

I. EXECUTIVE SUMMARY

1. INTRODUCTION

The California Board of Forestry and Fire Protection (Board) is in the process of considering approval of a comprehensive update to the Jackson Demonstration State Forest (JDSF) Management Plan. The Plan is required pursuant to Public Resources Code (PRC) §4645 and Article 8 of Board policy. The draft Plan was prepared by the California Department of Forestry and Fire Protection (CDF).

Adoption of the JDSF Management Plan by the Board is a project subject to the California Environmental Quality Act (CEQA)¹ as defined by statute and the CEQA Guidelines². The Board, as lead agency, has prepared this Draft Environmental Impact Report (DEIR) pursuant to CEQA for consideration and certification prior to the Board's approval of a final version of a new Management Plan for JDSF. This draft EIR reflects the Board's independent judgment as lead agency, pursuant to CCR §15084(e).

This "Executive Summary" section is intended to briefly summarize the proposed actions and their consequences identified in the EIR and assist decision-makers and the public in readily determining EIR conclusions with respect to the proposed action and its consequences.³

2. JACKSON DEMONSTRATION STATE FOREST

JDSF is a 48,652-acre state-owned forest located in Mendocino County between Willits and Fort Bragg. Prior to its acquisition by the State in 1947, most of the area had been heavily harvested. JDSF is now primarily a healthy young-growth forest ecosystem with redwood, Douglas-fir, and hardwood tree species. About 460 acres of old growth stands remain. Since 1947, CDF has managed JDSF to achieve a number of different goals, including research in various natural sciences of the forested landscape, demonstration of existing and new methods of sustainable timberland management for non-industrial and industrial forest landowners; educational efforts using formal seminars, field tours, publications, and demonstrations; maintenance and enhancement of wildlife and fisheries habitats; and public recreation.

Due to litigation, only minimal management has been conducted on JDSF since 2003. There are currently no timber operations occurring on the forest.

¹ Public Resources Code §21000 et seq.

² Title 14, California Code of Regulations [CCR] §15000 et seq.

³ Title 14 CCR §15123.

3. PROJECT DESCRIPTION

The JDSF Draft Forest Management Plan (DFMP) provides direction for the management of all of the uses and resources of the forest based on the identified management emphasis areas of forest demonstration, research, habitat protection, watershed health, and recreation. The DFMP describes the application of a diverse set of silvicultural systems and the protection of existing old-growth redwood groves, resulting in a forest with a diversity of vegetation and habitats. The DFMP includes a plan for forest road management, addresses continued public recreation, provides for protection of archaeological resources, and describes actions proposed to enhance anadromous salmonid habitat. It recognizes several categories of Special Concern Area and describes the management constraints needed to maintain the associated values.

Table I.1 summarizes physical actions that may result from implementation of the DFMP.

4. PROJECT PURPOSE AND OBJECTIVES

The purpose of the JDSF Management Plan is guided by state legislation, Board policy, and forest management planning. These three tiers are interrelated and, in the aggregate, shape the project purpose.

Consistent with all of the above, the JDSF Management Plan's stated purposes are as follows:

- Guide the integrated use and protection of the Forest's resources
- Meet requirements of legislation and Board policy
- Address local, regional, and statewide concerns.

Goals and objectives are detailed in the Section III (Project Information) of this EIR and in Appendix II of the DFMP. The projects goals are as follows:

- **RESEARCH & DEMONSTRATION:** Improve the amount and quality of information concerning economic forest management and timber management methods that is available to the general public, small forest landowners, resource professionals, timber operators, and the timber industry.
- **TIMBER MANAGEMENT:** Manage the forest on the sustained yield principle, defined as management which will achieve continuous high yields of timber production that contribute to employment and tax revenue, consistent with environmental constraints related to recreation, watershed, wildlife, fisheries, and aesthetic enjoyment.
- **WATERSHED AND ECOLOGICAL PROCESSES:** Promote and maintain the health, sustainability, ecological processes, and biological diversity of the forest and watersheds during the conduct of all land management activities.

Table I.1. Summary of Potential Actions Resulting from Implementation of the JDSF Management Plan

On-site Actions

- Research and Demonstration Programs Emphasizing Economic and Sustainable Forest Management, Timber Harvest, Environmental Resource Conservation, etc. (DFMP Chapter 4)
- Forest Management with Increased Late-Seral Development and Sustained Yield Timber Harvest (10-Year Average 31 Million Board Feet Annually – well Below Growth of the Forest) (DFMP Chapter 3)
- Continued Restoration and Protection of Habitat and Natural Resources (DFMP Chapter 3)
- Continued Recreation Use (including Camping, Hiking, Picnicking, Biking, Horseback Riding, and Hunting) and Improvements to Recreational Facilities (DFMP Chapters 2 and 3)
- Continued Harvest of Minor Forest Products Such as Salvage Logs, Greenery, Mushrooms, and Firewood (DFMP Chapter 2)
- Fire Protection Measures Including Fuel Breaks, Fuel Thinning, Prescribed Burns, Water Storage, and Development of Helispots (DFMP Chapter 3)
- Pest Control by Cultural, Mechanical, Chemical, or Biological Alternatives Pursuant to Integrated Pest Management Procedures (DFMP Chapter 3)
- Vegetation Control for Noxious and Invasive Species by Physical Removal, Biological Controls, or Use of Herbicides (DFMP Chapter 3)
- Reconstruction, Replacement or Decommissioning of existing roads pursuant to a Road Management Plan (DFMP Chapter 3)
- Continued Use of Existing Quarries to obtain surface materials for on-site roads
- Transport of Timber to Landings (Yarding) and Markets (DFMP Chapter 3)

Off-site Activities

- Hauling of Timber for Off-site Processing
- Continued Generation of Recreational Travel (DFMP Chapter 2)
- Purchases of, or Trades for, Private Adjacent Lands and Inholdings with Possible Conversion to Uses Consistent with JDSF Management Plan (DFMP Chapter 3)

- **FOREST RESTORATION:** Work towards achieving a balanced mix of forest structures and attributes in order to enhance forest health and productivity.
- **RECREATION and AESTHETIC ENJOYMENT:** Plan for and provide low impact recreational opportunities that are compatible with forest management objectives and healthy ecological processes, and that are consistent with historic recreational use characteristics.

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- **INFORMATION & PLANNING:** Develop, maintain, and update management plans and other planning documents and processes. Manage and support the information needs of all State Forest programs.
- **PROTECTION:** Protect the forest from damage and preserve the peace within.
- **MINOR FOREST PRODUCTS:** Maintain a program that provides an opportunity for the public and small businesses to purchase minor forest products.
- **PROPERTY CONFIGURATION:** Improve the boundary layout of the State Forest to facilitate management logistics and increase demonstration and research opportunities.

5. ISSUES TO BE RESOLVED

The JDSF Management Plan proposes a balanced program to address multiple needs while still meeting the primary legislative goals and objectives of economical forest management, demonstration and research.

The EIR compares management alternatives, weighing each against the project goals and objectives. Each alternative incorporates varying levels of forest management demonstration, wildlife habitat protection and management, commodity management, research, and recreational use. The Board will consider each alternative and, based on the analysis provided in this EIR, may select a management strategy that differs from the one presented in the DFMP. The final Management Plan may incorporate elements from several of the alternatives.

This document identifies and addresses significant impacts which may result from adoption of the JDSF Management Plan, and proposes mitigation to reduce them to “less than significant” levels through changes (mitigations) recommended for incorporation into the Management Plan, or through other mitigations required as part of Plan approval and/or subsequent implementing actions such as individual timber harvesting plans (THPs).

6. AREAS OF CONTROVERSY

The management of JDSF has given rise to many controversies. The most important ones related to this EIR are as follows:

- a. Should there be any timber harvesting?

Some commenters have opposed all timber harvesting on JDSF urging that the forest be allowed to “recover” and become an old-growth forest. They have urged that the area be allowed to develop into habitat for endangered species or that the purpose for the Forest be changed to focus solely on recreation.

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CDF prepared the DFMP in consideration of a mandate to demonstrate sustainable timber management as called for in the enabling legislation.⁴ The Forest was acquired by the State to restore the land to timber production and to demonstrate economical and sustainable forest management while giving consideration to other resource values. The Board believes that existing law requires timber production to remain an important activity on the forest. Further, the demonstrations on JDSF are beneficial to large and small timberland owners in providing an opportunity to learn how to enhance the productivity of their lands.

State Park units located nearby or adjacent to JDSF are managed almost exclusively for recreation and ecological preservation purposes, and timber harvesting generally does not occur. These areas provide substantial benefits in terms of preservation and potential old-growth forest development. In addition to the recreational services provided by the State Parks in the area, providing recreational opportunities such as camping, horseback riding, and hiking, is an important part of JDSF management.

b. Should there be any clear cutting?

Some commenters have proposed that there be no clear cutting on JDSF. They have recommended that only selection cutting or other unevenaged management practices be allowed in order to reduce environmental impacts and to allow wildlife habitat conditions to continue to develop to favor wildlife species associated with old-growth forests.

The DFMP provides for both even-aged and uneven-aged management systems. Well over half of the Forest area is precluded from evenaged management. Even-aged management is widely used in California and is a viable method of timber harvesting when utilized properly; therefore, the DFMP proposes continued research and demonstrations of this method, including reserve-form stands (popularly called “variable retention”). Demonstration of even-aged management offers an opportunity for resource professionals and private landowners to observe proper implementation and to determine the environmental effects associated with this management tool. Using both even- and uneven-aged management throughout JDSF will result in a diversity of wildlife habitat. The management plan restricts both the extent and location of even-age harvesting.

c. Should herbicide use be allowed?

Some people have urged that CDF discontinue all use of herbicides on the forest claiming that herbicides present a threat to the environment and human health. Responding to these concerns, CDF significantly reduced the use of herbicides on the forest until a new management plan could be prepared.

The Board and CDF believe that there are important benefits to be found in limited herbicide use as part of an integrated pest management program, and that, when properly applied, herbicides do not present a threat to the environment or to human health. Limited use of herbicides on the forest can demonstrate for private owners the proper and appropriate use of chemical treatments in combination with non-herbicide methods for controlling invasive exotic plants, an important regional problem in natural resource management. Herbicide use remains significantly less expensive and more effective than many other means for accomplishing these objectives and is expected to remain an

⁴ Public Resources Code § 4651

important vegetation management tool on private lands. Demonstration projects have potential to contribute to a reduction in herbicide use through application of improved silvicultural techniques and integrated pest management.

7. IMPACTS AND MITIGATION

Public scoping and written comments have indicated several subjects of particular concern that are analyzed in the EIR. The following is a list of some of those concerns:

- a. The harvest of old-growth forest may have significant effects on wildlife habitat.

The DFMP identifies existing groves of old-growth and discusses protection of individual old-growth trees. Identified groves will be protected and young growth stands that are adjacent to specific groves will be managed to enhance the wildlife habitat values of the protected stands. In addition, approximately 20% of the forest will be managed to produce late-seral habitat elements often associated with old-growth forest. Most individual old-growth trees with characteristics valuable to wildlife will be retained.

- b. Continued timber harvesting may adversely affect water quality.

Timber harvesting on JDSF will be planned and implemented utilizing state of the art harvesting methods and protection measures. All operations will meet or exceed the state forest practice regulations. One goal of all operations is to protect watersheds and maintain watershed processes. In addition, the DFMP identifies near-stream tree retention standards, which are higher than those specified by the Rules. These retention standards will limit tree removal from near-stream areas and maintain high levels of shade producing canopy. Adverse impacts attributable to increased solar radiation inputs through canopy removal will be avoided. In addition, retention of near-stream trees also increases the potential for large woody debris recruitment. These are both important elements of anadromous salmonid habitat. Equipment limitation zones and no-cut buffer zones adjacent to watercourses will provide protection from sediment delivery to watercourses. Implementation of the DFMP's Road Management Plan will result in a decrease of road-related sediment over time.

- c. Timber harvesting may affect wildlife species that are listed as threatened or endangered.

The protection measures described in the DFMP present a programmatic approach to species protection. Potential impacts and mitigation are identified in sections VII, Resource Analysis, and VIII, Cumulative Effects Analysis, of the EIR. Site-specific analysis and mitigation will be developed at the project level, typically through the timber harvesting plan preparation and review process.

- d. Management activities on JDSF may result in soil erosion.

In addition to erosion control techniques required by state regulations, the DFMP proposes a Road Management Plan. Forest Roads have high potential for sediment delivery to watercourses. The Road Management Plan proposes an inventory and plan for control of potentially significant road-related erosion sites, which will provide a beneficial long-term result.

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Tables provided at the conclusion of each resource section within this report (see section VII) summarize levels of impact among the several alternatives. Mitigation measures have been identified that will reduce all potentially significant impacts to less than significant levels. A summary of the potentially significant impacts of implementing the DFMP as identified in the draft EIR, and the feasible mitigation measures and alternatives to the Plan are found in Table I.2

8. ALTERNATIVES CONSIDERED

The EIR examines seven alternatives, including the May 2002 DFMP, which is the proposed project. In the course of evaluating these alternatives, the Board may choose to approve the DFMP as submitted by CDF (i.e., alternative C1, the Proposed Project), may choose to modify the DFMP to wholly incorporate an alternative different than C1, or may choose to combine various elements of the alternatives to create a new management approach. Whichever choice the Board makes, the Final EIR must adequately address all potential environmental impacts of the Final Management Plan approved by the Board.

The EIR examines the following alternatives (see section VI for more detail):

Alternative A No Direct Management Activity - No Project

Alternative "A" describes the effects of only minimal maintenance and protection of JDSF lands. There would be no harvest of timber. Road maintenance would be limited to that necessary to maintain public access. Stand structure would change more slowly than in an active management strategy. The demonstration value of this alternative is limited due to its passive nature. The primary land uses on JDSF would be public recreation and monitoring or study of natural environmental processes.

Alternative A is based on management direction that is not consistent with the current Public Resources Code or Board policy. Thus, absent changes to those legal mandates, it is not a feasible alternative.

Alternative B Management Consistent with 1983 Management Plan - No Project

Alternative B describes JDSF maintaining the level of forest management demonstration, timber production, recreational development, and environmental protection consistent with the 1983 Management Plan. It includes an annual timber harvest set close to growth and conservative harvesting practices that meet or exceed the requirements of the FPRs. This alternative includes protection of listed species and recruitment of recovery habitat for listed species as opportunities arise. A demonstration program is included that explores basic forest processes. This alternative provides a moderate level of wildlife protection emphasis, with a low level of recreation facility development.

Alternative C1 Proposed Project--Management Consistent with the May 2002 Draft Management Plan

Alternative C1 describes a timber management program based on determining and working towards a long-term desired future habitat, watershed, and growing stock condition. This alternative has a conservation-oriented approach to management of

wildlife and aquatic resources on a watershed basis. With limited exception, clearcutting is permitted only for research purposes. Existing old growth stands and trees would be protected from harvest. Late seral forest would be recruited in riparian zones. Use of watershed information and evaluation techniques is applied in the development and management of projects. A road management plan is incorporated to reduce sedimentation. Demonstration capabilities will be enhanced. The alternative proposes a survey of recreation users, planning for a potential increase in recreation facilities, and recreational corridors adjacent to primary recreational sites. Management within the recreational corridors will emphasize demonstration values and aesthetics.

Alternative C2 Management Consistent with the November 2002 Management Plan

This alternative is similar to C1, with the addition of (1) greater emphasis on the development of late seral forest, including the designation of habitat for marbled murrelet primarily in the vicinity of upper Russian Gulch, lower Big River, and upper Thompson Gulch; (2) additional protection for snags, large woody debris retention, and large woody debris recruitment; (3) increased level of review, analysis, and mitigation provided in planning for individual timber harvest activities and even-aged timber harvest proposals.

Alternative D Management with an All-Age Emphasis (Citizen Advisory Committee)

This alternative is developed from recommendations of a former seventeen-member JDSF Citizen Advisory Committee. The primary goal for management of JDSF would be conversion of the entire forest into an all-aged forest. There would be no harvest of old-growth trees. There would be no clearcutting, and other even-age regeneration methods would be used only for limited demonstration purposes. No herbicides would be used. Recreation would be emphasized, including increasing the number of hiking trails and campsites. Timber harvesting would be compatible with the recreation uses. Demonstration and research would emphasize management alternatives for single-tree selection and other all-aged silvicultural methods for small landowners. Hardwood management and use would be another demonstration emphasis.

This alternative represents a low to moderate level of timber production with specific management constraints, a high level of watershed protection, and a moderate to high level of recreational development.

Alternative E Management with a Late Seral Emphasis

This alternative includes an emphasis on development of late seral forests across the landscape. Restoration of the natural forest ecosystem and the protection of water quality, fish, and wildlife habitats at JDSF would be the primary management goals. There would be no even-aged management or harvest of old-growth trees. Timber harvesting, when it occurred, would be designed to advance timber stand development to late seral characteristics. Low impact recreational opportunities such as trails and hike-in campsites would be expanded. Research would no longer address questions on intensive forest management. A research, demonstration, and monitoring program would be implemented to gain and distribute knowledge on the restoration of old-growth and late-seral forests, natural watersheds, and associated resources.

Alternative E is based on management direction that, in part, is not consistent with the current Public Resources Code or Board policy. Thus, absent changes to those legal mandates, it is not a feasible alternative. However, elements of this alternative are useful for how they offer potential ways to mitigate forest management impacts.

Alternative F Management with an Older Forest Emphasis

This alternative was developed in response to a bill considered in the state legislature during the 2003-2004 session (SB 1648, Chesbro) and to detailed comments submitted by the Sierra Club. Alternative F would provide greater areas of late seral forest than most of the other alternatives. It would create a 3,498-acre Marbled Murrelet Recovery Demonstration Area and require the development of contiguous older forest habitat. Any tree alive since 1850 or earlier would be protected from harvest unless it posed a hazard. Preharvest and postharvest monitoring and publication of results would be required for any experiments involving even-aged management. A new advisory committee and an interagency technical committee would be formed.

Alternative F is based on management direction that, in part, is not consistent with the current Public Resources Code or Board policy. Thus, absent changes to those legal mandates, it is not a feasible alternative. However, elements of this alternative are useful for how they offer potential ways to mitigate forest management impacts.

9. CONCLUSION

This EIR provides analysis of the potentially significant effects of reasonably foreseeable activities that are associated with alternative management strategies applied to JDSF, including the proposed project, Alternative C1, as developed in the JDSF Draft Management Plan. The range of alternatives considered is, in large part, derived from comments received during public scoping meetings, letters from interested citizens, from a Citizen's Advisory Committee appointed by a former CDF Director, and a legislative bill.

Although there are potentially significant environmental effects associated with implementation of the proposed project, mitigation measures are proposed to avoid or substantially lessen those potential impacts. Following review of this EIR and the comments received during the comment period on this DEIR, the Board of Forestry and Fire Protection will select the final management strategy, which may be the proposed project, one of the other Alternatives, or a combination of elements of some or all of the Alternatives examined here.

AESTHETIC RESOURCES

Table I.2. Potentially Significant Impacts, Proposed Mitigation, and Project Alternatives.					
Alternatives					Discussion
Impact*	1	2	3	4	5
*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant–Mitigation Not Feasible					
Even-aged timber harvests would have a substantial adverse effect on a scenic vista.					
Alt. A					
Alt. B					
Alt. C1 May 2002 DFMP					
Alt. C2 Nov. 2002 Plan					
Alt. D					
Alt. E					
Alt. F					
Timber harvests and related activities would substantially degrade the existing visual character or quality of Special Treatment Areas or buffer areas that are identified but not specifically defined in the DFMP.					
Alt. A					
Alt. B					
Alt. C1 May 2002 DFMP					

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Table I.2. Potentially Significant Impacts, Proposed Mitigation, and Project Alternatives.					
Alternatives					Discussion
Impact*	1	2	3	4	5
*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant–Mitigation Not Feasible					
Alt. C2 Nov. 2002 Plan					
Alt. D					
Alt. E					
Alt. F					
Facility development would create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.					
Alt. A					
Alt. B					
Alt. C1 May 2002 DFMP					
Alt. C2 Nov. 2002 Plan					
Alt. D					
Alt. E					
Alt. F					
Timber harvesting, timber sale road construction, and/or Road Management Plan implementation would substantially degrade scenic vistas in a cumulative manner.					
Alt. A					

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Table I.2. Potentially Significant Impacts, Proposed Mitigation, and Project Alternatives.					
Alternatives					Discussion
Impact*	1	2	3	4	5
Alt. B					
Alt. C1 May 2002 DFMP					
Alt. C2 Nov. 2002 Plan					
Alt. D					
Alt. E					
Alt. F					

*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant–Mitigation Not Feasible

This alternative’s relatively greater reliance on even-aged prescriptions and limited consideration for development of late seral conditions poses a higher potential for degradation of visual character or quality. Mitigations would be developed and applied at the individual THP level following standard FPR considerations for cumulative impacts to aesthetic resources. Alternatively, Mitigation 4 could be applied to address potential cumulative impacts.

These alternatives would result in some beneficial long-term effects associated with increased late seral, mixed-age, reduced use of evenaged management, and hardwood management to varying degrees (with Alternatives D, E, and F superior to Alternatives C1 and C2). All alternatives would also result in short-term visual impacts since all involve timber harvest to varying degrees and include the Road Management Plan. All would require mitigation as specified in this section.

AGRICULTURAL RESOURCES

(There are no significant impacts to agricultural resources from the proposed project.)

MINERAL RESOURCES

(There are no significant impacts to mineral resources from the proposed project.)

AIR QUALITY

(There are no significant impacts to air quality from the proposed project.)

BIOLOGICAL RESOURCES

Aquatic Resources

(There are no significant impacts to aquatic resources from the proposed project.)

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Botanical Resources

(There are no significant impacts to botanical resources from the proposed project.)

Timber Resources

(There are no significant impacts to timber resources from the proposed project.)

Protection

(There are no significant protection impacts from the proposed project.)

Wetland Resources

(There are no significant wetland resource impacts from the proposed project.)

Wildlife and Wildlife Habitat Resources

Table I.2. Potentially Significant Impacts, Proposed Mitigation, and Project Alternatives.						
Alternatives					Discussion	
Impact*	1	2	3	4	5	
<p>*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant After Mitigation (5) Significant -Mitigation Not Feasible</p>						
<p>Potential to 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 CDFG or U.S. Fish and Wildlife Service.</p>						
<p>Impact: Snags and Down Wood</p>						
Alt. A						Alternative A does not propose the removal or creation of snags and downed wood. Therefore, the number of snags and amount of downed wood is expected to naturally increase within the 10 year planning period under Alternative A.
Alt. B						Although snags and downed wood will be retained as directed by the FPRs, their removal is still likely to occur under Alternative B. Snags and downed wood are lacking on JDSF and without specific retention measures, the number of snags could be significantly reduced on JDSF under Alternative B. This impact could be mitigated to less than significant by applying snag protection measures similar to Mitigation 1.
Alt. C1 May 2002 DFMP						Refer to detailed project impacts above. Apply Mitigation 1 to reduce impacts to less than significant.

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Table I.2. Potentially Significant Impacts, Proposed Mitigation, and Project Alternatives.					
Alternatives					Discussion
Impact*	1	2	3	4	5
Alt. C2 Nov. 2002 Plan					
Alt. D					
Alt. E					
Alt. F					
Impact: Other Unique/Special Habitats and Features					
Alt. A					
Alt. B					
Alt. C1 May 2002 DFMP					
Alt. C2 Nov. 2002 Plan					
Alt. D					

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Table I.2. Potentially Significant Impacts, Proposed Mitigation, and Project Alternatives.					
Alternatives					Discussion
Impact*	1	2	3	4	5
Alt. F					Similar to Alternative E.
Impact: Reduce the number or restrict the range of a rare or endangered animal.					
Alt. A					Management activities that would impact the range or number of sensitive species would not occur. Conversely, forest stand management as a means of speeding the recruitment of potentially occupied habitat to the benefit of sensitive species would not occur.
Alt. B					Lack of protection for remnant old-growth patches and individual trees or proposed management to recruit late seral habitat conditions will negatively influence certain species of concern. Implementation of Additional Management Measures described in section VII.6.6.4 and watercourse and late seral forest protections as in Alternative C1 would likely reduce associated impacts to a less than significant level.
Alt. C1 May 2002 DFMP					Implementation of aquatic and terrestrial wildlife protection measures described, control of sediment as an influence on aquatic wildlife species and application of Mitigation 1 to provide snag habitat will likely markedly reduce associated impacts and result in a less than significant or beneficial effect.
Alt. C2 Nov. 2002 Plan					Similar to Alt. C1.
Alt. D					Increase in recreation infrastructure and expected level of public use may negatively affect certain sensitive species such as the Marbled Murrelet and other species potentially occupying JDSF. Change in habitat capability is generally stable to positive or beneficial for species of concern sans potential disturbance related species impacts.
Alt. E					Increase in late seral habitat conditions, road management, and WLPZ protections (aquatic wildlife species) will generally increase habitat availability and quality for sensitive wildlife species.
Alt. F					Similar to Alt. E

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Table I.2. Potentially Significant Impacts, Proposed Mitigation, and Project Alternatives.						
Alternatives					Discussion	
Impact*	1	2	3	4	5	*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant After Mitigation (5) Significant -Mitigation Not Feasible
Impact: Interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery areas.						
Alt. A						Lack of any forest management activities would generally result in no further impact to terrestrial wildlife species movement or reproduction requirements for at least the short-term. Aquatic wildlife species (amphibians) would likely experience negative effects from increased levels of sedimentation from road erosion and crossing failures. Lack of active planning and management to reduce fire risk could result in marked habitat alteration depending on the location of fire start and attendant weather conditions. Lack of late seral forest development would slow recruitment rate and representation of this forest condition.
Alt. B						Similar to Alternative A for the short term relative to forest management. Converse to Alt A., movement and use of nursery areas for species associated with early stages of forest development would likely be enhanced over the longer term. Tree species diversity would be reduced.
Alt. C1 May 2002 DFMP						Increased extent of late seral forest conditions over the long-term and further development of riparian forest condition across the range of stream classes will enhance movement and corridor opportunities. Improvement in habitat conditions for certain late seral forest associated species of concern will also enhance movement and reproductive habitat for the more common species associated with these forest conditions. With application of Mitigation 1, overall effects will be beneficial.
Alt. C2 Nov. 2002 Plan						Similar to Alt. C1.
Alt. D						Increased levels of expected recreational use and associated level of disturbance would likely result in heightened levels of disturbance to certain areas used for reproduction and of high public interest. Species particularly sensitive to human disturbance or increase in potential predator populations as a result of recreational use (Marbled Murrelet) could be negatively affected. Emphasis on uneven aged management and strengthened riparian zone and hardwood management are compensating features of this alternative.
Alt. E						Similar to Alternative C1. Emphasis on late seral forest development and uneven aged management will enhance habitat quality for species utilizing resultant forest conditions over the longer term.
Alt. F						Similar to C1 and E, Alternative F includes specific direction to establish contiguous older forest habitat and a watercourse based linkage of key areas.

GEOLOGY AND SOILS

Table I.2. Potentially Significant Impacts, Proposed Mitigation, and Project Alternatives.					
Alternatives					Discussion
Impact*	1	2	3	4	5
*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant–Mitigation Not Feasible					
Impact 4. Exposure of people or structures to landslides.					
Alt. A					
Alt. B					
Alt. C1 May 2002 DFMP					
Alt. C2 Nov. 2002 Plan					
Alt. D					
Alt. E					
Alt. F					
Impact 6. Location on unstable geologic unit or soil.					
Alt. A					
Alt. B					
Alt. C1 May 2002 DFMP					
Alt. C2 Nov. 2002 Plan					
Alt. D					
Alt. E					
Alt. F					

HAZARDS AND HAZARDOUS MATERIALS

(There are no significant hazards or hazardous material impacts from the proposed project.)

HERITAGE RESOURCES

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

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

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Table I.2. Potentially Significant Impacts, Proposed Mitigation, and Project Alternatives.						
Alternatives					Discussion	
Impact*	1	2	3	4	5	*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant -Mitigation Not Feasible
Recreation And Public Uses, And Maintenance Of Existing Facilities. Impact 6. Potential for individual and cumulative impacts to significant heritage resources from ground-disturbing activities related to maintenance of and improvements to or abandonment of existing campgrounds, other existing recreational and visitor developments, and administrative facilities. Impact 7. Potential for impacts to significant heritage resources from construction of new recreational, visitor and administrative facilities. Impact 8. Potential for individual or cumulative impacts from illicit artifact collecting or vandalism of significant heritage resources by the public, contractors and CDF staff and their families who use or frequent recreational, visitor and/or administrative facilities.						
Alt. A						There is no substantial difference among the alternatives. All will involve recreational use and either maintenance of existing facilities or construction of limited new facilities to varying degrees resulting in potentially significant impacts and the need for similar mitigation measures as specified (see Management Goals 1-10; Impacts 6-7, Mitigation Measures 13-14; Impact 8, Mitigation Measures 15-16).
Alt. B						
Alt. C1 May 2002 DFMP						
Alt. C2 Nov. 2002 Plan						
Alt. D						
Alt. E						
Alt. F						
Herbicide Use And Native American Collecting. Impact 9. Potential for impacts on traditional Native American plant collecting resources areas and for increased health risks from application of herbicides at JDSF.						
Alt. A						Herbicides would be used for road maintenance. Native plants would be reduced in number due to lack of an active program to control invasive non-native species. This impact would be less than significant since no native plant is likely to be eliminated from the site due to lack of control program. Where used, apply same mitigations as for Alt. C1
Alt. B						Highest potential herbicide use for timber management and project-by-project invasive weed control. Mitigation (see Alt C1, following) would reduce this impact to less than significant.
Alt. C1 May 2002 DFMP						Moderate potential herbicide use as part of the IWM strategy for invasive plant control and limited use for reforestation. Mitigation (see Management Goals 2 and 5; Mitigation Measure 17) would reduce this

HYDROLOGY AND WATER QUALITY

(There are no significant hydrology and water quality impacts from the proposed project.)

LAND USE AND PLANNING

(There are no significant land uses or planning impacts from the proposed project.)

NOISE

Table I.2. Potentially Significant Impacts, Proposed Mitigation, and Project Alternatives.						
Alternatives					Discussion	
Impact*	1	2	3	4	5	*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant–Mitigation Not Feasible
Impact 4. A substantial temporary increase in ambient noise levels in the project vicinity above levels existing without the project.						
Alt. A						This alternative would result in no logging-related noise. It would result in no active management regarding shooting and OHVs.
Alt. B						These alternatives will have some logging activities to varying intensities and frequencies, which will result in noise impacts. The noise impacts in all cases are less than significant given the mitigation measures specified.
Alt. C1 May 2002 DFMP						
Alt. C2 Nov. 2002 Plan						
Alt. D						
Alt. E						
Alt. F						
Impact 6. A temporary or permanent accumulation of noise over space and time from two or more sources resulting in an impact on sensitive human receptors.						
Alt. A						The minimal level of management activity under this alternative does not have the potential to result in significant cumulative noise impacts.
Alt. B						These alternatives will have some logging activities to varying intensities and frequencies, which will result in noise impacts and have some potential to result in a significant cumulative impact across multiple sources, time, and space. The noise impacts in all cases will be less than significant given the mitigation measures specified.
Alt. C1 May 2002 DFMP						

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Table I.2. Potentially Significant Impacts, Proposed Mitigation, and Project Alternatives.					
Alternatives					Discussion
Impact*	1	2	3	4	5
Alt. C2 Nov. 2002 Plan					
Alt. D					
Alt. E					
Alt. F					

*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant
(4) Less than Significant after Mitigation (5) Significant–Mitigation Not Feasible

PUBLIC SERVICES, POPULATION AND HOUSING

(There are no public service, population or housing impacts from the proposed project.)

RECREATION RESOURCES

(There are no significant impacts to recreation resources from the proposed project.)

TRANSPORTATION AND TRAFFIC

(There are no significant public transportation or traffic impacts from the proposed project.)

CLIMATE CHANGE AND CARBON SEQUESTRATION

(There are no significant climate change and carbon sequestration impacts from the proposed project.)

CUMULATIVE EFFECTS

Cumulative effects were summarized in a somewhat different fashion than were individual impacts, hence the summary table below (Table I.3) varies from those above. The letters in the table refers to the various alternatives. Only impacts for which the proposed project (alternative C1) has the potential to cause significant adverse cumulative effects are listed.

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Table I.3. Summary of Potential Adverse and Beneficial Potential Cumulative Effects for the Proposed Project.						
	Cumulative Effects Potential for the Various EIR Alternatives*					
	Potential for Significant Adverse Cumulative Effects			Potential for Significant Beneficial Cumulative Effects		
Resource Area	Yes after mitigation	No after mitigation	No reasonably potential significant adverse effects	Yes without mitigation	Yes after mitigation	No reasonably potential significant beneficial effects
Biological Resources						
Wildlife and Wildlife Habitat						
Snags and Down Wood		B-D	A, E, F	E, F		A-D
Unique/Special Habitats and Features		B-C2	A, D-F	D-F	C1, C2	A, B
Vaux's Swift and Purple Martin		B-C2	A, D-F	D-F		A-C2
Reduction in the Number or Range of an Endangered Species		B-C2	A, D-F	E, F		A-D
Interfere with Movement, Migration, or Use of Nursery Areas		C1-C2	A, B, D-F	E, F	C1, C2	A, B, D
Heritage Resources See sections VIII.13 and VII.9.7 for details		A-F				A-F

*This table format is adapted from the Forest Practice Rules cumulative impact assessment table found at 14 CCR § 912.9.