

Boggs Mountain 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 1986 management plan for Boggs Mountain Demonstration State Forest¹ (BMDSF). California Department of Forestry and Fire Protection (CAL FIRE) has primary authority for management of BMDSF. The Board of Forestry and Fire Protection (Board) is the lead agency under the California Environmental Quality Act (CEQA). The purpose of this Initial Study is to evaluate the potential environmental impacts 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 BMDSF staff on the management of BMDSF. All management activities conducted on BMDSF under the guidance of the project are subject to further CEQA analysis at the project level.

PROJECT INFORMATION	
1. Project Title:	Boggs Mountain 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:	Boggs Mountain Demonstration State Forest, Lake County
5. Project Sponsor's Name and Address:	California Department of Forestry and Fire Protection (CAL FIRE), Boggs Mountain Demonstration State Forest PO Box 839 Cobb, CA 95426
6. General Plan Designation:	Public Land
7. Zoning:	TPZ - Timberland Production
8. Description of Project:	See below

¹ Board of Forestry and Fire Protection policy states:

“Management Plans for Boggs Mountain, Jackson, LaTour, Mountain Home and Soquel 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.”

9. Surrounding Land Uses and Setting:

BMDSF has common boundaries with eight subdivisions and approximately 70 private landowners. Most of the adjacent ownerships on the west side of the forest have been developed for residential subdivisions. Larger less developed parcels are found adjacent to the northern and eastern boundaries of the forest. The undeveloped parcels are comprised of brush land or extensively managed timberlands.

Three commercial timber types are found within and adjacent to the forest. The timber types are ponderosa pine, ponderosa pine/Douglas-fir, and Douglas-fir. Ponderosa pine predominates on the west slopes with about five percent sugar pine. The northeast slopes support a ponderosa pine/Douglas-fir stand with various densities of ponderosa pine, sugar pine, and Douglas-fir.

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
- Lake County Air Quality Management District
- Lake County Public Health
- Lake County Agriculture Commissioner
- California Department of Pesticide Regulation
- Lake County Sheriff Department

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

Description of Project:

The project is a revised Forest Management Plan for BMDSF, a 3,493-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, education (Public Resources Code 4631(c)), and the demonstration of economical forest management (Public Resources Code 4631(d)). BMDSF has been managed by CAL FIRE since 1949 through the implementation of a series of management plans approved by the Board. The project is a revision of the 1986 BMDSF Management Plan.

The revision of the previous management plan is necessary because of the success of the management strategies, current inventory information, and changes to the Forest Practice Rules. The project revisions exhibit an increase in timber inventory, growth, and annual allowable harvest.

The following is a list of management activities that may be conducted under the guidance of this project: timber harvesting, road maintenance/reconstruction, campground development and use, biomass harvesting, prescribed burning, pre-commercial thinning, recreational trail construction, culvert replacement or removal, fire wood cutting, etc. This list is not all inclusive as there may be additional activities as well as research and demonstration projects. Additionally, BMDSF 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. Harvests conducted on BMDSF shall be compatible with unevenaged management. This management measure ensures that BMDSF will maintain a diverse forested landscape that represents all age, diameter, and crown classes throughout the forest.
2. All harvest trees or leave trees shall be marked prior to timber operations. This management measure ensures that all trees will be evaluated for the presence of nesting structures, potential snag and Large Woody Debris (LWD) recruitment, and the existence of any other special habitat elements.
3. Existing roads shall be maintained, reconstructed, or decommissioned pursuant to the Road Maintenance Plan, which is incorporated into the revised Management Plan. This management measure ensures that road projects will proceed in a planned and orderly manner in order to avoid, minimize, or mitigate adverse impacts.
4. BMDSF shall maintain a rustic outdoor recreational experience within a working forest environment. This management measure ensures that public use of the State Forest is encouraged so that visitors may experience a variety of outdoor recreational activities as well as educational opportunities.
5. BMDSF shall continue to prescribe various Stand Improvement Projects such as reforestation, precommercial thinning, and mechanical brush control. This management measure ensures that promotion of regeneration and growth of timber species will be initiated and will continue as a major component of BMDSF's management and demonstration program.
6. BMDSF shall continue to use prescribed fire as a tool to facilitate fire hazard reduction and ecosystem management. This management measure ensures that fire remains as a natural ecosystem process within the forest. Forest fuel reduction will be an ongoing program which will supplement the fuelbreak system as the main defense against wildfire.

Mitigation Measures

1. BMDSF has restricted non-emergency timber operations and roadwork to be conducted outside of the winter period (November 15 through May 1). No timber operations shall occur on Saturdays, Sundays, and nationally designated holidays.
2. In addition to compliance with the Forest Practice Rules applicable to the Northern Forest District, timber harvesting operations on BMDSF shall comply with Lake County Rules regarding operations within areas designated as “Scenic Combining District” and additional restrictions on the hours of operation within 300 feet of any occupied dwelling pursuant to Title 14 of the California Code of Regulations Sections 945 through 945.5.
3. The Licensed Timber Operator (LTO) shall be aware of the location of trail systems within and adjacent to the plan area. Timber operations shall be conducted in a manner that will minimize impacts to recreational facilities.
4. No further expansion of the permanent road system is proposed. All new road construction shall be of the “temporary” classification and shall be abandoned upon completion of use pursuant to the Forest Practice Rules.
5. Prescribed burns conducted on BMDSF shall have an approved Smoke Management Plan (SMP) on file with the Lake County Air Quality Management District. In addition to the conditions of the SMP, BMDSF shall adhere to CAL FIRE requirements for Region Duty Chief approval of live fire use.
6. 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 BMDSF Forest Office.

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.

George Gentry
Executive Officer to the California Board of Forestry

Date

ANALYSIS OF POTENTIAL ENVIRONMENTAL IMPACTS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. Aesthetics. Would the project:				
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

BMDSF has been subject to timber harvest and other associated activities by the State of California since 1965. The past management at BMDSF 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 and no additional permanent road construction is proposed. The planned management of BMDSF and the utilization of unevenaged management will result in the continuation of a diverse appearance of the forested landscape.

Individual projects conducted under the guidance of this Management Plan will have additional visual assessments utilizing site specific information. Timber harvest activities can be perceived as an adverse impact to aesthetics resources. However, the harvesting proposed on BMDSF will reduce the risk of catastrophic wildfires. The land is zoned TPZ and permitted uses include timber harvesting and fuel wood reduction. According to the Forest Practice Rules (14CCR 898), “On TPZ lands, the harvesting per se of trees shall not be presumed to have a significant adverse impact on the environment.” The long term interest of BMDSF is to maintain this property in a forested condition. This is to the long-term benefit of neighboring property owners, maintaining the aesthetics into the future. While reducing the horizontal and vertical continuity of fuels through active timber harvesting, aesthetic values will also be maintained by reducing the risk of catastrophic crown fires.

Prior to approval, Timber Harvesting Plans (THPs) are subject to an interdisciplinary agency review and public comment period. The THP 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, 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 a 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?*

BMDSF utilizes unevenaged management, which will maintain the current varied appearance of the forested landscape. BMDSF has several scenic vistas that are accessible to the public. Scenic overlooks of Cobb Mountain, Seigler Mountain, Mount Hannah, Hidden Valley, and Clear Lake are located at various locations on Boggs Mountain.

BMDSF is located above the mid-slope on a ridge top and 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 BMDSF are private timberlands with varying levels of harvest. Residential developments located on the west side of BMDSF are located on the same slope, but downhill from the forest, which limits the view.

Portions of BMDSF are visible from State Highway 175 between Loch Lomond and Middletown and from several locations along the Loch Lomond and Big Canyon Roads. The planned management activities described within the project are consistent with previous management practices and no significant impact on any scenic vistas is anticipated.

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

The State Highway 175 corridor which runs along the western boundary of BMDSF is within the Lake County Scenic Combining District. Harvests are restricted to single tree selection within the corridor.

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 BMDSF 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?*

BMDSF has been subject to timber harvest and associated activities by the State of California since 1965. The past management BMDSF 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; therefore additional permanent road construction is not necessary. The planned management of BMDSF and the utilization of unevenaged 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
II. Agricultural Resources.				
<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> <p>Would the project:</p>				
<p>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?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>b) Conflict with existing zoning for agricultural use or a Williamson Act contract?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>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?</p>	<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?***
 BMDSF is not farmland.
- b) *Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?***
 BMDSF is zoned as 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?***
 BMDSF is not farmland.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. Air Quality.				
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 BMDSF which may have an impact on air quality. They are open burning, road maintenance, and dust created from logging truck traffic.

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

Project burns conducted on BMDSF that are greater than 10 acres in size or when the expected emissions are greater than one ton, are required to have an approved SMP. Upon Air Quality Management District approval of the SMP, BMDSF shall obtain an open burning permit from the District. Additionally burning shall only be conducted on “Burn Days” designated by Lake County Air Quality Management District. 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.

Dust abatement and mitigation measures required under the Forest Practice Rules and described within BMDSF’s THPs effectively mitigate dust generation from BMDSF roads.

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

Lake 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)?***

Lake 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?***

Smoke impacts to adjacent communities are addressed in the SMPs. Smoke impacts are minimized and adequate smoke dispersal is obtained by the adherence to the SMP, burn permit, and permissive burning periods.

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

Smoke impacts to adjacent 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. When broadcast burning is conducted pursuant to the SMP, BMDSF staff closely communicates with the Air Quality District to ensure smoke dispersal is optimal and smoke impacts are minimized.

BMDSF may use chemicals such as resins or hygroscopic salts for dust abatement on BMDSF roads. These chemicals have little or no odor. The curing time for these chemicals is one to two 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
IV. Biological Resources. Would the project:				
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

BMDSF supports a variety of wildlife and their associated habitats. Timber harvest activities on the State Forest have the potential to adversely impact biological resources. BMDSF 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 vernal pools and springs
- 4) Protect riparian zones and restore where needed
- 5) Identify potential stands for late successional management
- 6) Design forest management activities based on landscape perspectives. Components to consider include horizontal and vertical forest structure, vegetation density, edge effect, corridor size, and biological diversity
- 7) Maintain conifer and hardwoods in buffer zones along watercourses and springs to 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
- 10) Frequent use of broadcast burning will enhance wildlife habitat by removing areas of old decadent brush
- 11) Adopt measures to monitor the implementation plant protection guidelines established by Department of Fish and Game regarding two rare species of manzanita (Sonoma manzanita - *Arctostaphylos canescens* ssp. *sonomensis* and Konocti manzanita - *Arctostaphylos manzanita* ssp. *elegans*). These species are listed as CNPS 1B species
- 12) Timber harvesting operations will utilize the existing road system thereby eliminating the need for new road construction
- 13) Where feasible and on a THP specific basis, no harvesting of trees greater than 40 inches DBH will be proposed for harvest

Several management goals of BMDSF 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. A goal of BMDSF is to balance 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 lower than that of many private owners due to additional landscape and wildlife habitat interests on BMDSF as a public forest and the goal to maintain the widest range of forest conditions in order to accommodate potential future research studies.

The allowable cut is based upon the long term sustainability analysis in the BDSF Option A plan (California Department of Forestry and Fire Protection 2008). The long-term sustained yield (LTSY) is 1.66 million board feet per year (475 board feet per acre per year). Current annual growth is 357 board feet per acre per year. The corresponding near term sustainable

annual harvest level in the first decade is 770 thousand board feet per year (220 board feet per acre per year). This constitutes a harvest intensity of 1.5 percent of inventory. The potential unrestricted LTSY that can be realized if BMDSF were to be managed for optimal sustainable timber production is 650 – 700 board feet per acre per year, depending on the silvicultural methods used.

Planned harvests will be designed to increase stand growth and productivity by implementing optimal stocking and spacing configurations in individual stands. The annual harvest is less than the LTSY due to the constraints on forest management activities imposed by other forest values on BMDSF and the fact that most of the stands on the forest are still young and will accumulate significantly more growth as they mature. In addition to the constraints placed on the calculation of the long term sustained yield in the harvest schedule, there are also discretionary commitments to planned management practices for non-timber resources. These commitments are in large part discretionary management practices which are necessary to maintain a healthy managed forest ecosystem. They are also necessary to avoid foreclosing on future management options. A goal of BMDSF is to have an active research program, which in turn depends on a diverse mix of forest structures, from early to late seral.

Based on field work and forest inventory data, stands were assessed for meeting the Board's definition of late-successional forest stands. No stands meeting the criteria of the definition were found on BMDSF. Many areas throughout the ownership have functional characteristics such as: large down logs, large decadent trees, and snags. These attributes will be retained and recruited wherever feasible.

BMDSF has two California Wildlife habitat Relationship (WHR) System habitat types; ponderosa pine and Douglas-fir. Brush or meadows cover approximately 2% of the total land base. The ponderosa pine habitat type is mainly on the south and west slopes and the Douglas-fir habitat type is mainly on the north and east slopes.

There are no Class I watercourses located within BMDSF. Class II and III watercourses will be provided protection measures that will meet or exceed the Forest Practice Rules. The buffer zones will assist in achieving the goals of BMDSF by providing filter strips for sediment and migration corridors for wildlife.

BMDSF staff individually marks all harvest or leave trees. BMDSF 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.

BMDSF 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. 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 conducted under the guidance of this Management Plan.

INITIAL BIOLOGICAL SCOPING

The Natural Diversity Data Base (NDDB) was used as a scoping tool to determine if any rare, threatened, endangered, or special concern species and/or their habitat are located on BMDSF. A nine quadrangle query was conducted which included Whispering Pines 7.5 minute quad and the surrounding eight quads.

Baseline scoping involved a review of the *Plant and Wildlife Resources Inventory of Boggs Mountain Demonstration State Forest*, which was conducted from May 1991 - August 1992 pursuant to Interagency Agreement No. 8CA16857 between CDF and the Department of Biological Sciences, CA State University, Sacramento. The BMDSF staff periodically accesses the Department of Fish and Game's Biogeographic Information and Observation System (BIOS) database, which provides GIS-formatted information from the NDDB and Northern Spotted Owl (NSO) databases. Protocol NSO surveys are conducted annually by BMDSF staff. No detections of NSO have been observed by BMDSF staff since 2005.

CNDDDB sensitive plant and wildlife species within the surrounding nine quad search was most recently conducted as part of botanical surveys for the preparation of several THPs (reports dated June 30, 2007 prepared by Northwest Biosurvey). The following species have either been found within the projects or have potential habitat within the projects: foothill yellow-legged frog, Northern Spotted Owl, Sonoma manzanita, and Konocti manzanita.

Foothill yellow-legged frog: The NDDB indicates that the Foothill yellow-legged frog (*Rana boylei*), a Species of Concern, is within the assessment area of BMDSF. The State Forest contains possible habitat for this species within Mill Creek. The last sighting of this species was in June of 1994 near the confluence of Malo Creek and Big Canyon Creek. This location is outside of the State Forest boundary. *Rana boylei* exists in riparian habitat. Specific WLPZ mitigation measures for watercourses will be included within project guidelines which are adequate for the protection of *Rana boylei* habitat. No Class I watercourses exist within the State Forest. There is limited habitat for amphibians. The Class II watercourses located within BMDSF dry during the summer months, thereby not supporting viable populations of foothill-yellow legged frog. Significant adverse impacts to this species as a result of the proposed project are not anticipated.

Northern Spotted Owl: From April through July of 2005, 2006, 2007 site visits were made by BMDSF staff to established calling points and spotted owls were called by voice and using the tape supplied by Department of Fish and Game. Multiple visits were made to calling point #33, which was the location of a 1999 single-owl sighting near Malo Creek. Two owls responded on July 7, 2005 after four visits to the calling point. No NSO responses were recorded during the 2006 and 2007 surveys. (Site visits are currently underway for 2008; no responses thus far.)

According to Carol Hill, former owner of Boggs Mountain Inner Coast Range Reserve, spotted owls were seen in 1968; again in 1979; and one was heard in 1986 on the Reserve located adjacent to the State Forest's northern boundary. The last recorded sighting of a NSO on BMDSF was in 1999. As a result of the long period between sightings, there is a high possibility that the owls seen and heard during the 1999 and 2005 surveys were transient.

A NDDB sensitive wildlife species nine quad search was conducted. The following species were evaluated for potential adverse impacts:

Species (status)	Common Name	Habitat
<i>*Rana boylei</i> (<i>Species of Concern</i>)	foothill yellow-legged frog	See above
<i>Agelaius tricolor</i> (<i>Species of Concern</i>)	Tricolored blackbird	wetlands
<i>Coccyzus americanus occidentalis</i> (<i>State Endangered</i>)	Western yellow-billed cuckoo	Densely foliated, deciduous trees and shrubs, especially willows, required for roosting sites
<i>Lavinia hitch</i> (<i>Species of Concern</i>)	Clear Lake hitch	Native to Clearlake
<i>Archoplites interruptus</i> (<i>Species of Concern</i>)	Sacramento perch	Sluggish, vegetated waters of sloughs and lakes
<i>Antrozous pallidus</i> (<i>Species of Concern</i>)	pallid bat	Roosts in caves, crevices, mines, tree hollows. Needs water. Prefers rocky outcrops, cliffs with access to open habitats for foraging
<i>Clemmys marmorata marmorata</i> (<i>Species of Concern</i>)	northwestern pond turtle	Wetlands, including ponds, marshes, lakes, streams, irrigation ditches, and vernal pools
<i>Dubiraphia brunnescens</i> (<i>no listing</i>)	brownish dubiraphian riffle beetle	Submerged roots (e.g. willows), on rocky lakeshores
<i>Falco peregrinus anatum</i> (<i>State Endangered – Federally delisted</i>)	American peregrine falcon	Requires protected cliffs and ledges for cover
<i>Falco mexicanus</i> (<i>Species of Concern</i>)	prairie falcon	Nests in cliffs; forages in open terrain
<i>Progne subis</i> (<i>Species of Concern</i>)	purple martin	Frequents old-growth, multi-layered, open forests with snags
<i>Lasionycteris noctivagans</i> (<i>Species of Concern</i>)	silver-haired bat	Roosts in caves, crevices, tree hollows. Needs water. Forest dweller
<i>Lasiurus cinereus</i> (<i>Species of Concern</i>)	hoary bat	Open habitats with access to trees for cover and habitat edges for feeding
<i>Corynorhinus townsendii</i> (<i>Species of Concern</i>)	Townsend's big-eared bat	Requires caves, mines, tunnels or other human made structures for roosting; prefers mesic habitats
<i>Hydrochara rickseckeri</i> (<i>no listing</i>)	Ricksecker's water scavenger beetle	Habitat is not known for this species, but most others in this widespread genus inhabit a variety of habitats including artificial ponds. However, the very restricted range of this one contrasts strikingly with others

		in the genus and could indicate a more specialized species. Adults can fly but are aquatic, as are larvae
<i>Trachykele hartmani</i> (no listing)	metallic wood-boring beetle	Not known
<i>Pandion haliaetus</i> (Species of Concern)	osprey	Requires open clear water for foraging; uses large trees, snags in open forest habitats for cover and nesting
<i>Elanus leucurus</i> (no listing)	white-tailed kite	Frequents montane pine and fir habitats with large trees and snags
<i>Hysteroecarpus traskii</i> (Species of Concern)	Russian River tulle perch	Only found in Russian River and its tributaries
<i>Calasellus californicus</i> (no listing)	An isopod	Freshwater
<i>Aquila chrysaetos</i> (Species of Concern)	golden eagle	Rolling foothills, mountain terrain, cliffs, and rock outcrops
<i>Saldula usingeri</i> (no listing)	Wilbur Springs shorebug	Not known
<i>Haliaeetus leucocephalus</i> Federally Threatened State Endangered	bald eagle	Requires large old growth trees or snags in remote mixed stands near water
<i>Oncorhynchus mykiss irideus</i> (Federally Threatened)	Steelhead – Central CA Coast ESUs	Habitat that sustains fish migration and spawning, habitat that supports aquatic habitat for nonfish aquatic species
* <i>Lasiurus blossevillii</i> (no listing)	western red bat	Prefers edges or habitat mosaics that have trees for roosting and open areas for foraging

Note: * denotes Whispering Pine quad

Habitats such as wetlands, caves, mines, tunnels, late successional forest stands, rolling foothills, and open bodies of water do not exist within BMDSF. Therefore species associated with such habitat elements will not be significantly affected by the proposed projects. Only two species listed in the above table are identified with the Whispering Pines quad. They are foothill yellow-legged frog and the western red bat. There have been no sightings of these two species or the other species identified in the above table. Several trees greater than 40" DBH will be retained throughout BMDSF. Snags will not be removed unless they pose a safety hazard.

Board of Forestry Sensitive Species include Bald eagle, Golden eagle, Great blue heron, Great egret, Northern goshawk, Osprey, Peregrine falcon, California Condor, Great gray owl, Northern spotted owl, and Marbled Murrelet. These species have been evaluated below:

Species (status)	Common Name	Habitat
<i>Ardea herodias</i>	Great blue heron	Secluded groves of tall trees

		near shallow water feeding areas
<i>Ardea alba</i>	Great egret	Requires groves of trees suitable for nesting and roosting, relatively isolated from human activities, near aquatic foraging areas
<i>Accipiter gentilis</i>	Northern goshawk	Dense, mature conifer and deciduous forest, interspersed with meadows, other openings, and riparian areas required
<i>Pandion haliaetus</i> (Species of Concern)	osprey	Requires open clear water for foraging; uses large trees, snags in open forest habitats for cover and nesting
<i>Falco peregrinus</i>	Peregrine falcon	Frequents bodies of water in open areas with cliffs and canyons nearby for cover and nesting
<i>Gymnogyps californianus</i>	California condor	Requires vast expanses of open savannah, grasslands, and foothill chaparral, with cliffs, large trees, and snags for roosting and nesting
<i>Strix nebulosa</i>	Great grey owl	Forages in wet meadows and nests and roosts in nearby dense coniferous forest
<i>Strix occidentalis</i>	Northern spotted owl	See above section titled NSO
<i>Brachyramphus marmoratus</i>	Marbled murrelet	Breeders require mature, coastal coniferous forest for nesting and nearby coastal waters for feeding
<i>Aquila chrysaetos</i> (Species of Concern)	golden eagle	Rolling foothills, mountain terrain, cliffs, and rock outcrops
<i>Haliaeetus leucocephalus</i> Federally Threatened State Endangered	bald eagle	Requires large old growth trees or snags in remote mixed stands near water

The Northern goshawk range is located outside of BMDSF. The habitat range for the California condor is Southern California and well outside the range of BMDSF. The habitat range for the Great gray owl is within the eastern side of the Sierra Nevada range and well outside the range of BMDSF. Marbled murrelet is a coastal species and its range is well outside BMDSF. There are no large bodies of water or snags of sufficient size within the State Forest or immediately adjacent for the bald eagle. BMDSF does not contain rolling foothills nor cliffs or rock outcrops of sufficient size for the golden eagle. There are no large bodies of water within BMDSF or immediately adjacent to the BMDSF for the Peregrine falcon, Great blue heron, or Great egret. Considering the lack of habitat for these Sensitive Species, no significant adverse impacts are expected to occur. Habitat does exist for the Northern Spotted Owl; please see text section titled “Northern Spotted Owl” above.

Plants

The CNPS on line inventory for rare and endangered plants was consulted. The nine quad search resulted in the following plants. Rarefind and BIOS databases were also searched. CNPS ranking and state and federal ranking is also identified.

Species (status)	Common Name	Habitat
<i>*Amsinckia lunaris</i> (CNPS 1B)	bent-flowered fiddleneck	Cismontane woodland, grassland
<i>Amorpha californica</i> var. <i>napensis</i> (CNPS 1B)	Napa false indigo	Broadleafed upland forest, chaparral, cismontane woodland
<i>*Arctostaphylos canescens</i> ssp. <i>sonomensis</i> (CNPS 1B)	Sonoma manzanita	Chaparral, coniferous forest, occasional serpentine
<i>*Arctostaphylos manzanita</i> ssp. <i>elegans</i> (CNPS 1B)	Konocti manzanita	Chaparral, Cismontane woodland, Coniferous Forest
<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Raiche's Manzanita	Chaparral, Lower montane coniferous forest, often rocky serpentine soil
<i>*Astragalus rattanii</i> var. <i>jepsonianus</i> (CNPS 1B)	Jepson's milk-vetch	Grassland, Chaparral, Cismontane woodland
<i>Brodiaea californica</i> var. <i>leptandra</i> (CNPS 1B)	narrow-anthered California brodiaea	Broad-leafed upland forest, Chaparral, Cismontane woodland, lower montane coniferous forest, valley and foothill grassland
<i>*Brodiaea coronaria</i> ssp. <i>rosea</i> (CNPS 1B) State Endangered	Indian Valley brodiaea	Closed-cone coniferous forest, Chaparral, Cismontane woodland, valley and foothill grassland
<i>Calystegia purpurata</i> ssp. <i>saxicola</i> (CNPS 1B)	coastal bluff morning-glory	Coastal dunes, coastal scrub, North Coast coniferous forest
<i>*Ceanothus confusus</i> (CNPS 1B)	Rincon Ridge ceanothus	Closed-cone coniferous forest, Chaparral, Cismontane woodland
<i>*Ceanothus divergens</i> (CNPS 1B)	Calistoga ceanothus	Chaparral, rocky serpentine soil, volcanic
<i>Ceanothus sonomensis</i> (CNPS 1B)	Sonoma ceanothus	Chaparral (serpentine or volcanic)
<i>*Chlorogalum</i>	dwarf soaproot	Chaparral, serpentine

<i>pomeridianum</i> var. <i>minus</i> (CNPS 1B)		
* <i>Cryptantha clevelandii</i> var. <i>dissita</i> (CNPS 1B)	Serpentine cryptantha	Chaparral, serpentine
* <i>Dichantherium lanuginosum</i> var. <i>thermale</i> (CNPS 1B) State Endangered	Geysers dichantherium	Closed-cone coniferous forest, riparian, valley foothill and grassland
<i>Eriastrum brandegeae</i> (CNPS 1B)	Brandegee's eriastrum	Chaparral, Cismontane woodland
* <i>Erigeron angustatus</i> (CNPS 1B)	narrow-leaved daisy	Chaparral, serpentine soil, volcanic

* <i>Eriogonum nervulosum</i> (CNPS 1B)	Snow Mountain buckwheat	Chaparral, serpentine soil
* <i>Eryngium constancei</i> (CNPS 1B) State and Federally Endangered	Loch Lomond button-celery	Vernal pools
<i>Fritillaria pluriflora</i> (CNPS 1B)	adobe-lily	Chaparral, Cismontane woodland, valley and foothill grassland
<i>Gratiola heterosepala</i> (CNPS 1B) State Endangered	Boggs Lake hedge-hyssop	Marshes, swamps, vernal pools
<i>Harmonia hallii</i> (CNPS 1B)	Hall's harmonia	Chaparral, serpentine soil
* <i>Hesperolinon adenophyllum</i> (CNPS 1B)	glandular western flax	Chaparral, Cismontane woodland, valley and foothill grassland (usually serpentine)
* <i>Hesperolinon bicarpellatum</i> (CNPS 1B)	two-carpellate western flax	Serpentine Chaparral
<i>Hesperolinon didymocarpum</i> (CNPS 1B) State Endangered	Lake County western flax	Chaparral, Cismontane woodland, valley and foothill grassland (usually serpentine)
<i>Hesperolinon serpentinum</i> (CNPS 1B)	Napa western flax	Chaparral, serpentine soil
* <i>Horkelia bolanderi</i> (CNPS 1B)	Bolander's horkelia	Chaparral, Cismontane woodland, valley and foothill grassland (vernally mesic areas), meadows, seeps
* <i>Imperata brevifolia</i> (CNPS 2)	California satintail	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps, riparian scrub
<i>Lasthenia burkei</i> (CNPS	Burke's goldfields	Meadows and seeps,

<i>IB)</i> <i>State and Federally Endangered</i>		vernal pools
<i>Layia septentrionalis</i> (CNPS 1B)	Colusa layia	Chaparral, Cismontane woodland, valley and foothill grassland (sandy, serpentine)
* <i>Legenere limosa</i> (CNPS 1B)	legenere	Vernal pools
* <i>Leptosiphon jepsonii</i> (CNPS 1B)	Jepson's leptosiphon	Chaparral, Cismontane woodland (usually volcanic)
<i>Limanthes vinculans</i> (CNPS 1B) <i>State and Federally Endangered</i>	Sebastopol meadowfoam	Meadows and seeps, valley and foothill grassland, vernal pools
* <i>Lupinus sericatus</i> (CNPS 1B)	Cobb Mountain lupine	Broad-leafed upland forest, Chaparral, Cismontane woodland, lower montane coniferous forest
<i>Micropus amphibolus</i> (CNPS 3)	Mt. Diablo conttonweed	Broad-leafed upland forest, Chaparral, Cismontane woodland, lower montane coniferous forest, valley and foothill grassland (rocky)
* <i>Mielichhoferia elongata</i> (CNPS 2)	elongate copper-moss	Cismontane woodland (usually vernal mesic)
<i>Monardella villosa ssp. globosa</i> (CNPS 1B)	robust monardella	Broad-leafed upland forest, Chaparral (openings), Cismontane woodland, coastal scrub, valley and foothill grassland
<i>Myosurus minimus ssp. apus</i> (CNPS 3)	little mousetail	Valley and foothill grassland, vernal pools
<i>Navarretia leucocephala ssp. bakeri</i> (CNPS 1B)	Baker's navarretia	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools
* <i>Navarretia leucocephalia ssp pauciflora</i> (CNPS 1B) <i>Federally Endangered State Threatened</i>	few-flowered navarretia	Volcanic ash, vernal pools
* <i>Navarretia leucocephalia ssp plieantha</i> (CNPS 1B) <i>State and Federally</i>	many-flowered navarretia	Volcanic ash, vernal pools

<i>Endangered</i>		
<i>Navarretia myersii</i> ssp. <i>deminuta</i> (CNPS 1B)	small pincushion navarretia	Vernal pools
<i>Orcuttia tenuis</i> (CNPS 1B) <i>Federally Threatened</i> <i>State Endangered</i>	slender Orcutt grass	Vernal pools
* <i>Penstemon newberryi</i> var. <i>sonomensis</i> (CNPS 1B)	Sonoma beardtongue	Chaparral
<i>Potamogeton zosteriformis</i> (CNPS 2)	eel-grass pondweed	Marshes and swamps (assorted freshwater)
* <i>Sedella leicoarpa</i> (CNPS 1B) <i>State and Federally Endangered</i>	Lake County stonecrop	Cismontane woodland, valley and foothill grassland, vernal pools (volcanic)
* <i>Sidalcea oregano</i> ssp. <i>hydrophila</i> (CNPS 1B)	marsh checkerbloom	Meadows and seeps, riparian forests
<i>Sidalcea oregano</i> ssp. <i>valida</i> (CNPS 1B) <i>State and Federally Endangered</i>	Kenwood Marsh checkerbloom	Marshes and swamps
<i>Streptanthus batrachopus</i> (CNPS 1B)	Tamalpais jewel-flower	Closed-cone coniferous forest, chaparral (serpentine soil)
<i>Streptanthus brachiatus</i> ssp. <i>brachiatus</i> (CNPS 1B)	Socrates Mine jewel-flower	Closed-cone coniferous forest, chaparral (serpentine soil)
* <i>Streptanthus brachiatus</i> ssp. <i>hoffmanii</i> (CNPS 1B)	Freed's jewel-flower	Chaparral, Cismontane woodland (serpentine)
* <i>Streptanthus breweri</i> var. <i>hesperidis</i> (CNPS 1B)	green jewel-flower	Chaparral (openings), Cismontane woodland (serpentine, rocky)
<i>Streptanthus morrisonii</i> (<i>Species of Concern</i>)	see individual subspecies	Chaparral, Cismontane Woodland, Coniferous Forest
<i>Streptanthus morrisonii</i> ssp. <i>elatus</i> (CNPS 1B)	Three Peaks jewel-flower	Chaparral, serpentine soil
<i>Streptanthus morrisonii</i> ssp. <i>kruckebergii</i> (CNPS 1B)	Kruckeberg's jewel-flower	Cismontane woodland (serpentine)

Note: * denotes Whispering Pine quad

The above listed plant species that are primarily associated with marshes, swamps, valley land, coastal scrub, and desert scrub are not found within BMDSF because such habitats do not exist. There are two vernal pools on BMDSF. Direct removal, filling, or hydrological interruption is not proposed on or near these habitat types. No impact to these areas is anticipated.

According to the NDDDB sensitive plant list the following species have been associated with the Whispering Pines quad: elongate copper-moss, Loch Lomond button-celery, narrow-leaved daisy, bent-flowered fiddleneck, serpentine cryptantha, Freed's jewel-flower, green jewel-

flower, *Streptanthus morrisonii*, legenere, Lake County stonecrop, Sonoma manzanita, Konocti manzanita, Jepson's milk-vetch, Cobb Mountain lupine, glandular western flax, marsh checkerbloom, Snow Mountain buckwheat, Jepson's leptosiphon, few-flowered navarretia, many-flowered navarretia, Calisotoga ceanothus, Rincon Ridge ceanothus, Bolander's horkelia, Sonoma beardtongue, Indian Valley brodiaea, dwarf soaproot, Geyers dichanthelium, and California satintail. The botany surveys only identified two of the above species (Sonoma and Konocti manzanita).

Konocti manzanita and Sonoma manzanita could potentially be impacted by timber harvesting operations. Impacts to this species would primarily occur from construction of new skid trails. The established network of skid trails within the State Forest shall be used wherever possible, in order to minimize potential impacts. Considering the large population of these two manzanita species found throughout the State Forest, the proposed silvicultural methods, the use of existing landings, skid trails, and roads, and the lack of herbicide use it appears that no significant adverse impact to the population will occur.

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 BMDSF has resulted in forested landscape that is varied and has a mixture of various timber stand types and wildlife characteristics. The Project proposes no substantial changes to the management of BMDSF that would result in the significant changes in the current forest structure or wildlife habitat. The planned utilization of both unevenaged and evenaged management will continue to maintain a landscape that is varied and has a mixture of various wildlife habitats.

The development of BMDSF as an multiple aged forest will provide for a more biologically diverse habitat than is found in the current predominantly young forest. The single tree selection, group selection, and sanitation-salvage harvesting will improve the forest habitat by developing and maintaining a variety of crown levels, stand densities, and small openings in the forest. Group selection openings will provide habitat for wildlife species that prefer and need edge cover, the openings themselves will provide feeding habitat for rodents and the predators that feed on the rodents. The multilevel forest canopy will provide habitat for the wildlife that occupies the various levels of the forest canopy. The variable density crown canopy will allow different amounts of light to reach the forest floor which will determine the amount and types of vegetation which may grow on the forest floor and provide cover, food, and shelter for wildlife that utilizes the forest floor.

A goal of BMDSF is to maintain, restore, and enhance the occurrence of special habitat elements and unique habitats to promote species diversity and habitat quality. Considering this and the implementation of the management measures, it is anticipated that potential project impacts will be less than significant on 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 Department of Fish and Game.

- 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. Considering this and the implementation of the management measures, it is anticipated that any potential project impacts will be less than significant on riparian habitat and other sensitive natural communities. All projects conducted under the guidance of this Management Plan will have protection measures for all riparian areas.

- 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 vernal pools 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, watercourses, meadows, and vernal pools.

- 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 BMDSF has resulted in a forested landscape that is varied and has a mixture of various timber types and wildlife characteristics. The project proposes no substantial changes to the management of BMDSF 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 BMDSF annually. Watercourse protection measures, habitat retention areas, and large woody debris retention 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 BMDSF. A portion of the property located adjacent to the northern boundary of BMDSF contains a conservation easement, managed by the Land Trust of Napa County. The project does not conflict with the conservation easement.

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

In order to evaluate this question, BMDSF reviewed the information provided by LaTour Demonstration State Forest (LDSF) in their Initial Study for their Management Plan dated June 2008. LDSF is a 9033-acre state owned forested landscaped located in Shasta County managed by CAL FIRE. The information provided below is an excerpt from LDSF Initial Study. Similar tree species exist and management plans are proposed for La Tour and Boggs Mountain State Forests.

“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 1 summarizes estimated net carbon dioxide sequestration levels under proposed management at LDSF over a 100-year planning interval². The analysis shows substantial positive carbon sequestration benefits. Proposed management at LDSF will sequester a net CO₂ equivalent of 3,773 thousand tons of carbon at the end of 100 years.

Table 1. Estimated carbon sequestration at LDSF over the next 100 years.

1	2	3	4	5	6	7
Current standing inventory	CO ₂ stored in current standing timber	Standing inventory at end of 100-year planning interval	CO ₂ stored in standing timber at end of 100-year planning interval	Total harvest over 100-year planning interval	Total CO ₂ sequestered in forest products at end of 100-year planning interval	Total net CO ₂ 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.

² 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.

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:

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 planning. 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 CO₂ 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 CO₂ equivalent from harvesting emissions. Including vehicle and building emissions, the total GHG emissions estimate for LDSF is 46,861 tons of CO₂ 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 CO₂) 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
IV. Biological Resources. Would the project:				
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

BMDSF supports a variety of wildlife and their associated habitats. Timber harvest activities on the state forest have the highest potential to adversely impact biological resources. BMDSF 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 vernal pools and springs
- 4) Protect riparian zones and restore where needed
- 5) Identify potential stands for late successional management
- 6) Design forest management activities based on landscape perspectives. Components to consider include horizontal and vertical forest structure, vegetation density, edge effect, corridor size, and biological diversity
- 7) Maintain conifer and hardwoods in buffer zones along watercourses and springs to 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
- 10) Frequent use of broadcast burning will enhance wildlife habitat by removing areas of old decadent brush
- 11) Adopt measures to monitor the implementation plant protection guidelines established by Department of Fish and Game regarding two rare species of manzanita (*Sonoma manzanita* - *Arctostaphylos canescens* ssp. *sonomensis* and *Konocti manzanita* - *Arctostaphylos manzanita* ssp. *elegans*). These species are listed as CNPS 1B species
- 12) Timber harvesting operations will utilize the existing road system thereby eliminating the need for new road construction
- 13) No harvesting of trees greater than 40 inches DBH will be proposed for harvest throughout the forest

Several management goals of BMDSF 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. A goal of BMDSF is to balance 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 lower than that of many private owners due to additional landscape and wildlife habitat interests on BMDSF as a public forest and the goal to maintain the widest 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 BMDSF Option A plan. The long-term sustained yield (LTSY) for all conifer stand types on BMDSF average between 300 and 350 board feet per acre per year, or roughly 1 million board feet annually. The corresponding near term sustainable harvest level through 2016 is 500,000 board feet per year. The annual harvest is less than the annual growth, due to the constraints on forest management activities imposed by other forest values on BMDSF. In addition to the constraints placed on the calculation of the LTSY in the harvest schedule, BMDSF also has discretionary commitments to planned management practices for non-timber resources. BMDSF future harvest schedule is also guided by the BMDSF Option A. Stands were considered in terms of unevenaged management, prescribing appropriate silviculture methods for 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.

Based on field work and forest inventory data, stands were assessed for meeting the Board of Forestry late-successional forest definition. No stands meeting the criteria of the definition were found on BMDSF. 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.

BMDSF has two California Wildlife habitat Relationship (WHR) System habitat types; Ponderosa Pine and Douglas-fir. Brush or meadows cover approximately 2% of the total land base. The Ponderosa Pine habitat type is mainly on the south and west slopes and the Douglas-fir habitat type is mainly on the north and east slopes.

There are no Class I watercourses located within BMDSF. Class II and III watercourses will be provided protection measures consistent with the Forest Practice Rules or such protection measures will go above and beyond the Rules. The buffer zones will assist in achieving the goals of BMDSF provide filter strips for sediment and migration corridors for wildlife.

BMDSF individually marks all harvest or leave trees. BMDSF 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.

BMDSF 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. 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 conducted under the guidance of this management plan.

INITIAL BIOLOGICAL SCOPING

The *Natural Diversity Data Base (NDDDB)* was used as a scoping tool to check if any rare, threatened, endangered, or special concern species and/or their habitat are located on BMDSF. A nine quadrangle query was conducted, which included Whispering Pines 7.5 minute quad, and its surrounding eight quads. There are no recorded occurrences of state or federally listed threatened or endangered species on BMDSF.

Baseline scoping involved a review of the Plant and Wildlife Resources Inventory of Boggs Mountain Demonstration State Forest, which was conducted from May 1991 - August 1992 pursuant to Interagency Agreement No. 8CA16857 between CDF and the Department of Biological Sciences, CA State University, Sacramento. To keep abreast of the current species list, the BMDSF staff periodically accesses the Department of Fish and Game's Biogeographic Information and Observation System (BIOS) database, which provides GIS-formatted information from the NDDDB and Northern Spotted Owl (NSO) databases. Protocol NSO surveys are conducted annually by BMDSF staff. No detections of NSO have been observed by BMDSF staff since 2005.

CNDDDB sensitive plant and wildlife species within the surrounding nine quad search was most recently conducted as part of botanical surveys for the preparation of several Timber

Harvesting Plans (reports dated August 2007). The following species have either been found within the projects or have potential habitat within the projects: foothill yellow-legged frog, Northern Spotted Owl, Sonoma manzanita, and Konocti manzanita.

Foothill yellow-legged frog: The NDDDB indicates that the Foothill yellow-legged frog (*Rana boylei*), a Species of Concern, is within the assessment area of BMDSF. The state forest contains possible habitat for this species within Mill Creek. The last sighting of this species was in June of 1994 near the confluence of Malo Creek and Big Canyon Creek. This location is outside of the state forest boundary. *Rana boylei* exists in riparian habitat. Specific WLPZ mitigation measures for the watercourses will be included within project guidelines which are adequate for the protection of *Rana boylei* habitat. No Class I watercourses exist within the state forest. There is very limited habitat for amphibians. The Class II watercourses located within BMDSF dry up during the summer months, thereby not supporting viable populations of foothill-yellow legged frog. Significant adverse impacts to this species as a result of the proposed projects are not anticipated.

Northern Spotted Owl: From April through July of 2005, 2006, 2007 site visits were made by BMDSF staff to established calling points and spotted owls were called by voice and using the tape supplied by Department of Fish and Game. Multiple visits were made to calling point #33, which was the location of a 1999 single-owl sighting near Malo Creek. Two owls responded on July 7, 2005 after four visits to the calling point. No NSO responses were recorded during the 2006 and 2007 surveys.

According to Carol Hill, former owner of Boggs Mountain Inner Coast Range Reserve, spotted owls were seen in 1968; again in 1979; and one was heard in 1986 on the Reserve. The Reserve is adjacent to the state forest's northern boundary. The last recorded sighting of a NSO on BMDSF was in 1999. Because of the long period between sightings, there is a good possibility that the owls seen and heard during the 1999 and 2005 surveys were transient.

A CNDDDB sensitive wildlife species nine quad search was conducted. The following species were evaluated for potential adverse impacts.

Species (status)	Common Name	Habitat
* <i>Rana boylei</i> (Species of Concern)	foothill yellow-legged frog	See above
<i>Agelaius tricolor</i> (Species of Concern)	Tricolored blackbird	wetlands
<i>Coccyzus americanus occidentalis</i> (State Endangered)	Western yellow-billed cuckoo	Densely foliated, deciduous trees and shrubs, especially willows, required for roosting sites
<i>Lavinia hitch</i> (Species of Concern)	Clear Lake hitch	Native to Clearlake
<i>Archoplites interruptus</i> (Species of Concern)	Sacramento perch	Sluggish, vegetated waters of sloughs and lakes
<i>Antrozous pallidus</i> (Species of Concern)	pallid bat	Roosts in caves, crevices, mines, tree hollows. Needs water. Prefers rocky outcrops, cliffs with access

		to open habitats for foraging
<i>Clemmys marmorata</i> <i>marmorata</i> (Species of Concern)	northwestern pond turtle	Wetlands, including ponds, marshes, lakes, streams, irrigation ditches, and vernal pools
<i>Dubiraphia brunnescens</i> (no listing)	brownish dubiraphian riffle beetle	Submerged roots (e.g. willows), on rocky lakeshores
<i>Falco peregrinus anatum</i> (State Endangered – Federally delisted)	American peregrine falcon	Requires protected cliffs and ledges for cover
<i>Falco mexicanus</i> (Species of Concern)	prairie falcon	Nests in cliffs; forages in open terrain
<i>Progne subis</i> (Species of Concern)	purple martin	Frequents old-growth, multi-layered, open forests with snags
<i>Lasionycteris noctivagans</i> (Species of Concern)	silver-haired bat	Roosts in caves, crevices, tree hollows. Needs water. Forest dweller
<i>Lasiurus cinereus</i> (Species of Concern)	hoary bat	Open habitats with access to trees for cover and habitat edges for feeding
<i>Corynorhinus townsendii</i> (Species of Concern)	Townsend's big-eared bat	Requires caves, mines, tunnels or other human made structures for roosting; prefers mesic habitats
<i>Hydrochara rickseckeri</i> (no listing)	Ricksecker's water scavenger beetle	Habitat is not known for this species, but most others in this widespread genus inhabit a variety of habitats including artificial ponds. However, the very restricted range of this one contrasts strikingly with others in the genus and could indicate a more specialized species. Adults can fly but are aquatic, as are larvae
<i>Trachykele hartmani</i> (no listing)	metallic wood-boring beetle	Not known
<i>Pandion haliaetus</i> (Species of Concern)	osprey	Requires open clear water for foraging; uses large trees, snags in open forest habitats for cover and nesting
<i>Elanus leucurus</i> (no listing)	white-tailed kite	Frequents montane pine and fir habitats with large trees and snags

<i>Hysteroecarpus traskii</i> <i>pomo</i> (Species of Concern)	Russian River tule perch	Only found in Russian River and its tributaries
<i>Calasellus californicus</i> (no listing)	An isopod	Freshwater
<i>Aquila chrysaetos</i> (Species of Concern)	golden eagle	Rolling foothills, mountain terrain, cliffs, and rock outcrops
<i>Saldula usingeri</i> (no listing)	Wilbur Springs shorebug	Not known
<i>Haliaeetus leucocephalus</i> Federally Threatened State Endangered	bald eagle	Requires large old growth trees or snags in remote mixed stands near water
<i>Oncorhynchus mykiss irideus</i> (Federally Threatened)	Steelhead – Central CA Coast ESUs	Habitat that sustains fish migration and spawning, habitat that supports aquatic habitat for nonfish aquatic species
* <i>Lasiurus blossevillii</i> (no listing)	western red bat	Prefers edges or habitat mosaics that have trees for roosting and open areas for foraging

Note: * denotes Whispering Pine quad

Habitats such as wetlands, caves, mines, tunnels, late successional forest stands, rolling foothills, and open bodies of water do not exist within BMDSF. Therefore species associated with such habitat elements will not be significantly affected by the proposed projects. Only two species listed in the above table are identified with the Whispering Pines quad. They are foothill yellow-legged frog and the western red bat. There have been no sightings of these two species or the other species identified in the above table. Harvesting of trees greater than 40" DBH is prohibited. Snags will not be removed unless they pose a safety hazard.

Board of Forestry Sensitive Species include Bald eagle, Golden eagle, Great blue heron, Great egret, Northern goshawk, Osprey, Peregrine falcon, California Condor, Great gray owl, Northern spotted owl, and Marbled Murrelet.

Species (status)	Common Name	Habitat
<i>Ardea herodias</i>	Great blue heron	Secluded groves of tall trees near shallow water feeding areas
<i>Ardea alba</i>	Great egret	Requires groves of trees suitable for nesting and roosting, relatively isolated from human activities, near aquatic foraging areas
<i>Accipiter gentilis</i>	Northern goshawk	Dense, mature conifer and deciduous forest, interspersed with meadows,

		other openings, and riparian areas required
<i>Pandion haliaetus</i> (Species of Concern)	osprey	Requires open clear water for foraging; uses large trees, snags in open forest habitats for cover and nesting
<i>Falco peregrinus</i>	Peregrine falcon	Frequents bodies of water in open areas with cliffs and canyons nearby for cover and nesting
<i>Gymnogyps californianus</i>	California condor	Requires vast expanses of open savannah, grasslands, and foothill chaparral, with cliffs, large trees, and snags for roosting and nesting
<i>Strix nebulosa</i>	Great grey owl	Forages in wet meadows and nests and roosts in nearby dense coniferous forest
<i>Strix occidentalis</i>	Northern spotted owl	See above section titled NSO
<i>Brachyramphus marmoratus</i>	Marbled murrelet	Breeders require mature, coastal coniferous forest for nesting and nearby coastal waters for feeding
<i>Aquila chrysaetos</i> (Species of Concern)	golden eagle	Rolling foothills, mountain terrain, cliffs, and rock outcrops
<i>Haliaeetus leucocephalus</i> Federally Threatened State Endangered	bald eagle	Requires large old growth trees or snags in remote mixed stands near water

Northern goshawk range is located outside of BMDSF. The habitat range for the California condor is Southern California and is well outside the range of BMDSF. The habitat range for the Great gray owl is within the eastern side of the Sierra Nevada range and well outside the range of BMDSF. Marbled murrelet is a coastal species and its range is well outside BMDSF. There are no large bodies of water or snags of sufficient size within the state forest or immediately adjacent to the plan area for the bald eagle. BMDSF does not contain rolling foothills nor cliffs or rock outcrops of sufficient size for the golden eagle. There are no large bodies of water within BMDSF or immediately adjacent to the BMDSF for the Peregrine falcon, Great blue heron, or Great egret. Considering the lack of habitat for these Sensitive Species, no significant adverse impacts are expected to occur as a result of the proposed project. Habitat does exist for the Northern Spotted Owl; please see text section titled “Northern Spotted Owl” above.

Plants

The CNPS on line inventory of rare and endangered plants was consulted. The nine quad search resulted in the following plants. Rarefind and BIOS databases were also searched. CNPS ranking and state and federal ranking is also identified.

Species (status)	Common Name	Habitat
<i>*Amsinckia lunaris</i> (CNPS 1B)	bent-flowered fiddleneck	Cismontane woodland, grassland
<i>Amorpha californica</i> var. <i>napensis</i> (CNPS 1B)	Napa false indigo	Broadleafed upland forest, chaparral, cismontane woodland
<i>*Arctostaphylos</i> <i>canescens</i> ssp. <i>sonomensis</i> (CNPS 1B)	Sonoma manzanita	Chaparral, coniferous forest, occasional serpentine
<i>*Arctostaphylos</i> <i>manzanita</i> ssp. <i>elegans</i> (CNPS 1B)	Konocti manzanita	Chaparral, Cismontane woodland, Coniferous Forest
<i>Arctostaphylos</i> <i>stanfordiana</i> ssp. <i>raichei</i>	Raiche's Manzanita	Chaparral, Lower montane coniferous forest, often rocky serpentine soil
<i>*Astragalus rattanii</i> var. <i>jepsonianus</i> (CNPS 1B)	Jepson's milk-vetch	Grassland, Chaparral, Cismontane woodland
<i>Brodiaea californica</i> var. <i>leptandra</i> (CNPS 1B)	narrow-anthered California brodiaea	Broad-leafed upland forest, Chaparral, Cismontane woodland, lower montane coniferous forest, valley and foothill grassland
<i>*Brodiaea coronaria</i> ssp. <i>rosea</i> (CNPS 1B) State Endangered	Indian Valley brodiaea	Closed-cone coniferous forest, Chaparral, Cismontane woodland, valley and foothill grassland
<i>Calystegia purpurata</i> ssp. <i>saxicola</i> (CNPS 1B)	coastal bluff morning- glory	Coastal dunes, coastal scrub, North Coast coniferous forest
<i>*Ceanothus confusus</i> (CNPS 1B)	Rincon Ridge ceanothus	Closed-cone coniferous forest, Chaparral, Cismontane woodland
<i>*Ceanothus divergens</i> (CNPS 1B)	Calistoga ceanothus	Chaparral, rocky serpentine soil, volcanic
<i>Ceanothus sonomensis</i> (CNPS 1B)	Sonoma ceanothus	Chaparral (serpentine or volcanic)
<i>*Chlorogalum</i>	dwarf soaproot	Chaparral, serpentine

<i>pomeridianum</i> var. <i>minus</i> (CNPS 1B)		
* <i>Cryptantha clevelandii</i> var. <i>dissita</i> (CNPS 1B)	Serpentine cryptantha	Chaparral, serpentine
* <i>Dichantherium</i> <i>lanuginosum</i> var. <i>thermale</i> (CNPS 1B) State Endangered	Geysers dichantherium	Closed-cone coniferous forest, riparian, valley foothill and grassland
<i>Eriastrum brandegeeeae</i> (CNPS 1B)	Brandegee's eriastrum	Chaparral, Cismontane woodland
* <i>Erigeron angustatus</i> (CNPS 1B)	narrow-leaved daisy	Chaparral, serpentine soil, volcanic

* <i>Eriogonum nervulosum</i> (CNPS 1B)	Snow Mountain buckwheat	Chaparral, serpentine soil
* <i>Eryngium constancei</i> (CNPS 1B) State and Federally Endangered	Loch Lomond button-celery	Vernal pools
<i>Fritillaria pluriflora</i> (CNPS 1B)	adobe-lily	Chaparral, Cismontane woodland, valley and foothill grassland
<i>Gratiola heterosepala</i> (CNPS 1B) State Endangered	Boggs Lake hedge-hyssop	Marshes, swamps, vernal pools
<i>Harmonia hallii</i> (CNPS 1B)	Hall's harmonia	Chaparral, serpentine soil
* <i>Hesperolinon adenophyllum</i> (CNPS 1B)	glandular western flax	Chaparral, Cismontane woodland, valley and foothill grassland (usually serpentine)
* <i>Hesperolinon bicarpellatum</i> (CNPS 1B)	two-carpellate western flax	Serpentine Chaparral
<i>Hesperolinon didymocarpum</i> (CNPS 1B) State Endangered	Lake County western flax	Chaparral, Cismontane woodland, valley and foothill grassland (usually serpentine)
<i>Hesperolinon serpentinum</i> (CNPS 1B)	Napa western flax	Chaparral, serpentine soil
* <i>Horkelia bolanderi</i> (CNPS 1B)	Bolander's horkelia	Chaparral, Cismontane woodland, valley and foothill grassland (vernally mesic areas), meadows, seeps
* <i>Imperata brevifolia</i> (CNPS 2)	California satintail	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps, riparian scrub

<i>Lasthenia burkei</i> (CNPS 1B) <i>State and Federally Endangered</i>	Burke's goldfields	Meadows and seeps, vernal pools
<i>Layia septentrionalis</i> (CNPS 1B)	Colusa layia	Chaparral, Cismontane woodland, valley and foothill grassland (sandy, serpentine)
* <i>Legenere limosa</i> (CNPS 1B)	legenere	Vernal pools
* <i>Leptosiphon jepsonii</i> (CNPS 1B)	Jepson's leptosiphon	Chaparral, Cismontane woodland (usually volcanic)
<i>Limanthes vinculans</i> (CNPS 1B) <i>State and Federally Endangered</i>	Sebastopol meadowfoam	Meadows and seeps, valley and foothill grassland, vernal pools
* <i>Lupinus sericatus</i> (CNPS 1B)	Cobb Mountain lupine	Broad-leafed upland forest, Chaparral, Cismontane woodland, lower montane coniferous forest
<i>Micropus amphibolus</i> (CNPS 3)	Mt. Diablo conttonweed	Broad-leafed upland forest, Chaparral, Cismontane woodland, lower montane coniferous forest, valley and foothill grassland (rocky)
* <i>Mielichhoferia elongata</i> (CNPS 2)	elongate copper-moss	Cismontane woodland (usually vernal mesic)
<i>Monardella villosa</i> ssp. <i>globosa</i> (CNPS 1B)	robust monardella	Broad-leafed upland forest, Chaparral (openings), Cismontane woodland, coastal scrub, valley and foothill grassland
<i>Myosurus minimus</i> ssp. <i>apus</i> (CNPS 3)	little mousetail	Valley and foothill grassland, vernal pools
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> (CNPS 1B)	Baker's navarretia	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools
* <i>Navarretia leucocephala</i> ssp. <i>pauciflora</i> (CNPS 1B) <i>Federally Endangered</i>	few-flowered navarretia	Volcanic ash, vernal pools

<i>State Threatened</i>		
* <i>Navarretia leucocephalia</i> ssp. <i>plieantha</i> (CNPS 1B) <i>State and Federally Endangered</i>	many-flowered <i>navarretia</i>	Volcanic ash, vernal pools
<i>Navarretia myersii</i> ssp. <i>deminuta</i> (CNPS 1B)	small pincushion <i>navarretia</i>	Vernal pools
<i>Orcuttia tenuis</i> (CNPS 1B) <i>Federally Threatened State Endangered</i>	slender Orcutt grass	Vernal pools
* <i>Penstemon newberryi</i> var. <i>sonomensis</i> (CNPS 1B)	Sonoma beardtongue	Chaparral
<i>Potamogeton zosteriformis</i> (CNPS 2)	eel-grass pondweed	Marshes and swamps (assorted freshwater)
* <i>Sedella leicoarpa</i> (CNPS 1B) <i>State and Federally Endangered</i>	Lake County stonecrop	Cismontane woodland, valley and foothill grassland, vernal pools (volcanic)
* <i>Sidalcea oregano</i> ssp. <i>hydrophila</i> (CNPS 1B)	marsh checkerbloom	Meadows and seeps, riparian forests
<i>Sidalcea oregano</i> ssp. <i>valida</i> (CNPS 1B) <i>State and Federally Endangered</i>	Kenwood Marsh checkerbloom	Marshes and swamps
<i>Streptanthus batrachopus</i> (CNPS 1B)	Tamalpais jewel-flower	Closed-cone coniferous forest, chaparral (serpentine soil)
<i>Streptanthus brachiatus</i> ssp. <i>brachiatus</i> (CNPS 1B)	Socrates Mine jewel-flower	Closed-cone coniferous forest, chaparral (serpentine soil)
* <i>Streptanthus brachiatus</i> ssp. <i>hoffmanii</i> (CNPS 1B)	Freed's jewel-flower	Chaparral, Cismontane woodland (serpentine)
* <i>Streptanthus breweri</i> var. <i>hesperidis</i> (CNPS 1B)	green jewel-flower	Chaparral (openings), Cismontane woodland (serpentine, rocky)
<i>Streptanthus morrisonii</i> (<i>Species of Concern</i>)	see individual subspecies	Chaparral, Cismontane Woodland, Coniferous Forest
<i>Streptanthus morrisonii</i> ssp. <i>elatus</i> (CNPS 1B)	Three Peaks jewel-flower	Chaparral, serpentine soil
<i>Streptanthus morrisonii</i> ssp. <i>kruckebergii</i> (CNPS 1B)	Kruckeberg's jewel-flower	Cismontane woodland (serpentine)

Note: * denotes Whispering Pine quad

The above listed plant species that are primarily associated with marshes, swamps, valley land, coastal scrub, and desert scrub are not found within the plan area because such habitats do not exist within BMDSF. There are two vernal pools on BMDSF. Direct removal, filling, hydrological interruption are not proposed on or near these habitat types. No impact to these areas is anticipated.

According to the CNDDDB sensitive plant list the following species have been associated with the Whispering Pines quad: elongate copper-moss, Loch Lomond button-celery, narrow-leaved daisy, bent-flowered fiddleneck, serpentine cryptantha, Freed's jewel-flower, green jewel-flower, *Streptanthus morrisonii*, legenere, Lake County stonecrop, Sonoma manzanita, Konocti manzanita, Jepson's milk-vetch, Cobb Mountain lupine, glandular western flax, marsh checkerbloom, Snow Mountain buckwheat, Jepson's leptosiphon, few-flowered navarretia, many-flowered navarretia, Calisotoga ceanothus, Rincon Ridge ceanothus, Bolander's horkelia, Sonoma beardtongue, Indian Valley brodiaea, dwarf soaproot, Geyers dichanthelium, and California satintail. The botany surveys only identified two of the above species (Sonoma and Konocti Manzanita).

Two sensitive plant taxa were identified during the recent botanical surveys (Konocti and Sonoma manzanitas). Konocti manzanita and Sonoma manzanita could potentially be impacted by timber harvesting operations. Impacts to this species would primarily occur from construction of new skid trails. The established network of skid trails within the state forest shall be used wherever possible, in order to minimize potential impacts. Considering the large population of these two manzanitas found throughout the state forest, the proposed silvicultural methods, the use of existing landings, skid trails, and roads, and the lack of herbicide use it appears that no significant adverse impact to the population will occur.

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 BMDSF has resulted in forested landscape that is varied and has a mixture of various timber stand types and wildlife characteristics. The Project proposes no substantial changes to the management of BMDSF 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.

The development of BMDSF as an all-aged forest will provide for a more biologically diverse habitat than is found in the current predominantly young forest. The single tree selection, group selection, and sanitation-salvage harvesting will improve the forest habitat by developing and maintaining a variety of crown levels, stand densities, and small openings in the forest. Group selection openings will provide habitat for wildlife species that prefer and need edge cover, the openings themselves will provide feeding habitat for rodents and the predators that feed on the rodents. The multilevel forest canopy will provide habitat for the wildlife that lives in the various levels of the forest canopy. The variable density crown canopy will allow varying amounts of light to reach the forest floor which will determine the amount and types of vegetation which may grow on the forest floor and provide cover, food, and shelter for wildlife that utilizes the forest floor.

LDSFA goal of BMDSF is to maintain, restore, and enhance the occurrence of special habitat elements and unique habitats to promote species diversity and habitat quality. Considering this and the implementation of the management measures, it is anticipated that any potential 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 Department of Fish and Game.

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. Considering this and the implementation of the management measures, it is anticipated that any potential project impacts will be less than significant on riparian habitat and other sensitive natural communities. All projects conducted under the guidance of this management plan will have protection measures for all riparian areas.

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 vernal pools 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, watercourses, meadows, and vernal pools.

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 BMDSF has resulted in forested landscape that is varied and has a mixture of various timber stand types and wildlife characteristics. The Project proposes no substantial changes to the management of BMDSF 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 BMDSF annually**. Watercourse protection measures, habitat retention areas, retention of trees greater than 40 inches DBH, and large woody debris retention 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 BMDSF.

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

In order to evaluate this question, BMDSF reviewed the information provided by LaTour Demonstration State Forest (LDSF) in their Initial Study for their Management Plan dated March 28, 2008. LDSF is a 9033-acre state owned forested landscaped located in Shasta County managed by CAL FIRE. The information provided below is an excerpt from LDSF Initial Study. Similar tree species exist and similar management plans area proposed for La Tour and Boggs State Forests.

“This analysis evaluates whether climate change and greenhouse gas (GHG) issues related to management of LDSFLDSF 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 LDSFLDSF over a 100-year planning interval³. The analysis shows substantial positive carbon sequestration benefits. Proposed management at LDSFLDSF will sequester a net CO₂ equivalent of 3,773 thousand tons of carbon at the end of 100 years.

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

1	2	3	4	5	6	7
Current standing inventory	CO ₂ stored in current standing timber	Standing inventory at end of 100-year planning interval	CO ₂ stored in standing timber at end of 100-year planning interval	Total harvest over 100-year planning interval	Total CO ₂ sequestered in forest products at end of 100-year planning interval	Total net CO ₂ 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.

³ 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.

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:

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 planning. 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 CO₂ 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 CO₂ equivalent from harvesting emissions. Including vehicle and building emissions, the total GHG emissions estimate for LDSFLDSF is 46,861 tons of CO₂ 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 LDSFLDSF 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 CO₂) 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 LDSFLDSF 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
V. Cultural Resources. Would the project:				
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

Numerous archaeological surveys have been conducted on BMDSF. These surveys have been extensive and the forest has complete coverage as a result of the surveys. Two reports, described below, contain a summary of earlier State Forest archeological surveys.

The report titled: *A Boggs Mountain Demonstration State Forest Prehistoric Archeological Overview* by Christian Gerike and Suzanne B. Stewart, Sonoma State University Academic Foundation, Inc., Rohnert Park, CA December 1988, summarizes earlier archeological surveys done for specific projects, such as geothermal exploration and timber harvest planning. Approximately 2500 acres of BMDSF is covered in this report.

A second report: *A History and Prehistory of Boggs Mountain Demonstration State Forest, Lake County, California* by Brian D. Dillion, Ph.D., Consulting Archeologist in cooperation with the Center for Public Archeology, California State University, Northridge, for the California Department of Forestry and Fire Protection, CDF Archeological Reports #15, May 1995, summarizes prior surveys and contains the results of the associated 1000-acre survey which included the remainder of the unsurveyed State Forest lands as of August 1991.

The above reports identified, mapped, and summarized the archeological resources that have been found on BMDSF up until 1991. A property-wide records check was done by State Archaeologist J. Charles Whatford for Boggs Mountain Demonstration State Forest on February 1, 2006. The document is over 200 pages and is on file at the Boggs Mountain Forest Office (NWIC File No. 05-CDF-7).

There are no known archaeological resources that would be impacted by BMDSF 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. 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 BMDSF staff who are trained to conduct archaeological surveys (Foster, 2006).

BMDSF's cultural resources management procedures are based on CAL FIRE's statewide Management Plan for Historic Buildings and Archaeological Sites (Foster and Thornton, 2001) and its accompanying Environmental Impact Report (Foster and Sosa, 2001) which prescribe general measures for identifying, evaluating, and managing heritage resources on CAL FIRE lands statewide including BMDSF. 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 BMDSF, 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 BMDSF.

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 BMDSF. No human remains or associated grave goods were encountered during the archaeological survey work on BMDSF and human remains or grave goods are not likely to be encountered during project activities. However, the possibility exists for human remains to occur within the project area. If human remains were unearthed, but not protected in accordance with procedures in state law (see below), this could be a potentially significant impact. BMDSF 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 Lake County Coroner and the CAL FIRE 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 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
VI. Geology and Soils. Would the project:				
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"/>	X	<input 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 #4B (Fault Activity Map of California and Adjacent Areas) found no active faults or faults with historic movement mapped within or immediately adjacent to BMDSF. The closest faults with Holocene displacement are part of the Mayacamas Fault located approximately 15 miles west of BMDSF near Geyserville. No surface rupture from fault activity is expected to occur on BMDSF.

ii) Strong seismic ground shaking?

Strong seismic shaking on BMDSF is likely. The California Geological Survey Probabilistic Seismic Hazards Ground Motion map indicates that BMDSF and immediate vicinity has a 10% probability of exceeding a maximum peak ground acceleration of 30 to 40 percent g^* in 50 years. No areas in BMDSF or immediate vicinity are known to have been damaged by historic earthquakes (historic means 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 BMDSF, therefore the probability of seismic-induced liquefaction is very low.

iv) Landslides?

The few deep-seated landslides known to exist along the northern slopes of Boggs Mountain 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 THP review and comment or other CEQA review. This review would minimize the likelihood of destabilizing operations being conducted. The California Geology Survey (CGS) is part of the multiagency review team that provides comments as well as expertise during the review of THPs. CGS staff has a Certified Engineering Geologists (CEG) that participates in field review of individual projects, including THPs.

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 BMDSF 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.

BMDSF has included a Road Maintenance Plan as part of the revised Management Plan. The intent of this Road Maintenance Plan is to provide a systematic program to ensure that the design, reconstruction, use, maintenance, and surfacing of BMDSF'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 BMDSF roads occurred between 2000 and 2003 that assessed the entire road

system and watercourse crossings. The assessment identified road segments and crossings that posed potential hazards associated with the road system. The assessment of BMDSF roads is an ongoing process. Many issues are scheduled for repair concurrently with future THPs. Soil erosion from BMDSF roads will be minimized and impacts to water quality will be reduced to less than significant with the implementation of the Road Maintenance Plan. As stated in the Road Maintenance Plan:

“Upgrading of the road network is essential for long term resource management, administrative access, fire control and recreational purposes. A major goal of this plan is to establish a road system that is largely self-maintaining and/or requiring low levels of maintenance. Road upgrading will minimize fine sediment contributions to stream channels and reduce the risk of serious erosion and sediment yield when large magnitude storms occur. A variety of upgrade techniques such as culvert upsizing, converting ditched insloped roads to outsloped alignments and installing rolling dips as well as other treatments will be utilized throughout the road network. A systematic approach to road management problems was employed in order to identify, prioritize and cost-effectively treat current and future sediment sources on the forest.”

The Road Maintenance Plan also includes supplemental information such as a document prepared by Pete Cafferata (hydrologist with CAL FIRE) and Michael Wopat (CGS). This information discusses how to design watercourse crossings for passage of the 100-year flood event.

Timber harvest activities are another potential source of soil erosion and sediment delivery to watercourses. The Forest Practice Rules, which regulate timber harvest activities, 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, 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 requiring immediate correction. Where required, BMDSF shall obtain a 1600 permit from the Department of Fish and Game for the installation or repair of watercourse crossings.

Additionally, BMDSF has restricted harvests to silvicultural prescriptions compatible with unevenaged management. Such harvesting methods maintain vegetative cover, rain drop interception, evapotranspiration, and a source for needle cast, thereby reducing the potential for soil erosion.

The adherence to the Forest Practice Rules, WQ waiver, Department of Fish and Game permits and the implementation of unevenaged management silviculture will 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 BMDSF, such projects are subject to THP review or other CEQA review and comment. This process would minimize the likelihood of destabilizing operations occurring as a result of proposed projects.

- 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 BMDSF and no construction of major new structures are planned.

- 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?***

The BMDSF Forest Office and Boggs Mountain Helitack Base are co-located and are plumbed into the local sewer system. No other septic systems are planned to be installed on BMDSF. 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
VII. Hazards and Hazardous Materials. Would the project:				
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 checked="" type="checkbox"/>	<input 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 BMDSF or used on BMDSF 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 to 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 the BMDSF Forest Office. 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. 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. The storage of potentially hazardous materials on BMDSF is in accordance to the MSDS and any buildings that are used for storage will display appropriate placards.

- Small amounts of equipment fuel, oils and burn mix are stored in petroleum approved containers in a placarded outbuilding at the Boggs Mountain Helitack Base. There is also a 5,000 gallon Jet-A petroleum storage tank located at the BMDSF parking lot and a 800 gallon compartmentalized diesel and gasoline storage tank at the Helitack Base. 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 may be used on BMDSF are hygroscopic salts and resins, which are considered to be non-hazardous as per MSDS information provided to BMDSF. 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 BMDSF, 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 are minimized, eliminated, and controlled if they occur. Additionally over 90% of dust abatement on BMDSF is accomplished by use of water and water trucks.
- Herbicides may be used on BMDSF for the periodic control of invasive or noxious weeds. 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).

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 MSDS's 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 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, and/or biological resources. Mitigation examples include but are not limited to drift control measures, buffers, avoidance, weather restrictions, and timing.

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 PCA. New products, formulations, and application techniques may provide better control and improved environmental toxicology profiles.

The Lake County Agricultural Commissioner has responsibility for compliance and enforcement actions, registration of businesses that perform pest control in Lake County, issuing Restricted Materials Permits and Operator identification numbers and other regulatory responsibilities. The Regional 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 the guidance of this Management Plan, BMDSF will review the recommended herbicides, surfactants, and adjuvants intended use and the possible environmental effects of each. BMDSF 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 Environmental Protection Agency and the Department of Pesticide Regulation (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/> .

BMDSF will also research 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, and instructions on the product label. Additionally when herbicides are used on BMDSF all herbicide containers must be secured when 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 BMDSF staff. When herbicides are handled and applied according to the product label instruction, PCA recommendations, and the MSDS, significant adverse impacts to people, wildlife, water resources and the environment are not anticipated.

The measures described above 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 the mitigation measures discussed above reduces the probability of any potential 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 the mitigation measures discussed above reduces the probability of any potential 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?*

Cobb Elementary School is located on a 10-acre parcel surrounded on three sides by BMDSF. Hazardous materials (Jet-A, diesel and gasoline) will be used or handled approximately 1,650 feet uphill from the school property at the Boggs Mountain Helitack Base.

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?*

BMDSF 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?*

BMDSF 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?*

BMDSF 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. The Forest Practice Rules (14 CCR 938.3) requires all logging roads remain passable during 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 BMDSF.

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?

The forest has common boundaries with eight subdivisions and approximately 70 private landowners. Most of the adjacent ownerships on the west side of the forest have been developed for residential subdivisions. There are also many residences intermixed with adjacent wildlands to the north, east, and south of BMDSF. Several management activities have varying levels of risk to cause a wildfire. These activities are timber operations, road maintenance, campgrounds, and prescribed 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 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 designated campsites and the campers are required to register thereby informing them of the rules on the State Forest. Additionally the 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.

In order to reduce the risk of wildfire, BMDSF maintains shaded fuel breaks along the heavily used roads and a fuels reduction program throughout the forest. The primary method of fuels reduction is through prescribed burning. All prescribed burning is conducted under specific meteorological conditions with the appropriate number of CAL FIRE personnel and equipment to maintain control.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. Hydrology and Water Quality. Would the project:				
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 BMDSF. Forest roads and timber harvest activities are the primary sources of soil erosion caused by BMDSF 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 BMDSF will be less than significant. The adherence to the Forest Practice Rules, WQ waiver, Department of Fish and Game permits and the implementation of the management measures will ensure 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)?*

The campgrounds on BMDSF do not have water. Water is available at the parking lot located across from the Forest Office. Water for this supply is obtained from the local water district. This site has minimal use and would not significantly deplete ground water. The Forest Office can serve as a residence during the summer months; however currently the building is used solely as an office. Across from the Forest Office is the Boggs Mountain Helitack station which is used as a residence year round. Water for this residence is obtained from the local water district. No active wells are located on BMDSF.

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 have the potential to alter the existing drainage patterns and cause substantial on or off site erosion. The adherence to the Forest Practice Rules, WQ waiver, Department of Fish and Game permits and the implementation of the management measures 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 Forest Practice Rules, WQ waiver, Department of Fish and Game permits and the implementation of the management measures will 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 BMDSF.

f) Would the project otherwise substantially degrade water quality?

Degradation to water quality caused from management activities at BMDSF will be less than significant. The adherence to the Forest Practice Rules, WQ waiver, Department of Fish and Game permits and the implementation of the management measures will ensure 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.

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 BMDSF management activities will cause on or off site flooding is less than significant. The adherence to the Forest Practice Rules, WQ waiver, Department of Fish and Game permits and the implementation of the management measures will 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
VIII. Hydrology and Water Quality. Would the project:				
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"/>

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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"/>
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f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Discussion

Soil erosion and sediment delivery to watercourses has the highest potential to degrade water quality on BMDSF. Forest roads and timber harvest activities are the primary sources of soil erosion caused by BMDSF 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 BMDSF will be less than significant. The adherence to the FPRs, WQ waiver, DFG permits and the implementation of the management measures will ensure 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)?*

The campgrounds on BMDSF do not have water. Water is available at the parking lot located across from the Forest Office. Water for this supply is obtained from the local water district. This site has minimal use and would not significantly deplete ground water. The Forest Office can serve as a residence during the summer months; however currently the building is used solely as an office. Across from the Forest Office is the Boggs Mountain Helitack station which is used as a residence year round. Water for this residence is obtained from the local water district. No active wells are located on BMDSF.

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 the management measures 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 the management measures will 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 BMDSF.

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

Degradation to water quality caused from management activities at BMDSF will be less than significant. The adherence to the FPRs, WQ waiver, DFG permits and the implementation of the management measures will ensure 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.

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 BMDSF 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 the management measures will 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
IX. Land Use and Planning. Would the project:				
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?*

BMDSF pre-dates the majority of the adjacent subdivisions.

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?*

BMDSF 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 policy. The Board also establishes policy, which governs BMDSF. 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 provides guidance to BMDSF 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?*

A portion of the property located adjacent to the northern boundary of BMDSF contains a conservation easement, managed by the Land Trust of Napa County. The project does not conflict with the conservation easement.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. Mineral Resources. Would the project:				
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"/>

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. BMDSF has several rock sources that have been quarried for use on the forest roads and for watercourse crossing armament. Shale rock is sold to the public by permit on a limited basis from an established quarry on BMDSF.

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?*

BMDSF 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
XI. Noise. Would the project result in:				
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 ground borne vibration or ground borne 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

Timber operations and roadwork activities typically occur between the first of May and the end of October. Local residents are accustomed to an increase in ambient noise levels during the drier months due to the increase in tourist traffic along the State Hwy 175 corridor.

Visitors to BMDSF 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.

- 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. Within 300 feet of any occupied dwelling in Lake County the operation of power equipment, including chain saws, except licensed highway vehicles, shall be restricted to the hours between 7:00 a.m. and 7:00 p.m. and shall be prohibited on Saturdays, Sundays, and nationally designated holidays (14 CCR 945.4)

Implementation of Special Lake County Forest Practice Rules will reduce conflicts with adjacent landowners. Historical use indicates that noise impacts will be less than significant.

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

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

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. Population and Housing. Would the project:				
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"/>

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. BMDSF is zoned TPZ and no developments in homes, businesses, or infrastructure is planned. Currently there is only one entrance and exit permissible with motor vehicles. This is not expected to change.

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
XIII. Public Services. Would the project:				
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

The response times from emergency services will not be affected by management activities. The project does not conflict with, but rather assists with emergency response to incidents.

Pursuant to Board policy, one of BMDSF’s primary purposes is education in forest management. BMDSF currently participates in several educational activities. The Friends of Boggs Mountain (FOBM) is an active organization that donates time to work on trails, parking lot facilities, kiosks, and presentations. BMDSF staff frequently engages in these educational presentations and FOBM meetings. BMDSF staff also contributes to the FOBM newsletter discussing several activities/facts regarding the forest.

The nearest school (Cobb Elementary School) lies approximately ¼ mile southwest of the Forest Office. A portion of BMDSF lies adjacent to this school. BMDSF staff frequently maintains the nature trails located adjacent to the school. These trails are heavily used by students, teachers, and neighbors. The project will not impact school access to the forest or any school facilities.

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

- 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
XIV. Recreation. Would the project:				
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"/>

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 BMDSF are hiking, mountain bike riding, horseback riding, hunting, recreational driving, and camping. The project proposes no significant changes from previous BMDSF management plans. The project anticipates the expansion of a campground and the further small development of another campsite. The project also anticipates further trail maintenance and possible construction. The expected recreational use on BMDSF will have no impact on the physical deterioration of other parks or the national forest in the county.

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?*

As a result of the increasing use of horseback riding, BMDSF is currently reviewing ideas of creating a single campsite to accommodate horseback riders. Horseback riders that plan to camp on BMDSF are not allowed to camp at the two established campgrounds (Calso and Ridge Camps). Currently, they are allowed to camp at a flat area near the Road 500 and 400 intersection. A campfire ring is established and the site will remain primitive in nature. It is anticipated that a few facilities will be erected at this site, but such facilities will be minimal such as a small wooden corral and picnic table. Ground work is minimal and no significant impact is anticipated.

It is also a possibility that one additional outhouse be erected at a single campsite that is used periodically. Construction and erection will be minimal.

To minimize ground disturbance, the development of further trails will utilize, to the maximum extent possible, existing footpaths, and old skid trails.

It is anticipated that further replacement of picnic tables will occur within Calso and Ridge Camps. Picnic tables that are currently in place at these sites are dilapidated and need replacement. Cement vandal proof tables will be the replacement. Ground work is minimal and no significant impact is anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. Transportation/Traffic. Would the project:				
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"/>

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 not result in an increase in traffic levels above historical use. There will be a slight increase in truck traffic on BMDSF and the access roads during logging operations. Log hauling typically occurs between the first of June and the end of October. Access roads to BMDSF 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.

There are four local roads that access Hwy 29 from BMDSF. They are: Hwy 175, Red Hills Road, Loch Lomond Road, and Bottle Rock Road. Hwy 175 is the highway access to the State Forest and surrounding community. It is commonly used for hauling logs when there is a timber harvest operation in the area. Loch Lomond Road has been used in the past for log hauling. It is not anticipated that this road will be used for logging operations conducted on BMDSF for the following reasons: maintenance problems as a result of storm related road damage, perceived safety problems related to the combination of log trucks, school buses, and pedestrians, and the availability of alternative routes. Red Hills and Bottle Rock Roads are currently used to haul logs from local harvests and may be used to transport logs from BMDSF.

From past experience it is estimated that logging vehicles used in future timber operations will temporarily increase truck traffic on the State Forest roads and public highways by an average of five to ten log trucks plus four to six worker vehicles per day. During an active THP it is estimated that one or two log trucks per hour may be added to the peak hour vehicle volumes on Hwy 175.

- 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 logging truck traffic leaving BMDSF travels on Hwy 175. The logging truck traffic originating from BMDSF will 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 impact on 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 highway accessing BMDSF, which are considered hazardous. There is no expected increase in hazards associated with BMDSF traffic. The local residents are accustomed to logging truck traffic (including other heavy truck traffic such as UPS/FedEx delivery trucks and large trucking traffic associated with The Geysers). There is no history of conflict with incompatible uses along the access roads to BMDSF 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. The Forest Practice Rules (14 CCR 938.3) require that all logging roads remain 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 the Forest Office to accommodate BMDSF 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 allow ample parking and access for visitors throughout BMDSF. The main road on BMDSF (Road 500) is wide enough to allow for vehicles to park on the roadside during high activity use and still allow enough room for emergency vehicles to travel the roadway.

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
XVI. Utilities and Service Systems. Would the project:				
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

The BMDSF Forest Office is plumbed into the local sewer system. Two self-contained toilets are located at the campgrounds and one self-contained toilet is located at the forest parking lot.

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

The public sewer system that services the Forest Office and Boggs Mountain Helitack is adequate for the facilities. The toilet facilities at the campgrounds and parking lot can accommodate normal campground and day use. Large groups of campers or sponsors of special events that draw large crowds are requested to provide their own "porta-potties" through a letter of understanding with the forest manager.

- 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?***

On additional self-contained toilet, similar in design to the existing facilities, is planned for an existing campsite/day use area. This project is considered categorically exempt under Title 14 Section 15303-new construction of small structure.

- 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 Forest Practice Rules, WQ waiver, and Department of Fish and Game 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 BMDSF and the BMDSF 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 BMDSF 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 BMDSF 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
XVII. Mandatory Findings of Significance.				
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).

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 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. 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 throughout BMDSF. Historical and cultural sites have been recorded and management measures developed. Any projects conducted under the guidance of this Management Plan that would cause ground disturbance, will require an archeological survey. 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.)***

ASSESSMENT AREA

The cumulative effects assessment area was established based on the planning watersheds that contain BMDSF. This assessment area is used because the primary cumulative impact issues related to forest management typically express themselves at the scale of planning watersheds or a subset of the planning watershed area. The biological assessment area varies with the species being evaluated.

BMDSF lies within four Calwater planning watersheds: Big Canyon Creek (5512.300105), Upper Kelsey Creek (5512.300103), Anderson Creek (5512.300101), and Hoodoo Creek (5512.300102). Protection of watershed values is an integral part of the overall management of the forest and is directly correlated with silvicultural practices and logging standards pursuant to Section 4651 of the PRC and the Forest Practice Act.

Upper Kelsey Creek, Anderson Creek, and Hoodoo Creek planning watersheds have been designated as within the Evolutionary Significant Unit (ESU) for Chinook salmon, Coho salmon, and steelhead trout within the FRAP Calwater mapping system. However, consultations with Department of Fish and Game personnel indicate that THPs submitted within these watersheds may operate under the standard rules because of downstream barriers to anadromous species.

Table 2. Planning watersheds at BMDSF.

Planning Watershed/sub-watersheds	Acres	Percent of Forest
Upper Kelsey Creek Watershed	913	26
Houghton Creek	506	
Jones Creek	241	
Kelsey Creek	166	
Anderson Creek Watershed	197	6
Putah Creek	197	
Hoodoo Creek Watershed	213	6
Harbin Creek	196	
Cockerell Creek	23	
Big Canyon Creek Watershed	2170	62
Grouse Spring	197	
Malo Creek	459	
Mill Creek	449	
Big Canyon Creek	238	
Spikenard Creek	797	
Unnamed Tributaries	30	

There are no anadromous fisheries or fish-bearing watercourses within the forest boundary, however the management of BMDSF recognizes that watercourses and associated riparian zones form a critical link between the terrestrial and aquatic environments, exerting a strong influence on the biological and physical processes that create and maintain aquatic habitats. In addition to providing important habitat elements for a variety of plants and animals, riparian vegetation provides shade that moderates stream water temperatures and contributes LWD which influences the aquatic and terrestrial food web.

BMDSF lies on the top of Boggs Ridge, which is mostly a dry ridge top that runs northwest/southeast separating Putah Creek and Kelsey Creek watersheds. Boggs Mountain is part of the headwaters for the Kelsey Creek and Putah Creek drainages. Kelsey Creek is in the Clear Lake watershed; Putah Creek is in the Lake Berryessa watershed. Drainages on the forest are first and second order with no fisheries resources. Several landowners use water that comes directly from BMDSF. Most of these are in the east side of the forest including Ettawa Springs and Harbin Hot Springs.

Surface water is uncommon on the forest. There are 3.8 miles of perennial streams; portions of Grouse Spring, Houghton, Malo and Spikenard Creeks. Three springs exist on the forest: Big Springs, Bluff Springs, and Houghton Springs.

Table 3. Perennial streams on BMDSF.

Big Springs Creek	.50 mi.
Grouse Spring Creek	.25 mi.
Houghton Creek	.76 mi.
Malo Creek	.76 mi.
Mill Creek	.76 mi
Spikenard Creek	1.14 mi.
TOTAL	3.8 mi.

PAST, PRESENT AND FUTURE PROJECTS

The main purpose of BMDSF's forest management program is to conduct demonstrations, education, and research in forest management consistent with the legislative goals for the management of the 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. THPs are the best source of information regarding the types of forest management activities that have the greatest potential to contribute to significant adverse cumulative impacts.

The table below contains a list of the projected near term harvest on BMDSF by silviculture method.

Table 4. Planned near term harvest schedule.

Harvest Year	Management Unit	Acres
2009-10	Bluff Springs Mill Creek	181
2010-11	Calupowee High Point	320
2012-13	Spikenard	250
2014-15	Big Springs	220
2016-17	Giffords	270
2018-19	High Point	250
2020-21	Starview	357
2022-23	Pine Summit	371

Currently there are three THPs under preparation at BMDSF: The 43-acre Hobergs Loop THP consists of entirely of the single-tree selection silviculture method; the 146-acre Mill Creek THP consists of selection and commercial thinning silviculture methods; and the 154-acre Calupowee THP consists of selection and commercial thinning silviculture methods.

PAST PROJECTS

The following harvesting plans have been approved within the Cumulative Impacts Assessment Area over the last ten years. This 10-year review for cumulative impacts potential provides an adequate retrospective view.

Big Canyon Creek planning watershed:

- 1-98-386 LAK 40 acres located in Township 12 North Range 8 West, Section 25 MDBM. Selection and shelterwood removal silviculture with tractor yarding. Status: Completed.
- 1-99-507 LAK 20 acres located in Township 12 North Range 8 West, Section 24 MDBM. Selection silviculture with tractor yarding. Status: Completed.
- 1-05-148 LAK 472 acres located in Township 11 North Range 7 West, Sections 8, 9, 16, 17, and 21 MDBM. Shelterwood Removal Step with ground based yarding. Status: Partial Completion. Also located within Hoodoo Creek planning watershed.
- 1-06-105 LAK 176 acres located in Township 11 North Range 7 West, Sections 8 and 17. Shelterwood Removal Step with ground based yarding. Status: Complete. Also located within Hoodoo Creek planning watershed.

Upper Kelsey Creek planning watershed:

- 1-98-272 LAK 45 acres located in Township 12 North Range 8 West, Section 15. Shelterwood Removal Step, Rehabilitation of Understocked Stands, Alternative Prescription with ground based yarding. Status: Complete.

- 1-00-025 LAK Project was withdrawn during the review period.
- 1-00-028 LAK 34 acres located within Township 12 North, Range 8 West, Sections 21 and 22. Seed Tree Seed Step, Shelterwood Removal Step, Special Treatment Area, and Alternative Prescription with ground based yarding. Status: Complete.

Hoodoo Creek planning watershed:

- 1-05-148 LAK 472 acres located in Township 11 North Range 7 West, Sections 8, 9, 16, 17, and 21 MDBM. Shelterwood Removal Step with ground based yarding. Status: Partial Completion. Also located within Big Canyon Creek planning watershed.
- 1-06-105 LAK 176 acres located in Township 11 North Range 7 West, Sections 8 and 17. Shelterwood Removal Step with ground based yarding. Status: Complete. Also located within Big Canyon Creek planning watershed.

There have been no THPs or Non-Industrial Timber Management Plans (NTMPs) submitted within the Anderson Creek planning watershed within the past 10 years.

CURRENT PROJECTS

Current projects within the assessment area consist of one active THP and two NTMPs. NTMPs are ongoing projects that utilize unevenaged silviculture methods for long term sustained yield on a non-industrial parcel of timberland. These projects have no expiration date and are periodically activated through the notification procedure outlined in 14 CCR 1090.7.

- 1-99NTMP-004 LAK 573 acres Located in Township 12 North Range 8 West Sections 20, 21, 27, 28 and 33. Selection, Salvage, and Rehabilitation of Understocked Stands with tractor and cable yarding. Located within the Upper Kelsey Creek planning watershed.
- 1-99NTMP-017 LAK 1,320 acres located in Township 11 North Range 8 West, Sections 4, 9, 15, 16 MDBM. Project proposes using tractor yarding harvesting under Selection, Sanitation/Salvage, Transition and Rehabilitation silvicultural methods.
- 1-07-085 LAK 125 acres located within Township 12 North Range 8 West, Section 21. Selection with ground based yarding. Status: Active. Located within the Upper Kelsey Creek planning watershed.

OTHER PROJECTS OUTSIDE OF BMDSF WITHIN THE PLANNING WATERSHEDS

The Cobb Mountain area (close vicinity to BMDSF) has steam well and geothermal production managed by CALPINE and Bottle Rock Power. Interest in using the County's waste water for injection in the Geysers steam field to increase steam production has resulted in the County constructing a pipeline to transport waste water from the City of Clearlake area to the Geysers

on Cobb Mountain. The pipeline crosses portions of the assessment area north of Big Canyon Creek.

Pine Grove Resort is a 90 year old resort located in Cobb Valley off Bottle Rock Road. The site is east of Cobb Mountain and west of Boggs Mountain. BMDSF is approximately one mile from the Resort. Currently, the owner is proposing a renovation and reconstruction of the resort on its 30-acre property. The plan includes a 500 seat outdoor amphitheater, 108 cottages, full service spa, renovated recreational hall and micro brewery, and nature trails. This project is proposed as a fractional time share. A wastewater management plan, NSO assessment, traffic assessment, botanical report, habitat assessment, bat habitat assessment, wetland delineation, archeological survey, and forest management report have been prepared for the project. The project as currently submitted is for a Negative Declaration. The owner has submitted a Major Use Permit Application to the County of Lake. This document was distributed to reviewing agencies on November 15, 2007. The project is currently under review.

Residential development and urbanization of the Cobb area in general and the assessment area in particular is expected to continue as the population increases. As a result of the ongoing urbanization of the area, all resources are subject to impacts which can be minimized by County planning and implementation planning regulations. No other development plans are known at this time.

RESOURCE VALUES

Adverse cumulative impacts arising from forest management activities typically have the potential to affect the six resources identified below:

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

Aesthetics

The discussion of aesthetics in Section I has considered this resource 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 has considered this resource 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 has considered a number of elements of this resource 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, and IV(g) impacts on greenhouse gasses and climate change.

The discussion under Section IV 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 BMDSF boundaries show that the acreage of late seral forest types on BMDSF will increase significantly over the next several decades. Forest management practices outside BMDSF 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.

Upper Kelsey Creek, Anderson Creek, and Hoodoo Creek planning watersheds have been designated as within the ESU for Chinook salmon, Coho salmon, and steelhead trout within the FRAP Calwater mapping system. However, consultations with Department of Fish and Game personnel indicate that THPs submitted within these watersheds may operate under the standard rules because of downstream barriers to anadromous species.

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 BMDSF 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.

Geology

Geologically, BMDSF is complex. The State Forest is on a lava cap about one mile wide by 3.5 miles long, forming a gently rolling summit with the sides breaking down into moderate to steep slopes. There are a few small areas of steep slopes and rock outcrops. Volcanic rocks are exposed over much of the forest. Andesites and basalts are visible as outcrops and along roads over most of the upper elevation, with the lower slopes of the northwest portion having volcanic rock cap sandstones and mudstones. Most of the THPs on BMDSF will operate on slopes less than 50% as most of the slopes are gentle. Uneven-aged management will be the dominate forest management method. Silvicultural methods will be used that promote growth and regeneration in order to develop and maintain an all-aged forest composed of a mosaic of age and size classes consistent with the desired future forest structure conditions.

Hydrology and Water Quality

The project will not generate cumulative impacts related to watershed resources. Factors supporting this conclusion include BMDSF's geographic position at high elevation near the headwaters of watercourses, combined with BMDSF modeled timber harvest, and the implementation of the Road Maintenance Plan. Protection of watershed values will be an integral part of the overall management of the forest and will be directly correlated with silvicultural practices and logging standards pursuant to Section 4651 of the PRC and the Forest Practice Act.

Hazards and Hazardous Materials

The primary hazardous materials concern related to cumulative effects on BMDSF is the use of herbicides. The discussion of potential herbicide cumulative effects is addressed in Section VII, which found that there was not the potential for a significant adverse impact given the application of the mitigation measures described.

MANAGEMENT ACTIVITIES

The dominant land use in this area is forest management. Forest management activities include timber harvest, site preparation including burning, planting, vegetation control, precommercial thinning, road repair, road maintenance, recreation development, demonstration, and research projects.

The project will not cause significant adverse cumulative impacts related to timber harvesting. The modeled 100-year projections of forest habitat conditions show that the acreage of different habitat types on BMDSF will not diminish over time. BMDSF's forest management activities will continue to provide a diversity of forest stands and habitat types of various seral stages and provide connectivity of these habitats within the assessment area. The planned harvests at BMDSF and the harvest units will be separated in time and distance.

An analysis of past and current THPs in the assessment area identified several projects located within the planning watersheds encompassing BMDSF. Most of the surrounding landowners adjacent to BMDSF are residential. The adjacent landowner sharing the western boundary of BMDSF intermittently harvests timber on a relatively small scale. The project related impacts when added to the other projects in the vicinity of BMDSF will not result in significant adverse cumulative impacts.

The project will not cause adverse cumulative impacts from road repair and maintenance. The BMDSF Road Maintenance Plan contains a systematic protocol for avoiding and repairing road related cumulative impacts over time and distance.

The project will not cause adverse cumulative impacts from recreation. Recreation on BMDSF is dispersed and occurs at levels that have been shown to have negligible impacts on the environment. The Management Plan does not propose any significant changes in the recreation pattern or intensity.

The project will not cause adverse cumulative impacts from research and demonstration studies. Research installations are most often non-interventional and of a size and density that they will not likely create a significant adverse environmental impact.

The project will not cause adverse cumulative impacts from the use of herbicides. Herbicides 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 BMDSF 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 use may be used for demonstration or research purposes, or for the establishment, survival, and improved growth of forest stands.

DISCUSSION AND CONCLUSIONS

The above analysis of resource values including soil, water, and biological resources illustrate how the assessment area watersheds are stable landscapes. Forest management activities in the

assessment area, including BMDSF, over the last several decades have not resulted in significant adverse cumulative impacts. The proposed project proposes no substantial changes in the management of BMDSF. The planned utilization of both unevenaged and evenaged management will continue to maintain a landscape that is varied and has a mixture of various timber stand types and wildlife habitats.

Individually or cumulatively, the proposed project does not represent a substantial deviation from past practices in the assessment area. MSP documents and THPs from landowners in the assessment area over the past 10 years provide a basis for evaluating potential cumulative effects from timber harvesting. The light harvest levels, chosen silvicultural methods, and environmental protection measures in these documents, when evaluated over the assessment area demonstrate that significant adverse cumulative impacts from forest management activities are not likely to occur as a result of the proposed project.

Possible site specific impacts are addressed on a project by project basis. The development of THPs or other CEQA projects under the guidance of this Management Plan are subject to separate cumulative effects analysis consistent with CEQA. The analysis is conducted based on the project's specifications and current or reasonably foreseeable future projects within the assessment area.

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 humans. 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 described herein, these impacts would be reduced to a less than significant level.

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