

IV. CUMULATIVE EFFECTS

1. INTRODUCTION

The resource areas for which cumulative effects were specifically considered in the 2005 DEIR include the categories of Watershed (with subcategories of Flow Effects, Water Temperature Effects, Nutrient Effects, Large Wood and Organic Debris Effects, and Sediment Effects), Hazardous Materials, Soil Productivity, Biological Resources (with subcategories of Aquatic Resources, Wildlife and Wildlife Habitat, and Botanical Resources), Recreation, Aesthetics, Noise, Traffic, Air Quality, and Heritage Resources.

A substantial amount of cumulative impact assessment has already been presented in section III (Resource Specific Analysis). The purpose of this section is to:

1. identify changes that have occurred in the environment through the implementation of various projects, both inside and outside of JDSF, since the release of the 2005 DEIR; and
2. identify where management and policy proposed under Alternative G has been changed from Alternative C1, changes that primarily place a greater emphasis on research and demonstration and adopt measures that will lessen the potential for adverse environmental impacts.

This section attempts to synthesize and recap, rather than repeat in detail, information that is found in the 2005 DEIR and in other parts of this recirculated DEIR.

2. KNOWN CHANGES IN THE CUMULATIVE EFFECTS BASELINE

It is important to recognize that, since assessment of cumulative effects by definition and law requires consideration of future projects and their potential effects, the cumulative effects assessment process is dynamic. What were once viewed as “reasonably foreseeable future project” in many cases have become “current” or “past” projects, or have been abandoned. And, projects that were not envisioned at the time of the previous DEIR release may have been approved by various lead agencies and undertaken or completed. The following summary listing of recent projects in the vicinity of JDSF approved by various lead agencies serves to update the baseline for cumulative effects analysis.

Lead Agency - California Department of Forestry and Fire Protection

Road 610 Decommission Project – This is a funded proposal to upgrade 100 feet and decommission 1.3 miles of road in the Caspar Creek watershed. The project will treat crossings, potential fill slope failures, reduce road surface erosion, upgrade a stream crossing, and replace an undersized culvert. It is anticipated that a Negative Declaration will be filed by DFG to cover this project, along with DFG issuance of a Stream Alteration Permit, which is also a CEQA process.

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Road 630 Decommissioning – Completed project to decommission 3.5 miles of inner gorge road in the Caspar Watershed. This work included site-specific treatments for stream crossing removals, treating existing and potential cut and fill slope failures, and reducing road surface erosion.

The Road 630 project tiered off of a programmatic EIR for the California Forest Improvement Program. While this project may result in some sediment generation in the short-term, it is expected to substantially reduce long-term sedimentation, resulting in enhanced in-stream habitat and improved fish populations. Two selective harvesting projects, including one for research purposes, are currently contemplated for Caspar Creek in the next three to five years (see Table II.3, above).

Property Acquisition – CAL FIRE was gifted a narrow streamside area adjacent to about one mile of Caspar Creek between Highway 1 and the existing western boundary of the Forest, providing opportunities for watershed and aquatic habitat study and restoration by making the entire length of Caspar Creek part of the Demonstration State Forest. The Board of Forestry and Fire Protection filed a Categorical Exemption for the decision to accept the gift (<http://www.ceqanet.ca.gov/NOEdescription.asp?DocPK=589183>). This action involved only a transfer in ownership; no physical management actions are currently foreseen. Thus, no potential individual or cumulative impact is anticipated from this action.

Caspar Creek Weir Pond Cleanout and Flume Replacement – The Department has filed a Negative Declaration for this project (<http://www.ceqanet.ca.gov/NODdescription.asp?DocPK=558812>) and the Department of Fish and Game has issued a Streambed Alteration Permit (<http://www.ceqanet.ca.gov/NODdescription.asp?DocPK=602175>) for the sediment cleanout portions of the project. CAL FIRE and the USDA Forest Service consulted with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service on this project. The federal biological opinion supported the Negative Declaration and CDFG 1600 Streambed Alteration Permit for the project. A Mitigated Negative Declaration and Stream Alteration Permit will be finalized for removal and replacement of fish ladders at the site of the two Caspar Creek weir ponds. This project is expected to vastly improve conditions for both adult and juvenile salmonids moving both upstream and downstream at the weir sites, while preserving the ability to conduct long-term monitoring and assessment of watershed effects as part of the joint CAL FIRE/USDA Forest Service Caspar Creek Watershed Project.

Tree Removals - - Incidental planned or completed removal of dead, diseased, and non-native trees at specified sites within Jackson Demonstration State Forest to train tree fallers about safety protocol and to fall diseased trees that pose a fire or safety hazard and/or compete with healthy commercial forest species. A Notice of Exemption (<http://www.ceqanet.ca.gov/NOEdescription.asp?DocPK=605913>) was prepared for this project. No potential for significant cumulative impacts.

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Chamberlain Creek Conservation Camp - Shooting range asphalt surfacing of 0.17 acres. A notice of Categorical Exemption was filed (<http://www.ceqanet.ca.gov/NOEdescription.asp?DocPK=599446>). Surfacing of this existing rocked and soil surface facility has reduced the potential for sediment production from the site. No potential for significant individual or cumulative impacts.

Parlin Fork Conservation Camp - Septic system upgrade and mill yard resurfacing with rock. A notice of Categorical Exemption was filed (<http://www.ceqanet.ca.gov/NOEdescription.asp?DocPK=601407>). The rocking of the existing mill yard has reduced potential for sediment production from the site. No potential for significant individual or cumulative impacts is anticipated.

Mendocino Redwood Company – Program Timberland EIR (PTEIR). Notice of Preparation filed to initiate the process of developing a PTEIR in conjunction with a Habitat Conservation Plan, Natural Communities Conservation Plan and programmatic Streambed Alteration Agreement. No activities to take place under this proposal until approved by CAL FIRE, DFG, U.S. Fish and Wildlife Service, and National Marine Fisheries Service; possibly in 2008. This planning process has goals oriented to the restoration and protection of the forest landscape. Management resulting from this process is not expected to be more disruptive, and potentially to be less disruptive, than the Mendocino Redwood Company management assessed in the 2005 DEIR.

Lead Agency - Department of Fish and Game

Various projects using grant funds to initiate activities (5/2006 through 8/2006) that are designed to restore coastal streams and watersheds that historically produced large populations of salmon and steelhead. These projects will improve environmental conditions over time and will not result in significant adverse cumulative impacts.

Streambed alteration permit for Campbell THP 1-06-083 in the Two Log Creek Watershed to abandon watercourse crossings, replace culverts, and install critical dips. The THP serves as the CEQA document for the streambed alteration permit. The short-term harvest schedule (Table II.3) for Alternative G indicates only one harvest partially occurring in Two Log Creek watershed. The Dunlap South harvest involves a selection and cluster selection harvest prescription. The level of non-JDSF harvest currently indicated for Two Log Creek (see Table IV.1, below) is far lower than the level anticipated and assessed in the 2005 DEIR. Thus, no significant adverse cumulative impacts are anticipated.

Streambed alteration permit to permit drafting from a Class I watercourse for an NTMP in Dark Gulch (South Big River). The NTMP serves as the CEQA document for the streambed alteration permit. No JDSF lands are located in Dark Gulch.

Streambed alteration permit for Mendocino Redwood Company (MRC) in the Two Log Creek and Berry Gulch watersheds to (1) install one culvert on an in-stream landing; (2)

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install one culvert on in-stream landing; (3) repair and use rocked ford; and (4) install energy dissipater for culvert at head-cutting on in-stream landing. DFG issued a Notice of Decision (<http://www.ceqanet.ca.gov/NODdescription.asp?DocPK=598412>) for this permit tiered to a MRC timber harvesting plan (THP 1-06-017 MEN). These measures are intended to reduce sediment production, thus contributing to potential improved in-stream habitat and water quality over time. The short-term harvest schedule for Alternative G (Table II.3) identifies several potential JDSF harvests on Berry Gulch [14 Gulch North, South Whisky Springs, Berry Flat, Helms (partially in Mouth of Big River watershed), Thompson Gulch, and West Berry Gulch] and one potential harvest on Two Log Creek (a portion of Dunlap South). The levels of non-JDSF harvest currently indicated for the Berry Gulch and Two Log Creek watersheds (see Table IV.1, below) are much lower than the level anticipated and assessed in the 2005 DEIR. Given the modeling done in the 2005 DEIR and the sediment reduction potential of the streambed project, no significant adverse cumulative impacts are anticipated.

Streambed alteration permit for MRC in the Middle Fork N. Fork Noyo River for (1) replacing an undersized 18" culvert with a 30" culvert, (2) replacing a failing culvert with a rocked ford, (3) abandonment of a road crossing, and (4) abandonment of a skid trail crossing. And also (1) installation of a rocked ford, (2) installation of a temporary "Spittler" type crossing at an existing failed crossing site, (3) installation of a 60" culvert at an existing failed crossing site, (4) placement of rock armor at the outlet of an existing culvert, and (5) placement of rock armor the outlet of an existing culvert. DFG issued a Notice of Decision (<http://www.ceqanet.ca.gov/NODdescription.asp?DocPK=598659>) for this permit tiered to a MRC timber harvesting plan (THP 1-04-292 MEN). These measures are intended to reduce sediment production, thus contributing to potential improved in-stream habitat and water quality over time. The Middle Fork N. Fork Noyo River watershed does not include any part of JDSF. The level of non-JDSF harvest currently indicated for the North Fork of the Noyo (see Table IV.1, below) is higher than the level anticipated and assessed in the 2005 DEIR, however this project is not a timber harvest but a stream improvement project that will reduce sediment inputs. Given the modeling done in the 2005 DEIR and the sediment reduction potential of the streambed project, no significant adverse cumulative impacts are anticipated.

Lead Agency – Department of Parks and Recreation

Jughandle State Reserve 2007– Removal of gorse and broom plants by cutting mature plants to ground level with power and hand tools and treating cut stems and small plants with triclopyr herbicide. Cut stems will be collected into piles by using a rubber-wheeled all-terrain vehicles. Jughandle Reserve is located on the Russian Gulch planning watershed. JDSF lands comprise only 18 percent of this watershed. No near term actions are anticipated on areas of JDSF close enough to this Department of Parks and Recreation that cumulative effects might occur.

Jughandle State Reserve 2006 - Conduct a series of experimental gorse removal trials using hand tools, heavy equipment for brush cutting and discing, and herbicide

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applications to cut stems. The Department of Parks and Recreation filed Categorical Exemptions for these two projects

(<http://www.ceqanet.ca.gov/NOEdescription.asp?DocPK=604603>;

<http://www.ceqanet.ca.gov/NOEdescription.asp?DocPK=592038>). JDSF lands comprise only 18 percent of this watershed. No near-term actions are anticipated on areas of JDSF close enough to this Department of Parks and Recreation that cumulative effects might occur.

Mendocino Woodlands Camp 1 - Replace flooring at the recreation hall. No potential for cumulative effects interactions with JDSF management is anticipated.

Big River Watershed Restoration Project - The proposed project would replace failing culverts at Class II and Class III stream crossings with bridges, remove accumulated sediments and road fill prisms from stream crossings, construct armored fords at Class II and Class III stream crossings, partially restore historic topography and native vegetation on former logging roads (road decommissioning), and convert roads to trails. The project also will delineate parking areas, a boat launch ramp, and driving surfaces within the existing west-end entry area to the Big River unit, accessed from State Highway 1, and construct a vault-type restroom building in the entry area outside the 100-year floodplain. Standard Parks signs and a Proposition 40 acknowledgement sign will also be installed as part of the project. The Department of Parks and Recreation issued a Mitigated Negative Declaration for this project (<http://www.ceqanet.ca.gov/NODdescription.asp?DocPK=602742>). The project activities here of potential concern for interaction with JDSF management effects are the elements regarding stream crossings, sediment removal, armored ford construction, road decommissioning and conversion of roads to trails. These projects are intended to result in decreased sediment over time, potentially contributing to improve in-stream habitat and water quality. Given the sediment reduction potential of these projects, no significant adverse cumulative impacts are anticipated.

Montgomery Woods State Park – Acquisition of a 2 acre parcel located within the reserve. Acquisition of a small parcel does not in and of itself result in any specific environmental impacts likely to interact with environmental effects from JDSF. No potential for significant adverse cumulative impacts is anticipated.

Lead Agency – State Water Resources Control Board

The proposed project is adoption and implementation of the North Coast Instream Flow Policy. The policy is likely to address the State Water Board's administration of water right applications; small domestic use and livestock stock pond registrations; existing permits and licenses; and change petitions, including transfers, time extensions, and wastewater change petitions. In addition, the Water Board proposes to include an enforcement element as part of the policy that will govern water right enforcement actions in the coastal streams described above. This policy is intended to improve in-

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stream beneficial uses. Thus, it is not expected to combine with effects of JDSF management on in-stream flows to result in significant adverse cumulative impacts.

Lead Agency - California Conservation Corps

Daugherty Creek & Tributaries LWD Project - To improve the quality and quantity of salmonid rearing habitat within the Daugherty Creek Watershed. This project is intended to improve habitat quality and is not expected to combine with effects of JDSF management to result in significant adverse cumulative impacts.

Lead Agency – Mendocino Coast Recreation and Park District

Approved project to develop a regional park on 600 acres in an unincorporated portion of Mendocino County. The project includes a pocket park, trail systems, sports park, and an 18-hole champion golf course. The project area is located a few miles east of Fort Bragg in the Lower Noyo watershed area. The District issued an EIR for this project; CAL FIRE issued the conversion permit and associated timber harvesting plan (<http://www.ceqanet.ca.gov/NODdescription.asp?DocPK=593373>; <http://www.ceqanet.ca.gov/NODdescription.asp?DocPK=604638>). The major actions to be taken under the project include timber harvest and removal, clearing of vegetation, and construction of a golf course, park, trails, and related facilities. Approximately 165 acres will be cleared under the Timber Harvesting. The timber harvest and clearing of the brush and undergrowth will be done in 2007 or 2008 depending on available funds. A significant portion of the site is to be left in natural conditions.

As discussed below in the analysis of Table IV.1, no JDSF harvesting is proposed for the Mouth of Noyo watershed in the short-term harvest schedule for Alternative G (Table II.3), thus there is no potential for unanticipated cumulative watershed effects here as a result of interactions between JDSF and non-JDSF harvesting activities. The analysis below also shows that a basin-wide cumulative effect is not anticipated as a result of this project.

Lead Agency – Mendocino County

Timberlock Ranch, LLC Sediment Reduction Project, Middle Noyo River - Reduce impacts and restore salmonid habitat through implementation of site specific and prioritized road upgrades and decommissioning in the Middle Noyo River Watershed, Mendocino County, CA. This project is intended reduce sediment and improve habitat quality; thus, it is not expected to combine with effects of JDSF management to result in significant adverse cumulative impacts.

Waste Transfer Facility - The County of Mendocino is proposing to develop a transfer waste building, vehicle ramp, and gate house at a site yet to be selected. Further, it is

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proposed to enlarge the metals yard and construct a loading ramp, as well as install new landscaping and extend the hours of operation. The site is expected to be a few acres in size, but the location of this facility has not yet been chosen. The list of potential sites includes small areas of JDSF. Since a specific site has not yet been chosen, and construction plans have not been finalized, an assessment of potential for cumulative impacts is speculative at this time.

Update to Table VIII.10 from the 2005 DEIR

Table VIII.10 from the 2005 DEIR (p. VIII-38) summarized anticipated future timber harvests within the JDSF EIR cumulative effects assessment area as of 2005. CAL FIRE records of timber harvest plan submissions and timber operations indicate that some timber harvesting activity has occurred in the intervening years. Table IV.1, below, summarizes the timber harvesting plan submissions that have occurred within the JDSF cumulative effects assessment area established in the 2005 DEIR, in the period 2005 through mid-May 2007 by watershed. No timber operations occurred within JDSF during this period. The “projected” harvest column comes from Table VIII.10 in the 2005 EIR presenting the Board’s best estimate of future timber harvesting activity at that time, using the methods described in that document.

The information indicates that, in most cases, the analysis in the 2005 DEIR was based on the anticipation of higher amounts of harvesting activity than has yet been brought into the permitting process. The fourth column of the table calculates the difference between the projected future non-JDSF harvest level from the 2005 DEIR and the actual harvesting plan submissions since the DEIR projections were made.

Big River Overall, the 2005 DEIR projected non-JDSF harvest levels for the Big River watershed that are far higher than the actual submissions to date (by almost 4,000 acres). This difference indicates that there is no currently anticipated likelihood of basin-wide cumulative effects that might be greater than was assessed in the 2005 DEIR. Rather, the numbers to date indicate a lesser potential at the basin level.

On the Laguna Creek, and Martin Creek watersheds on the Big River, substantially more harvesting has been proposed in non-JDSF projects than was anticipated in the 2005 DEIR. Only slightly more harvesting has been proposed on Chamberlain Creek (20 acres) than was projected in the 2005 DEIR. No JDSF harvesting is proposed for the Laguna Creek and Martin Creek watersheds in the short-term harvest schedule for Alternative G (Table II.3), thus there is no potential for unanticipated cumulative watershed effects here as a result of interactions between JDSF and non-JDSF harvesting activities.

The JDSF short-term harvest schedule does include a 515-acre commercial thin/late structure development harvest on Chamberlain Creek (West Chamberlain sale). However, given the small area (20 acres) of unanticipated non-JDSF harvesting and the low intensity nature of the West Chamberlain harvest proposed for JDSF, there does

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not appear to be a potential for significant cumulative watershed effects any greater than the potential assessed in the 2005 DEIR.

Table IV.1. Timber Harvesting Plans Submitted Within the Watershed Cumulative Effects Assessment Area during the Period January 2005 through mid-May 2007.

Planning Watershed Name and (Acreage)	Non-JDSF Projected Future Harvest Area from 2005 DEIR (Acres)	Non-JDSF Actual Submitted Project Acres, Jan. 2005-May 2007 (Acres)	Actual Submissions Minus Projected Submissions
Big River Watersheds			
Berry Gulch (7,999)	500	270	-230
Chamberlain Creek (7,868)	0	20	20
Laguna Creek (3,246)	0	130	130
Lower NF Big River (4,953)	300	270	-30
Martin Creek (5,945)	0	420	420
Mettick Ck. (11,733)	1,950	300	-1,650
Mouth of Big River (9,549)	510	0	-510
Russell Brook (7,017)	1,500	1,395	-105
Two Log Ck. (11,433)	2,729	720	-2,009
Big River Watershed Total	7,489	3,525	-3,964
Noyo River Watersheds			
Mouth of Noyo (5,223)	25	466*	441
North Fork Noyo (6,521)	187	230	43
Parlin Ck. (7,578)	342	265	-77
Hayworth Ck.(7,112)	175	80	-95
Brandon Gulch (6,449)	0	0	0
Kass Ck. (3,533)	1,193	0	-1,193
Noyo River Watershed Total	1,922	1,041	-881
<p>*Entire 466 acres is related to the Mendocino Coast Recreation and Park District park and golf course project described above. Only 165 acres of this area is to be cleared under the timber harvesting plan.</p> <p>Note: Table summarizes future harvesting information, to the extent that harvest acreages are available. Future harvest acres are generally not available for NTMPs, though NTMPs are listed since they permit harvesting at any time with the filing of a Notice of Timber Operations, after which harvest activities may commence without any additional permit review. By law, NTMPs are restricted to unevenaged management.</p>			

Noyo River Overall, the 2005 DEIR projected non-JDSF harvest levels for the Noyo River watershed that are higher than the actual submissions to date (by almost 900 acres). This difference indicates that there is no currently anticipated likelihood of

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basin-wide cumulative effects that might be greater than was assessed in the 2005 DEIR. Rather, the numbers to date indicate a lesser potential at the basin level.

On the Mouth of Noyo watershed on the Noyo River watershed, substantially more harvesting has been proposed in non-JDSF projects than was anticipated in the 2005 DEIR. The difference on the Mouth of Noyo watershed was entirely due to the golf course project described above. No JDSF harvesting is proposed for the Mouth of Noyo watershed in the short-term harvest schedule for Alternative G (Table II.3), thus there is no potential for unanticipated cumulative watershed effects here as a result of interactions between JDSF and non-JDSF harvesting activities.

Conclusion Regarding Known Changes in the Cumulative Effects Baseline

Overall, the information and analysis above does not indicate a reasonable likelihood for significant adverse cumulative environmental impacts to result from interactions between the identified new projects and management activities on JDSF that would be anticipated under Alternative G.

3. WATERSHED CUMULATIVE EFFECTS

Management of JDSF under Alternative G will differ somewhat from management under Alternative C1 (May 2002 DFMP) as it relates to the following watershed cumulative effects:

- Flow Effects
- Water Temperature Effects
- Nutrient Effects
- Large Wood and Organic Debris Effects
- Sediment Effects

Detailed discussion and analysis can be found in the respective resource specific analysis sections of the 2005 DEIR (section VII and appendices 10-12), the cumulative effects (section VIII) of the 2005 DEIR, and section III of this RDEIR. **In the cumulative effects section of the 2005 DEIR the BOF found that management of JDSF under alternative C1 would have no significant cumulative effects in these resource areas.**

Changes to Goals and Objectives Proposed Under Alternative G

Alternative G proposes changes to the Goals and Objectives for Alternative C1, including elevating Forest Restoration to Goal #2 and the addition of objectives to increase the amount of old forest structure, late seral habitat and restoring more productive river and stream systems. See Appendix 1 for details.

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Changes in Specific Management Actions Proposed Under Alternative G

Alternative G recommends changes in management and includes numerous measures that further reduce the potential for impacts to watershed values (see section II.2 for details). These changes, as detailed above, include:

- Establishes an Older Forest Structure Zone
- Increases Late Seral Habitat
- Reduces Even-aged Management
- Limits Initial Implementation Period Harvest Levels
- Reduces Rate of Harvest
- Limits Treatments within Buffers

Because of the changes in management proposed under Alternative G there is a significant decrease in amount and intensity of timber operations that are likely to occur and a commensurate decrease in the potential for adverse impacts to watershed values.

Mitigations from Alternative C1 Adopted into Alternative G

Mitigations in the 2005 DEIR that addressed landslide potential and promoted water quality for Alternative C1 have been fully incorporated into Alternative G as management measures (see RDEIR section III.10 Hydrology and Water Quality).

Cumulative Impacts

The 2005 DEIR identified several potential watershed cumulative impacts associated with the adoption of Alternative C1. In each resource area it was found by the 2005 DEIR that the impacts for Alternative C1 were less than significant or, in some cases, beneficial. Given the changes in management proposed under Alternative G, as compared to Alternative C1, the following significance determinations are made for Alternative G for each potential impact:

Flow Effects

Impact 4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. (Less than Significant)

Impact 5: Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. (No Impact)

Water Temperature Effects

Project Impact 1: 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.

Impact 1a: Increases in Water Temperature (Beneficial)

Nutrient Effects

No potentially significant nutrient effects were identified with the implementation of management under Alternative C1, nor would any be anticipated under Alternative G.

Large Wood and Organic Debris Effects

Project Impact 1: 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.

Impact 1c: Reduction in LWD Recruitment. (Beneficial)

Sediment Effects

Impact 1: Violate any water quality standards or waste discharge requirements. (Less than Significant)

Project Impact 1: 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.

Impact 1b: Increases in Sedimentation. (Less than Significant)

Mitigation

All of the watershed cumulative effects associated with the implementation of Alternative G were found to be less than significant or beneficial. As such, no mitigation is required.

4. HAZARDOUS MATERIALS CUMULATIVE EFFECTS

Management of JDSF under Alternative G will not differ substantially from management under Alternative C1 (May 2002 DFMP) as it relates to potential impacts to hazards and hazardous materials. One difference is that Alternative G is more restrictive regarding the use of herbicides than Alternative C1. This change is expected to result in a small decrease in the potential hazardous materials cumulative impacts for Alternative G, as compared to Alternative C1.

Cumulative Impacts

The 2005 DEIR identified one potential cumulative impact associated with hazardous materials. The BOF found that the impact was less than significant. The BOF makes the following significance determination associated with implementing management under Alternative G:

Impact 3: Adoption of the DFMP has a less than significant potential to cause a hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Less Than Significant)

Mitigation

The potential effects associated with the implementation of Alternative G are less than significant. As such, no mitigation is required.

5. SOIL PRODUCTIVITY CUMULATIVE EFFECTS

Management of JDSF under Alternative G will differ somewhat from management under Alternative C1 (May 2002 DFMP) as it relates to soil productivity. Detailed discussion and analysis can be found in the respective section of the 2005 DEIR (section VII.7), the cumulative effects section (section VIII.6) of the 2005 DEIR, and in section III.7 of this RDEIR. **In the cumulative effects section of the 2005 DEIR the BOF found that management of JDSF under Alternative C1 would have no significant cumulative effects on this resource.**

Changes to Goals and Objectives Proposed Under Alternative G

Alternative G proposes changes to the Goals and Objectives in Alternative C1, including elevating Forest Restoration to Goal #2 and the addition of objectives to increase the amount of old forest structure and late seral habitat.

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Changes in Specific Management Actions Proposed Under Alternative G

Alternative G recommends changes in management and includes numerous mitigation measures that further reduce the potential for impacts to forest soils. These, detailed above, include:

- Establishes an Older Forest Structure Zone
- Increases Late Seral Habitat
- Reduces Even-aged Management
- Limits Interim Harvest Levels
- Reduces Rate of Harvest
- Limits Treatments within Buffers

Because of the changes in management proposed under Alternative G, there is a significant decrease in amount and intensity of timber operations (e.g., reduction in average annual harvest from 31 to 20 million board feet), as compared to Alternative C1, that would occur and a commensurate decrease in the potential for impacts to forest soils.

Cumulative Impacts

The 2005 DEIR identified one potential cumulative impact to forest soils. The BOF found that the impact was less than significant. Changes in management under Alternative G relevant to soil impacts, listed above, will reduce the likelihood of significant soil disturbance at the project level and cumulatively across the region. Effects are expected to be less than under Alternative C1 and less than significant. The following significance determination is made associated with implementing management under Alternative G:

Impact 5: Soil Erosion or Loss of Topsoil will Result in a Significant Individual or Cumulative Impact. (Less than Significant)

Mitigation

The potential effects associated with the implementation of Alternative G are less than significant. As such, no mitigation is required.

6. BIOLOGICAL RESOURCE CUMULATIVE EFFECTS

Management of JDSF under Alternative G will differ somewhat from management under Alternative C1 (May 2002 DFMP) as it relates to the following biological resource cumulative effects:

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- Aquatic Resources
 - Channel Geomorphology
 - Instream Habitat/Bank Stability
 - Fish/Amphibian Populations
 - Number/Range Rare or Endangered Species
- Wildlife and Wildlife Habitat
 - Late Succession/Old-Growth Forest
 - Snags and Down Wood
 - Riparian Habitat
 - Unique/Special Habitats and Features
 - Wildlife Communities and Habitat Values
 - Southern Torrent Salamander and Tailed Frog
 - Marbled Murrelet
 - Northern Spotted Owl
 - Vaux's Swift and Purple Martin
 - Sonoma Red Tree Vole
 - Reduction in the Number or Range of an Endangered Species
 - Interfere with Movement, Migration, or Use of Nursery Areas
 - Cause a Wildlife Population to Drop Below Self-Sustaining Levels
- Botanical Resources
 - Threaten/Eliminate Community
 - Reduce No. of Rare, Threatened, or Endangered Species
 - Impacts to Candidate, Sensitive, or Special Status Species
 - Restrict Range of Rare, Threatened or Endangered Species
 - Impact Mushroom Corners
 - Reduction of Range or Extirpation of Species

Detailed discussion and analysis can be found in the respective sections of the 2005 DEIR (section VII.6), the cumulative effects section (section VIII.7) of the 2005 DEIR, and section III.6 of this RDEIR. **In the cumulative effects section of the 2005 DEIR the BOF found that management of JDSF under Alternative C1 would have no significant cumulative effects in these biological resource areas.**

Changes to Goals and Objectives Proposed Under Alternative G

Alternative G proposes changes to the Goals and Objectives in the Alternative C1, including elevating Forest Restoration to Goal #2 and the addition of objectives to increase the amount of old forest structure, late seral habitat and restoring more productive river and stream systems.

Changes in Specific Management Actions Proposed Under Alternative G

Alternative G recommends changes in management and includes numerous mitigation measures that further reduce the potential for impacts to biological resources. As detailed above, these include:

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- Establishes an Older Forest Structure Zone
- Increases Late Seral Habitat
- Reduces Even-aged Management
- Limits Interim Harvest Levels
- Reduces Rate of Harvest
- Limits Treatments within Buffers
- Botanical Surveys for Timber Harvesting Plans and other Large Projects, using DFG Protocols

Because of the changes in management proposed under Alternative G there is a significant decrease in amount and intensity of timber operations that are likely to occur and a commensurate decrease in the potential for impacts to biological resources.

Mitigations from Alternative C1 Adopted into Alternative G

Mitigation in the May 2002 DFMP that addressed impacts to biological resources, specifically snag dependent species, has been fully incorporated into Alternative G as a management measure. This measure is:

Retain all snags within all 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. The largest snags, including residual old-growth snags, should have priority for protection until the snag retention goals of the DFMP are met.

Cumulative Impacts

The 2005 DEIR identified several potential cumulative impacts to aquatic, wildlife and botanical resources associated with the adoption of Alternative C1. In most biological resource areas, the DEIR found that the impacts were less than significant or, in some cases, beneficial. Impact to snag dependent species was found to be less than significant with the mitigation that has been adopted as a management measure in Alternative G. Given the changes in management proposed under Alternative G the following significance determination is made for each potential cumulative impact of the alternative:

Aquatic Resources

Project Impact 1: *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.*

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Impact 1e: Channel Geomorphology. (Less than Significant)

Project Impact 3: Potential to have a substantial effect on any riparian habitat.

Impact 3c: Instream Habitat and Streambank Stability. (Beneficial)

Project Impact 5: Causes a fish or amphibian population to drop below self-sustaining levels or threaten to eliminate an aquatic community. (Beneficial)

Project Impact 6: Reduce the number or restrict the range of a rare or endangered aquatic plant or animal. (Beneficial)

Wildlife and Wildlife Habitat

The reader is referred to 2005 DEIR section VII.6.6, particularly sections VII.6.6.3 and VII.6.6.6 through VII.6.6.9, as well as Table VII.6.6.34.

The impact summary tables at the end of Section VII.6.6 in the 2005 DEIR address a large number of species and habitat issues. The issues that have received that greatest amount of concern from the public, agencies, wildlife biologists, and others, or indicated the potential for significant adverse cumulative impacts for the Alternative C1 are:

- late succession/old-growth forest
- snags and down wood
- riparian habitat
- unique/special habitats and features
- wildlife communities and habitat values
- Southern Torrent Salamander and Tailed Frog
- Marbled Murrelet
- Northern Spotted Owl
- Vaux's Swift and Purple Martin
- Sonoma red tree vole
- reduction in the number or range of an endangered species
- interfere with movement, migration, or use of nursery areas
- cause a wildlife population to drop below self-sustaining levels

The analysis results for these issues are summarized in Table VIII.14 in the 2005 DEIR. For more details on these factors and other wildlife and species cumulative effects, see the section III.6.7 of the RDEIR. **Alternative G has adopted as management measures all mitigations to Alternative C1 identified in the 2005 DEIR as necessary to mitigate impacts to wildlife and wildlife habitat. Further, Alternative G has multiple additional elements, as listed above, that will further reduce**

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potential impacts or increase potential benefits to wildlife and wildlife habitat. Therefore, it is concluded that there would be no significant adverse cumulative impacts associated with the adoption of Alternative G.

Botanical Resources

As discussed in section III.6.3, Alternative G incorporates the use of botanical surveys using DFG protocols, a measure that was lacking in Alternative C1.

Impact 1: The project has the potential to threaten to eliminate a plant community. (Less than Significant)

Impact 2: The project has the potential to threaten to reduce the number of an endangered, rare, or threatened species. (Less than Significant)

Impact 3: Have substantial adverse effects, either directly or indirectly through habitat modifications, on any species identified as a candidate, sensitive, or special status plant species in local or regional plans, policies, or regulations, or by the CDFG or USFWS. (Less than Significant)

Impact 4: The project has the potential to threaten to restrict the range of an endangered, rare, or threatened species. (Less than Significant)

Impact 7: Forest management activity impacts to the Mushroom Corners area could cause adverse impacts to the type localities for 26 fungi species with a resulting loss of scientific value. (Less than significant)

Impact 6: Cumulative effects resulting in a reduction in the range of a species, or local extirpation of a plant species on a spatial scale that includes the larger analysis area. This threshold includes changes in the environment caused by the interaction of ecological processes and multiple effects. (Less than Significant)

Mitigation

The potential effects associated with the implementation of Alternative G are less than significant. As such, no mitigation is required.

7. RECREATION CUMULATIVE EFFECTS

Management of JDSF under Alternative G will differ substantially from management under Alternative C1 (May 2002 DFMP) as it relates to recreation cumulative effects. Detailed discussion and analysis can be found in the respective section of the 2005 DEIR (section VII.14), the cumulative effects section (section VIII.8) of the 2005 DEIR,

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and section III.14 of this RDEIR. **In the cumulative effects section of the 2005 DEIR, the finding was that management of JDSF under Alternative C1, as mitigated, would have no significant cumulative effects on this resource.**

Changes to Goals and Objectives Proposed Under Alternative G

Alternative G proposes changes to the Goals and Objectives in the Alternative C1, including elevating the Forest Restoration to Goal #2 and the addition of objectives to increase the amount of old forest structure, late seral habitat and restoring more productive river and stream systems.

Goal #5, Recreation and Aesthetic Enjoyment is modified to reflect enhanced levels of recreational opportunity and additional involvement of recreation user groups. The following Objectives are added to Goal #5:

- Extend existing trails to create a more extensive trail system, including linkages with neighboring State Parks.
- Engage various recreation user groups interested in cooperating in the design, implementation, and stewardship of a more extensive recreational facilities system.

Goal #6 Information, Planning, & Staffing is modified to encourage public participation in forest management. The following Objectives were added to Goal #6:

- Provide regular information to the local community regarding educational and recreational opportunities on the Forest, as well as research, demonstration, and management activities in general.
- Provide opportunities for public and other agency input into planning processes, including any advisory groups that CAL FIRE or the Board may establish.

Changes in Specific Management Actions Proposed Under Alternative G

Alternative G recommends changes in management and includes numerous mitigation measures that further reduce the potential for cumulative impacts to recreation resources. As detailed above, these include:

- Establishes an Older Forest Structure Zone
- Increases Late Seral Habitat
- Reduces Even-aged Management
- Limits Interim Harvest Levels
- Reduces Rate of Harvest
- Limits Treatments within Buffers
- Advisory Body Review of Management

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Because of the changes in management proposed under Alternative G there is a significant decrease in amount and intensity of timber operations that are likely to occur and a commensurate decrease in the potential for impacts to recreation values.

Mitigations from Alternatives C1

Mitigation in the 2005 DEIR that addressed impacts to recreation has been fully incorporated into Alternative G as a management measure:

For public safety, post and maintain signs around all areas closed to public access for timber operations that includes information defining the period of closure. In order to avoid conflicts between recreation uses and for public safety, post and maintain appropriate signs around all areas closed to hunting, trapping, and the use of firearms. Signs should be posted at all points where roads and trails enter such areas and, in the case of hunting restrictions, at legally required intervals along the perimeter of such areas.

Cumulative Impacts

The 2005 DEIR identified two potentially cumulative impacts to recreation values associated with the adoption of Alternative C1. In both cases it was found by the BOF that the impacts were less than significant. Given the changes in management proposed under Alternative G, the following significance determinations are made for Alternative G for each potential impact:

Impact 2b: *Cumulatively over time, use of the JDSF roads and trails for recreation would be substantially reduced or eliminated if roads and trails are not maintained, if roads and trails are abandoned, or sanctioned trails are not reconstructed after a timber harvest operation.* (Less than Significant)

Impact 6: *The DFMP will create individual or cumulative impacts associated with construction and use of new or expanded recreational improvements.* (Less than Significant)

Mitigation

The potential effects associated with the implementation of Alternative G are less than significant. As such, no mitigation is required.

8. AESTHETIC EFFECTS

Management of JDSF under Alternative G will differ somewhat from management under Alternative C1 (May 2002 DFMP) as it relates to aesthetic cumulative effects. Detailed

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discussion and analysis can be found in the respective section of the 2005 DEIR (section VII.2), the cumulative effects section (Section VIII.9) of the 2005 DEIR, and section III.2 of this RDEIR. **In the cumulative effects section of the 2005 DEIR, the finding was that management of JDSF under Alternative C1 would have a less than significant cumulative aesthetic effect with mitigation.**

Changes to Goals and Objectives Proposed Under Alternative G

Alternative G proposes changes to the Goals and Objectives in the Alternative C1, including elevating the Forest Restoration to Goal #2 and the addition of objectives to increase the amount of old forest structure, late seral habitat and restoring more productive river and stream systems.

Goal #5, Recreation and Aesthetic Enjoyment is modified to reflect additional involvement of recreation user groups. The following Objectives are added to Goal #5:

- Extend existing trails to create a more extensive trail system, including linkages with neighboring State Parks.
- Engage various recreation user groups interested in cooperating in the design, implementation, and stewardship of a more extensive recreational facilities system.

Goal #6 Information, Planning, & Staffing is modified to encourage public participation in forest management. The following Objectives were added to Goal #6:

- Provide regular information to the local community regarding educational and recreational opportunities on the Forest, as well as research, demonstration, and management activities in general.
- Provide opportunities for public and other agency input into planning processes, including any advisory groups that CAL FIRE or the Board may establish.

Changes in Specific Management Actions Proposed Under Alternative G

Alternative G recommends changes in management and includes numerous measures that further reduce the potential for cumulative impacts to aesthetic resources. As detailed above, these include:

- Establishes an Older Forest Structure Zone
- Increases Late Seral Habitat
- Reduces Even-aged Management
- Limits Interim Harvest Levels
- Reduces Rate of Harvest
- Limits Treatments within Buffers

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Because of the changes in management proposed under Alternative G there is a significant decrease in amount and intensity of timber operations that are likely to occur and a commensurate decrease in the potential for impacts to aesthetics.

Mitigations from Alternatives C1

Mitigations in the 2005 DEIR that addressed aesthetic impacts have been fully incorporated into Alternative G as management measures. These measures are:

Measure 1 - For even-aged timber harvest plans, conduct field evaluations by a RPF or his or her designee to determine the visibility of the THP area to the Forest visitor as seen from roads, trails, and recreation areas. Evaluations will include, but be not limited to, consideration of the following factors:

- the potential frequency of viewing by the general public,
- the degree and duration of vistas,
- the general topography of the THP area in relation to the view aspect,
- and type and density of forest canopy and understory cover of forest areas surrounding the THP area.

The RPF will make a finding of whether or not the evaluation leads to a conclusion that a significant impact to a scenic vista exists. Where appropriate, to visually soften and mitigate significant impacts created by even-aged management on the integrity of scenic views from designated overlooks visible to significant numbers of general forest visitors, the THP shall include one or a combination of the following: modify the configuration of the harvest area to better reflect topography and natural patch shapes; modify the configuration of the harvest area to avoid spanning ridgelines in whole, or in part; reduce the size of the individual harvests units and/or total harvest area; or leave selected standing trees along the harvest edge boundaries.

Measure 2 - For all timber harvest plans conducted within or adjacent to Special Treatment Areas or buffer areas that are identified but not specifically defined in the DFMP, conduct field evaluations by a qualified RPF or other qualified professional, as determined by [CAL FIRE], to determine the visibility of the THP area. Evaluation will consider, but not be limited to:

- the potential frequency of viewing by the general public,
- the degree and duration of views from areas of concern;
- presence of distinctive visual attributes such as rock outcrops, streams, or distinctive flora;
- type and density of forest canopy and understory cover;
- and general topography in relation to the view aspect.

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Evaluations should take into account the configuration of the THP in relation to the areas around it. The RPF will make a finding whether or not the evaluation leads to a conclusion that a significant impact to a scenic vista exists. Where appropriate to visually screen views from Special Concern Areas, the Mendocino Woodlands State Park and Outdoor Center, and other state park units adjacent to JDSF, or to direct views to provide desirable vistas, modify the width of the buffer appropriately (wider or narrower). Designate timber harvest practices within buffer areas to be one or a combination of single-tree selection, hazard tree removal, or no harvesting, as appropriate.

To address impacts on the visual character and integrity of the JDSF, no harvesting or some form of restricted timber harvesting within the 23 identified Special Concern Areas. The DFMP also provides for buffers around some Special Concern Areas and other forest resources that would mitigate the impacts of timber management on aesthetic resource. Buffers that are specifically defined in the DFMP are:

- **Campgrounds and day-use areas buffers** - where timber harvesting within 300 feet of campgrounds and day-use areas will be planned and conducted with the designated site use in mind.
- **Road and trail corridors** - specified 300-foot buffers in the DFMP, plus additional corridors to be considered for designation following recreation user survey.
- **Slash abatement zones** - where main access routes to high-use recreation areas; timber harvest plans will have slash abatement within 50 feet of the road.
- **Non-catastrophic tree mortality and down wood retention zones** - within old-growth management areas, WLPZs, or within 100 feet of old-growth groves.
- **Watercourse and Lake Protection Zones** - where a series of management prescriptions are defined to include, but not be limited to: a 25-foot no-harvest zone; an Equipment Exclusion Zone; leaving uncut the 10 largest trees per 330 feet of stream channel within 50 feet of the watercourse transition line; retaining a minimum of 240 sq. ft. of conifer basal area within the WLPZ following harvest activity; reentry no more frequently than every 20 years in Class I WLPZs; and retention of native hardwoods except where species imbalance has occurred.
- **Neighbor/State Park Buffer Special Concern Area** - a 200-foot zone has been established along all neighboring non-industrial timberland ownerships and State Parks where the silvicultural method has been

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restricted or scenic values must be considered in selection of an appropriate silvicultural system.

- A 200-foot harvest exclusion buffer from camp areas, recreational cabins, or main roads located within Mendocino Woodlands State Park. This buffer does not apply to the Railroad Gulch Silvicultural Study area.
- 200-foot buffers have historically been considered around residential properties that are adjacent to the Forest boundary. The type of timber management that has occurred within these buffers has been based on discussions with individual property owners.

Measure 3 - Require the Forest Learning Center and Forest interpretive Center to be located and designed in accordance with the CEQA process to not significantly affect day or nighttime views from campgrounds or residential areas. CEQA processes also shall be followed for any other facilities, not identified at this time, that are proposed at a later date.

Measure 4: For all timber harvesting plans, the RPF or designee shall conduct field evaluations to determine the visibility of the proposed THP area in combination with the existing viewshed, past, present, and probable future operations, to the Forest visitor as seen from areas of high public use. Evaluations will consider, but not be limited to:

- the potential frequency of viewing by the general public
- the degree of visibility
- duration of view
- general topography of the view area
- character of the forest canopy and understory cover
- visually dominant landscape features
- visual recovery trajectory
- past visual forest management impacts within the viewscape regardless of ownership.

The RPF will make a finding of whether or not the evaluation leads to a conclusion that a significant adverse cumulative impact to a scenic vista exists. This mitigation must be applied to areas including but not limited to all foreground views (views up to 200 feet), to the middleground vistas looking into James Creek from Highway 20 and the surrounding viewscape from the Camp 20 Recreation Area from Highway 20, and any identified background views of JDSF seen from areas of high public use. Where appropriate to maintain visual quality and to mitigate cumulative impacts created by forest management on the integrity of scenic views, the THP shall include one or a combination of the following:

- modify the project to reflect the natural character of the landscape

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- incorporate edge treatments into the design of the proposed operation (feathered edges, irregular harvest unit design, etc.)
- create islands or patches of trees to mitigate visual impacts under silvicultural methods involving the use of variable retention
- retain stems under an appropriate silvicultural prescription to maintain visual quality
- minimize major visual lines if not in character with the viewed landscape.
- modify the size, shape and configuration to fit the character of the surrounding landscape
- delay harvest until the visible landscape has recovered a forested appearance

Cumulative Impacts

The 2005 DEIR identified one potentially cumulative impact to aesthetic values associated with the adoption of Alternative C1. It was found by the BOF that the impacts were less than significant with mitigation. These mitigations have been adopted as management measures for Alternative G. Given the changes in management proposed under Alternative G, the following significance determination is made for Alternative G for this potential impact:

Cumulative Impact 1: Timber harvesting, timber sale road construction, and/or Road Management Plan implementation would substantially degrade scenic vistas in a cumulative manner. (Less than Significant)

Mitigation

The potential effects associated with the implementation of Alternative G are less than significant. As such, no mitigation is required.

9. NOISE EFFECTS

Management of JDSF under Alternative G will differ somewhat from management under Alternative C1 (May 2002 DFMP) as it relates to cumulative noise effects. Detailed discussion and analysis can be found in the respective section of the 2005 DEIR (section VII.12), the cumulative effects section (Section VIII.10) of the 2005 DEIR, and section III.12 of the RDEIR. **In the cumulative effects section of the 2005 DEIR, it was found that management of JDSF under Alternative C1 would have a less than significant cumulative noise effect with mitigation.**

Mitigations from Alternatives C1

Mitigations in the 2005 DEIR that addressed noise impacts have been fully incorporated into Alternative G as management measures. These are:

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Measure 1

While timber operations are generally limited to daylight hours when many people are away from home, logging adjacent to rural residential homes and neighborhoods will generate noise. Noise will be mitigated on a site-specific basis, taking into account the nature of the area and the inhabitants, or receptors. Options to reduce noise impacts might include limiting operations to weekdays, keeping landings and heavy equipment as far away from receptors as feasible, and where necessary, utilizing methods and machinery that are less noisy.

Measure 2

Active timber operations within the vicinity of occupied campgrounds and picnic areas will be limited to weekdays and non-holidays. Noise abatement mitigation will be included in any timber sale within 100 feet of an open campground or within 200 feet of a residence, park, or other identified sensitive receptor. Camp hosts will be kept informed of activities associated with timber operations affecting campgrounds under their jurisdiction.

Noise impacts on wildlife can be mitigated by avoiding nesting/breeding areas of noise-sensitive listed species during the critical reproductive and young-rearing months. JDSF will conduct area-wide wildlife surveys in viable habitats for listed species for one or more years prior to commencement of operations wherever timber operations are proposed. The data will be incorporated with other known locations of wildlife, both on and off the property, helping staff design operations for minimal impact to sensitive and listed species on the Jackson Demonstration State Forest.

Measure 3

Any proposed helicopter logging will use the Mendocino General Plan standards for residential dwellings in rural suburban communities as a guide in estimating noise impacts of specific timber harvest operations. Potential noise levels can generally be determined by considering the equipment used, time of use, terrain, and distance to sensitive receptors.

The following helicopter flight characteristics will be considered in the design of timber management operations to further mitigate noise impacts within and adjacent to JDSF where sensitive receptors are identified:

- Buffer helicopter pads by using ridges or other solid sound attenuating landscape features where available and practical.
- Design helicopter flight paths to provide buffering distance from hiking trails, campgrounds, and nest sites of listed species.

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- Where practical, design helicopter flight paths using terrain features that would reduce noise reception by sensitive receptors (i.e. fly behind ridges).
- Limit times of day for helicopter use to reduce impacts when operating near residential neighborhoods and occupied campgrounds.
- Logging operations will increase ambient noise levels near an active timber harvest; however, given the temporary, remote and seasonal nature of timber harvest, the above mitigation measures will reduce noise impacts to a less than significant level.

Additional helicopter measures new to Alternative G:

- Active operations will be limited to weekdays and non-holidays.
- Noise abatement will be included in a THP within 1000' of an open campground or 200' of a residence, part or other identified sensitive receptor.
- Camp-hosts will be informed of timber operations affecting campgrounds under their jurisdiction.
- In addition, noise impacts on nest sites of listed species and neighbors will be considered in decisions to prescribe helicopter use in logging operations.

Mitigation 4

Noise-generating management activities will be assessed for cumulative noise effects, and JDSF will incorporate mitigation measures to minimize them. Examples of mitigation that can be applied to projects include alteration of project methods, timing, location, scope, and duration. Trees have potential to buffer ambient (chronic) highway and residential noise, and site-specific retention should be considered to reduce potential impacts to residents or recreationalists.

Target shooting and chainsaws (firewood cutting) are generally the noisiest recreational activities, with potential individual and cumulative noise impact that may not be mitigated by distance. JDSF controls firewood cutting through the use of permits, so firewood collection locations can be controlled. Recreational shooting is not a controlled activity on the State Forest, although it is prohibited in specified areas around Mendocino Woodlands and the Parlin Fork and Chamberlain

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Creek Conservation Camps.. For harvesting and construction activities, mitigating noise to a level that is less than significant is accomplished by limiting days and hours of operation, as well as providing buffering distance, taking advantage of topographic features, and time between noise-creating activity and nearby sensitive receptors, and using equipment that makes less noise.

Cumulative Impacts

The 2005 DEIR identified one potential cumulative noise impact associated with the adoption of Alternative C1. It was found by the BOF that the impact was less than significant with mitigation, and these mitigations have been incorporated into Alternative G as management measures. Given the changes in management proposed under Alternative G, the following significance determination is made for Alternative G for this potential impact:

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.
(Less than Significant with Mitigation)

Mitigation

The potential effects associated with the implementation of Alternative G are less than significant. As such, no mitigation is required.

10. TRAFFIC EFFECTS

Management of JDSF under Alternative G will not differ substantially from management under Alternative C1 (May 2002 DFMP) as it relates to cumulative traffic effects. Detailed discussion and analysis can be found in the respective section of the 2005 DEIR (section VII.15), the cumulative effects section (Section VIII.11) of the 2005 DEIR, and section III.15 of the RDEIR. One difference between Alternative G and C1 is that Alternative G will have about one-third less annual timber harvest volume, resulting in proportionately less log truck traffic. **In the cumulative effects section of the 2005 DEIR, it was found that management of JDSF under Alternative C1 would have a less than significant cumulative effect on traffic.**

Cumulative Impacts

The 2005 DEIR identified three potential cumulative traffic impacts associated with the adoption of Alternative C1. It was in the DEIR that the impacts were less than significant. Given that traffic impacts under Alternative C1 differ little from management proposed under Alternative G, the following significance determination is made for Alternative G for these potential impacts:

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Impact 1: An increase in traffic, which is substantial in relation to existing traffic load and capacity of the street system. (Less than Significant)

Impact 2: Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways. (Less than Significant)

Impact 5: Would the project significantly affect parking capacity? (Less than Significant)

Mitigation

The potential effects associated with the implementation of Alternative G are less than significant. As such, no mitigation is required.

11. AIR QUALITY

Management of JDSF under Alternative G will not differ substantially from management under Alternative C1 (May 2002 DFMP) as it relates to cumulative air quality effects. One difference is that average annual timber harvesting is anticipated to be about one-third lower under Alternative G as compared to C1. As discussed in the 2005 DEIR, pollutants from the operation of logging-related heavy equipment and logging trucks are of concern for air quality. Reduced harvesting levels will result in roughly proportionately less air pollutants from logging equipment and trucks. Detailed discussion and analysis can be found in the respective section of the 2005 DEIR (section VII.5), the cumulative effects section (Section VIII.12) of the 2005 DEIR, and section III.5 of the RDEIR.

Cumulative Impacts

In the cumulative effects section of the 2005 DEIR, it was found that management of JDSF under Alternative C1 would have a less than significant cumulative effect on air quality. **Given that management under Alternative C1, as it relates to cumulative air quality impacts, differs little from the management proposed under Alternative G, it is expected that implementation of Alternative G also will have a less than significant impact.**

Mitigation

The potential effects associated with the implementation of Alternative G are less than significant. As such, no mitigation is required.

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12. LAND USE

Management of JDSF under Alternative G will not differ substantially from management under Alternative C1 (May 2002 DFMP) as it relates to cumulative land use effects. Detailed discussion and analysis can be found in the respective section of the 2005 DEIR (section VII.11), the cumulative effects section (Section VIII.13) of the 2005 DEIR, and section III.11 of the RDEIR.

Cumulative Impacts

In the cumulative effects section of the 2005 DEIR the BOF found that management of JDSF under Alternative C1 would have one potentially significant cumulative effect on land use. This effect was found to be less than significant. Given that management under Alternative C1, as it relates to cumulative land use impacts, differs so little from the management proposed under Alternative G, **it is concluded that implementation of Alternative G will have a less than significant cumulative effect on land use.**

Impact 3: Would implementation of the Management Plan result in adverse cumulative impacts to adjacent landowners in the form of reduced enjoyment in the use of their property or a loss of property values (Less than Significant).

Mitigation

The potential effects associated with the implementation of Alternative G are less than significant. As such, no mitigation is required.

13. HERITAGE RESOURCES

Management of JDSF under Alternative G will differ somewhat from management under Alternative C1 (May 2002 DFMP) as it relates to cumulative effects to heritage resource. Detailed discussion and analysis can be found in the respective section of the 2005 DEIR (section VII.9), the cumulative effects section (Section VIII.14), and section III.9 of the RDEIR. **In the cumulative effects section of the 2005 DEIR, it was found that management of JDSF under Alternative C1 would have a less than significant cumulative on cultural resources with mitigation.**

Changes to Goals and Objectives Proposed Under Alternative G

A total of ten Management Goals would be added to Alternative C1 as a result of implementing management at JDSF under Alternative G (see Heritage Resources section III.9 of RDEIR).

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Mitigations from Alternative C1

A total of 18 mitigation measures were identified in the 2002 DEIR for Alternative C1. These mitigations have been incorporated into Alternative G as management measures (see section III.9 of the RDEIR).

Cumulative Impacts

To summarize, in the 2005 DEIR, there were a number of potential heritage resources impacts for which mitigations were found necessary under Alternative C1 to prevent significant adverse cumulative impacts to heritage resources (see section VII.9 of the 2005 DEIR or section III.9 of this RDEIR). These potential impacts relate to:

- management activities such as timber management;
- fire protection and prescribed burns;
- maintenance of existing roads and appurtenant structures;
- recreation and public uses, and maintenance of existing facilities;
- and interpretation, demonstration, and research programs.

Alternative G proposes to adopt the Management Goals and mitigations (adopted as management measures) from Alternative C1 that mitigated Alternative C1 to a level of less than significant for the individual and cumulative effects to heritage resources. As such, **it is concluded that implementation of Alternative G will have a less than significant cumulative effect on heritage resources.**

Mitigation

All of the cumulative effects to cultural resources associated with the implementation of Alternative G were less than significant. As such, no mitigation is required.

14. CUMULATIVE IMPACTS SUMMARY AND COMPARISON TABLE

Table IV.2 provides a comparison and summary of the cumulative effects findings for Alternatives A through G. This format is loosely adapted from the cumulative impacts checklist found in the Forest Practice Rules at 14 CCR § 912.9.

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Table IV.2. Summary of Potential Adverse and Beneficial Potential Cumulative Effects.						
	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
Watershed						
Flow			A-G			A-G
Water Temperature			A-G	A, C1-G		B
Nutrients			A-G			A-G
Large Woody Debris		B	A, C1-G	A, D-G	B, C1, C2	
Organic Debris			A-G			A-G
Sediment						
Violate WQ Standards		A, B	C1-G	C1-G	A, B	
Aquatic Habitat/Species		A, B	C1-G			A-G
Hazardous Materials			A-G			A-G
Soil Productivity						
Organic Matter Loss			A-G			A-G
Surface Soil Loss		A, B	C1-G			A-G
Soil Compaction			A-G			A-G
Growing Space Loss			A-G			A-G
Biological Resources						
Aquatic Resources						
Channel Geomorphology		A, B	C1-G			A-G
Instream Habitat/Bank Stability		B	A, C1-G	A, C1-G	B	
Fish/Amphibian Populations		A, B	C1-G	C1-G	A, B	
Number/Range Rare or Endangered Species		A, B	C1-G	C1-G		A, B
Wildlife and Wildlife Habitat						
Late Succession/Old-Growth Forest			A-G	E, F		A-D, G
Snags and Down Wood		B-D	A, E, F, G	E, F		A-D, G

DRAFT ENVIRONMENTAL IMPACT REPORT FOR PROPOSED JDSF MANAGEMENT PLAN

Table IV.2. Summary of Potential Adverse and Beneficial Potential Cumulative Effects.						
	Cumulative Effects Potential for the Various EIR Alternatives*					
	Potential for Significant <i>Adverse</i> Cumulative Effects			Potential for Significant <i>Beneficial</i> 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
Riparian Habitat		B	A, C1-G	C1-G		A, B
Unique/Special Habitats and Features		B-C2	A, D-G	D-G	C1, C2	A, B
Wildlife Communities and Habitat Values			A-G	A, D-F		B-C2, G
Southern Torrent Salamander and Tailed Frog		B	A, C1-G	D-F		A-C2, G
Marbled Murrelet		B, D	A, C1, C2, E, F, G	E, F, G	C1-D	B
Northern Spotted Owl			A-G	E, F		A-C2, G
Vaux's Swift and Purple Martin		B-C2	A, D-G	D-F		A-C2, G
Sonoma Red Tree Vole			A-G	A, D-F		B, C1, C2, G
Reduction in the Number or Range of an Endangered Species		B-C2	A, D-G	E, F		A-D, G
Interfere with Movement, Migration, or Use of Nursery Areas		C1-C2	A, B, D-G	E, F, G	C1, C2	A, B, D
Cause a Wildlife Population to Drop Below Self-Sustaining Levels		B, D	A, C1, C2, E, F, G	A, C1, C2, E, F, G	D	B
Botanical Resources						
Threaten/Eliminate Community		B	A, C1-G			A-G
Reduce No. of Rare, Threatened, or Endangered Species		B	A, C1-G			A-G
Impacts to Candidate, Sensitive, or Special Status Species		B	A, C1-G			A-G
Restrict Range of Rare, Threatened or Endangered Species		B	A, C1-G			A-G
Impact Mushroom Corners		B, D, E, F	A, C1, C2, G			A-G

DRAFT ENVIRONMENTAL IMPACT REPORT FOR PROPOSED JDSF MANAGEMENT PLAN

Table IV.2. Summary of Potential Adverse and Beneficial Potential Cumulative Effects.						
	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
Reduction of Range or Extirpation of Species		B	A, C1-F			A-G
Recreation						
Loss of Roads and Trails		A	B-G			A-G
New or Expanded Facilities			A-G			A-G
General Recreation-Related Effects			A-G	C1-G		A, B
Aesthetics						
Degradation of Scenic Vistas		B-F	A, G			A-G
Noise						
Temporary or Permanent Accumulation		B-F	A, G			A-G
Nesting Birds			A-G			A-G
Traffic						
Substantial Increase in Traffic			A-G			A-G
Exceed Level of Service			A-G			
Parking Capacity		A	A-G			A-G
Air Quality			A-G			A-G
Land Use		B	A, C1-G			A-G
Heritage Resources See sections VIII.13 and VII.9.7 for details.		A-F	G			A-G

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

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