

VI. ALTERNATIVES

1. INTRODUCTION

EIRs are required to identify ways to mitigate or avoid the significant impacts a project may have on the environment (CCR §15126.6). One means for avoiding impacts is to consider project alternatives that reduce one or more impacts while at the same time meeting the basic project objectives. The lead agency is responsible for selecting alternatives that cover a reasonable range and are feasible. The lead agency does not need to consider infeasible alternatives, alternatives that do not mitigate project impacts nor alternatives that do not meet any of the project's objectives.

EIRs must evaluate the impact of a "no project" alternative. In the case of the future management of JDSF "no project" can take two different courses: (1) that no management would occur; or (2) that management would continue on as it had in the past without the implementation of the new Plan (the Proposed Project). The Board has chosen to evaluate both of these project alternatives in this EIR.

Later in this section six alternatives to the proposed project (the May 2002 DFMP) are described that have been developed as the basis for impact analyses and comparison in this EIR. The alternatives meet, to some degree, the basic DFMP purposes, goals, and objectives (see Section III.2); and they are feasible. Each alternative incorporates varying levels of commodity management, forest management demonstration, wildlife habitat protection and management, and recreational use. The Board will consider each alternative and, based on the analysis provided in this EIR, may select an alternative management strategy to the one presented in the DFMP. This alternative management strategy could be one of the seven alternatives in whole, or a composition of various elements from among the alternatives. The selected alternative and applicable mitigation measures identified in the final EIR will be incorporated into the JDSF Management Plan for final Board approval.

In the interest of fostering meaningful public participation and informed decision making, this EIR includes alternatives derived from recommendations made by individuals and groups during the hearings on the draft management plan and during the scoping meetings (see Section II.11 Public Participation). Some of these alternatives would not meet many of the basic purposes, goals and objectives or would require changes in legislation or Board policy in order to be implemented. However, because this project involves publicly owned land, and because government has an ability to change policies and laws, the EIR considers alternatives offering a wider range of policy choices than are normally presented in an EIR for a private project.

Table VI.1 at the end of this section provides a summary and comparison of the project characteristics among the alternatives selected by the Board for full

analysis. This section also identifies alternatives that were considered by the Board but dismissed from further analysis as well as the “environmentally superior” and preferred alternatives.

2. ALTERNATIVES CONSIDERED BUT DISMISSED FROM FURTHER CONSIDERATION

Lead agencies must analyze a range of reasonable alternatives that feasibly attain most of the project’s basic objectives (CCR §15126.6) (see Section III.2 Project Purpose, Goals and Objectives). The selection of a reasonable range of alternatives began with an evaluation of a broader range of possible alternatives. This range of alternatives was selected by the Board in consultation with other agencies and based on extensive public scoping comments (see Section II.11 Public Participation).

CEQA Guidelines §15126.6 states that a lead agency need not consider every conceivable alternative or infeasible alternatives, nor must it “consider an alternative whose effect cannot be reasonably ascertained or whose implementation is remote and speculative.” In addition, a lead agency need not consider alternatives that do not mitigate one or more of the project’s potentially significant effects. A “rule of reason” is employed in determining the range of alternatives considered in an EIR with the intent of stimulating “meaningful public participation and informed decision making”. The lead agency may eliminate alternatives that: fail to meet most of the basic project objectives; are infeasible; or don’t avoid environmental impacts [CCR §15126.6(c)].

Certain alternatives are discussed below because they were recommended, in their entirety or parts, in frequent comments during the public scoping process. However, these alternatives were considered but eliminated from further analysis because they were found by the Board to: be infeasible; be redundant – in part or in their entirety – with other alternatives; fail in meeting most project objectives; and/or, not mitigate the project’s potentially significant effects.

Sale of Jackson Demonstration State Forest: One idea frequently mentioned in the history of American public land management is that the way to make public lands productive is to transfer the lands into private ownership. This was the idea behind the original sales of public lands by the Federal Government in the 1700s and the 1800s. The idea returned to popularity during the Reagan Administration. Sale of JDSF would also provide revenues to a strained State Treasury during a time of budget deficits.

The sale of JDSF would likely lead to ownership by industrial timber interests, grape producers or real estate developers. In intensive private timber or vineyard production, the property might increase the flow of products into the economy, but the public benefits from demonstration, research, education, recreation, old growth

development, and fish and wildlife habitat would be greatly reduced, if not lost entirely. With real estate development, new home sites would become available, but fragmentation of land holdings would greatly impair timber production as well as the other public benefits of the current forest, such as wildlife habitat. Nontimber uses of forestlands, such as development and particularly agriculture, are not subject to the same environmental protections as timber management under the Forest Practice Act and Rules. As a result, increased erosion and flow of pollutants into streams would probably occur under such land uses.

Sale of the Forest is not a feasible alternative because it would foreclose the opportunities for demonstration, research, education, recreation, cultural resource protection, old growth development, and fish and wildlife habitat protection. This alternative conflicts with the purposes for which the State purchased the property in the late 1940s and for which CDF has managed the property since that time. Sale would require changes in legislation such as PRC §§ 4631(a) and 4651, and in Board policies 0351.2 and 0351.3. Because this approach would achieve few of the purposes of the proposed project and would potentially lead to greater, rather than lesser, environmental impacts than under the preferred project alternative, this alternative was dismissed from further consideration.

Endangered Species Protection and Recovery: Numerous public comments were received that encouraged the adoption of an alternative that afforded full protection to, and ensured recovery of, several species including coho salmon, steelhead, northern spotted owl, and marbled murrelet.

All alternatives considered provide varying levels of protection to state or federally listed species. However, an alternative that ensured recovery for all threatened and endangered species is not feasible at JDSF. In addition, regardless of the level of habitat protection provided, it is not scientifically possible for the Board or CDF, or any other landowner, to ensure that a species will recover. JDSF is too small to provide the ability for species to recover; but, by demonstrating proper management and monitoring, JDSF can result in environmental benefits to millions of private acres.

This alternative was eliminated due to infeasibility and a failure to meet the basic purpose, goals and objectives of the DFMP of demonstrating how timber production can be managed to serve a variety of public purposes. However, components of this alternative have been incorporated into the alternatives analyzed in detail. Alternatives C2, D, E and F would provide elevated levels of protection for these species.

Exclusive Late Seral Timber Management: Several scoping comments focused on JDSF considering longer-term timber management goals, such as long rotations and cutting cycles. Rotations/cutting cycles of 150 years up to 1,000 years were suggested that allowed for the production of large-diameter, old-growth quality logs. In addition, it was suggested that JDSF "not be mandated to manage exclusively

for maximizing timber production" and that sustained yield should be projected for hundreds of years.

The Board and CDF are specifically prohibited from managing JDSF exclusively for maximizing timber production, but in fact must consider a variety of forest resource values (See PRC § 4651). The six alternatives analyzed in detail, as well as the proposed project, consider wildlife, water, recreation, aesthetics, cultural resources, and other resource values and the balance among these values.

While a long-rotation/cutting cycle alternative would create larger-diameter logs, it would significantly limit JDSF's ability to function as a demonstration forest. Few private owners are growing large diameter trees for timber production anymore, and mills that can process large diameter logs are disappearing. There would be few people interested in learning from this type of demonstration. JDSF has a responsibility to demonstrate forest management over a variety of management regimes including short, medium, and long rotations/cutting cycles.

JDSF's timber projections are based on a long-term analysis. The DFMP alternatives project a long-term sustained yield (LTSY) over a 100-year planning interval. While it is recognized that longer-term projections may be desirable from a wildlife habitat perspective, the state of the art in modeling tools limit analysis to shorter time frames.

This alternative was eliminated from further consideration and analysis due to a failure to meet the basic purpose, goals, and objectives of the DFMP-- demonstrating timber management in ways that would benefit the general public and a variety of timber owners and managers. In addition, this alternative is infeasible in that it is beyond today's modeling capabilities to make reliable growth and yield projections over extensive time periods. Components of this alternative have been incorporated into the proposed project and the six alternatives analyzed to the extent that the purpose, goals and objectives can be met. The alternatives considered include a wide spectrum of silvicultural treatments, even- and uneven-aged management, as well as various cutting cycles and rotations. Residual old-growth trees of specific sizes and with unique structural characteristics, as well as old-growth groves would be set aside as no-harvest zones under each of the alternatives. In some of the alternatives, large areas of late seral forest would be established.

Recreational Use as Primary Management Emphasis: Some members of the public requested that JDSF be managed to enhance recreational benefits rather than traditional multiple uses and timber production. This alternative would promote more camping and hiking facilities as well as increased off-road vehicle use.

This alternative was eliminated from further consideration and analysis due to a failure to meet the basic purpose, goals and objectives of the DFMP as spelled out

in PRC § 4651. The Board and CDF lack the authority for managing JDSF primarily for recreation; CDF is required to consider a variety of forest resource values including recreation. While the Board or CDF could seek this authority it appears unnecessary in that other State Forests are already managed with a recreation emphasis and the proposed Plan has elevated recreation levels proposed.

Components of this alternative have been incorporated into Alternatives A, C1, C2, D, E and F to the extent that the project purpose, goals and objectives can be met. Continued forest recreation opportunities at JDSF would be ensured through the establishment of buffers around campgrounds and hiking trails, as well as transportation corridors. No timber harvesting would be permitted under any of the alternatives, including the proposed project (C1), in the pygmy forest and old-growth groves, which are popular visitor attractions. Only limited timber harvesting in the Mendocino Woodlands STA would be allowed under Alternatives A through D and F, while Alternative E includes a no-harvest prescription for the majority of the Mendocino Woodlands STA thereby affording enhanced recreational opportunities in the adjoining State Park facility.

Small-Scale Operations for Local Needs and Increased Access to Minor Forest Products: Public scoping indicated that there was interest in having JDSF managed to better meet the needs of small, local timber operators and sawmills. In addition, the public is interested in increased access for minor forest products. This alternative would emphasize managing JDSF primarily for timber sales to small operators and sawmills. Large commercial operations would be minimized. Thinning and other forest work would be targeted toward small businesses. In addition, other minor forest products (for example, firewood, mushrooms, burls, foliage) would continue to be harvested by the public and local businesses.

This alternative would not affect the Forest's resources in a manner that is substantially different from the other alternatives analyzed. The difference between timber sales being made to small or large operators is unlikely to affect the Forest's wildlife, water, or timber resources. The harvesting of minor forest products by the public currently occurs on JDSF and would likely continue under all of the alternatives analyzed. Small sales would produce potentially significant effects related to safety, closure of more roads to the public, and increased operating and planning costs. In as much as alternatives are designed to offer ways to reduce the proposed project's environmental effects, there is no beneficial environmental effect with respect to 20 or 30 minor sales versus 5 variable sized sales for the same areas. On the other hand, if the effect of this alternative is to restrict the amounts and types of timber harvest, then this alternative is included as part of Alternatives C2 and D through F. Based on the above considerations, this alternative was eliminated from further consideration and analysis.

Regional Watershed and Conservation Planning: Several commenters preferred to see an analysis that focused on a broader, regional approach rather

than the management of JDSF within its own boundaries. This included developing a regionally based plan emphasizing watershed and resource conservation. This also included using JDSF as a mitigation bank for adjacent timberlands, managing JDSF as a wildlife connectivity corridor with other public lands in Mendocino County, and considering adjacent parklands as part of the analysis. Others wanted the entire Noyo River watershed considered in any analysis.

This alternative would require multiple landowners to participate and agree to management direction over the long term. The feasibility of such a mutually acceptable agreement is remote because adjoining public and private ownerships have differing management objectives. Demonstration on JDSF, however, will set an important precedent for other landowners in Mendocino County and elsewhere. In addition, the analysis of impacts on fish and wildlife species in this EIR is not limited to JDSF alone, but includes the entire Noyo and Big River basins, in addition to four smaller coastal drainages. The larger watershed areas are used to assess potential impacts to fish and wildlife species, to watersheds, and for the cumulative effects analysis. Some analyses consider even larger regional scales. The use of JDSF as a mitigation site could allow more intense timber management activities elsewhere likely resulting in a full range of significant indirect impacts that would not otherwise occur as a result of this project.

This alternative was eliminated from further consideration and analysis due to technical infeasibility, expansion of the project scope and geographic area beyond the DFMP's basic purpose, and the likelihood of increased impacts associated with more intense off-site activities resulting from a mitigation bank on JDSF. Components of this alternative have been incorporated into Alternatives C2, D, E and F to the extent that they meet the project purpose, goals and objectives, and reduce environmental impacts.

Transfer management of the Mendocino Woodlands Special Treatment Area to the California Department of Parks and Recreation: In 1947, the National Park Service gifted over 5,000 acres of land in the Woodlands area of Big River to the State of California. This land was incorporated into Jackson State Forest and managed by the Division of Forestry. The gift was conditional, specifying that the land was to be managed exclusively for conservation, recreation, and public park purposes. The State of California requested an opinion from the Federal Government as to whether timber harvest in the area would comply with the conditions of transfer. The Federal Government replied in the affirmative, so the land was accepted by the State.

In 1976, the State Legislature transferred over 700 acres of this area to the State Department of Parks and Recreation (DPR). The area transferred to DPR consisted primarily of the Woodlands Camp recreation area. This legislation also designated about 2,500 acres of the surrounding state forest as a Special Treatment Area.

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The Woodlands Camp Association (concessionaire of the Woodlands Camp area) and others have proposed that the Special Treatment Area surrounding the Woodlands be transferred to the Department of Parks and Recreation. Others have claimed that the harvest of timber from the entire area deeded to California by the NPS is illegal under the terms of the transfer. While this is not the case, some local individuals have expressed this concern.

This alternative includes consideration of transfer of the 2,500-acre Special Treatment Area to DPR. This area includes a portion of the state forest lying adjacent to and between Russian Gulch State Park, Mendocino Woodlands State Park, and the new Big River addition to the Mendocino Headlands State Park, thus forming a large, contiguous area of redwood forest of approximately 13,000 acres under DPR management. The basis for this recommendation is the contention that CDF's management activities, such as timber harvesting within the STA, causes significant impacts and interferes with the enjoyment of visitors to the Mendocino Woodlands.

The purpose of alternatives in an EIR is to identify methods for reducing impacts, not necessarily to compare the management styles between various agencies. A transfer in ownership of the STA, and hence management objectives, may indeed lead to a reduction in potential effects. However, a transfer in ownership is not the only means to effect that change. Several of the alternatives analyzed in this EIR, specifically C1, C2, D, E and F, include changes in management of the forest while under CDF's control that will effectively have the same net result: no even aged management; no herbicide use; reduced harvest levels, late seral forest development, etc.

In addition, the alternative conflicts with State Forest Policy:

The State forests should remain intact as management units without further diversion of productive area to non-forestry purposes. There should be no future transfers of commercial timberland from the state forests except where such transfers meet the program objectives of the State forests (State Forest Land Acquisition Policy 0351.9).

Given this policy conflict, and because recreational users of JDSF and the Mendocino Woodlands would have similar experiences and the impacts to forest resources and the environment from recreational use and management would be the same, regardless of land managers, this alternative has been eliminated from further consideration.

Maximize Timber Production: Some members of the public expressed a preference that management of JDSF should maximize timber production. Under this approach, timber production would be reduced only to the extent made necessary by the Forest Practice Act and Rules, water quality protection laws, and fish and wildlife protection laws. JDSF's research, demonstration, and recreation

roles would be abandoned, or limited to the extent that these uses would not detract from maximization of timber production.

This alternative would result in higher levels of timber removals over time and greater use of intensive management practices such as clearcutting and other even-age management techniques. Herbicide use to reduce vegetation competition in young stands would be increased. Older, slower-growing stands would be replaced with faster-growing young stands. Road system changes would be made primarily for the purpose of better accessing stands for active management, rather than for the purpose of reducing sediment inputs to streams or improving riparian habitat.

This alternative is presently infeasible since it is not compatible with the statute that calls for maximizing sustained production of timber products while giving consideration to values relating to recreation, watershed, wildlife, range and forage, fisheries, and aesthetic enjoyment (PRC § 4639). This alternative also is inconsistent with Board policy.

This alternative was rejected from further consideration because it is largely inconsistent with the project goals and objectives and fails to mitigate any of the proposed project's potential significant effects.

Alternate Locations: Certain types of projects require at least one alternative to evaluate an alternate project location if moving the project to the new location would avoid a significant effect and not cause the same kind of effect at the new location. An alternate location is not required for this Program EIR since the JDSF Management Plan is site-dependent in much the same way a city is site-dependent on its incorporated area in conducting a General Plan Program EIR. These considerations, however, do not preclude analysis of differing management activities in different locations within JDSF. Further, JDSF is not typical of other large forestland holdings in its maturing second growth timber conditions, its ongoing research activities such as the Caspar Creek Study, its old growth redwood and Douglas-fir groves, and its special facilities such as the conservation camps. No significant environmental effect resulting from approving the DFMP has been identified that could be avoided by moving this State Forest to another location.

3. GENERAL OVERVIEW DESCRIPTION OF ALTERNATIVES

Seven alternatives have been selected for analysis including: the proposed project; two no-project scenarios (no management and continued management under existing plan); and four other alternatives. These alternatives have been determined generally feasible, consistent with the basic project purpose, goals and objectives and consistent with the CEQA concept that alternatives avoid or lessen a project's environmental effects.

The paragraphs below provide only a brief overview of each of the seven alternatives. To more completely understand the alternatives, the reader is strongly encouraged to examine Table VI.1, below, which presents a detailed matrix that clearly shows the difference and similarities among the alternatives.

Alternative “A” (No Project--Minimal Management Activity)

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; management of this kind can be observed on many parklands and private holdings. The primary land uses on JDSF would be public recreation and monitoring or study of natural environmental processes.

This alternative is not required for analysis since it does not meet the project goals and objectives. Further, it would likely require changes in legislation and Board policy. It is not intended as an alternative that could feasibly be adopted; rather, it is intended as a baseline for purposes of comparing the project setting (and the absence of any management plan activities) to several different management strategies represented by Alternatives B through F.

Alternative B (No Project--Management Consistent with 1983 Management Plan)

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 [harvest previously estimated at about 29 million board feet (MMBF) per year; now estimated at close to 36 MMBF per year for this alternative] 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. It also includes the maintenance of existing recreational facilities. This alternative accommodates changes in laws and regulations that affect management activities, particularly changes in the FPRs and the Endangered Species Act. This alternative entails a moderate level of timber production (harvest during the first decade of the plan would be equal to 82% of growth and 1.7% of inventory), a moderate level of wildlife protection emphasis, with a low level of recreation facility development.

By examining the potential effects of the implementation of the previous JDSF management plan, this alternative provides an additional kind of baseline to compare the potential effects of the other alternatives considered in the EIR.

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 includes an average annual harvest level of 31 MMBF (based on a 10-year average) for the first decade. Harvest during this 10-year period would be equal to 70% of growth and 1.4% of inventory. With limited exception, clearcutting is permitted only for research purposes. Old growth stands and trees would be protected. This alternative has a conservation-oriented approach to management of wildlife and aquatic resources on a watershed basis. 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 desired future condition is developed in terms of maintaining a high level of timber production while actively maintaining and recruiting additional habitat needed for listed species and other species of concern. Class I and II riparian zones would be managed to establish late successional habitat. The alternative includes a similar type of recreational use as Alternative B; in addition it proposes a survey of recreations 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. A range of Special Concern Areas that will receive specified protections is designated (see Map Figure D).

As the “proposed project” alternative, C1 represents the management plan that the Department has proposed to the Board for adoption.

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. Harvest during the first decade would be equal to 70% of growth and 1.4% of inventory.

The November 2002 Management Plan was approved by the Board in November of 2002. However, that approval was later rescinded by the Board on October 9,

2003 as a result of a July 30, 2003 order of the Mendocino County Superior Court. See the Notice of Preparation for this EIR in Appendix 4 for further details.

Alternative D (Citizen Advisory Committee)

This alternative is developed from recommendations of a seventeen-member JDSF Citizen Advisory Committee (CAC) appointed by former CDF Director Richard Wilson. 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. Riparian zones for all watercourse classes would be protected by using harvest limitations similar to the methods described in the *Report of the Forest Ecosystem Management Assessment Team* (FEMAT 1993). Riparian zones would be managed to establish late successional habitat. Recreation would be emphasized, including increasing the number of hiking trails and campsites. Timber harvesting would be compatible with the recreation uses. Harvest during the first decade would be equal to 55% of growth and 1.1% of inventory. 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 (Late Seral Emphasis)

This alternative includes a number of the public concerns expressed during scoping, with 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. Harvest during the first decade would be equal to 18% of growth and 0.4% of inventory. Low impact recreational opportunities such as trails and hike-in campsites would be expanded where they did not pose significant risk to fish and wildlife resources. Research would no longer address questions on intensive forest management, but would shift to studying the existing vegetation types, development of old forest conditions, and watercourse conditions and how they change over time. 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 may not be 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 (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 was based on the version of SB 1648 available in early July 2004.¹ This version was used because that was the time when specific EIR analysis work was begun. The Sierra Club recommendations also were incorporated into this alternative because they were largely compatible with the SB 1648 elements and provided additional detail to the alternative, and because the Sierra Club was a major proponent of SB 1648.

Alternative F would change the basic management goal of JDSF from maximizing sustained timber productivity while giving consideration to values relating to recreation, watershed, wildlife, range and forage, fisheries, and aesthetic enjoyment to balancing sustained production of high quality timber products while maintaining and restoring high quality habitat for flora and fauna native to the coast redwood ecosystem. This alternative would utilize primarily uneven-aged management, including prescriptions designed to develop a core of late-seral forest conditions and habitat components. Even-aged management is minimized and limited to research. Watercourse protection would be based on the National Marine Fisheries Service's short-term habitat conservation plan guidelines.

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, consisting of two sections at the headwaters of Jughandle Creek and Russian Gulch. A Recovery Research and Recreation Area is designed to maintain connections between older forest habitat, generally linking the existing old growth groves and some of the older second-growth along watercourses and including other key features of demonstrated public interest. Multiple modes of management are encouraged in this Area, including timber harvest, research and demonstration, and recreation. The purpose of this Area is to direct management toward maintaining and developing a core of older forest stands and maintaining old forest habitat components where timber harvest does occur Thompson Gulch would be designated for late seral development.

Any tree alive since 1850 or earlier would be protected from harvest unless it posed a hazard. Harvest during the first decade would be equal to 42% of growth and

¹ SB 1648 continued to evolve during the legislative session. It was passed by the legislature on August 27, 2004, and submitted to the Governor, who vetoed the bill on September 16, 2004.

0.9% of inventory. Preharvest and postharvest monitoring and publication of results would be required as an integral component of any experiments involving even aged management. A new advisory committee, appointed by the Board of Forestry and Fire Protection, would be formed to oversee JDSF management. An interagency technical committee also would be formed.

The Sierra Club developed a map detailing the spatial extent of a number of the management features contained in their scoping comments (see Map Figure AA).

Some aspects of Alternative F management direction may not be consistent with the current Public Resources Code or Board policy. Thus, absent changes to those legal mandates, it is not a wholly feasible alternative. However, elements of this alternative are useful for how they offer potential ways to mitigate forest management impacts. Through the use of shading, Table VI.1 indicates which elements of Alternative F may be inconsistent with current law or Board policies.

4. DETAILED COMPARISON OF ALTERNATIVES BY SUBJECT

Table VI.1, found at the end of this section, presents the seven alternatives in a detailed, comparative format. In general, the comparison is geared toward key management measures. This table provides a much more complete basis for the comparison of the alternatives than does section VI.3, above.

5. RELATIVE COMPARISON OF IMPACTS BY RESOURCE

Tables are provided on the conclusion of each resource analysis section (refer to Section VII) and the conclusion of the cumulative effects section (refer to Section VIII) summarizing the level of impact identified for each alternative and whether such impacts can be mitigated to less than significant levels.

6. ENVIRONMENTALLY SUPERIOR ALTERNATIVE AND PREFERRED ALTERNATIVE

CEQA Guidelines §15126.6(e)(2) requires a lead agency in an EIR to identify an Environmentally Superior Alternative, and where the Environmentally Superior Alternative is the No Project Alternative, to identify an Environmentally Superior Alternative from among the other alternatives. This requires the lead agency to develop a feasible alternative that mitigates one or more of the project's impacts thereby providing a choice to the decision makers other than merely "project" vs. "no-project".

Alternative E, with its habitat emphasis, is the environmentally superior alternative and would result in the least severe impacts, particularly to wildlife resources. The

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alternatives analysis further concludes that certain impacts, such as fire hazards and road erosion, would worsen under the no action alternatives (Alternatives A and B).

The preferred alternative is Alternative C1, which represents the proposed JDSF May 17, 2002 Draft Management Plan.

The shaded text in Table VI.1 below denotes components of alternative that are potentially inconsistent with the current Public Resources Code, regulations, or Board policies. Specific elements that are potentially inconsistent are shown in shaded text and a parenthetical reference number that refers to the pertinent elements of legislation and policy as follows:

(1) PRC 4631. It is hereby declared to be in the interest of the welfare of the people of this state and their industries and other activities involving the use of wood, lumber, poles, piling, and other forest products, that desirable cutover forest lands, including those having young and old timber growth, be made fully productive and that the holding and reforestation of such lands is a necessary measure predicated on waning supplies of original old growth timber. It is further declared to be the policy of the state to acquire by purchase, exchange, lease, or grant all of the following: . . .

(d) One area, not to exceed approximately 40,000 acres, in each of the following districts, Coast Range Pine and Fir District, North Sierra Pine District and the South Sierra Pine District, for the purpose of demonstration of economical forest management. These areas shall not include virgin timber except that which is incidental to areas previously harvested.

PRC 4631.5 (a). Retain the existing land base of state forests in timber production for research and demonstration purposes.

(2) PRC 4639. "Management" means the handling of forest crop and forest soil so as to achieve maximum sustained production of high quality forest products while giving consideration to values relating to recreation, watershed, wildlife, range and forage, fisheries, and aesthetic enjoyment.

(3) PRC 740. The board shall represent the state's interest in the acquisition and management of state forests as provided by law and in federal land matters pertaining to forestry, and the protection of the state's interests in forest resources on private lands, and shall determine, establish, and maintain an adequate forest policy. General policies for guidance of the department shall be determined by the board.

PRC 4645. The department, in accordance with plans approved by the board, may engage in the management, protection, and reforestation of state forests.

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PRC 4646. The director, acting in accordance with policies adopted by the board, shall administer this chapter. He may exercise all powers necessary to accomplish its purposes and intent.

(4) BOF Policy 351.2. The primary purpose of the State Forest program is to conduct innovative demonstrations, experiments and education forest management.

BOF Policy 351.2. A. Timber production will be the primary land use on Jackson, LaTour and Boggs Mountain State Forests.

(5) BOF Policy 351.4. G. Economically and ecologically justifiable intensified forest management practices to increase total fiber production and timber quality will be pursued on the State forests. These practices will be designed and carried out for maximum applicability (or demonstration values) to private lands.

BOF Policy 334.3. In order to maintain timber growing land in California as a permanent source of current and future timber supply, the Board has found that it is in the public interest: . . .

B. To manage all prime timberland on State forests to investigate and demonstrate management for optimum long-run timber production.

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Table VI.1. Comparison of Management Approach and Elements Among Proposed Alternatives.						
A Minimal Management* (No Project)	B Continue 1983 Plan (No Project)	C1 CDF May 2002 DFMP (Proposed Project)	C2 CDF Nov. 2002 Plan	D CAC Proposal*	E Late Seral Forests*	F Older Forest Emphasis*
OVERALL STATUTORY MANAGEMENT DIRECTION (Note: Significant management direction also comes from regulations and Board policies. See Appendix 5, Statutes, Regulations, and Polices Governing State Forests.)						
Demonstration of economical forest management, [from PRC § 4631(d)]. [T]he handling of forest crop and forest soil so as to achieve maximum sustained production of high quality forest products while giving consideration to values relating to recreation, watershed, wildlife, range and forage, fisheries, and aesthetic enjoyment (from PRC § 4639).	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Demonstrations and scientifically designed studies regarding forest resource management; timber production; maintenance and restoration of forestland resources; education; recreation; and public enjoyment Management shall demonstrate how to balance sustained production of high quality timber products with maintaining and restoring high quality habitat for

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						flora and fauna native to the coast redwood ecosystem in a way that provides ample opportunities for research, recreation, education, and public enjoyment.
OVERALL ALTERNATIVE MANAGEMENT DIRECTION						
Provide only minimal maintenance and protection of forest resources (1).	Maintain the current level of forest management demonstration, timber production, recreational development, and environmental protection consistent with the 1983 Management Plan. Provide a moderate level of timber production, a	Elevates wildlife, watersheds, and ecosystem processes to a level of importance equivalent to the timber management and the research, demonstration and education programs. Places approximately 30% of the Forest into	Similar to C1, with greater provision for development of late seral forest habitat.	Emphasize uneven-aged management. No use of clearcutting; other even-aged management prescriptions restricted to limited demonstration purposes. Demonstrations to emphasize all-aged management. Increased emphasis	Emphasize development of late seral forests (5), restoration of the natural forest ecosystem, and the protection of water quality, fish, and wildlife habitats. No even-aged management (2, 5) or harvest of old-growth trees. Low impact recreational	All forest resources to receive equal protection (1, 2). <i>Restoration and fish and wildlife habitat oriented management restrictions will apply to approximately 80% of the Forest (2, 5).</i> A new advisory committee with a

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	moderate level of wildlife protection emphasis, with a low level of recreation facility development.	Special Concern Areas where special consideration is given to specific resources or values during the planning and implementation of management activities. Special concern areas may involve protection of listed species, protection of watercourses and aquatic habitat, or protection of scenic values, recreational resources, or adjacent state parks. Applies a conservation-oriented approach to management of wildlife and aquatic		on hardwoods management. Provide strengthened protections for riparian zones, including development of late seral forest characteristics. Create a citizen's committee to ensure citizens' input, approval of forest management, and oversight of management practices. Appointment a citizen advisory committee to seek an updated and revised legislative mandate for the Forest.	opportunities would be expanded where they do not pose significant risk to fish and wildlife resources. Research would shift to studying the existing vegetation types and watercourse conditions and how they change over time.	majority of members not appointed by the BOF as well as having no financial interests in timber products shall be actively involved in annually setting and reviewing management plans. An interagency technical committee shall also be appointed to advise the board, department, and advisory committee (3).

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		resources on a watershed basis. Maintains a high level of timber production while actively maintaining and recruiting additional habitat needed for listed species and other species of concern.				
FOREST MANAGEMENT						
Special Concern Areas (SCAs) and Woodlands Special Treatment Area (STA)						
No Inner gorge or landslide SCAs, all others similar to C1 related to roads for recreational access. Protect specific species and sites as necessary to comply with applicable laws, rules, and	Most special concern areas driven by regulation (e.g. stream protection zones, protection of listed species, constrained silviculture in special treatment areas adjacent to state	Provides 23 types of special concern areas with public trust resources values are identified and have management constraints applied. SCAs include watercourse protection zones	Similar to C1.	Similar to C1 with greatly expanded riparian zones and habitat development areas. Manage Woodlands STA for conversion to a preserve (2, 4, 5), except for the Helms and Caspar Creek project areas.	Inner gorge, landslide, WLPZ, Non-timberland neighbors, and Woodlands SCAs are all no harvest (2, 4, 5), all others similar to C1 with most of Forest off limits to harvest (2, 4, 5).	Approximately 12,000 acres that have not been entered in the past 80 years shall be managed to address the regional scarcity of that age class (5). Eleven old growth groves totaling 459

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regulations.	parks, etc.).No Inner gorge or landslide SCAs, no late seral habitat development. Protect specific species and sites as necessary to comply with applicable laws, rules, and regulations.	(7,440 acres); old-growth groves (459 acres) and old-growth augmentation (late seral development) areas (780 acres); nest areas for bird species of concern; buffers for specified high-use roads, trails, and campgrounds; and buffer for neighboring rural residential properties and state parks. In most cases, only selective harvesting that retains a significant component of large trees and a high stand density is allowed in SCAs.		Also, transfer Woodlands STA to the Department of Parks and Recreation (1).		acres will be protected. <i>Adds approximately 328 acres at the head of Thompson Gulch to the Woodlands Special Treatment Area, to be managed for old growth development.</i> The Woodlands Special Treatment Area shall be used for the purposes specified in the act of Congress of June 6, 1942 [56 Stats, 236: 16 U.S. C. 459t] that authorized the transfer. <i>In high visitor use areas associated</i>

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		In the Woodlands Special Treatment Area, silvicultural activities are focused on promoting late-successional forest conditions, maintaining aesthetic qualities, and limiting impacts on the operation of Mendocino Woodlands.				<i>with Roads 408, 409 and 500 near Mendocino and Caspar, the current full canopy stand appearance must be maintained post-harvest. Impacts to mycological resources will be mitigated.</i> <i>See below for 3,498-acre Marbled Murrelet Recovery Demonstration Area.</i>
Silviculture (Also refer to Growth and Yield, below)						
No harvest, no site prep, no thinning, no planting (1, 2, 5)	Similar to C1, except that neither even-aged nor uneven-aged management is emphasized. No silvicultural allocation plan.	Demonstrate a wide range of silvicultural systems across the landscape, available for future research and demonstration. Establish a structural condition	Similar to C1, with greater emphasis upon development of late-seral forest: approx. 70% of area available for moderate to intensive timber	No clearcutting; other even-aged management prescriptions restricted to limited demonstration purposes. Apply large-scale	Utilize uneven-aged prescriptions to accelerate the development of late-seral forest within the limited area of the Forest where timber harvest	Utilize primarily uneven-aged management, including selection and prescriptions designed to develop a late-seral forest condition. The use

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		allocation plan with approximately 75% of Forest area available for moderate to intensive timber management, with approximately 64% dedicated to forms of uneven-aged management (including 20% for late—seral forest development and old growth), and 29% to forms of even-aged management.	management (64% uneven-aged and 29% even-aged), 23% for late-seral prescriptions, and 7% other prescriptions.	demonstrations of all-aged management using small group and single-tree selection. Demonstrate how to convert an even-aged forest into an all-aged forest, and experiment in the development of old forest components within a young forest. Develop high quality hardwoods.	would be allowed.	of even-aged management is minimized and limited to experiments designed and implemented for a specific research purpose (2, 4, 5).
Growth and Yield						
No annual harvest volume (2, 4, 5). Long-term sustained yield (LTSY) of 64.2 million board feet (MMBF) per year.	As interpreted by CDF and approved by the Board in the 1983 management plan; in compliance with Forest Practice Regulations	Compliance with Board Policy and Forest Practice Regulations associated with Maximum Sustained	Similar to C1, with a small reduction in long-term productive potential associated with increase in area dedicated to late-	After increased allocation of timberland base to restoration of late-seral forest in expanded riparian areas (limited	After allocation of the majority of the timberland base to restoration of late-seral forest conditions (no timber harvesting	<i>Separate the SCAs and other areas where protection is paramount from the rest of the Forest and calculate separate long-term</i>

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	<p>associated with Maximum Sustained Production requirements.</p> <p>Annual allowable harvest nearly equal to estimated annual growth, which was estimated at 29 million board feet (MMBF) per year in 1983. First period harvest now estimated at an average of 35.6 MMBF per year. Long-term sustained yield (LTSY) estimated at to exceed 50.5 MMBF per year).</p>	<p>Production.</p> <p>DFMP constrains harvest to an average of approximately 31 MMBF per year and would continue to build inventory over time; LTSY approximately 45.2 MMBF per year.</p>	<p>seral development.</p> <p>Plan constrains harvest to an average of approximately 31 MMBF per year; LTSY of 45.5 MMBF per year.</p>	<p>cutting allowed within the riparian zone to accelerate development of late-seral conditions, no further harvest after these conditions achieved), manage remainder of land base for compliance with Forest Practice Regulations associated with Maximum Sustained Production; no clearcutting; other even-aged management very limited.</p> <p>Harvest an average of about 24.9 MMBF per year during the first 10-year period; LTSY of 53.2 MMBF per year.</p>	<p>utilized), manage remainder of land base through limited harvest to promote development of late-seral forest.</p> <p>Harvest an average of about 8.1 MMBF per year (2, 4, 5) during the first 10-year period. LTSY approximately 62.1 MMBF per year.</p>	<p><i>sustained yields for each area. Determine appropriate harvests based on habitat goals in these special areas.</i></p> <p>Majority of forest not harvested since 1925 is treated as a special biological resource, which limits harvest potential.</p> <p><i>Expanded riparian buffer zones with limited harvest intended to promote development of late-seral conditions. Large area established to promote development of habitat for the marbled</i></p>

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						<i>murrelet and late-seral or old forest conditions.</i> Harvest an average of about 19.3 MMBF per year. LTSY approximately 55.4 MMBF per year.
TIMBER SALE PROGRAM—10-YEAR FIRST PERIOD.						
No timber sales (2, 4, 5).	Similar to C1 but with a somewhat higher annual average harvest level.	Estimated 3- 5 timber sales per year with 2-15 MMBF per sale.	Same as C1.	Estimated 1 to 3 timber sales per year with 2-11 MMBF per sale, also some very small sales designed for local small mill owners.	Estimated 1 to 3 sales per year with 2-10 MMBF per sale (2, 4, 5).	<i>Each timber plan shall be approved by the advisory committee (3).</i> <i>Estimated 1 to 3 timber sales per year with 2-8 MMBF per sale</i>
Conifer Species Diversity						
No active management for species diversity.	Intent of management is to promote maximum sustained production of high quality timber	Manage to promote natural mix of native species and proper ecological balance. Reduce hardwood site occupancy and	Similar to C1 with increase in area dedicated to development of late-seral forest conditions.	Uneven-aged harvest and natural regeneration with minimal species control.	Similar to D with attempt to imitate old-growth forest species mix and structural balance.	<i>Promote native species mix similar to original species mix in most areas within the constraints of the</i>

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	products, concentrated upon growth and yield of valuable redwood and Douglas-fir. Minor species have limited recognition for habitat values.	occupancy by other minor forest species where they exist beyond natural historic levels, and restore with native conifers.				<i>allowed silvicultural practices.</i>
Hardwood Management						
No active management.	Hardwoods are recognized for their habitat value on a limited basis, but an aggressive campaign to reduce hardwoods and replace them with native conifers would be implemented over time.	Actively manage stands to maintain or reduce hardwood stocking to levels similar to expected natural levels. West end managed to maintain current hardwood levels of about 10% of stand basal area; east end managed to reduce hardwood occupancy to about 15% of stand and shift back towards	Same as C1.	Manage hardwoods as a significant stand component to demonstrate development of high quality hardwood trees, habitat and product values. Allow hardwoods to achieve larger sizes. Hardwood management may be subsidized by the overall timber program.	Manage hardwoods to maintain a species mix and structure similar to old-growth forest.	<i>In areas available for forest management, manage hardwoods to the extent necessary to achieve levels associated with old forest within the constraints of the allowed silvicultural practices.</i>

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		native conifers.				
Geologic Review Of Timber Management Areas						
Little or no review needed since no timber management would occur.	Review projects as required by the Forest Practice Rules and as otherwise required by project-level CEQA review.	Review THPs as per Forest Practice Rules and involve a Certified Engineering Geologist in review of activities on potentially unstable slopes or within the inner gorge.	Same as C1.	No operations within inner gorge, review THPs as per Forest Practice Rules and Certified Engineering Geologist review of activities on potentially unstable areas.	Same as D.	<i>Review as per FPRs; apply NMFS short-term HCP guidance for delineating, mapping, and marking on ground any unstable areas before preharvest inspection. For each unstable area, determine probability of failure using best available science and participation of a geomorphological or geotechnical expert.</i>
Yarding						
No yarding of timber (2, 4, 5).	Similar to C1, but with potential for routine utilization of tractors for yarding timber on slopes to	Ground based yarding mostly limited to slopes <40%, cable on steeper slopes, and	Same as C1.	Same as C1.	Same as C1.	Same as C1.

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	the limits specified in the Forest Practice Rules.	limited helicopter where road construction not possible or not desirable. Compliance with FPR limitations.				
Transportation (see also Road Mangement Plan)						
Comply with FPRs and sediment TMDLs where applicable. No significant road construction or reconstruction; minor maintenance and major repairs limited to imminent failures (2).	Comply with FPRs and sediment TMDLs where applicable. No road management plan, maintain current road system and construct new road as necessary to facilitate forest management activity.	Comply with FPRs and sediment TMDLs where applicable. Roads and landings constructed and reconstructed as needed to support harvest operations. Road Management Plan includes inventory, construction, maintenance, and decommissioning standards. Decommission unnecessary and	Same as C1.	Similar to C1. No new road construction in Riparian Management Zones. Culvert replacements to accommodate 150-year flood event and should not be used where bridging is more applicable.	Similar to D plus aggressive road decommissioning in most of Forest.	<i>Same as D.</i>

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		environmentally damaging roads.				
Fire Protection						
Fire suppression only; no active planning or management to reduce fire risks other than keeping roads open and maintaining existing facilities (2). Continued interaction with Unit Fire Protection Program.	On going fire protection and prevention as part of on-going interaction with Unit Fire Protection Program, concentration upon water tanks, fuel breaks, road maintenance, staff training, and roadside slash reduction.	In addition to aspects of B and active fire suppression program, development and implementation of a comprehensive Fire Protection and Prevention Plan that includes vegetation management, consideration of fuels reduction through burning, shaded fuel breaks for fire defense. Potential for use of understory burning to enhance late-seral habitat development.	Same as C1.	On going fire protection and prevention similar to B.	Similar to B with additional consideration of understory burning to imitate natural conditions associated with late-seral forests.	<i>Same as C1.</i>

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Herbicide Application						
Limited use for road maintenance.	Use as necessary in compliance with legal restrictions and label to treat roadside vegetation, control invasive species, and control hardwoods and brush in harvest units.	Use as part of an integrated pest management program to control invasive plant species, for hardwood control in cutting units, and use for road maintenance. Herbicides represent a tool that can be used in an integrated fashion with other mechanical and cultural treatments to achieve the desired management objectives.	Same as C1.	Stop the use of chemicals in vegetation control and site preparation. Provide a three-year moratorium on chemical use for control of invasive species. Explore and develop alternatives to using chemicals for vegetation control.	No herbicide use.	<i>Demonstrate alternatives to herbicide use. Use herbicides only if other approaches fail.</i>
SPECIES PROTECTION						
Aquatic Species						
---Class I Watercourse						
Comply with FPRs and sediment and temperature	Comply with stream buffer specifications, equipment use	Comply with FPRs and sediment and temperature	Same as C1.	Comply with FPRs and sediment and temperature	Most Class I watercourses and adjacent area would	<i>Comply with FPRs and sediment and temperature TMDLs</i>

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TMDLs; however, there will be little or no application due to minimal management activity.	restrictions, and other limitations near watercourses as established in the FPRs and sediment and temperature TMDLs.	TMDLs. Augment FPR minimum standards to retain 10 largest conifers within 50 feet of stream per 330 feet of stream length, 25-foot inner band w/no cut or limited entry for habitat improvement with minimum 85% canopy; retain minimum 240 sq ft. conifer basal area, only one harvest per 20 years; 125-foot outer band with 70 to 85% canopy retention, or as needed to comply with FPR; no fire ignition in WLPZ; no salvage in WLPZ; retain all native hardwoods,		TMDLs. Riparian Management Zone (RMZ) typically to extend to width equivalent to height of two site potential trees (at 200 years of age), which may be 400 feet or more on either side of the watercourse. No cut in inner half or limited cut to promote recovery and protection; once late-seral conditions achieved, harvest only as necessary to maintain late-seral. In outer half of RMZ, single-tree selection harvest allowed, with maximum basal area removal of 30% and maximum	not be managed for timber production, but some limited management could occur to facilitate development of late-seral forest within the riparian management zone.	<i>plus NMFS short-term HCP guidelines, which require: designation of an Aquatic Protection Zone (APZ) that is equal to the greater of one site-potential tree height or 180-feet; APZ may be further widened depending upon inner gorge, unstable area, or slopes >50%; most management activities excluded in APZ, including harvest. APZ to be managed to establish late successional habitat.</i>

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Table VI.1. Comparison of Management Approach and Elements Among Proposed Alternatives.						
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		recruit late seral elements and characteristics.		length rotation; manage to achieve and maintain late seral conditions. Full suspension of logs within RMZ whenever possible.		
---Class II Watercourse:						
Comply with FPRs and sediment and temperature TMDLs; however, there will be little or no application due to minimal management activity.	Comply with FPRs and sediment and temperature TMDLs.	Comply with FPRs and sediment and temperature TMDLs. Augment FPR minimum standards to retain 10 largest conifers within 50 feet of stream per 330 feet of stream length, 25-foot inner band w/no cut or limited entry for habitat improvement with minimum 85% canopy; retain minimum 240 sq ft. conifer basal area,	Same as C1.	Comply with FPRs and sediment and temperature TMDLs. RMZ typically to extend to width equivalent to height of 1.5 site potential trees (at 200 years of age), which may be 300 feet or more on either side of the watercourse. No cut in inner half or limited cut to promote recovery and protection; once late-seral conditions	Same as D in the managed area of the Forest.	<i>Comply with FPRs and sediment and temperature TMDLs plus NMFS short-term HCP guidelines, which require: designation of an Aquatic Protection Zone (APZ) that is equal to the greater of one site-potential tree height or 180-feet; APZ may be further widened depending upon inner gorge, unstable area, or slopes >50%; most</i>

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		75-foot outer band with high basal area and canopy retention. No fire ignition in WLPZ; no salvage in WLPZ; retain all native hardwoods, recruit late seral elements and characteristics.		achieved, harvest only as necessary to maintain late-seral. In outer half of RMZ, single-tree selection harvest allowed, with maximum basal area removal of 30% and maximum length rotation; manage to achieve and maintain late seral conditions. Full suspension of logs within RMZ whenever possible.		<i>management activities excluded in APZ, including harvest. APZ to be managed to establish late successional habitat.</i>
---Class III Watercourse						
Comply with FPRs and sediment and temperature TMDLs; however, there will be little or no application due to minimal management	Comply with FPRs and sediment and temperature TMDLs.	Comply with FPRs and sediment and temperature TMDLs, plus 25-foot ELZ for slopes <30% and 50 feet for slopes >30%. May be expanded	Same as C1.	Comply with FPRs and sediment and temperature TMDLs. RMZ with 100-foot width; no cut in inner half or limited cut to promote recovery	Same as D in the managed area of the Forest.	<i>Comply with FPRs and sediment and temperature TMDLs plus NMFS short-term HCP guidelines, which require: designation of an Aquatic</i>

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activity.		for site-specific conditions; no fires ignited within 50 feet of channel; majority of LWD shall remain following burning in ELZ.		and protection; once late-seral conditions achieved, harvest only as necessary to maintain late-seral. In outer half of RMZ, single-tree selection harvest allowed, with maximum basal area removal of 30% and maximum length rotation; manage to achieve and maintain late seral conditions. Full suspension of logs within RMZ whenever possible.		<i>Management Zone (AMZ) that is 100-feet or wider depending upon unstable area or slopes >50%; most management activities excluded in first 30 feet or more where unstable areas are present; in outer part of AMZ, conifer basal area may not be reduced to less than 50% of a fully stocked stand per empirical yield tables and may be harvested only if adjacent harvest units are commercial thinning or single-tree selection as a part of the same THP.</i>

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						<i>AMZ to be managed to establish late successional habitat.</i>
Terrestrial Wildlife						
--Northern Spotted Owl (NSO)						
Protect to avoid "take".	Similar to A; survey potential habitat within or near project areas; protect active sites as necessary or as specified after consultation with USFWS.	Protect to avoid "take". Objective to maintain or increase number and productivity of nesting pairs. FPR protection and consultation as needed with USFWS on a THP/project basis; silvicultural allocation plan and silvicultural practice retains and creates habitat available for NSO. As budget allows, expand more staffing to	Same as C1.	Similar to C1 with emphasis on expanded late-seral habitat recruitment in the riparian management zone. Experimentation with structural attributes similar to old-growth forest for wildlife enhancement. Expand staff expertise to include biologist.	Similar to D. Potential habitat created over time by increasing area dedicated to development of late-seral forest and vastly reducing area dedicated to timber production (2, 4, 5).	<i>Similar to D, though more area dedicated to late-seral habitat.</i>

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		include greater biological expertise.				
--Osprey						
Protect to avoid "take" per Fish and Game Code. Protect existing active nest sites.	Similar to A; comply with FPR requirements for individual projects.	Objective to maintain or increase the number and productivity of nesting osprey; management practices enhance nesting opportunity; retain existing snags; snag retention targets established; restrict log hauling within 300 feet of active nest; FPR protection and consult with CDFG as needed on a THP/project basis.	Same as C1.	Similar to C1. Opportunities for snag development increased by expanding area dedicated to development of late-seral forest within the expanded riparian management zone and through experimentation with development of old-growth structural elements.	Similar to D, but with vastly expanded opportunity for snag development through increase in area dedicated to late-seral forest development.	<i>Same as C1.</i>
--Marbled Murrelet (MAMU)						
Avoid "take" as necessary. Survey potential habitat if	Similar to A; Consult with CDFG/USFWS for	Protect all identified old-growth groves (459 acres); recruit	Similar to C1 with increase in area dedicated to	In addition to provisions of C1, no harvest in	Similar to C1, plus additional late seral habitat development	<i>Creates a 3,498-acre Marbled Murrelet Recovery</i>

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management activity has potential for “take”; consult with CDFG/USFWS for occupied habitat, No specific MAMU habitat recruitment.	occupied habitat, No specific MAMU habitat recruitment,. Survey potential habitat in and near THPs and other projects with potential for “take”.	late-seral forest within 492-acre buffer around Road 334 grove, 38-acre buffer around Upper James Creek Grove, 250 acre buffer around waterfall grove complex; additional silvicultural restrictions adjacent to habitat buffer; protocol surveys in potential habitat; seasonal buffers for occupied habitat; disturbance buffers for occupied habitat; USFWS and CDFG consultation for activities adjacent to potential habitat; 2,224 acres of Mendocino Woodland STA	development of late-seral forest conditions, primarily in the vicinity of upper Russian Gulch, lower Big River, and upper Thompson Gulch.	Woodlands STA (approx. 2,500 acres), except for some thinning from below to enhance marbled murrelet habitat where biologists think that it is good science, and substantial increase in recruitment of late-seral forest in the broad RMZ.	across the entire Forest	<i>Demonstration Area (MAMU Area), consisting of two sections at the headwaters of Jughandle Creek and Russian Gulch. These areas would be managed to maintain and develop a closed canopy, avoid conditions favorable to corvids, avoid firearm use, and apply tested nest limb development techniques.</i>

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		managed to recruit potential MAMU habitat, protocol surveys for THPs/projects .				
--Northern Goshawk (NOGO) and Cooper's Hawk						
Avoid "take" per Fish and Game Code.	Similar to A, plus FPR protection in THPs.	Surveys in potential habitat on a project basis; 100 acre nest site and 300 acre post fledging area protection zones for occupied NOGO nest sites; CDFG consultation for occupied Cooper's nest site if found; seasonal and disturbance buffers as per FPRs and on a consultation basis with CDFG.	Same as C1.	Same as C1.	Same as C1.	<i>Same as C1.</i>
--Vaux's Swift and Purple Martin						
No specific protection.	No specific protection.	Retain trees with suitable cavities; in even aged areas	Same as C1.	Similar to C1, with potential for expanded habitat	Similar to C1, with potential for expanded habitat	<i>Same as C1.</i>

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		retain all snags; retain large firs in WLPZ as snag recruitment; no salvage in WLPZ, MAMU buffers; retain large fir trees in or near even-aged areas in suitable habitat locations; snag recruitment targets for fish and wildlife SCAs and general forest.		area associated with broad riparian management zones.	area associated with extensive area managed to promote late-seral forest development.	
--Red Tree Vole (RTV)						
No specific protection.	No specific protection.	Manage to maintain significant potential habitat of Douglas-fir trees in a connected state.	Same as C1.	Similar to C1, plus retain all identified RTV nests. To the extent that the species prefers late-seral forest habitat, provides for expanded riparian management zone intended to develop	Similar to C1 plus retain all identified RTV nests. To the extent that the species prefers late-seral forest habitat, provides for expansive area of late-seral forest habitat	<i>Same as C1.</i>

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				into late-seral forest.	development.	
--Rare Plants						
No specific protection.	Compliance with FPR; Protect known populations and incidental discoveries of populations of rare, threatened, and endangered species, project surveys only as required by THP review process and CEQA compliance.	Surveys in potential habitat on a THP or project basis; design projects to prevent significant negative effects to rare plant populations; provide survey results to CDFG; maintain and promote habitat conditions suitable to meet species habitat requisites. Use integrated pest management to control invasive species with potential to impact rare plant habitats.	Modify C1 adding a current list of species considered as recommended by DFG and more formalized scoping, survey, consultation, and recording process.	Same as C1.	Same as C1.	<i>Similar to C1, plus phase in Forest-wide floristic survey as funding permits.</i>

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OTHER MANAGEMENT AREAS						
Recreation						
Forest open to the public with no active development of recreation facilities, minimally maintain existing facilities (2).	Maintain existing facilities, continued recreation use at levels similar to current use; conduct user survey; plan for potential increase in facilities; demonstrate compatibility between forest management and recreation; use recreation program to educate the public about forest management.	Similar to B; Maintain and improve existing facilities, develop recreation corridor at two main camping areas; establish aesthetic buffer with restricted silviculture adjacent to campsites, roads, trails, and neighboring rural residential homes; survey users for adaptive management purposes; surface roads heavily used for recreation; collaborate with Department of Parks and Recreation and	Similar to C1 with provision to increase signage associated with timber operations and other closures and restrictions.	Similar to C1, with increased emphasis on recreation with development of new and improved trails, mitigate timber harvest specifically to address recreation. Hire staff with recreational background or education; rock high-use recreational roads; improve trail system; work with State Parks on joint trail systems; the priority of recreation should be increased when planning timber harvests; include resource scientists on the	Develop low impact recreation opportunities where they do not present a significant risk to fish or wildlife.	<i>Similar to C1, plus make visitor use a primary consideration in older forest areas. In Road 408, 409, 500, Caspar and Mendocino Woodlands areas, emphasize management consistent with visitor use including visual mitigation, slash minimization, and consideration for mycological resource.</i>

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		Mendocino Woodlands Association.		recreation staff.		
Aesthetics						
No provisions for consideration of aesthetics.	No specific constraints; compliance with FPR which requires consideration of cumulative effects in THPs.	Aesthetics consideration in development of silvicultural allocation plan; establishment of aesthetic buffers adjacent to campgrounds, trails, selected roads, and adjacent to designated rural residential neighborhoods.	Similar to C1, with increased level of review, analysis, and mitigation provided in planning for individual timber harvest activities and even-aged timber harvest proposals.	Similar to C1 but with greater emphasis upon aesthetic values; timber operations must be compatible with recreational use. Expanded riparian management zone expected to provide increase in aesthetic values.	Reduction in forest management activity expected to provide increase in aesthetic values.	<i>Similar to C1, plus maintain and enhance appearance of ridgeline forest stands.</i>
Research & Demonstration						
Limited research and demonstration of non-managed forest development (2, 4, 5).	Conduct forest management demonstrations as opportunities arise; no formalized demonstration	Development of a Research and Demonstration plan element of the Forest Management Plan,	Similar to C1 with increased level of detail and planning associated with the research and demonstration	Research and demonstration focused on converting even-aged stands to uneven-aged	Research and demonstration focused on the study of vegetation and watershed and how they change	Research and demonstration shall address all aspects of forest resource management,

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	plan; maintain the Caspar Creek Watershed research project.	plan for and implement a wide range of research and demonstration projects; form partnerships with other entities, construct a Forest Learning Center; manage the forest to create a variety of forest conditions available for future research and demonstration. Continued ongoing research and demonstration, including economical forest management.	plan.	<p>condition and development of late-seral forest; Increased emphasis on importance of hardwoods as habitat and product potential.</p> <p>Demonstrate the effects of single-tree selection and other all age silvicultural systems to wildlife and streams. Determine how many older trees and other forest components are needed in an area for enhancement of wildlife and how large and of what species or form are</p>	<p>over time with management intended to develop old-growth structure (2, 4, 5).</p> <p>Research related to intensive forest management and its effects (including even-aged management) likely reduced due to reduction or elimination in scope of intensive forest management.</p>	<p>including timberland productivity, and habitat development and restoration, and shall promote the revitalization of the region's environment, economy, and timber production capacity (from revisions proposed to PRC§ 4639 and 4665 in SB 1648).</p> <p>Require preharvest and postharvest monitoring and publication of results as an integral component of any experiments involving even aged manage-</p>

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				<p>needed</p> <p>Aggressively explore and develop alternatives to chemical methods of vegetation control.</p> <p>Research related to intensive forest management and its effects (including even-aged management) likely reduced due to reduction or elimination in scope of intensive forest management.</p>		<p>ment.</p> <p><i>Research impacts of Class III stream buffers.</i></p> <p><i>Encourage long-term research on natural recovery processes in older forest stands.</i></p> <p><i>Research related to intensive forest management and its effects (including even-aged management) likely reduced due to reduction in scope of intensive forest management (2, 5).</i></p>

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Primary Demonstration Clientele						
Managers and users of parks and wilderness areas (2, 4, 5).	Researchers and educational institutions, landowners managing timberlands for moderate levels of timber production and wildlife protection, and low level of recreational use.	Researchers and educational institutions, landowners, general public, agencies, and elected officials interested in comparisons across a broad range of forest management approaches with the goal of elevating wildlife, watershed, and ecosystem protections within a management system primarily financed by timber production.	Same as C1.	The nonindustrial forestland owner is to be the primary client base. Researchers and educational Institutions, landowners, general public, agencies, and elected officials interested in uneven-aged forest management with increased emphasis on using strong riparian and late seral protection measures.	Researchers and educational institutions, landowners, general public, agencies, and elected officials interested primarily in the development of late seral forests.	<i>Researchers and educational institutions, managers and users of parks and wilderness areas. Managers and landowners with a primary interest in developing forests dominated by older trees and in significant stream restoration and road improvement projects.</i>

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Monitoring and Adaptive Management Program						
None.	None.	Includes a detailed monitoring and adaptive management plan, including definition of monitoring goals, parameters and data collection, and analysis and adaptive management.	Same as C1.	A Forest-wide fully funded, scientific monitoring program to assess biological and physical aspects of aquatic resources. Standardized to include: monitoring salmonid populations and habitat.	A 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.	<i>Same as C1.</i>
Road Management Plan						
No road management planning; maintain roads as needed to avoid loss of facilities or violation of rules and regulations (2).	No specific road management plan, construct and maintain roads as needed to support operations; occasional decommissioning of unnecessary roads in conjunction with timber operations.	Implement Road Management plan as outlined in DFMP; plan includes standards for 5-year inventory, construction, maintenance, decommissioning; establishes plan to schedule repair	Same as C1.	Similar to C1. Culvert replacements accommodate 150-year flood event and should not be used for bridging is more applicable.	Similar to C1, but aggressive road decommissioning will occur in most of forest.	<i>The road inventory proposed in C1 should be completed as soon as possible and maintenance and repair projects undertaken in an expedited fashion. These expenditures will take priority over</i>

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		and decommissioning work.				<i>other forest management expenditures.</i>
Minor Forest Products						
Same as C1 with limited access due to road closures.	Relatively unrestricted public access by permit for collection of salvage sawlogs, dead and down firewood, greenery, mushrooms, split products.	Restricted public access by permit for the following products available to the public: salvage saw logs, poles, split products, greenery, mushrooms and firewood; area and other restrictions included on permits intended to protect riparian areas, structural habitat elements, and down old-growth material.	Same as C1.	Similar to C1 with additional restrictions; provide greater access to local citizens for collection of some minor forest products.	Similar to C1 although restricted to remaining Forest area available for limited management, additional restrictions to limit effects on old-growth development.	<i>Same as C1.</i>

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Rock Pits/Quarries						
Limited use of existing pits for road maintenance while remaining in compliance with all applicable rules and regulations.	Unrestricted use and development of rock pits subject to all applicable rules and regulations.	Most road rock is brought in from off site rock pits with very limited use of existing pits for Forest road work; possible development of new pit(s) in compliance with all existing rules and regulations; recognition of ecological value of potential new pit development areas.	Same as C1.	Same as C1.	Decreased level of activity at existing pits and no new development.	<i>Same as C1.</i>
Invasive Species Control						
Minimal; only as necessary to maintain open roads (2).	Treat invasive species on a case-by-case basis; not subject to planning or thorough consideration.	Integrated pest management approach with emphasis upon prevention; provision for suppression of	Same as C1.	Use of herbicides prohibited for at least a 3-year period. Demonstration of a non-herbicide control methods	Similar to C1, but without the use of herbicides.	<i>Use herbicides as a last resort to protect forest resources. Conduct research and demonstrations on</i>

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		invasive species; eight planned actions in the DFMP. Cultural, mechanical, and other alternative control methods considered in addition to, or in combination with herbicide use. Continued research and demonstration of a variety of control methods.		during moratorium.		<i>alternative eradication strategies.</i>

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HABITAT MANAGEMENT						
Old Growth Forest, Late Seral Forest, and Old Trees						
Retain existing old growth with no late seral development; natural stand development over time.	Per informal local policy, retain existing old growth groves, limited harvest of residual old growth trees, with no late seral development.	Retain existing old growth groves, retention of large residual old growth trees and old trees with structure, late seral development in selected SCAs and riparian protection zones; retention of structure in many even-aged prescriptions. Approximately 20% of the Forest dedicated to development of late-seral forest.	Similar to C1 with increase in area dedicated to development of late-seral forest conditions.	Retain existing old growth groves and old growth trees; late seral development in Woodlands STA and wide riparian management zones.	Retain all old growth groves and residual trees; main emphasis of management is to develop old growth forest characteristics across the Forest (2, 4, 5).	Timber harvest shall not occur in stands of old growth. Any tree alive since 1850 or earlier shall not be subject to any timber harvest unless posing a health or safety hazard to person or property. <i>Late seral development will be promoted in MAMU Area, riparian zones, and, to some extent, in areas unentered in past 80+ years.</i>

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Riparian Zone (See also Aquatic Species Protection described above)						
Not applicable since no management activity.	Forest Practices Rules. See details above under Aquatic Species Protection.	Zone widths as determined by Forest Practice Rule provisions, augmented by increased retention. See details above under Aquatic Species Protection.	Similar to C1 with additional restriction on timber removal when channel LWD is considered deficient. See details above under Aquatic Species Protection.	Ensure that silvicultural management within the riparian management zones provides for the rapid return to the natural (historical) ecological functions of riparian vegetation and entire riparian ecosystems (where past practices or natural events have diminished the diversity and functioning of riparian plant communities or entire riparian ecosystems). See details above under Aquatic Species Protection.	See description above under Aquatic Species Protection.	<i>See description above under Aquatic Species Protection.</i>

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Wetlands						
No management.	Forest Practices Rules.	Forest Practices Rules with protection of wetland site integrity and hydrologic function.	Same as C1.	FEMAT.	FEMAT.	<i>Forest Practice Rules and NMFS short-term HCP guidelines.</i>
LWD						
No management.	Forest Practices Rules; no specific targets.	Terrestrial: Retain at least 2 down logs per acre 20 ft. long by 16 inches large end diameter with at least 1 log per acre 20 ft. long by 24 inches large end diameter. Instream: no salvage within the channel zone or riparian zone.	Similar to C1 with additional restriction upon timber removal in the riparian zone when channel LWD levels are considered deficient.	Similar to C1, but with increased potential for recruitment from the broad riparian management zone.	Similar to C1 with increased potential for recruitment from emphasis on late seral development.	<i>Similar to C1 plus NMFS short-term HCP restrictions on salvage and sanitation logging in APZ and AMZ. Set targets in consultation with CDFG. Coordinate with salvage program to avoid conflicting management.</i>

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Snags						
No management.	Forest Practices Rules; no specific targets.	In wildlife special concern areas retain 3 snags per acre >20" dbh with at least 1 > 30" dbh, in general forest retain at least 1 per acre >30" dbh, uneven distribution to provide best snags in the best locations, indirect recruitment; salvage highly restricted.	Similar to C1 with provision to retain all snags in timber harvests with the exception of those that pose a fire or safety hazard, or are within the alignment of roads proposed for construction.	Similar to C1.	Similar to C1 with increased emphasis on late seral development.	<i>Similar to C1. In older forest areas, enhance recruitment of snags and down wood via maintenance of high stocking levels.</i> <i>Retain all snags in timber harvest areas with the exception of snags that pose a fire or safety hazard, or are within the alignment of roads proposed for construction.</i>
Hardwoods (see Hardwood Management, above.)						

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Habitat Connectivity						
No consideration or change in existing conditions other than natural forest development.	No specific direction to develop habitat connectivity, riparian zone standards per FPR with some site-specific augmentation; provide limited development.	Management to provide late seral characteristics in managed stands, riparian zones and SCAs with late seral emphasis.	Same as C1.	Similar to C1 with larger riparian zones and additional no or minimal harvest SCAs.	Specific emphasis on old growth development (2, 4, 5) will tend to promote habitat connectivity across the Forest.	<i>Build contiguous older forest habitat, linking the existing old growth groves and some of the old second-growth. Ensure that at a minimum there is a watercourse-based core that links all the key areas with linkages over the divide into key areas in adjacent watersheds. Less stringent protection would be required outside of the defined linkage corridors.</i>

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