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?***

There is one septic system located at LDSF Headquarters. The soils around headquarters are capable of supporting a septic system. No other septic systems are planned to be installed on LDSF. The toilets located at the campgrounds are self-contained and require pumping for removal of the waste. Licensed contractors dispose of the waste.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VII. Hazards and Hazardous Materials. Would the project:</b>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Discussion**

Potentially hazardous materials located on LDSF or used on LDSF for management activities include equipment fuel and oil, petroleum and propane storage tanks, dust palliatives, herbicides, marking paint, and incendiary and firing devices. Proper use, storage and transportation of these chemicals should not result in any potential significant impacts on the environment. Potential significant impacts could occur by accidental spilling of the material.

To insure that all material is properly used, stored and transported, Material Safety Data Sheets (MSDS), material labels, and any additional handling and emergency instruction of the materials are kept on file at LDSF Headquarters (**mitigation 1**). Any state employee handling

these materials are made aware of the potential hazards, given proper training and instruction, and also made aware of the location of the MSDS, and any other documentation for the material (**mitigation 2**). All contractors used in the application or use of these hazardous materials shall have the appropriate licenses and be able to read and understand the MSDS, labels, appropriate recommendations and application instructions (**mitigation 3**). The storage of potentially hazardous materials on LDSF is in accordance to the MSDS and any buildings that are used for storage will display appropriate placards (**mitigation 4**).

- Small amounts of equipment fuel, oils and burn mix are stored in petroleum approved containers in a placard outbuilding at LDSF Headquarters. There is also two petroleum storage tanks located at LDSF Headquarters. These tanks are above ground and access is restricted to CAL FIRE employees.
- Firing and incendiary devices are stored in accordance to the MSDS with ignition devices and fuel stored separately. These devices are only used by properly trained CAL FIRE employees. Storage buildings display the appropriate placard.
- The types of dust palliatives that have been used on LDSF have been hygroscopic salts and resins, these materials are considered to be non-hazardous as per MSDS information provided to LDSF. These materials are non-flammable, non-combustible and are considered to be low or non-toxic to aquatic organisms. When these materials are utilized on LDSF, they will be applied under ideal weather conditions to allow for rapid curing. Potential hazards associated with the proper delivery and application of these products is very unlikely. By controlling the application process, using only licensed applicators and adhering to the MSDS, product labels and application recommendations, accidental spills can be minimized, eliminated and controlled if they occur. Additionally 90 % plus of dust abatement on LDSF is accomplished by use of water and water trucks.
- Herbicides have been used on LDSF for demonstration, research and for the establishment, survival and improved growth of new forest stands. The use of herbicides as a tool to control vegetation is determined by the vegetation present on site, by the vegetation targeted for control and the level of control needed to accomplish the goals of the project. These factors, as well as local weather patterns, soil types, topography, and the presence of threatened or endangered species are used to determine if herbicides will be used. The specific recommendation for the type herbicide, application rate, timing, and application method will be determined by the site specific conditions and made by a Licensed Pest Control Advisor (PCA).

The three main brush species targeted for control on LDSF are chinquapin, manzanita, and snow brush. Other species that may be targeted in specific situations are gooseberry, currant, bitter cherry and various grasses. Application methods have been typically a directed backpack application to target species and two aerial applications following the 1978 Whitmore Burn.

Individual herbicide applications are based on label and MSDS restrictions, and written recommendations by PCA, that provide CEQA equivalency. The Recommendations build upon the Pesticide, surfactant and adjuvant Labels and Material Safety Data Sheets, which provide information potential for movement and toxicity. The PCA Recommendations consider site specific information such as vegetation present on site, targeted species, restrictions on chemical use, current and forecasted weather, soil types, topography, and the

presence of threatened or endangered species. These recommendations will also evaluate proximity to schools, apiaries, neighbors, domestic water systems, presence of wetlands, watercourses, amphibians, and fish. If necessary these recommendations will include mitigations to reduce the impacts to apiaries, humans or biological resources. Mitigation examples include but not limited to drift control measures, buffers, avoidance, weather restrictions, and timing. Additionally, LDSF is open range and grazing cattle are periodically present. Each pest control recommendation will consider the probability that cattle could graze treated vegetation (location and timing) and select herbicides with appropriate grazing restrictions.

Specific herbicide use depends on the nature of the vegetation and site conditions and may change based on availability from the manufacturer, registration status, feasible treatment alternatives and the recommendations of the Pest Control Advisor. Previous Herbicides used on LDSF include, Glyphosate, Triclopyr, Imazapyr, 2-4D, Hexazinone and picloram. The Carbon Sequestration Project on LDSF is currently utilizing Glyphosate, Triclopyr, and Imazapyr.

New products, formulations and application techniques may provide better control and improved environmental toxicology profiles than the current chemicals being utilized at LDSF. Additionally as part of LDSF's research and demonstration mission, small-scale herbicide trials or vegetation control studies are appropriate. For this reason, in the future, there may be additions or deletions to the list of herbicides considered for use on LDSF.

Additional background on herbicide regulation and use is included as this topic is of concern to some of the public. The U.S. Environmental Protection Agency regulates pesticide use nationwide and has exclusive authority over pesticide labeling. Use of a pesticide is limited to the applications and restrictions on the label, and the label restrictions are legally enforceable. The California Department of Pesticide Regulation (DPR) regulates pesticides within the State of California and has legal authority to adopt restrictions on pesticide use going beyond the regulations of the U.S. Environmental Protection Agency (7 U.S.C.A. §136v). Under California law, pesticide products must be registered by DPR in order to be sold and used in California. Before a substance is registered as a pesticide for the first time, DPR conducts a thorough evaluation. After a pesticide is registered for use in this state, DPR has an ongoing obligation to review new information received about the pesticide that might show new problems beyond those identified in the registration process. DPR is the lead agency for regulating herbicide use under CEQA. Where the review of new information shows that a significant adverse impact has occurred, or is likely to occur, DPR is required to reevaluate the registration. The regulatory program of DPR and the county agricultural commissioners is thorough, detailed, and involved.

DPR's program for regulating pesticides was certified by the Secretary of the Resources Agency as a functional equivalent program under Public Resources Code (PRC) § 21080.5 in the same manner as the state's program of regulating timber harvesting was certified (14 CCR. § 15251(i)). Because the program is certified, DPR does not prepare environmental impact reports (EIRs) but prepares other documents in the place of EIRs (PRC § 21080.5(d)(3)). Because the registration evaluation process considers use of an herbicide in a broad area and in a variety of conditions, the documents are the functional equivalent of a program EIR for each pesticide. By the terms of its certification, the program is prevented from approving the registration as requested if there are feasible alternatives or mitigation measures available that could lessen any significant adverse effects on the environment

(PRC § 21080.5(d)(2)(A)). By § 12825 of the Food and Agricultural Code, DPR may refuse to approve the registration of a new pesticide if its use would cause a significant adverse effect on the environment.

If DPR determines that further restrictions need to be placed on the use of a pesticide product to mitigate potential adverse effects, including human health effects and environmental effects, DPR classifies the pesticide as a restricted pesticide, and individual applications need a permit from the county agricultural commissioner. Site specific application and use of restricted pesticides is evaluated by the county agricultural commissioner during its review of applications for restricted materials permits. Not all pesticides are restricted, and only restricted pesticides require a permit from the county agricultural commissioner, except for a pesticide that DPR has not designated as restricted, the commissioner can require a permit for its use if the commissioner makes a finding that the pesticide will present an undue hazard when used under local conditions.

Because DPR is the CEQA lead agency, its determination the use will not have a significant effect on the environment is binding on all State agencies, including CAL FIRE (PRC § 21080.1, 14 CCR § 15050). Accordingly, if a DPR registered herbicide will be used in accordance with the directions and restrictions on the pesticide product label and any other restrictions established by DPR, LDSF is required to find that the use will not have a significant effect on the environment unless there is new information showing significant or potentially significant effects not analyzed by DPR. The significant new information must show that the use would cause a new significant effect on the environment that had not been analyzed previously, that a previously analyzed effect would be much more severe, or that a new feasible alternative or mitigation measure, considerably different from ones analyzed previously, would lessen the significant effect but the project proponents declined to adopt it (14 CCR § 15088.5(a)). If CAL FIRE receives comments on proposed herbicide use, CAL FIRE will need to determine whether the information qualifies as significant new information. CAL FIRE will consult with DPR and the county agricultural commissioner about the submitted information both to obtain the evaluation by the agencies with their expertise and to alert them about the issues. DPR could respond to the information with a decision to reevaluate the registration of the herbicide or it could advise CAL FIRE that the information is repetitive of what was evaluated during the registration decision.

The Shasta County Agricultural Commissioner has responsibility for compliance and enforcement actions, registration of businesses that perform pest control in Shasta County, issuing Restricted Materials Permits and Operator ID numbers and other regulatory responsibilities. The forest does not lie in the Shasta County Groundwater Protection Areas. The Central Valley Water Quality Control Board does not require notification for herbicide application that is applied in accordance to the product labels.

When herbicides are determined to be used on individual projects, conducted under this guidance of this management plan, LDSF will review the recommended herbicide's, surfactant's, and adjuvant's intended use and the possible environmental effects of each. LDSF will work with the PCA to determine whether the proposed use would be consistent with the label and the registration limitations.

Details of herbicide, surfactant and adjuvant chemistry, including mode of action and break down products as well as manufactures formulations are evaluated in depth by EPA and DPR during both the registration process and periodic reviews. In addition to the label and

MSDS the following source should be reviewed for information relevant to the project; National Pesticide Information Center <http://npic.orst.edu/> .

LDSF will also check for significant new information showing changes in circumstances or available information that would require new environmental analysis. Significant new information should be referred to DPR for that department's analysis as part of its ongoing evaluation program.

Accidental spills can be minimized, avoided or controlled, by adherence to the PCA's recommendation, the product label and **mitigations 1-4**. Additionally when herbicides are used on LDSF all herbicide containers must be secured when being transported and all empty containers must be triple rinsed and disposed of properly off-site, with rinse water being put into the mixing tank. Any herbicide work conducted by contractors shall be closely monitored by LDSF staff. When herbicides are handled and applied according to the product label instruction, PCA's recommendation, and the MSDS, significant adverse impacts to people, wildlife, water resources and the environment are not expected to occur.

The measures described above along with the **mitigations 1-4**, will insure that no significant adverse environmental or human health occurs as a result of pesticide application. Cumulative impacts are unlikely because herbicide uses related to different control projects are separated in time and distance so that their individual effects do not reinforce or interact with each other. Herbicide use under the plan is neither widespread nor frequent. Herbicide may be used for demonstration, research and for the establishment, survival and improved growth of forest stands. Forestry herbicide uses are substantially less, in both frequency and amount, than in agricultural or urban settings.

Other pesticides including rodenticides and fungicides would not be routinely used. Because bark beetle infestations can be serious in this region, there may be limited use of pheromones (attractants and repellants) which are classified as insecticides. Any future use would be carefully evaluated in Pest Control Recommendations and associated CEQA documents.

**a) *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?***

Adherence to **mitigations 1-4** reduces any potential significant impacts from the use, transport, and storage of hazardous materials to less than significant.

**b) *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?***

Adherence to **mitigations 1-4** reduces any potential significant impacts from the use, transport, and storage of hazardous materials to less than significant.

**c) *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?***

No, the nearest school is approximately 11 miles west of LDSF, in the town of Whitmore.

- d) **Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

LDSF is not on any list of hazardous material sites.

- e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

LDSF is not located within two miles of an airport.

- f) **For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

LDSF is not located within two miles of an airport.

- g) **Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

Timber operations have the potential to temporarily block roads with downed timber. FPRs 14 CCR 938.3 requires that all logging roads must be kept passable during the fire season for fire truck travel. To maintain compliance with 14 CCR 938.3, in the event that timber will block emergency response equipment, all timber operators are required to have equipment available on site to open the road immediately for emergency response equipment and to permit public access to and from LDSF.

- h) **Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

Several management activities have varying levels of risk to cause a wildfire. These activities are timber operations, road construction and maintenance, campgrounds, site preparation and prescribe burning.

The Public Resources Code regulates all timber operations, road construction and maintenance, and site preparation activities conducted during the fire season. These activities are required to have the appropriate fire suppression equipment on sight and maintained in a serviceable condition to aid in the suppression and control of any fires caused by the operations.

Campfires are only permitted in the four designated campgrounds and the campers are required to obtain and adhere to a campfire permit. Additionally the four designated campgrounds are maintained in a manner to lessen the potential of fire escape. Accumulation of dead vegetation is removed, trees pruned, and the fire rings are maintained.

All prescribe burning is conducted by the appropriate number of CAL FIRE personnel and equipment to maintain control of the prescribe burn.

LDSF is not adjacent to urbanized areas and there are very few residences intermixed with adjacent wildlands.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VIII. Hydrology and Water Quality. Would the project:</b>				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Result in inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## **Discussion**

Soil erosion and sediment delivery to watercourses has the highest potential to degrade water quality on LDSF. Forest roads and timber harvest activities are the primary sources of soil erosion caused by LDSF management (see Soil Erosion Discussion herein).

**a) *Would the project violate any water quality standards or waste discharge requirements?***

Impacts to water quality, violations of waste discharge requirements and the basin plan resulting from management activities at LDSF will be less than significant. The adherence to the FPRs, WQ waiver, DFG permits and the implementation of **management measures 1, 4 and 5** ensures that potential Project impacts are less than significant.

**b) *Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?***

LDSF has two hand-pump wells located at Old Cow and Butcher Gulch campgrounds. These are non-potable water sources, have minimal use and would not significantly deplete ground water. The residence located along the Bateman Road on the western edge of LDSF is located within a different watershed from where the two wells are located. Water for this residence is obtained from Roaring Springs, a large high volume spring. Protection of Roaring Springs is accomplished by the adherence to FPRs, WQ, and DFG requirements and the implementation of **management measure 4**.

**c) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?***

Road construction and maintenance, installation of erosion control structures, and the installation and repair of watercourse crossings all have the potential to alter the existing drainage patterns and cause substantial on or off site erosion. The adherence to the FPRs, WQ waiver, DFG permits and the implementation of **management measures 4 and 5** will lessen the potential Project impacts to less than significant.

**d) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?***

Road construction and maintenance, installation of erosion control structures, and the installation and repair of watercourse crossings all have the potential to alter the existing drainage patterns. The potential that these activities will cause on or off site flooding is less than significant. The adherence to the FPRs, WQ waiver, DFG permits and the implementation of **management measures 4 and 5** ensure that any potential Project impacts that may cause flooding are less than significant.

- e) **Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

There are no stormwater drainage systems located on or down stream of LDSF.

- f) **Would the project otherwise substantially degrade water quality?**

Degradation to water quality caused from management activities at LDSF will be less than significant. The adherence to the FPRs, WQ waiver, DFG permits and the implementation of **management measures 1, 4 and 5** ensures that potential Project impacts are less than significant.

- g) **Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?**

The project does not propose the construction of any structures. The structures at LDSF Headquarters are located outside a 100-year flood hazard area.

- h) **Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows?**

The project does not propose the construction of any structures.

- i) **Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?**

The project is not located in a flood zone or below a levee or dam. The potential that LDSF management activities will cause on or off site flooding is less than significant. The adherence to the FPRs, WQ waiver, DFG permits and the implementation of **management measures 4 and 5** ensure that any potential Project impacts that may cause flooding are less than significant.

- j) **Would the project result in inundation by seiche, tsunami, or mudflow?**

The project is not located within an area that is subject to a seiche, tsunami or mudflow.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IX. Land Use and Planning. Would the project:</b>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

**a) *Would the project physically divide an established community?***

No, the nearest community to LDSF is the Lassen Pines subdivision, located 4 miles south of the forest.

**b) *Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?***

LDSF is public land and is zoned TPZ. The project is compatible with the zoning and is required pursuant to Public Resources Code (PRC) §4645 and Article 8 of the California Board of Forestry and Fire Protection (Board) policy. The Board also establishes policy, which governs LDSF. Board policy states that the primary purpose of the state forest program is to conduct innovative demonstrations, experiments, and education in forest management. The project is guidance to LDSF staff and the policies of the Board are met by many of the management practices described within.

**c) *Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?***

The large forestlands adjacent to LDSF, managed by W.M. Beaty and Associates, Sierra Pacific Industries, Roseburg Forest Products, and the Lassen National Forest all have varying land management documents. The project does not conflict with any of these documents.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>X. Mineral Resources. Would the project:</b>				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

**a) *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?***

The project will not result in the loss of availability of known mineral resources. LDSF has several rock sources that have been quarried for road rock and watercourse crossing armament. The rock sources are not commercial and the rock is only utilized on LDSF.

**b) *Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?***

LDSF is not designated in any plan as having locally important mineral resources.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XI. Noise. Would the project result in:</b>				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

LDSF is located in a rural setting in which there is one permanent resident, located on the main access road, that would be exposed to the seasonal increase in noise levels associated with timber operations, road construction and maintenance. Timber operations, roadwork activities typically occur between the first of June and the end of October. This resident is accustomed to an increase in noise levels during the drier months due to its location and the logging activities on LDSF and the surrounding forestlands.

Visitors to LDSF, utilizing the campgrounds will also be exposed to equipment noise if timber operations are occurring in the vicinity of the campgrounds. The majority of campground use occurs on the weekends. Timber operations and roadwork will be conducted during the weekdays, to the extent feasible, to minimize the impact to forest visitors (**management measure 6**).

- a) **Would the project create exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?**

The project as proposed will not have an increase in noise over historical levels. As defined in the Shasta County General Plan, Section 5.5, there are no “noise sensitive areas and uses” in the vicinity of LDSF. There are no known noise ordinances in the vicinity of LDSF. Implementation of **management measure 6** will reduce conflicts with forest visitors and historical use shows noise impacts will be less than significant.

- b) **Would the project create exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?**

The project as proposed will not have an increase in noise over historical levels. The near by resident will have a temporary increase to ground vibrations resulting from road maintenance activities. The resident is accustomed to the temporary increase in ground vibrations and benefits from the road maintenance by improving year round access to the residence. Implementation of **management measure 6** will reduce conflicts with forest visitors and historical use shows noise and vibration impacts will be less than significant.

- c) **Would the project create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

The project as proposed will not have an increase in noise over historical levels. The project will result in no impact.

- d) **Would the project create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

The project as proposed will not have an increase in noise over historical levels. The nearby resident is accustomed to a seasonal increase of noise associated with timber operations and roadwork. Implementation of **management measure 6** will reduce conflicts with forest visitors and historical use shows noise and vibration impacts will be less than significant.

- e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

The project is not located within two miles of an airport. The project will result in no impact.

- f) **For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?**

There are no known private airstrips within 20 miles of LDSF. The project will result in no impact.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XII. Population and Housing. Would the project:</b>				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

- a) *Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?***

The Project will not increase population growth. LDSF and the surround forestlands are zoned TPZ and no developments in homes, businesses, or infrastructure is planned.

- b) *Would the project displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?***

The Project will not displace any residences.

- c) *Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?***

The project will not displace any persons.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIII. Public Services. Would the project:</b>				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

There are no substantial changes in this project from LDSF 2003 management plan. The response times from emergency services will not be affected by management activities. LaTour Butte has a fire lookout and several radio repeaters. CAL FIRE manages LDSF, the fire lookout and the radio repeaters. The project does not conflict with, but rather assists with the objectives of the lookout and the repeaters.

By Board policy one of LDSF’s primary purposes is education in forest management. LDSF currently participates in several tours and presentations, including annual tours for the community college and an annual presentations to the Boy Scouts of America. The nearest school is eleven miles to the west of LDSF. The project will not impact school access to the Forest, or any school facilities.

LDSF is public land and the project does not limit public access to LDSF.

- a) **Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:**

**Fire protection?** The project will have no impact.

**Police protection?** The project will have no impact.

**Schools?** The project will have no impact.

**Parks?** The project will have no impact.

**Other Public Facilities?** The project will have no impact.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIV. Recreation. Would the project:</b>				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Discussion**

- a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?***

The primary recreational uses on LDSF are hunting, camping, fishing, hiking and during the winter snow mobiling, snow shoeing, and cross-country skiing. The project proposes no significant changes from previous LDSF management plans, thus the amount of recreation is not expected to increase above historical use. The project does anticipate the expansion of three of the campgrounds and possible development of nature trails as funds become available. The expected recreational use on LDSF and the adjacent Lassen National Forest will have no impact on the physical deterioration of either the state or national forests.

- b) *Would the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?***

The expansion of the three campgrounds will be the development of additional sites that are currently being utilized during peak usage. The existing facilities at the campgrounds will be able to accommodate these new sites.

To minimize ground disturbance, the development of the nature trails will utilize, to the maximum extent possible, existing footpaths and old skid trails. Prior to construction of the nature trails, archaeological and biological surveys will be conducted. These surveys will minimize impacts to the resources and aide in locating plant identification stops along the trail.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XV. Transportation/Traffic. Would the project:</b>				
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exceed, individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

- a) *Would the project cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?***

The Project will result in no increase in traffic levels above historical use. An increase in truck traffic on LDSF and the access roads occurs during logging operations. Log hauling typically occurs between the first of June and the end of October. Timber sales on LDSF vary significantly in volume resulting in a range from 3 to as many as 25 loads per day moving on the access routes. The seasonal increases in truck traffic are typical for the local area and the local residents are accustomed to this traffic. Access roads to LDSF are designed to handle these and higher levels of truck traffic. Additionally during hauling operations the timber operators are required to maintain the seasonal roads in serviceable condition.

- b) Would the project exceed, individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?**

The vast majority of the logging truck traffic leaving LDSF travels down the Bateman and the Tamarack Roads to the Whitmore Road and down to State Highway 44. The logging truck traffic originating from LDSF does not result in a significant increase in traffic on these roadways. The level of service to the roads should not be impacted.

- c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

The project will have no influence any existing air traffic patterns.

- d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

There are known design features, along the access roads to LDSF, that are considered hazardous. There is no expected increase in hazards associated with LDSF traffic. The local residents are accustomed to logging truck traffic and there is no history of conflict with incompatible uses along the access roads to neither LDSF, nor are any expected.

- e) Would the project result in inadequate emergency access?**

Timber operations have the potential to temporarily block roads with downed timber. California Forest Practice Rules (FPRs) 14 CCR 938.3 requires that all logging roads must be kept passable during the fire season for fire truck travel. To maintain compliance with 14 CCR 938.3 in the event that timber will block emergency response equipment, all timber operators are required to have equipment available on site to open the road immediately for emergency response equipment.

- f) Would the project result in inadequate parking capacity?**

There is adequate parking at LDSF Headquarters to accommodate LDSF staff and visitors. The campgrounds can also accommodate several vehicles per campsite. Road turnouts and log landings are also used for parking. The use of log landings allows ample parking and access to visitors throughout LDSF.

- g) Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?**

The project has no potential to impact alternative transportation programs.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVI. Utilities and Service Systems. Would the project:</b>				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

There is one septic system located at LDSF Headquarters, four self-contained toilets located at campgrounds and one self-contained toilet located at Valley View Point.

**a) *Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?***

The septic system at LDSF Headquarters is adequate for the facilities and use. The toilet facilities at the campgrounds can accommodate the campground use. The project will not exceed wastewater treatment requirements of WQ.

**b) *Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?***

The existing facilities at the campgrounds will be able to accommodate the additional planned campsites.

- c) Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

There are no storm water facilities associated with this project. The installation of new drainage features (watercourse crossings and road drainage) and the replacement of old features shall adhere to the FPRs, WQ waiver, DFG permits. The replacement and installation of drainage features will have a less than significant impact on the environment.

- d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

The existing water on LDSF and the LDSF water rights are sufficient to accommodate the Project.

- e) Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?**

The existing facilities on LDSF will not be impacted by the project.

- f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?**

The Project will not increase the production of solid waste generated on LDSF and should not exceed the capacities of the county landfill.

- g) Would the project comply with federal, state, and local statutes and regulations related to solid waste?**

The project will not violate any federal, state, or local statutes regulating solid waste.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVII. Mandatory Findings of Significance.</b>				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Authority: Public Resources Code Sections 21083 and 21087.

Reference: Public Resources Code Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.3, 21093, 21094, 21151; *Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296 (1988); *Leonoff v. Monterey Board of Supervisors*, 222 Cal.App.3d 1337 (1990).

## Discussion

- a) ***Would the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?***

The proposed project is a revision of LDSF 2003 Management Plan and proposes no substantial changes in the management of LDSF. The implementation of this management plan may have the potential to impact fish, wildlife and botanical species and/or their habitat in the sense that any projects conducted under the guidance of this management plan may impact these species and/or their habitat. The development of projects under the guidance of this management plan will have separate analyses conducted based on the project’s specifications and site-specific information. Potential impacts will be less than significant with the adherence to all applicable laws and regulations, obtaining the appropriate permits, the implementation of the **mitigations 1-4** and **management measures 1-6** described herein. See also the discussion above under item IV, Biological Resources, and item VIII Hydrology and Water Quality.

The implementation of this management plan will have a less than significant impact on cultural resources. Archeological surveys have been conducted on nearly all of LDSF. The three discovered cultural sites have been recorded and management measures developed. Any projects conducted under the guidance of this management plan and would cause ground disturbance, will require a survey and a Native American information request. See also the discussion above under item V, Cultural Resources.

- b) *Would the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)***

#### **Overview**

The key resource concerns for potential significant adverse cumulative impacts from forest management are reflected in a number of the areas considered above primarily from an individual impact perspective:

- Aesthetics
- Air Quality
- Biological Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality

The dominant land use in this area is forest management. Forest management activities may include timber harvest, site preparation including burning, planting, competing vegetation control including manual methods and herbicides, precommercial thinning and road repair and maintenance. Forest management also includes activities associated with recreation and research.

The project will not generate significant adverse cumulative impacts from timber harvesting. One-hundred-year projections of forest habitat conditions show that the acreage of late seral forest types on LDSF will increase significantly over the next several decades. The inventory of standing volume of biomass will increase significantly over the same planning interval, as the project proposes to continue to harvest only a fraction of the overall growth potential on LDSF. It is anticipated that adjacent landowners, including the Lassen National Forest, will be a neutral to beneficial effect on forest-management-related impacts over the assessment area. The majority of land acreage within and adjacent to LDSF is managed using uneven-aged silviculture, which has less potential to cause significant detrimental effects (individually or cumulatively) on water quality than even-aged management practices. Uneven-aged management does not create large openings that can be a potential barrier to the movement of some wildlife species due to the juxtaposition and proximity of multiple even-aged THPs on different ownerships.

The project will not generate significant adverse cumulative impacts from road repair and maintenance. The road management plan included in the management plan contains a systematic protocol for avoiding road related cumulative impacts over time and distance.

The project will not generate significant adverse cumulative impacts from recreation. Recreation on LDSF is dispersed and occurs at low levels that have been shown to have negligible impacts on the environment. The management plan does not propose any significant changes in recreation pattern or intensity.

The project will not generate significant adverse cumulative impacts from research. Research installations are most often non-interventional and they will be of a size and density such that they do not create a significant adverse environmental impact, either singly or cumulatively.

The project will not generate cumulative impacts from the use of herbicides because herbicide uses related to different control projects are separated in time and distance so that their individual effects do not reinforce or interact with each other. Forestry herbicide uses on LDSF are substantially less, in both frequency and amount, than in agricultural or urban settings. Herbicide use under the plan is neither widespread nor frequent. Herbicide may be used for demonstration, research and for the establishment, survival and improved growth of forest stands. These conclusions are based on the analysis below and in part on the analysis provided in the resource analysis sections above.

### **ASSESSMENT AREA**

The cumulative effects assessment area was established based on the planning watersheds that contain LDSF. This assessment area is used because the key cumulative impact issues related to forest management typically express themselves at the scale of planning watersheds or a subset of the planning watershed area. No substantial downstream impact issues (e.g., sediment or temperature impaired streams, salmonid impacts, etc.) have been identified, hence it was not considered necessary to extend the cumulative impact assessment area to watersheds below the five planning watersheds identified below.

The assessment area consists of the five CalWater planning watersheds (Table 3) covering LDSF.

Table 3

Huckleberry Creek CalWater ID v2.2 5507.320102/12,836 total acres; 1,452 (11%) LDSF acres.
Beal Watershed CalWater ID v2.2 5507.310103/11,598 total acres; 5,928 (51%) LDSF acres.
Atkins Creek CalWater ID v2.2 5507.310101/8,646 total acres; 1,211 (14%) LDSF acres.
Upper South Fork Bear Creek CalWater ID v2.2 5507.220104/9,116 total acres; 180 (2%) LDSF acres..
Upper Battle Creek CalWater ID v2.2 5507.120104/9,830 total acres; 199 (2%) LDSF acres.
<b>Total Assessment Area: 52,026 total acres; 9,033 (17%) LDSF acres</b>

There are five CalWater v2.2 planning watersheds within which LDSF lies. The five planning watershed assessment areas include several vegetation types but are dominated by conifer forest. Significant areas of young ponderosa pine plantations mixed with various shrub species are found in the Atkins Creek and Beal planning watersheds. The Upper South Fork Bear and Upper Battle Creek watersheds include large wet meadow areas. Low elevations range from 2,920 feet for the Beal and Atkins Creek planning watersheds to 4,520, 4,100, and 3,840 feet for the Huckleberry, Upper Battle Creek and Upper South Fork Bear Creek watersheds respectively. No lakes are found on LDSF, and the only natural lake defined by the five planning watershed boundary is Huckleberry Lake (about 1.5 acres in size). Several small stock ponds exist in the Atkins Creek and South Fork Bear Creek planning watersheds. The largest man-made reservoir is located in the headwaters of Upper Battle Creek.

Descriptions of the five planning watersheds within the assessment area are as follows:

1. Beal Watershed - South Cow Creek and Beal Creek to the junction with Atkins Creek

Beal watershed (planning watershed 5507.310103) is the headwaters of South Cow Creek and drains a basin of 11,598 acres, of which 5,928 acres are contained within the boundaries of LDSF. Elevation ranges from 6,740 at LaTour Butte to 2,920 feet at the junction with Atkins Creek. Major tributaries include Beaver, Bullhock and Beal Creeks. South Cow is a third order stream before the junction with Atkins Creek (and fourth order below Atkins). There are approximately 9 miles of Class I watercourse along the main channel.

2. Atkins Creek

Atkins Creek (planning watershed 5507.310101) is a major tributary of the headwaters portion of South Cow Creek. The drainage basin is 8,646 acres in size, of which 1,211 acres are contained within the boundaries of LDSF. Elevation ranges from 6,500 feet at McMullen Mountain to 2,920 feet where it enters Cow Creek. Major tributaries include Lee March, Butcher, and Sunset Gulches. Atkins Creek is a third order stream and there are approximately 7 miles of Class I watercourse along the main channel.

3. Huckleberry Creek - Old Cow Creek, including Hunt Creek

Huckleberry Creek (planning watershed 5507.320102) includes the headwaters portion of Old Cow Creek and drains a basin of 12,836 acres, of which 1,452 acres are contained within the boundaries of LDSF. Elevation ranges from 7,064 (Huckleberry Mountain) to 4,520 feet about 1/4 mile below the junction with Hunt Creek. The stream originates from Huckleberry Lake in the Lassen National Forest. Additional major tributaries include Huckleberry Creek, Peavine Gulch, and White Fawn Gulch. Old Cow Creek below Hunt Creek is a fourth order stream. There are about 7.5 miles of Class I watercourse along the main channel.

4. Upper Battle Creek

Upper Battle Creek (planning watershed 5507.120104) is the headwaters of North Fork Battle Creek is defined as the basin down to the junction with Bridges Creek. It includes North Battle Creek Reservoir, but is above McCumber Reservoir. Total watershed area is 9,830 acres, of which 199 acres are contained within the boundaries of LDSF DSF. Elevation ranges from 7,064 (Huckleberry Mountain) to 4,100 feet at Bridges Creek. Major tributaries are unnamed. North Fork Battle Creek is a third order stream. There are approximately 7.5 miles of Class I watercourse along the main channel.

5. Upper South Fork Bear Creek

Upper South Fork of Bear Creek (planning watershed 5507.220104) drains a watershed of 9,116 acres, of which 180 acres are contained within the boundaries of LDSF. Elevation ranges from 6740 (LaTour Butte) to 3,840 feet. Major tributaries are unnamed. Dersch and Thatchers Meadows are major openings located within this planning watershed. South Fork Bear Creek is a third order stream. There are about 6 miles of Class I watercourse along the main channel.

**PAST, PRESENT AND FUTURE PROJECTS**

The main purpose of LDSF’s forest management program is to conduct demonstrations, education and research in forest management consistent with the legislative goals for the management of the Demonstration State Forests. Subordinate goals include harvesting to create the depth of forest structure diversity necessary to maintain a multi-disciplinary research forest, and revenue generation to cover the costs of operations of the State Forests program.

The dominant land use in the assessment area is forest management. Hence, concerns about cumulative impacts are related to the accumulation over time and space of impacts related to forest management. Timber harvesting plans (THPs) are the best source of information on the kinds of forest management activities that have the greatest potential to contribute to significant adverse cumulative impacts.

Table 4 contains a list of the projected harvest on LDSF for the next 10 years, by silviculture method. Table 5 is a list of THPs that have occurred within the assessment area in the last 10 years. The 10-year look back for cumulative impacts potential provides an adequate retrospective view.

Table 4

<b>10 year projected harvest at LDSF (LDSF Option A 2007)</b>	<b>ACRES</b>
Group selection <sup>4</sup>	377
Selection	1381
Commercial Thin	590
Sanitation/salvage	302
Rehabilitation	40
Fuelbreak	83
Shelterwood	202
Seed Tree	140
Clearcut	15
Variable Retention	80
Total	3210

Currently there are two THPs under preparation at LDSF. The 300 acre Rock Pit THP consists of Group Selection, Selection and Shelterwood silviculture methods. The Buck Butte THP consists of Selection and Sanitation/Salvage silviculture methods.

<sup>4</sup> The 377 acres represents the acreage in group openings only.

THP Number	yarding method	status	Acres by Prescription											**Total	
			NH	FB	AP	R/W	CC	SWR	NT	SEL	SS	CT	Rehab		GSEL
2-99-222	tractor/skidder	completed			198		99	22			86				405
2-02-033	tractor/skidder	completed					31								31
2-02-225	tractor/skidder	active			70	3	44							557	674
2-03-172	tractor/skidder	active								458					458
2-04-177	tractor/skidder	active		40						1133		11			1,184
2-05-111	tractor/skidder	active				2	213			10					225
2-05-149	tractor/skidder	active	39	14						95	200			1914	2,262
2-06-129	tractor/skidder	active			344	2									346
2-06-138	tractor/skidder	active			167		239								406
2-98-239	tractor/skidder	completed										527		329	856
2-99-086	tractor/skidder	completed						12							12
2-99-253	tractor/skidder	completed					5	83						368	456
2-01-037	tractor/skidder	completed				1				300	50	1025			1,376
2-03-143	tractor/skidder	active					11	95		362					468
2-03-188	tractor/skidder	active		57			485	2				237			781
2-03-050	tractor/skidder	completed								1185					1,185
2-02-214	tractor/skidder	active	13	112			494	54		3		410			1,086
2-02-187	cable, tractor/skidder	completed						344						1288	1,632
2-99-252	tractor/skidder	completed			265										265
2-99-266	tractor/skidder	completed								1432	129	49	4		1,614
2-99-158	tractor/skidder	completed	28				1273	51							1,352
2-01-193	tractor/skidder	completed								2369		32			2,401
2-01-161	tractor/skidder	completed										50		611	661
2-04-211	tractor/skidder	active									292			749	1,041
2-05-147	tractor/skidder	active		4			40								44
Total Acreage			80	227	1,044	8	2,934	663	0	7,347	757	2,341	4	5,816	21,221
Percent of Assessment Area			0.2%	0.4%	2.0%	0.0%	5.6%	1.3%	0.0%	14.1%	1.5%	4.5%	0.0%	11.2%	40.8%

The following symbols are for Table 5

CC	Clear Cut	SEL	Selection
SWS	Shelterwood Seed	SS	Sanitation-Salvage
SWP	Shelterwood Prep	CT	Commercial Thinning
SWR	Shelterwood Removal	AP	Alternative Prescription
STS	Seed Tree Seed	Rehab	Rehabilitation of Understocked Area
STR	Seed Tree Removal	GSEL	Group Selection
R/W	Right of Way	NT	Non Timberland
FB	Fuelbreak	NH	No Harvest

## **DISCUSSION AND CONCLUSIONS**

Cumulative impacts arising from timber harvesting typically affect wildlife, habitat, ecosystem productivity and aquatic resource values. Timber harvesting does not have the potential for creating cumulative impacts on or near LDSF.

The most plausible mechanism for timber harvest induced cumulative impacts at or near LDSF, juxtaposition and proximity of harvest unit openings across ownership boundaries, is highly unlikely to occur in the assessment area. Planned harvests at LDSF will occur at a low level, well below actual growth on the Forest, and harvest units will be separated in time and distance. Potential cumulative impacts arise most readily from even-aged silvicultural methods. LDSF proposes to conduct a vanishingly small acreage of total planned timber harvest under this silvicultural method during the next decade, 15 acres or one-half of one percent of the total acreage planned for harvest in the next 10 years.

The major acreage of neighboring ownership to LDSF is the Lassen National Forest. Timber harvest activity on the Lassen National Forest has been negligible for the last 10 years, and is expected to continue to remain at very low levels for the foreseeable future. Two of the private landowners neighboring LDSF, Roseburg Resources Company and Sierra Pacific Industries, are committed to sustainable forestry practices through their certification by the Forest Stewardship Council and Sustainable Forestry Initiative, respectively. A third neighbor, Beaty and Associates, manage their lands very conservatively under a State-approved sustained yield plan. These planning and certification instruments have goals oriented to the protection of non-timber public trust resource values, maintenance of forest health and productivity and sustainable forest management.

Adverse cumulative impacts arising from timber harvesting typically have the potential to affect the six resources areas identified in the Overview section, above. Based on the analysis herein, it is concluded that timber harvesting does not have the potential for creating significant adverse cumulative impacts on or off of LDSF to these resources areas.

### ***Aesthetics***

The discussion of aesthetics in section I already considered this resource area from a cumulative effects perspective [i.e., I(a) effects on a scenic vista, I(c) substantially degrade visual character] and found that there would be no significant adverse impact.

### ***Air Quality***

The discussion of air quality in section III already considered this resource area from a cumulative effects perspective [i.e., III(a) conflict with air quality plan, III(b) violate air quality standards, and III(c) result in a cumulative considerable net increase in any criteria pollutant) and found that there would be no significant adverse impacts.

### ***Biological Resources***

The discussion of biological resources in section IV already considered a number of elements of this resource area from a cumulative effects perspective and found that there would be no significant adverse impact. These include IV(a) impacts via habitat modification on listed species, IV(b) impacts on riparian habitat or sensitive natural communities, IV(c) effects on wetlands, IV(g) impacts on greenhouse gasses and climate change.

The discussion under section IV, above, identified six measures from the management plan that are specifically intended to protect biological resources from both individual and cumulative impacts. These measures go above and beyond the requirements of the Forest Practice Rules.

The project will not generate cumulative impacts related to wildlife, habitat diversity or ecosystem productivity. One-hundred year modeled projections of forest habitat conditions within LDSF boundaries show that the acreage of late seral forest types on LDSF will increase significantly over the next several decades (Table 1). Forest management practices outside LDSF within the assessment area is expected to remain similar to that of the last 10 years for the foreseeable future, and can be treated as a neutral to beneficial factor.

Snag and large woody debris retention standards in the management plan are formulated to improve wildlife habitat and diversity. It is expected that these retention standards will have a beneficial effect in time and distance.

The proposed management plan will have a beneficial effect on ecosystem productivity. The standing inventory of woody biomass volume will increase significantly over the planning interval, as the management plan proposes to continue to harvest only a fraction of the total annual growth that is accumulating on LDSF. It is anticipated that adjacent landowners, including the Lassen National Forest, will have a neutral to beneficial effect on ecosystem productivity over the assessment area. The majority of land acreage adjacent to LDSF has been managed using uneven-aged silviculture, which has less detrimental effects on water quality than even-aged management practices. Uneven-aged management does not pose the danger of creating very large openings and barriers to wildlife movement through juxtaposition and proximity of THPs on different ownerships.

The project will not generate cumulative impacts related to watershed resources. Factors supporting this conclusion include LDSF's geographic position at high elevation near the headwaters of all watercourses, combined with low intensity timber harvest, maximally dispersed in time and distance to achieve minimum environmental impact, and low impact road location and maintenance.

Trout occur in South Cow Creek and Old Cow Creek and seasonally in the lower 600 – 800 feet of Bullhock Creek during the early part of the year. Trout species found on LDSF are rainbow trout (*Salmo gairdnerii*), brown trout (*Salmo trutta*), and an occasional eastern brook

trout (*Salvelinus fontinalis*). No anadromous salmonids have been observed on LDSF. There are no records of historical observations.

All planning watersheds within the assessment area are included within the Evolutionarily Significant Unit (ESU) for Chinook salmon and steelhead trout due to known downstream populations and are therefore classified as “Threatened and Impaired Watersheds” under the Forest Practice Rules.

All stream channels, streambanks, and riparian zones will be protected during forest management activities. Protection of watershed values is an integral part of the overall management of LDSF and shall be directly correlated with silvicultural practices and logging standards pursuant to section 4651 of the Public Resource Code and the Forest Practice Act<sup>5</sup>.

A detailed watershed analysis for the five planning watersheds draining LDSF has been conducted by CAL FIRE (CAL FIRE 1995). Findings from the watershed process modules (mass wasting, surface erosion, hydrology, and riparian function) included:

The volcanic rocks present have generally low landsliding potential, with debris sliding restricted to steep areas which occupy only a small portion of the landscape. Most of the assessment area is composed of soils (Windy and Cohasset) which are not particularly susceptible to surface erosion on slopes less than 50 percent. The Jiggs/Lyonville soils are prone to surface erosion and road erosion problems frequently occur on these soils. The LDSF Option A and this management plan restricts timber harvest to single tree selection on these soil types.

The Atkins Creek planning watershed has a third of its area composed of hydrologically immature forest<sup>(6)</sup> located in the transient rain-on-snow zone and is prone to channel damaging increased peak flows. Management in this area is focused on enhancing growth of forest stands.

Canopy density is generally adequate within LDSF for fish bearing streams. LDSF has imposed a management measure of 75 feet “no cut” buffer along fish bearing streams.

The proposed project proposes no substantial changes in the management of LDSF. The planned utilization of both uneven-aged and even-aged management will continue to maintain a landscape that is varied and has a mixture of various timberstand types and wildlife characteristics. There no projects in the vicinity of LDSF that were identified on Lassen National Forest. There were several Timber Harvest Plans identified on the surrounding private timberlands in the vicinity of LDSF. The project related impacts when added to the other projects in the vicinity of LDSF will not have a considerable cumulative effect.

The development of projects under the guidance of this management plan will be subject to separate cumulative effects analysis consistent with CEQA. The analysis will be conducted based on the project’s specifications and any current or reasonably foreseeable future projects in the analysis area.

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<sup>5</sup> Timber Harvest Plans submitted within these watersheds will comply with the Forest Practice Rule 14 CCR 936.9, “Protection and Restoration in Watersheds with Threatened or Impaired Values.”

<sup>6</sup> Hydrologic maturity can be defined as the elapsed time after which there is little or no difference in wind speed and turbulence between forest and clearcut areas, usually 20 to 25 years .

**c) Would the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?**

No project related environmental effects were identified that would cause a substantial adverse effect on human beings. As described herein, the proposed project has the potential to impact to air quality, biological resources, soil erosion, hazardous materials, and water quality. However, with the adherence to all applicable laws and regulations, obtaining the appropriate permits, and the implementation of **mitigations 1-4** and **management measures 1-6** described herein, these impacts would be reduced to a less than significant level.

## REFERENCES

- 2006b. Landscape Management System. University of Washington, College of Forest Resources.
- California Department of Forestry and Fire Protection, 2003. La Tour Demonstration State Forest Management Plan. California Department of Forestry and Fire Protection, Redding, California.
- California Department of Forestry and Fire Protection, 2007. La Tour Demonstration State Forest Option A plan. California Department of Forestry and Fire Protection, Redding, California. 91 p.
- California Department of Forestry and Fire Protection, 1995. La Tour Demonstration State Forest Sustained Yield Plan. California Department of Forestry and Fire Protection, Redding, California. 246 p.
- California Department of Forestry and Fire Protection. 2008. LaTour Demonstration State Forest 2008 management plan update.
- California Natural Diversity Data Base. California Department of fish and Game, 2008
- Foster, D. G. 2006. Archaeological review procedures for CDF Projects. California Department of Forestry and Fire Protection, Sacramento, California.
- Foster, D. G. and M. V. Thornton. 2001. Management Plan for CDF's Historic Buildings and Archaeological Sites. CDF Archaeological Reports Number 22.
- Foster, D. G. and M. Sosa. 2001. Environmental Impact Report Supporting the Management Plan for CDF's Historic Buildings and Archaeological Sites. SCH #99021015, CDF Archaeological Reports Number 22
- Hannaford, M. and North State Institute for Sustainable Communities. 2000. Preliminary Water Quality Assessment of Cow Creek Tributaries.
- Hart, E., and Bryant, W.A., revised 1997, *Fault-Rupture Hazard Zones in California: Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps*: Department of Conservation, Division of Mines and Geology, Special Publication SP-42, 38 p.
- Jennings, C.W., Compiler, 1994, *Fault Activity Map of California and Adjacent Areas, with Locations and Ages of Recent Volcanic Eruptions*: California Department of Conservation, Division of Mines and Geology, Geologic Data Map No. 6, 92-page explanatory text, 1 Plate, scale 1:750,000.
- Mayer, K. E., and W. F. Laudenslayer. 1988. A guide to wildlife habitats of California. California Department of Forestry and Fire Protection, 1416 Ninth Street, Sacramento, CA 95814.
- Peterson, M., Beeby, D., and others, 1999, *Seismic Shaking Maps of California*: California Department of Conservation, Division of Mines and Geology, Map Sheet MS-48, various scales.
- Puettmann, M.E. and J.B. Wilson. 2005. Life-cycle analysis of wood products: Cradle-to-Gate LCI of residential wood building materials. Wood and Fiber Science. 37. Corrim Special Issue: 18-29.
- Sacramento Watersheds Action Group. 2001. Latour Demonstration State Forest Watershed Monitoring Project—Stream Channel and Fish Habitat Assessment.

Schlosser, John, 1994, *Photo Reconnaissance Map of Geologic and Geomorphic Features Related to Landsliding, Latour State Forest Sustained Yield Plan, Shasta County, California* (Draft digital version produced by California Geological Survey in 2002): California Geological Survey, Scale 1:24,000.

Shasta County Planning, General Plan, Section 5.5

SHN Consulting Engineers and Geologists and VESTRA Resources, Inc. 2001. Cow Creek Watershed Assessment.

U.S. Department of Agriculture, Soil Conservation Service (USDA-SCS) and U.S. Forest Service, in cooperation with the University of California Agricultural Experiment Station. 1974. Soil survey of Shasta County area, California.

Western Shasta Resource Conservation District and the Cow Creek Watershed Management Group. 2005. Cow Creek Watershed Management Plan.

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